

Date presented to council: 7/17/03

Verified by: J. Newman, Dep. Clerk

CITY COUNCIL INFORMATION MEMORANDUM

IM No. 03-06

TITLE: Misc. Information Relating To Lake Lucille.

COUNCIL MEETING DATE: July 17, 2003 Work-session

ADMINISTRATION INITIAL: *DN*

PREPARED BY: J. Newman, Deputy Clerk *JN*

Date Prepared: July 9, 2003

FISCAL IMPACT: No

If yes, amount requested: \$ Account No.:

SUMMARY STATEMENT:

Attached for your review is a copy of the "Lake Lucille Clean Lakes Study Project" dated 1993. In addition we have attached written comments received by our office to date in relation to Lake Lucille. Also included are copies of our code that may be useful as you consider a solution to the issues raised.

Provided to you under separate cover a copy of the "Review Draft A; Phase 1 Diagnostic and Feasibility Study - Lake Lucille" dated May 12, 1993, which is on file in the Planning Office.

STAFF RECOMMENDATION, IF ANY: N/A – Informational purposes only.

Attachments:

Lake Lucille Clean Lakes Study Project, May 1999

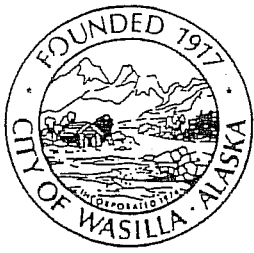
Correspondence from Kathleen Carr, George Boatright, and Thomas Remaley

WMC 1.20, General Penalty

WMC 12.20, City Lakes and Waterways

additional info. handed out @ meeting attached -

JN



CITY OF WASILLA

290 E. HERNING AVE.

WASILLA, ALASKA 99654-7091

PHONE: (907) 373-9050

FAX: (907) 373-9085

LAKE LUCILLE CLEAN LAKES STUDY PROJECT

By Joe Eilers, Lake Scientist

May, 1993

History of the Project

The Lake Lucille Clean Lakes Project was officially begun in August, 1991 although some of the field work actually began in June of that year. The project will terminate on June 30, 1993. The project has two fundamentally distinct purposes: (1) to diagnose water quality problems in the lake based on the results of a designed monitoring program, and (2) to evaluate feasible solutions for dealing with the problems in the lake. The City of Wasilla was awarded a grant from the Environmental Protection Agency (EPA) through the Alaska Department of Environmental Conservation (ADEC) to conduct the two-year project. Under the Clean Lakes Program, EPA provides 70% of the funding and the City provided 30%. The total cost of the two-year project was slightly less than \$57,000. The work associated with the project was awarded to a team of scientists and engineers with Gilfilian Engineering here in Wasilla and E & S Environmental Chemistry, Inc. in Corvallis, Oregon.

Lake Lucille Background

Before we can diagnose the problems in any lake, we need to have some idea how the lake came to be and its local surroundings. Lake Lucille was formed as a consequence of glacial activity in the area, perhaps scoured out of the till or as a depression formed from an ice block breaking off from a retreating glacier. The last glacial retreat in the region occurred some 10,000 years ago which is the approximate age of the lake. Because Lake Lucille has no real surface streams draining into the lake, most of the sediment is derived from decaying vegetation produced within the lake and from wind-blown soil called loess that is blown into the lake during the summer months. The rate that this material accumulates affects the longevity of the lake and the decreasing depth affects everything from fish habitat to water quality. We'll discuss the amount and type of sediment accumulated in the lake later in the article.

Another critical aspect of any lake is the source of water entering the lake and how long the water remains in the lake. Most of the water entering Lake Lucille enters from groundwater sources on the east end of the lake and from precipitation directly on the lake surface. Because these sources are relatively modest, the average drop of water remains in Lake Lucille for several months. This is important, because it means that any unwanted substances that might be added to the lake will remain for a considerable time. Although much of the inputs eventually leave the lake through the outlet, some material settles to the lake bottom and can recirculate back into the lake many times. A lake such as Lucille is far more sensitive to problems than its neighboring lake, Wasilla Lake, which is flushed more frequently by inflowing streams.

Another problem apparent in lakes such as Lucille is its shallow depth. The deepest spot is only 22 feet and the average depth is only 5.5 feet. A shallow lake in a northerly climate is prone to problems related to loss of dissolved oxygen in the water during the winter. Microorganisms continue to consume oxygen in the lake throughout the year and the onset of ice cover prevents oxygen from entering the lake. If oxygen loss is too great, fish kills result and hydrogen sulfide gas (smells like rotten eggs) can be emitted. This rate of oxygen loss during the winter can become especially acute if the lake becomes more highly enriched. The other problems associated with shallow lakes is that the fertile, shallow sediment provides an excellent place for aquatic weeds to become rooted and proliferate. Both the low dissolved oxygen concentrations and excessive weed growth are problems in Lake Lucille that affect the fisheries and other uses of the lake.

What Did We Measure on Lake Lucille?

For the past two years water samples have been collected from Lake Lucille, the outlet and several selected wells in the area on roughly a monthly basis. The samples have been measured on site for some parameters and then have been shipped to a laboratory at Oregon State University for further analyses. The samples have been analyzed for nutrients, dissolved minerals, pH (a measure of the acidity), chlorine, solids and certain metals. To check the performance of the laboratory, duplicate samples and blank samples (distilled water) are included among the actual lake and groundwater samples. Other samples are occasionally sent to other laboratories as further checks. The field crews also make measurements of dissolved oxygen, pH, temperature, and conductivity (a measure of the dissolved minerals) at three-foot intervals down through the deepest location in the lake. Samples have also been collected of the microscopic algae, aquatic weeds, and the organisms living in the sediment.

These measurements provide us with detailed information on the current conditions in the lake and the seasonal variations in chemistry. The rates of change in some of the chemical parameters give us important clues regarding how the lake processes nutrients and minerals. But measurements of water quality provides only one aspect of understanding a lake. Other sources of information that must be gathered include watershed hydrology (how much water enters the lake and from what sources), watershed features (land use, soils, geology, vegetation and topography), and lake fish stocking records and changes associated with development. The lake project team is especially grateful to lakeshore residents who provided oral histories of the lake, waterfowl counts and participated in the survey of sediment depth in the lake.

What Do We Do With This Information

The magnitude of the data collection effort required that we organize this information in computer files. After we have reviewed the entries to ensure a high quality data base, we plot the water quality data through time to observe patterns in lake chemistry. Next, we use the water quality data to calculate the average duration that water resides in the lake. The information on water quality and water quality is then merged to create a mathematical "model" that reproduces the conditions we monitored over the last two years. With this calibrated working model of the lake, we can then change various input conditions such as the nutrient inputs or the amount of water flowing into the lake to simulate the response of the lake under hypothetical conditions. In this way we can test the efficacy of various lake restoration techniques without the expense of implementing all the possible approaches. We then review the options for improving conditions in the lake, develop cost estimates for the options, and present the alternatives to the City and the public.

What Happens Next?

We have attempted to describe the objectives of the ongoing study of Lake Lucille and some of the specifics of the project. As the project winds to a close this spring, we will present the findings of the study and explain the options for dealing with the problems. We will present summaries of the data that have been collected, show some of the modeling results that guided us in the feasibility study, and discuss a range of options (and costs) for improving conditions of the lake.

What Have We Learned From the Study?

Literally hundreds of measurements have been made on Lake Lucille and surrounding area since July 1991. The purpose of these measurements has been to characterize the current water quality in the lake and groundwater, to understand the seasonal changes in water quality, and to develop an understanding of the processes that control the lake. Although all lakes share some common aspects, the differences in hydrology and chemistry among lakes are often so great that solutions to remedy problems can be very different. Some of the findings from this study that reveal some of the unique properties of Lake Lucille follow.

Lake Lucille is a "hardwater" lake. By this we mean that the concentration of calcium, magnesium, and bicarbonate are very high. The concentrations of these chemicals are so high that marl (limestone) is deposited in the lake. In fact, the marl deposits are so extensive in the lake that the U. S. Geological Survey investigated Lake Lucille in 1951 as a source of limestone for the manufacture of Portland cement. In some locations of the lake, the marl deposits are over 10 feet thick. The minerals are brought into Lake Lucille through springs entering the lake on the shallow area off the northeast shore. These springs are the principle source of water to the lake and are important for a variety of reasons that will be discussed later. The marl is deposited in the lake as a consequence of the photosynthetic activity of the aquatic plants which change the solubility of the minerals when they are actively growing. The extensive marl deposit in the lake are a clear signal that aquatic plants (affectionately referred to by some folks as "aquatic weeds") have been abundant probably for thousands of years. One of the plants that is very abundant throughout much of the lake, Chara (commonly called muskgrass or skunkweed because of its distinctive odor), is very typical in hardwater lakes such as Lucille and actually begins to decline if the phosphorus concentrations become too great.

Many lakes that have extensive growths of aquatic plants also have high concentrations of phosphorus and nitrogen. These nutrients often limit the growth of aquatic plants and algae. Given the history of lakeshore development and abundant plant growth, it would be reasonable to expect to find that the concentrations of phosphorus and nitrogen would be moderately high in Lake Lucille. However, nutrient concentrations in the lake are quite low – often times it has been difficult to even measure them. There are two reasons why nutrient concentrations in Lake Lucille are generally low; first, the abundant aquatic plants rapidly assimilate the nitrogen and phosphorus. Secondly, the precipitation of marl also causes some of the phosphorus to be deposited in the sediments. If these aquatic plants were suddenly removed, algae suspended in the water column would proliferate causing the lake to become less transparent.

The unpleasant odors reported by residents near the lake outlet in winter are derived from hydrogen sulfide. This "rotten" odor results when oxygen is depleted in the lake during the winter. The decaying plant and animal life consume oxygen which in turn causes the sulfate present to be transformed into a reduced form of sulfur. Lake Lucille is a shallow lake and unless the groundwater supply is adequate to replenish the lake, oxygen problems will continue.

More On What We Learned

The chemistry and biology of Lake Lucille undergo huge oscillations during the year. In the summer, pH values (a measure of acidity) increase to over 10 (pH 7 is neutral, 10 is highly alkaline) because of the intensive aquatic plant growth. Plants take carbon dioxide and bicarbonate out of the water to such a degree that limestone becomes encrusted on their exterior. The lake water stratifies into three layers at the deepest location of the lake during the summer with the deepest water losing much of its dissolved oxygen. The lake thoroughly mixes in the fall as temperatures cool, resulting in similar chemistry from the top to bottom. With the onset of ice, oxygen is no longer mixed into the water by the wind and photosynthesis declines rapidly, also cutting off a source of oxygen. By January, most of the oxygen is consumed in the lake causing the generation of the hydrogen sulfide. One of the few places oxygen remains is near the springs where incoming groundwater flows are sufficient to exceed the oxygen consumption rates. These springs serve as refuges for fish trying to survive the winter.

Under the ice, concentrations of dissolved minerals such as calcium and magnesium increase several times their values measured in the summer. Part of this is caused by the lack of dilution from rainfall, but most of it is caused by the freezing out of minerals as the ice forms. The chemicals that were dissolved in the water are forced out of the ice thus further concentrating the dissolved minerals in the lake water. Other minerals become much more concentrated under the ice as the oxygen is depleted, including iron and manganese. Phosphorus also increases under the ice and becomes available to the plants in the spring.

One of the most important aspects of understanding Lake Lucille is learning about its hydrology (sources and movement of water). We know from measuring the flow at the outlet to Lucille Creek that most of the water entering Lake Lucille is from groundwater. We also know from changes in water temperature, water chemistry, and the location of the groundwater-loving plants such as Chara that most of the groundwater enters the lake on the northeast corner. Historical accounts from long-time residents indicate that the flows from these springs used to be so great that holes remained in the ice throughout the winter in this portion of the lake. If this were the case (we have no reason to dispute these accounts), then higher quantities of inflowing groundwater would have brought more oxygenated water directly into the lake. Second, the openings in the ice would have allowed for some oxygen to diffuse into the water. Third, the higher groundwater flow rates would have increased the flushing rate in the lake. Thus, the average molecule of water would have spent a shorter time in the lake and nutrients would have flowed from the lake quicker.

Another critical factor affecting the hydrology of the lake was the installation of the dam on the outlet. This raised the elevation of the lake about three feet which contributed to a reduction of groundwater flow into the lake. It also allowed more of the aquatic plants to survive the winters. In the past, much of the shallow area of the lake would have been relatively free from rooted plants because of ice damage during the winter. Now the lake is sufficiently deep that the roots of these plants remain free of ice. The additional plant growth adds to the problems in the lake because these plants decompose during the winter, consuming oxygen in the process.

What Do We Do With Lake Lucille?

Lake Lucille suffers from a number of maladies — some caused by man, others natural in origin. One of the most noticeable problems is the abundant aquatic plant growth. The extensive marl deposits suggest that the lake has historically had an abundant rooted plant population. However, the extent of the plants has probably increased because of the increase in lake level caused by damming the outlet. If the aquatic plants were suddenly removed, algae would very likely become prolific because the algae would no longer have to compete with the rooted plants for nutrients. Therefore, use of chemical agents to inhibit the growth of rooted plants might have an even more undesirable effect on the lake. Other disadvantages of chemical treatment of Lake Lucille is that it would require annual treatment and it might have unanticipated effects on Lucille Creek and Big Lake downstream. It is possible to mechanically remove some of the aquatic plants with a motorized weed harvester. A piece of machinery and associated implements to harvest the plants cost about \$150,000 and would require an operator and indefinite treatment.

Another means of partially limiting the aquatic plants would be to lower the lake stage in the fall and let the shallow areas freeze in the winter. The further the lake level is lowered, the greater the lake area that will be relatively weed free the following year. The outlet could be blocked again in the spring allowing the lake to refill. The duration of the refill period

could be several weeks to several months depending on fluctuations in precipitation and groundwater levels. The winter drawdown cycle would have to be repeated periodically to refreeze the plants recolonizing the shallow sediments. By dredging a channel to the center of the lake, the lake level could be lowered further. Advantages of the winter drawdown technique is that it costs nothing (assuming no dredging is done) and it more closely simulates the natural processes in the lake.

Both the quality and quantity of the fisheries in Lake Lucille is poor. Currently the problem is dealt with by annual stocking of the lake. Historically, the fisheries was primarily a naturally-reproducing rainbow trout population, but the trout population has declined and two treatments with rotenone have not resulted in any long-term solution. Increased survival of trout through the winter could be achieved by increasing groundwater flow to the lake or through artificial means using an aerator. Increasing the water flow into Lake Lucille would solve a number of problems, but the only close supply of water to supplement the input into Lake Lucille is from neighboring Wasilla Lake. However, by removing water from Wasilla Lake, it would decrease the discharge to Cottonwood Creek and possibly jeopardize the migratory fish population. A compressor could be installed on the shore of Lake Lucille and pump air or pure oxygen into the lake during the winter. This could keep the lake from totally losing its oxygen into the lake during the winter, increasing fish survival and decreasing formation of hydrogen sulfide (the gas with the "rotten egg" odor). A major concern with the use of an aerator is that the increased water circulation would decrease the thickness of the ice cover or possibly open the lake near the discharge tubes. The potential gain in fisheries and water quality would have to be balanced with the increased danger associated with openings in the ice.

More Solutions for Lake Lucille

Another possible solution that we have investigated includes dredging the lake sediment to deepen the lake. Dredging has been done in a number of cases for lakes similar to Lake Lucille where the shallow waters provide ideal habitat for aquatic plants and the lake volume is inadequate to prevent winter kill. Dredging provides a long-term solution for some of the problems in the lake, but it is expensive. Estimates for dredging are about \$3 to \$4 per cubic yard of material removed. To remove enough sediment to make a difference in Lake Lucille would cost from one to several million dollars depending on the proximity of a sediment dewatering and disposal site.

One interesting feature of Lake Lucille is that there may be a way to partially offset the costs of dredging by selling some of the sediment. There are extensive commercially viable deposits of marl (limestone) in the lake that could be used in the manufacture of Portland cement or as a road binder. The U. S. Geological Survey investigated Lake Lucille as a source of limestone in 1951 and concluded that the marl deposits were over 10 feet thick in portions of the lake. Although dredging is attractive from some standpoints, it presents other problems. Lake Lucille is used extensively by waterfowl and removal of sediments and overlying plants could cause the birds to go elsewhere. Also, the rate of oxygen depletion under the ice in Lake Lucille is very fast and it may not be possible to remove enough sediment to prevent fish kills in all years.

In summary, there are several options for addressing the problems in Lake Lucille, but none are without their drawbacks. The aquatic plants could be curtailed using chemical treatments, but the costs are considerable for a lake of this size, the algae problem would likely become worse, the treatments would need to be repeated, and other effects from the chemicals are difficult to anticipate. The City could purchase a weed harvester to operate in the summer months. This will effectively treat the abundant aquatic plant problem, but the solution only addresses the symptom — not the cause. The lake level could be lowered in the fall, allowing the shallow sediments and plants to freeze. This doesn't cost anything, it will reduce plant growth in the shallow areas, but it will require an extended period in the spring to refill the lake. An aerator could be installed on the shore to pump oxygen into the lakewater during the critical winter months. The cost of aeration equipment is reasonable and the energy costs for operation are modest. The aeration will probably create openings in the ice which would need to be posted. An ideal solution to many of the lake problems would involve finding an additional water source to supplement the current groundwater input. Although it would be technically easy to pipe water from Wasilla Lake, the solution to Lake Lucille might create more problems for Wasilla Lake and Cottonwood Creek. The last solution proposed, dredging lake sediment, is prohibitively expensive unless part of the costs can be offset by commercial use of the sediment.

The solution most attractive to the consulting scientists and engineers is to lower the lake stage in the fall, allowing the shallow sediments to freeze. Other more costly and invasive procedures could be tried at a later date, but we recommend an incremental approach to lake manipulation. The ultimate solution is up to you, the residents of Wasilla. We encourage you to obtain written summaries of the lake study and to offer your opinion regarding the management of Lake Lucille. An information workshop will be held from 1:00 p.m. to 5 p.m. on Tuesday, May 18 followed by a public meeting that night at 7:00 p.m. to review the findings of the study and to examine the issues that were only briefly able to touch on here. We hope to see you there.

Lake Lucille Fishery and Outlet Structure History

Prior to 1955: Eilers 1993 study states "accounts of fishing in the lake prior to 1950 are replete with descriptions of abundant populations of large rainbow trout." and "the rainbow trout used to migrate into Lake Lucille and spawn. The natural fishery based on historical accounts was quite abundant".

1955: First ADF&G annual report states anglers caught RT and landlocked salmon.

1955: Lake was rehabilitated with rotenone to remove "scrap" fish, threespined stickelback and long nose suckers. The first outlet barrier was constructed to keep toxic water out of Meadow Creek and keep the "scrap" fish from moving back into the lake after treatment. Structure was constructed by ADF&G with the help of the Matanuska Valley Sportsman's Association and a number of independent sportsmen. After treatment 450 rainbow trout, 235 landlocked salmon were found dead and approximately 25,000,000 threespined stickelback and 80,000 suckers were killed.

1956: First stocking after rehabilitation: 116,000 RT and 31,000 SH

1957-1962: Stocked with a combination of RT and SS. Some winterkill found.

1963: Rehabilitated with rotenone to eliminate TS

1964: Stocked again in 1964 with RT

1965-1968: Stocked with SS

1967: Original outlet structure removed and new structure installed by ADF&G. This structure also didn't allow the passage of fish. The Lake Lucille Study prepared for the City of Wasilla by J.M. Eilers in 1993 states that this outlet structure raised the lake level approximately two and a half feet.

1969-1972: Not stocked.

1972: Rehabilitated with rotenone to eliminate TS.

1973-1989: Stocked with SS, KS, RT and GR

1989-present: Stocked with RT.

1990: City of Wasilla requested a dam safety inspection by the Borough for the outlet structure. They also notified ADF&G that some residents of the area had approached both the City and the Planning and Utilities Commission with a request to install and maintain a fish ladder at the Lucille Creek outlet.

1992: Outlet structure reconstructed by ADF&G with the addition of a fish ladder to allow natural migration of RT. From this point on the lake was stocked with either Big Lake strain RT or sterile RT.

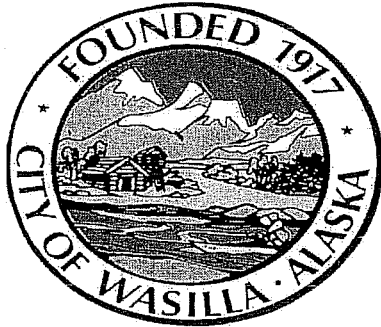
1994: As a result of the Eilers study the City of Wasilla planned to lower the lake level 2 feet by adjusting the outlet structure but never did it. It was intended to reduce the growth of aquatic weeds.

RECEIVED

OCT 08 2001

CITY OF WASILLA
CLERK'S OFFICE

City of Wasilla Lake Lucille Work Session



City of Wasilla Lake Lucille Work Session

The intent of this meeting is:

- to determine what agencies have specific authorities in regards to Lake Lucille.
- to gather input from the residents who live on Lake Lucille.
- to gather input from the users of Lake Lucille.
- to find consensus between the different groups to determine what solutions are feasible for the city and users .

City of Wasilla Lake Lucille Work Session

ADEC is responsible for enforcement of lake pollution issues. There are different types of pollution issues such as-

- *septic tank leaching
- *surface pollution (storm water runoff, etc.)
- *fuel spills

City of Wasilla Lake Lucille Work Session

For septic tank issues contact Mike Skibo
ADEC @ 907-376-5038 or mike_skibo@dec.state.ak.us

For surface pollution issues contact Laura Eldred
ADEC @ 907-269-1065 or laura_eldred@dec.state.ak.us

For fuel issues contact John Brown
ADEC 907-269-7688 or john_brown@dec.state.ak.us

City of Wasilla Lake Lucille Work Session

To report spills after normal business hours or during weekends call

1-800-478-9300

Be sure to have all of the necessary information to report the spill before calling. Forms may be downloaded from www.state.ak.us/dec/dspar/perp/repnew.htm

City of Wasilla Lake Lucille Work Session

Lake Lucille is not an inter-coastal waterway, therefore the US Coast Guard has no authority or responsibility over issues on Lake Lucille. However, the City of Wasilla regulations state that all boaters shall follow USCG safety regulations (this includes watercraft using inland rules of the road, the use of life preservers for all children under the age of 13, never boat under the influence of alcohol or drugs, and adhering to safe boat load limits, fire prevention, lights are required on watercraft during night operation, etc.).

Prepared by: Mayor Dianne M. Keller
July 17, 2003 City Council Work-session

Re: Lake Lucille

City of Wasilla Lake Lucille Work Session

Alaska State Troopers Fish & Wildlife Protection are responsible for wildlife harassment complaints and reports. There are several phone numbers to call to file a complaint:

*AST/FWP (main office) 745-2131

*Palmer Office- 746-9136

*Big Lake Office- 892-3474 or

*Trooper Dispatch- 907-428-7200

City of Wasilla Lake Lucille Work Session

The Matanuska-Susitna Borough is working with the public to monitor the quality of water at Lake Lucille. Please contact Lynn Fuller if you would like to assist with this project. Ms. Fuller, MSB Water Quality Coordinator, may be contacted at 746-7441 or lfuller@matsugov.us

City of Wasilla Lake Lucille Work Session

Water extraction from Lake Lucille is permitted through the State of Alaska, Department of Natural Resources. If you have questions about water or mineral extractions from the lake please contact the Public Information Officer at 907-269-8400

City of Wasilla Lake Lucille Work Session

What is the City of Wasilla responsible for on Lake Lucille???

City of Wasilla Lake Lucille Work Session

The City of Wasilla has adopted regulations that govern conduct, a no wake zone, hours of operation, noise control, safety, buoys and signs as well as special event permits. All members of the public and lake residents must adhere to the regulations that exist for Lake Lucille.

City of Wasilla Lake Lucille Work Session

The city has the enforcement authority on Lake Lucille for regulation of activity hours (WMC 12.20.020B) and conduct (lewdness 9.04.020, fine of \$200.00). Hours of continuous or repetitive operation on the lake are 8am-11pm.

Individuals not obeying the quiet hours of the lake may be cited a

\$100.00 fine by WPD.

City of Wasilla Lake Lucille Work Session

Hours of Operation (WMC 12.20.020B). Motorized uses producing continuous or repetitive noise which would or could disturb the peaceful enjoyment of lake shore residents and users of the public areas is prohibited between the hours of 11pm and 8am. Specifically, use of personal watercraft known as "jet skis" or "wave runners" and similar acrobatic or stunt equipment is prohibited between the hours of 11pm-8am. This restriction shall not be construed to prohibit the operation of aircraft, boats or other vehicles while transiting the lake in route to their destination.

City of Wasilla Lake Lucille Work Session

There is an established no-wake zone extending from a shoreline, lakeward a distance of 100 feet. It is unlawful for a motorized use to operate within that zone as to create a wake. The no-wake zone may be extended or reduced as required to protect unusually sensitive wildlife habitat or to provide access to erosion resistant shorelines or for other reasons as determined by the Mayor or Mayor's designee. The no-wake zone may be identified by appropriately labeled floating buoys. (WMC 12.20.020A)

City of Wasilla Lake Lucille Work Session

Noise Control (WMC 12.20.020C) All motorized uses on the surface of lakes must be equipped with manufacture's standard noise reduction equipment including mufflers, cowlings and exhaust systems. Special purpose or home-built equipment shall be similarly equipped to minimize noise generation. Open exhaust systems are prohibited. Aircraft operators shall minimize their take-off noise by utilizing the most central portions of lakes, away from residences, business and public areas.

City of Wasilla Lake Lucille Work Session

All lake users are required to follow safety regulations that have been adopted by the US Coast Guard (WMC12.20.020D). Watercraft using lakes shall obey the inland rules of the road and small craft regulations promulgated by the US Coast Guard, including use of personal floatation devices for all children under the age of 13. Lights are required on watercraft and vehicles during night operation. For more information on USCG boating education and regulations visit

www.uscgboating.org

City of Wasilla Lake Lucille Work Session

Buoys and Signs (WMC 12.20.020E) It is unlawful to strike, destroy, move, deface or otherwise tamper with floats, buoys, signs or other notices places by or with the approval of city, borough, state or federal agencies.

City of Wasilla Lake Lucille Work Session

Any individual or organization that wishes to hold a special event on Lake Lucille must request a special event permit that may be issued by the City of Wasilla Public Works Department (WMC 12.20.020 F). Restrictions and insurance requirements are enforced for all permitted activities within city limits.

City of Wasilla Lake Lucille Work Session

Different types of lake access are available to the public and lake residents. Pedestrian only access points for Lake Lucille are located within the city right-of ways at the following locations:

- W. Beaver Street
- W. Island Street
- S. Cove Street
- W. Forest Street
- S. Easy Street
- The north side of Carter Park

City of Wasilla Lake Lucille Work Session

Other pedestrian access points are located at section line easements located at

- Lake Lucille Park (located at the end of Endeavor St.)
 - South side of section 8 (17NR1W)
 - The end of Bailey Avenue

City of Wasilla Lake Lucille Work Session

The only recognized public boat launch on Lake Lucille is located in the road right-of-way located at the end of East Susitna Avenue.

City of Wasilla Lake Lucille Work Session

The most common complaints regarding Lake Lucille are:

- Lack of parking for vehicles and trailers
- Boaters not conforming to hours of operation
 - Excessive noise after hours
 - Trespass on private property
 - Littering in and around the lake
- Non-education of the public about lake regulations

City of Wasilla Lake Lucille Work Session

What can the City do to avoid conflicts between lake users and lake residents???

City of Wasilla Lake Lucille Work Session

One of the first things that should be done is to post lake informational signs at the different access points to educate the public about lake use and regulations. Point of contact information for all agencies that have regulation authority should be posted as well as the hours of operation and fine penalties.

City of Wasilla Lake Lucille Work Session

Boat launch access should be well defined to avoid trespassing on private property. A high fence should be installed on each side of the boat launch to protect the privacy of the property owners, this will also better define the public access.

Very Rough Estimated Costs
Fence, wooden \$6,000.00

City of Wasilla Lake Lucille Work Session

A locking gate should be installed and locked promptly at 11pm and unlocked at 8am daily. The city can amend our contract with Guardian Security to provide this service for the public. This should also help to reduce excessive noise after hours of operation.

Very Rough Estimated Costs
Metal Locking Gate \$10,000.00

City of Wasilla Lake Lucille Work Session

Individuals launching boats should be instructed to park away from the boat launch. Currently the city owns property approximately one block from the boat launch. This property is approx. one acre and will most likely accommodate 10-20 vehicles w/ trailers. Estimated cost for improvements to the city lot is \$10,000.00, parking will be on a first come first serve basis.

Purchase Additional Undeveloped Land for additional parking
Rough Estimated Cost- \$50,000.00-\$100,000.00
Estimated cost for parking development- could be as much as \$100,000.00

City of Wasilla Lake Lucille Work Session

Post no parking signs on the streets in this portion of Kennedy Addition subdivision.

Enforcement by WPD ticketing vehicles parking in the no parking areas.

City of Wasilla Lake Lucille Work Session

A garbage can has been placed in the boat launch area and city staff monitor the trash receptacle, another can may be added if needed. Animal control regulations should be posted and enforced (encourage animal owners to clean up after all animals or post "no pets allowed" signs in the boat launch area).

City of Wasilla Lake Lucille Work Session

By educating the public and lake residents and encouraging safe boating habits, Lake Lucille can continue to be a source of enjoyment for residents of the lake, the city and the borough. Creative solutions for access problems should be encouraged by the public, lake property owners and boaters for future cooperation and enjoyment.

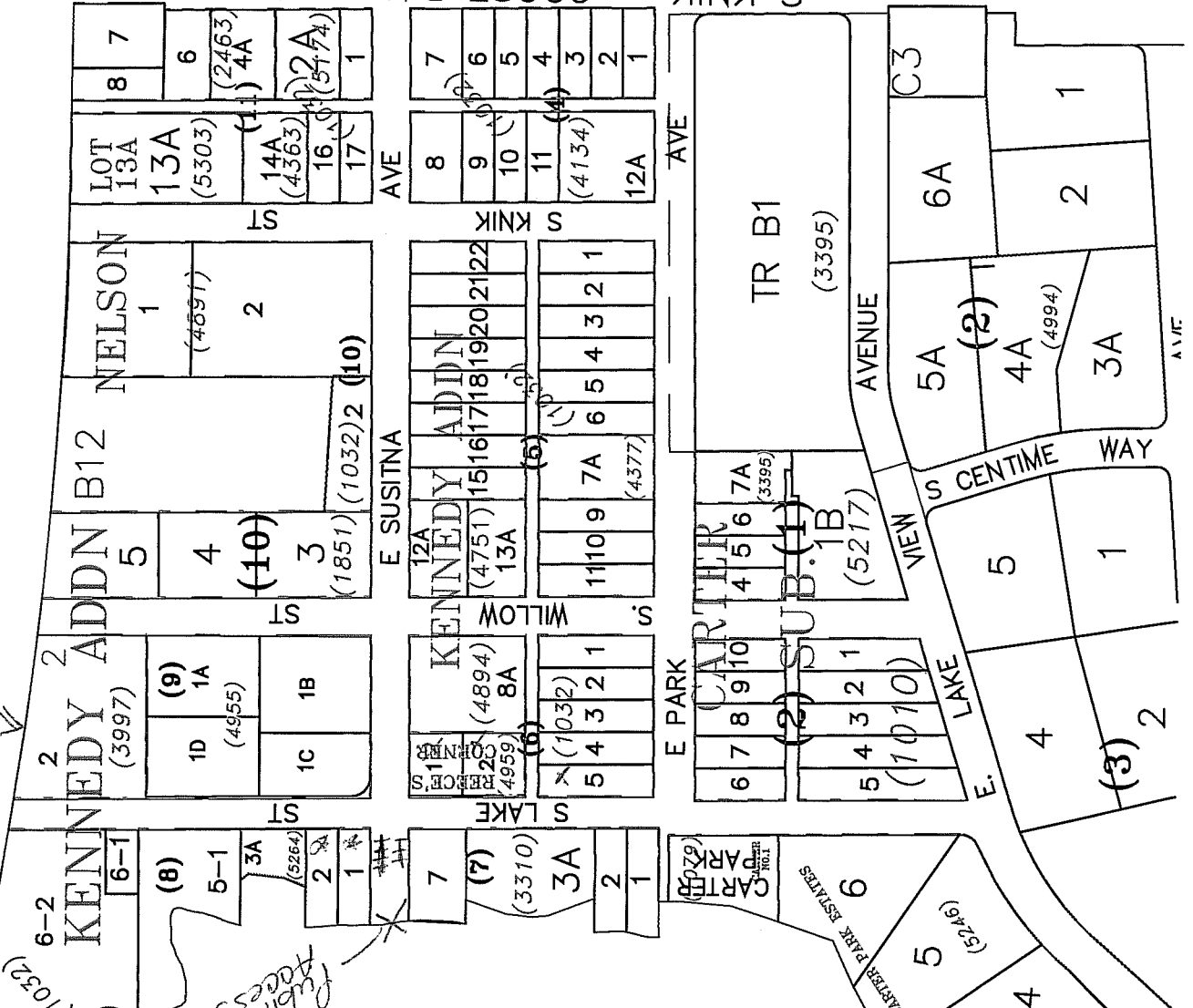
16A (4229) 16 (14151)

3-1 (4212) (4825) 17-1 2 1

E PARKS HIGHWAY

City owned lot

ALASKA RAILROAD



Public Address

C19

D5

C11

C2

C10

C3

(3)

(5246)

CARTER PARK ESTATES

CARTER PARK ESTATES

E PARK

CARTER SUB. 1B (5217)

CARTER SUB. 1A (3395)

TR B1 (3395)

S MIKIK

GOOSE BAY ROAD

(1032)

Chapter 1.20

GENERAL PENALTY

Sections:

- 1.20.010** **General penalty.**
- 1.20.020** **Penalty surcharge authorization and collection.**
- 1.20.030** **Disposition of scheduled offenses—Fine schedule.**

1.20.010 **General penalty.**

A. Penalty. Unless another penalty is specifically provided by this code for the violation of any particular provision, any person who violates any of the provisions or fails to comply with any of the mandatory requirements of this code, upon conviction, shall be punished by a fine not to exceed three hundred dollars (\$300.00) and the violation shall be treated as an infraction.

B. Procedure. The charge for the violation of a code provision may be brought by a city police officer, the mayor, or that city official responsible for the administration and enforcement of the code provision which has been violated. A person charged may dispose of an infraction offense by paying the fine set for the violation charged and pleading "no contest" in person or by mail, or may appear in court to contest the charge. As an infraction, trial is by the court without a jury, and there is no right to court-appointed defense counsel.

C. Separate Violations. Each day of a continuing violation of this code shall constitute a separate offense.

D. Civil Action Alternatives. In addition to any other remedies or penalties which may be provided in this code, or may otherwise be available, the city or any aggrieved person may

institute a civil action against a person who violates any provision of the code. In addition to injunctive and compensatory relief, a civil penalty not to exceed one thousand dollars (\$1,000.00) may be imposed for each violation. An action to enjoin a violation may be brought notwithstanding the availability of any other remedy. On application for injunctive relief and a finding of violation or threatened violation, the superior court shall grant the injunction. (Prior code § 1.24.015)

1.20.020 **Penalty surcharge authorization and collection.**

The surcharge required to be imposed pursuant to AS 12.55.039 is authorized and shall be imposed as a surcharge on penalties imposed for the violation of an ordinance, code provision, or regulation of the city brought under citation or criminal complaint that would require a proceeding in the Alaska Court system if the defendant were to enter a plea of not guilty. This surcharge is imposed in addition to any other fine or other penalty provided by law. The court may impose and collect the surcharge on all penalties imposed by the court or fines and bail forfeitures that are paid to the court. The surcharge shall be deposited into the general fund of the state of Alaska in accordance with AS 29.25.072. (Prior code § 1.24.030)

1.20.030 **Disposition of scheduled offenses—Fine schedule.**

A. A person cited for an offense for which a fine is established in subsection C of this section may mail or personally deliver to the clerk of court the amount of the fine indicated on the citation for the offense plus any surcharge required to be imposed by AS

29.25.074, together with a copy of the citation signed by the person indicating the person's waiver of court appearance, entry of plea of no contest, and forfeiture of the fine. A motor vehicle or traffic citation may be mailed or personally delivered within five days after the date of the citation. A citation for a scheduled offense other than a motor vehicle or traffic citation may be mailed or personally delivered within fifteen (15) days after the date of the citation. The payment of a fine under this subsection shall be treated as a judgment of conviction. The fine paid is complete satisfaction for the offense.

B. If a person cited for an offense for which a fine amount is established in subsection C of this section appears in court to contest the citation and is found guilty, the maximum sentence which may be imposed is the scheduled fine amount plus any surcharge required to be imposed by AS 29.25.074.

C. The following violations of this code are amenable to disposition without court appearance upon payment of a fine in the amount listed below.

CODE SECTION	DESCRIPTION OF OFFENSE	FINE
WMC 6.04.060	Business License Violations	\$250
WMC 6.08.110	Public Vending and Special Events	\$100
WMC 6.12.130	Taxicab and Chauffeurs Violations	\$100
WMC 8.04.030	Sale of Fireworks	\$100
WMC 8.04.040	Use of Fireworks	\$100
WMC 8.08.010	Refuse Enclosure Required	\$100
WMC 8.08.040	Litter Unlawful	\$100
WMC 8.12.020	Political Sign Posting on Right-of-Way	\$100
WMC 9.04.020	Lewd Conduct	\$200
WMC 9.12.010	Discharge of Firearm	\$200
WMC 9.20.010	Trespassing	\$100
* WMC 10.08.020	Obstruction of Right-of-Way	\$50
WMC 10.12.020	Prohibited Operation of Off-Road Vehicles	\$50
WMC 10.12.030	Operation of Off-Road Vehicle by a Minor	\$100
WMC 10.12.040	Operation of Off-Road Vehicle Without Helmet	\$100
WMC 10.12.060	Speeding of Off-Road Vehicle	\$100
* WMC 12.20.020	Motorized Uses on Lakes	\$100
WMC 12.24.020	Violation of Park Rules	\$250
WMC 13.08.020	Sewage Disposal	\$300
WMC 13.08.140	Sewage Violations	\$300
WMC 13.12.030	Wastewater Pretreatment Violations	\$300
WMC 13.20.060	Airport Violations	\$300
WMC 16.08.090	Land Use Code Violations	\$300

(Amended by memorandum 02-12; Ord. 01-47 § 2, 2001)

KATHLEEN CARR

RECEIVED

JUL 11 2003

**PLANNING OFFICE
CITY OF WASILLA**

**P.O. Box 870590
Wasilla, Alaska 99687
Phone: (907)373-0874
FAX: (907)373-0873**

FAX TRANSMISSION

Date: 7/11/03

Attention: *City of Wasilla Planning Office*

Subject: *Lake Lucille Work Session*

Reference: *My comments to be read*

My e-mail to you kept being rejected, so here is a fax!

From: "kathy carr" <kathyc1@hotmail.com>
To: jcarricaburu@ci.wasilla.ak.us
Subject: Lake Lucille Work Session
Date: Fri, 11 Jul 2003 20:09:33 +0000

7/11/03
I am submitting my comments to be read at the Lake Lucille Work Session.

My name is Kathleen Carr and I have been a property owner on Lake Lucille for over twenty years. I have watched public abuse get progressively worse over the years on my property, the lake access and the wildlife on the lake. I have had to call the police on numerous occasions. Many times Lake Street between Railroad Avenue and Susitna Avenue is blocked. This situation is now totally out of control. Trash and beer cans are littered everywhere, boats way too large for this lake are being launched. The curfew for boats to be on the lake is never followed. People are blatantly turning our private properties into a type of public park atmosphere with kids running loose among the large vehicles and sunbathers on our properties. Many nights there are boats out at midnight. I feel it is time to move the access and close the current access down before some small child is run over or drowned. Thank you for your time.
Respectfully, Kathleen Carr

Jamie Newman

From: Mayor Keller
Sent: Tuesday, July 15, 2003 9:12 AM
To: Jamie Newman
Subject: FW: Lake Lucille

Jamie,
Please share this email with the Council members.
Thanks,
Mayor Dianne M. Keller

-----Original Message-----

From: George R. Boatright [mailto:boats@palmerpolice.com]
Sent: Thursday, July 10, 2003 3:38 PM
To: mayor@ci.wasilla.ak.us
Cc: Tom Remaley
Subject: Lake Lucille

I have close friends who live on this lake. They, like many others, enjoy the view as well as the boating a fishing. Paul owns a 21' "North River" that he uses there as well as many of Alaska's rivers. This requires that he utilize the public boat ramp just as I am sure many other lake residence do.

I would venture that most of those who live in the immediate vicinity of the public boat ramp purchased their homes knowing of its existence at the time of purchase. If not I would suggest that they have a serious issue with their realtor. Of much greater annoyance than some of the boaters is the use of aircraft with constant speed props on the lake who's propeller tips break the sound barrier and set up one hell of a racket.

I occasionally use the lake and have a 20' Thunder Jet river boat. I make every effort not to annoy the local residence by my presence, though the parking of my trailer is somewhat problematic. Within a block of the ramp is a gravel lot that is for sale. I would suggest that the city of Wasilla purchase that lot and turn it into a fee parking facility and require that boat trailers not be parked on the street for more than the brief time that may be necessary for launch and retrieval.

Respectfully
George Boatright
boats@mtaonline.net

Jamie Newman

From: Mayor Keller
Sent: Tuesday, July 15, 2003 10:06 AM
To: Jamie Newman
Subject: FW:

Here is another email that I just received.
Thanks,
Mayor Dianne M. Keller

-----Original Message-----

From: Thomas Remaley [mailto:remaley@palmerpolice.com]
Sent: Tuesday, July 08, 2003 12:04 PM
To: mayor@ci.wasilla.ak.us
Subject:

Mayor Keller,

Just read the Lake Lucille article in the Frontiersman.

Can't make the meeting on 17 July, but would like to see the existing launch improved so it is not a problem for the lake or residents.

Closing it will not solve their problem since that would in essence make it a private lake, boaters would find a way in making a bigger problem like you said.

Limiting motor size would cut down on the number of boaters, but I'm not sure that is fair. Any boat with a motor needs a trailer so launching and parking remain the same.

Thomas Remaley
Wasilla

Jamie Newman

From: mchael a. carson [mcri@alaska.net]
Sent: Wednesday, July 16, 2003 11:47 AM
To: jnewman@ci.wasilla.ak.us
Subject: lake lucille park and susitna avenue on lake lucille

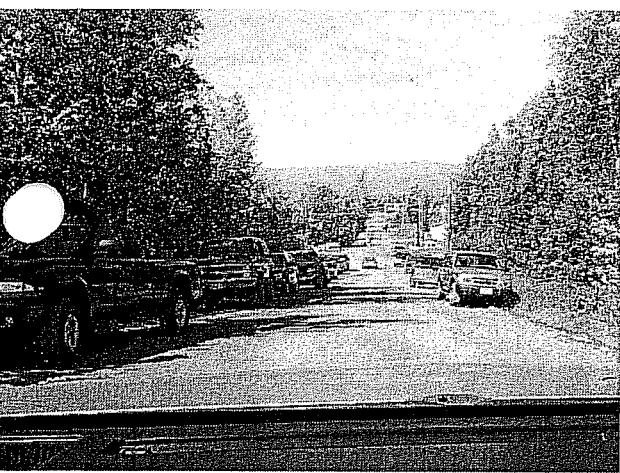
Please consider developing beachfront and boat launch at Lake Lucille Park on south side of Lake Lucille. It has 79 acres, toilets, 350 feet of waterfront, many campsites, and good roads.

Susitna Avenue at Lake Lucille is 60 feet wide, 95 feet long and attracts a major portion of boaters in the area, who use it for free, line the streets, clog traffic, and way overburden the 60 feet.

Carter Park is about 1/2 acres, and is way over-used. Please consider closing it down, giving it back to the family who dedicated it for public use, and shifting the burden to the 79 acre Lake Lucille Park. See attached pictures.

Lake Lucille Park's time has come.

Michael A. Carson, Wasilla



6/17/03

NORM FULLER CALLED AND
EXPRESSED THAT HE
ENJOYS USING BOAT
LAUNCH. THE LAKE IS
FOR ALL TO ENJOY.

NOTED BY: TIM KRUG

I am unable to attend
the July 17 meeting (please read
(ROBISON)

My name is Randi Robison
at 500 Lake Street. My
comment on the public
access will be brief and
to the point. I feel
the access has become
a public nuisance from
noise, congestion, and
misuse from its original
intent. I think it
should be closed-in the
interest of the growing
neighborhood and relocated
to 1 of 3 ideas I will
recommend. ① The ^{established} Borough
park off Kirk ② Contract
Goose Bay

with Lake Lucille lodge.

③ Carter Park ~~motor~~ snow machine access area.

I also feel the lake needs to limit the horsepower on the crafts and allow no jet ski's.

I have made my thoughts and comments known at numerous city council meetings. I have given pictures of the extreme erosion, and blatant misuse of a public access - not a boat launch.

Lynne Nelson
7-5457

July 17, 2007

Lake Lucille Concerns

Demond, et al.,

not stated is an option (possibly)

to purchase lots 1 & 2 adjacent to the
E. Lucitra ave. for public uses - first-
requisite immediate area next to lake.

Install sanitary facilities - ^{possibly} provide
a pay to launch facility for power
boats.

also - perhaps Wsilla ^{staff} somewhere
could establish a boat test certification
for power boats - prohibit illegal
testing in Wsilla Lake & in Lake
Lucille.

Steven Buccina

Chapter 12.20

CITY LAKES AND WATERWAYS

Sections:

- 12.20.010 Definitions.
- 12.20.020 Limitation of motorized uses on Lake Lucille and Wasilla Lake.
- 12.20.030 Prohibition of motorized uses.
- 12.20.040 Remedies and penalties.

12.20.010 Definitions.

As used in this chapter:

“Motorized use” means the operation of any equipment, watercraft or vehicle powered or propelled by a force other than human muscular power, gravity or wind including, without limitation, automobiles, aircraft, boats, personal watercraft, hydroplanes, all terrain vehicles, three-wheelers, motorcycles, snow machines and stationary equipment such as generators and pumps.

“Special event permit” means a permit approved by the mayor for a special purpose and limited to a specific time to conduct an event that otherwise would involve activities in violation of one or more provisions of this chapter.

“Wake” means the track in the water left after the passage of a boat or other vehicle as defined by waves. (Prior code § 13.02.010)

12.20.020 Limitation of motorized uses on Lake Lucille and Wasilla Lake.

A. No-Wake Zone. There is established a no-wake zone extending from a shoreline, lakeward a distance of one hundred (100) feet.

It is unlawful for a motorized use to operate within that zone so as to create a wake. The no-wake zone may be extended or reduced as required to protect unusually sensitive wildlife habitat or to provide access to erosion resistant shorelines or for other reasons as determined by the mayor or his or her designee. The no-wake zone may be presumptively identified by appropriately labeled floating buoys.

B. Hours of Operation. Motorized uses producing continuous or repetitive noise which would or could disturb the peaceful enjoyment of lake shore residents and users of public areas is prohibited between the hours of eleven p.m. and eight a.m. Specifically, use of personal watercraft known as “jet skis” or “wave runners” and similar acrobatic or stunt equipment is prohibited between the hours of eleven p.m. and eight a.m. This restriction shall not be construed to prohibit the operation of aircraft, boats or other vehicles while transiting the lake in route to their destinations.

C. Noise Control. All motorized uses on the surface of lakes must be equipped with manufacturers standard noise reduction equipment including mufflers, cowlings and exhaust systems. Special purpose or home-built equipment shall be similarly equipped to minimize noise generation. Open exhaust systems are prohibited. Aircraft operators shall minimize their take-off noise by utilizing the most central portions of lakes, away from residences, business and public areas.

D. Safety. Watercraft using lakes shall obey the inland rules of the road and small craft regulations as promulgated by the U. S. Coast Guard, including use of personal floatation devices. Lights are required on watercraft and vehicles during night operation.

E. Buoys and Signs. It is unlawful to strike, destroy, move, deface or otherwise tamper with

12.20.030

floats, buoys, signs or other notices placed by or with the approval of city, borough, state or federal agencies.

F. Special Events Permits.

1. Special events permits may be issued by the mayor subject to the following criteria:

a. Event activities are limited to eight hours in any one day, between the hours of eight a.m. and eleven p.m.

b. Event activities may occur on a maximum of three consecutive days.

c. Event activities must be located so as to avoid hazard to or damage of sensitive wildlife habitat, erosion-prone shorelines, public swimming areas and residential areas.

2. The special event permittee shall demonstrate that adequate and appropriate safety measures are taken to protect participants, spectators and bystanders including marking of activity area, safety patrols and public notice. A city special event permit does not release the event organizers or participants from rules or regulations of the Matanuska-Susitna Borough, state of Alaska or the U. S. Government, especially the U. S. Coast Guard. (Prior code § 13.02.020)

12.20.030 Prohibition of motorized uses.

Motorized uses are prohibited on Cottonwood Creek. (Prior code § 13.02.030)

12.20.040 Remedies and penalties.

Remedies and penalties for violations of this chapter are as provided in Chapter 1.20. (Ord. 01-47 § 14, 2001: Prior code § 13.02.040)

Jamie Newman

From: Mayor Keller
Sent: Thursday, July 17, 2003 3:41 PM
To: Jamie Newman
Subject: FW: Lake Lucille Work Session

Jamie,
Please give copies of this email to the Council members.
Thanks,
Mayor Dianne M. Keller

-----Original Message-----

From: Gail Bjornstd [mailto:gcb@alaska.net]
Sent: Thursday, July 17, 2003 2:58 PM
To: mayor@ci.wasilla.ak.us
Subject: RE:Lake Lucille Work Session

Mayor Keller;

I'm submitting my comments to be read at the Lake Lucille work session as I'm unable to be there in person.

I have been enjoying Lake Lucille for over 40 some years. First as a youngster growing up when my parents purchased our property in 1959. Then as an adult moving to,"our lake cabin,"in 1974,and making that my permanent residence.
I've seen many changes to both the Valley,and to Lake Lucille in that time.

As far as the boat launch is concerned, I agree that it needs to be cleaned up and improved,but not moved. The residents around the boat launch knew what was there when they purchased their homes. If they had objections to it,they should have looked elsewhere for property. Perhaps limiting the lake to small boats and canoes is the answer,but then the people who enjoy fishing,and usually have bigger boats,can't enjoy the lake.

I don't know what the answer is, yet I hope a workable solution is found so all the property owners and citizens that enjoy our lake are happy.

Sincerely
Gail Bjornstad

gcb@alaska.net