

Pine Lake Management Plan

INTRODUCTION:

In 2007, the LWB of WP initiated a planning effort for all its lakes. The purpose of this planning is, in part, to fulfill a component of the WP Land Development Plan. The specific purpose of each lake plan is to ascertain current status of each lake, perceptions of WP residents on lake uses, and identify and prioritize management needs for each lake. The integration of individual lake plans is anticipated to contribute to a Comprehensive Lakes Management Plan, which should form the basis for prioritization of management by the Village.

I. - STATUS

Pine Lake is a 48 acre freshwater lake located in the geographic center of Whispering Pines. The watershed area is bounded by Hardee Lane, Niagara-Carthage Rd, and Airport Rd. The lake itself is bordered by Pine Lake Drive, Hardee Lane, Pine Crescent, and Niagara-Carthage Road.

Pine Lake was constructed/impounded in 1967 by a concrete and earthen dam, approximately 35-feet high. No outflow is apparent on the lake, and overflow is via a single pipe through the dam. There is no apparent emergency spillway available on the lake, however records show one exists approximately three-fourths of the way up the dam. The dam is classified as high-hazard and there is a history of minor dam problems, notably how water has always seeped out under the dam into the lake below. Recently, it was noticed that some of the concrete plates on the waterside surface were being pushed out of place by the roots of the pine trees growing on the dam. To prevent the problem from seriously damaging the dam, the pine trees were cut down and a project to remove the stumps and fill the holes is in the bidding stage. Many residents felt that other alternatives, such as root-cutting, might have been a more viable solution. The Village has an engineer on retainer.

Pine Lake is minimally replenished by 1 or 2 small streams, but the majority of the water flowing into Pine Lake comes from runoff from the surrounding properties.

Pine Lake is surrounded by 86 lots, of which 81 have residences. There are about 5 undeveloped lots with no construction present. Shoreline access is provided by a ramp adjacent to Niagara-Carthage Road and Pine Crescent, or a small maintenance area near 108 Pine Lake Drive. Lake access is via an earthen ramp located off Niagara-Carthage Road which is in the proximity of the swimming area. Additional access is provided by homeowner properties. Minimal parking is available at the dam area. No mooring areas are available in this lake, other than on lakefront properties.

Most of the shoreline of Pine Lake is earthen, comprised of lawns and trees. Approximately 50% of the shoreline is hard-banked (rip rap and bulk heads). Approximately 60 docks/piers are presently in place. Residents have responsibility for

maintaining their docks/piers and retaining walls under WP ordinance. Responsibility for maintaining shorelines and associated debris is unclear.

Maximum depth of Pine Lake is 23 ft, and average depth is 12 feet. Siltation has occurred in 3 areas, mainly the lake coves. This is probably as the result of construction of homes upstream along the small streams entering the lake. Water level fluctuates drastically, and may rise and fall as much as 3 feet in a year. This is mainly due to excessive water being pumped out of the lake to irrigate the golf course. Withdrawal by the golf course for irrigation was granted in the original charter of the village without apparent limits on amount or timing. Residents are allowed to draw water from Pine Lake for residential irrigation under permit, except under severe drought restriction. We are unaware of any drawdowns ever taking place, due to the fluctuation of the lake height.

The water quality of Pine Lake is generally indicated to be good. The 2001 Lakes Assessment Report, based on July samples, indicated the following for Pine Lake:

Trophic State: Oligotrophic (low productivity)

Average Surface Conditions: (mg/l)

Total N: <0.5 NH3: <0.05 NO2+NO3: <0.05

Total KN: <0.5 Total P: <0.02 PO4: <0.01

Total DS: 50 Total SS: <5.0

pH: 7.12 s.u. Sp. Conductivity: 75 μ mhos Chl. a: 2.44 μ g/l

Alkalinity: (taken, not reported)

Water Clarity: 10.3 ft Stratification Depth: 13 ft

Water quality data, provided by Foster Lake and Pond Management Report (FLPM), taken in October, 2004, supplement the above.

pH: 6.5 Alkalinity: 16 mg/l Hardness: 30 mg/l

Visibility: >36 in. Dissolved Oxygen: 6.3 mg/l-9.4 mg/l

The FLPM report noted that Pine Lake has an olive brown/tannic brown appearance due to a lack of planktonic activity in the water column.

Although water quality tests usually state the water quality is good, residents have noticed decreased water clarity continually over the last 10 years, possibly longer.

In 2005, unusually high levels of coliform bacteria were detected in several of the test points and follow-up tests were performed for several months. The lake was closed to public use during this time. Household septic systems were tested, and other possibilities were investigated, but no cause was ever determined. Levels eventually returned to normal, and have not reoccurred. No Lake Watch water quality monitoring program has been implemented, but regular water sampling is scheduled to be initiated in 2009 as a part of the LWB comprehensive lakes sampling program.

Aquatic vegetation in Pine Lake consists primarily of floating-hearts and spatterdock, floating leaf plants which sometimes extend as far as 30 feet from shore (LAR, 2001), primarily in the coves, especially near Station P1. According to the Foster Report (FLPM, 2004), bladderwort and spikerush are the dominant species of submerged aquatic vegetation. Chara is also present, but not at the nuisance level. Encroachment of emergent and terrestrial plants was observed 5 to 10 feet from the shore and around residential docks. Nuisance levels mainly occur in coves. Yearly sprayings have been conducted to control the vegetation, and sometimes need to be repeated. Sprayings are not regularly scheduled, and are done at the request of the Lake Representative. Grass carp have been introduced in the past to control submergent plants, although no clear records can be found.

Fish species in Pine Lake are bluegill, shellcracker (red ear sunfish), redbreast sunfish, largemouth bass, and pickerel, as reported by the most recent electrofishing survey in 2004 (FPLM). The fish population was very diverse, but highly unbalanced. It was recommended to properly stock to balance the populations, and add grass carp to help control the vegetation. The report also recommended that pickerel and bream (sunfishes) be removed when caught. Fish management has consisted of stocking programs. Harvest is subject to NCWRC regulations. No mercury problems have been noted.

Pine Lake has many resident geese and other birds during the year, and these add to the pollution of the lake due to fecal matter. An increase in insect level has been noticed recently coincident with the substantial lowering of the lake due to golf course irrigation during the summer months.

No ongoing assessments are in place for vegetation and fish, although a village water quality testing program is being initiated. Other assessments are made at the direction of the Lakes and Watershed Board on an as-needed basis.

Use of WP lakes is generally restricted to property owners, occupants, and their guests. Beyond its ubiquitous esthetic value to lakeside residents and other users, Pine Lake is utilized recreationally for boating/canoeing/ kayaking, fishing, and swimming. There are no parks on Pine Lake. The Lake Management Questionnaire indicated that over 90% of Pine Lake respondents use the lake for water-based recreation. Of those using the lake, all uses were high: Boating: 51%; Canoeing/Kayaking: 29%; Fishing: 57%; and Swimming: 51%. Use of Village parks by Pine Lake respondents was considerably less (14%); Pine Lake does not have its own park.

Public Outreach/Input

Lake representatives are identified in the Village website and contact information provided. Pine Lake and other Village residents provide input directly to the Pine Lake representative at any time.

Communication is enhanced via a 6-member voluntary "Core Group" which interacts individually and collectively with the Pine Lake representative. This core group has only

been formed recently, and is based on voluntary participation only. Future members may be added based on personal expertise.

In the process of developing this lake plan, public inputs on lake issues were solicited through an extensive questionnaire administered to all Village residents in late 2007. Individual lake forums were then conducted, to be followed by review of the lake plan. Notification of residents is via reverse 911 and Village bulletin board. Pine Lake is in the process of instituting an email notification system, and lake residents walking the lake is always a popular, and effective, form of communication.

The first annual meeting of Pine Lake residents and other interested Village residents was held on September 25, 2008, to report on progress in management implementation and identify citizen concerns.

Management Responsibility

Village ordinances (Article II) govern use of water for irrigation, operation of watercraft, codes of conduct and dress, piers and floats, vegetation control, access areas, regulations and safety rules (for watercraft and swimming), fishing, permits, penalties, and maintenance of aquatic ecology.

Responsibility for management of the Village lakes rests with the Village Council, generally upon recommendation of the Lakes and Watershed Board (LWB), made in accordance with the individual lake plan and the comprehensive lakes management plan. Pine Lake interests are brought to the LWB by the lake representative. The Pine Lake representative has a core group to assist in planning and suggestions. Enforcement is via the Village Police Department, except as otherwise appropriate.

II. - PERCEPTIONS

Perceptions of the status of Pine Lake and suggestions for matters of attention were accumulated from a series of sources. First, the Pine Lake Representative to the LWB responded to a draft list of topics for consideration in the planning effort (2/07). A second set of more specific responses was developed at a Pine Lake forum (8/07) conducted by the previous Lake Representative at the time of the LWB questionnaire. Further inputs were received at the recent Pine Lake annual meeting (9/08) and from the recently-formed core group.

The Village Lake Management Questionnaire administered Village-wide in August, 2007, resulted in 49 responses from 81 residents who designated themselves as living on Pine Lake. Responses to all questions by these residents, along with their written comments, formed the principal basis for the survey data. The Questionnaire was comprised of a set of general questions and a set of lake-specific questions, the lake of interest being chosen by the respondent. Pine Lake was chosen as the lake of interest by 9 of 245 questionnaire respondents who indicated that they did not live on a lake.

Questionnaire response numbers for individual questions were somewhat variable, as some respondents did not answer every question. Consequently, percentages are expressed as proportion of those answering any individual question.

The lake is very important to Pine Lake residents for water-based recreation. Of the respondents, 92% (45/49) use Village lakes for water-based recreation. Pine Lake has no park.

Pine Lake is not an important resource for WP residents who do not live on the lake, since only 9 responded. Of the 245 off-lake residents who responded to the Questionnaire, 113 (46%) indicated that they use Village lakes for water-based recreation, but only 9 include Pine Lake among the lakes used.

Questionnaire responses to the lake-specific questions were very similar for lake residents and off-lake residents. Consequently, lake-specific response data were generally pooled for the two groups. Inputs on perceptions from various sources were consolidated and organized as follows:

II.1. - Lake Infrastructure

- Dam/Spillway
- Access and Boat Launches
- Docks and Retaining Walls

II.2. - Watershed Activities and Effects

- Disturbance
- Sedimentation
- Dredging
- Water Withdrawals

II.3. - Water Quality

- Water Clarity
- Pollution Sources
- General Water Quality Monitoring

II.4. - Aquatic Vegetation

II.5. - Winter Water Level Drawdown

II.6. - Boating

- Regulations
- Registration
- Mooring Buoys

II.7. - Fisheries

II.8. - Parks

- Parking/Boat Storage
- Swimming Areas
- Picnic Areas
- Pets
- Sanitation
- General

II.9 - Swimming

- Maintenance of Swimming Areas
- Segregation of Activities
- Floats and Rafts

- II.10. - Enforcement
- II.11. - Communication
- II.12. - General Satisfaction with Management

II.1. - Lake Infrastructure

WP residents consider lake infrastructure to be extremely important. Respondents to the 2006 Citizen Survey of Land Development and Use overwhelmingly expressed that it is extremely important for the Village to maintain or improve dams. Respondents also expressed a strong expectation for maintaining and improving access to Village lakes.

II.1.1.- Dam/Spillway

A safe and well-functioning dam and spillway is critical to the life of Pine Lake and property values of lakefront lots. The high-hazard dam has been seeping water for years and should be repaired. We should also institute a program to recover the water we have lost through seepage to the lake below. We should do whatever it takes to preserve this resource, regardless of cost. The Village has a responsibility to preserve our property values and our resources.

II.1.2. - Access

Other than via lakeside residences, access to Pine Lake is via the boat launch. People on Pine Lake feel there are enough parks available; although access to the launch is considered inadequate (74% indicated no problem or little problem).

		No Problem→ Big Problem (percentages)				
(5.) Adequacy of parks and access areas	ON	56	18	13	5	8
	OFF	33	33	22	11	0
		Highly Unsatisfactory→Highly Satisfactory (percentages)				
(17.) Access for boat launching.		4	16	16	48	16

Pine Lake residents consider access for boat launching to be adequate (64%), but boat storage and parking is insufficient. These 2 issues should be addressed at the earliest convenience.

The boat launch on Pine Lake should be improved, rebuilt using concrete, and equipped with a small dock. This would provide spatial segregation of boats and trailers from the swimming areas. Boat storage area should be provided near the launch.

II.1.3. - Docks and Retaining Walls

Docks and retaining walls are a typical amenity for lakefront residents. Lakefront residents were in neither high agreement nor high disagreement with the effectiveness of construction and maintenance management.

		Strongly Disagree→Strongly Agree (percentages)				
(34.) Construction and maintenance of private docks and bulkheads are effectively monitored and controlled.		10	15	33	35	7

Some docks and bulkheads are in a state of disrepair, but overall are in better condition than at some times in the past. The residents have a responsibility to maintain their docks and retaining walls, but the Village should make it easier for them to get permits.

II.2. - Watershed Activities and Effects

Pine Lake residents indicated that stormwater inflows (24% concerned) and sedimentation (43%) were of concern as factors affecting water quality of Pine Lake.

II.2.1. - Watershed Disturbance

Residents feel strongly that watershed activities are affecting Pine Lake, and watershed disturbances are not being adequately controlled (45% disagree/strongly disagree while 47% are unsure if new construction is being managed effectively; residents are split on whether stormwater runoff is effectively controlled).

Strongly Disagree → Strongly Agree (percentages)

- (44.) New construction in the watershed is being effectively supervised in terms of controlling silt and sediment runoff. 17 28 47 8 0
- (52.) Storm water run off is not effectively controlled and is harming the lakes 3 11 71 3 11

Watershed effects were noted as residential, commercial, golf course, and street runoff. Any construction should be closely monitored. City ordinances are in place to control off-site/downstream impacts and should be strictly enforced. Strict penalties should be invoked, and used to offset impacts. Contractors should put up a bond to remediate effects of runoff into the lakes. All road runoff to the lakes should go through a containment basin.

II.2.2. - Sedimentation

Pine Lake residents consider siltation of lake coves to be a serious problem (55% indicated dissatisfaction with siltation). Many residents have remarked tht the coves were previously much deeper for recreational use and are deteriorating drastically.

Highly Unsatisfactory → Highly Satisfactory (percentages)

- (15.) Siltation of cove areas. 29 26 33 10 2

All Pine Lake inlets are badly silted, and current/future activities in the watershed will exacerbate the situation. The source of sediments must be found and stopped either by the village or the residents. Whereas runoff from construction areas and streets will occur to some extent, a containment basin should be installed on each inlet to intercept runoff and accumulate silt and debris.

The Village should require all contractors, residential, sub-division to be responsible to clean any sedimentation in Pine Lake resulting from their activity. There is an ordinance on our books that addresses Erosion Control (K-III-52 section 9.2 paragraph d. and K-IV-10 section h, paragraph 1), putting the cleanup responsibility on the contractor. Ordinances should be strictly enforced.

II.2.3. - Dredging

Siltation of coves has progressed to the point that dredging is needed to deepen the coves (65% of residents agreed/strongly agreed that the Village should dredge). This priority was affirmed by those in attendance at the Pine Lake forum.

Strongly Disagree → Strongly Agree (percentages)

(53.) The Village should dredge areas where siltation has occurred. 0 5 30 **45** 20

The Village should purchase a small mobile dredge and do maintenance dredging where needed. It could serve the various WP lakes with sedimentation problems. Residents could serve as volunteers to assist dredging operations. After initial dredging, and with better watershed management, maintenance dredging should not be demanding. Purchase costs might be partially recovered by leasing the dredge to other municipalities.

II.2.4. - Water Withdrawals

Water withdrawals occur both for Golf Course irrigation and for residential use. Both user groups need to be conservative during periods of drought, and both subject to similar conservation measures.

Residential irrigation is not perceived as a major problem (46% of residents agree; 32% disagree).

Strongly Disagree → Strongly Agree (percentages)

(51.) Residential irrigation systems drawing from the lakes are managed effectively by the Village. 15 17 24 39 5

Village residents are highly concerned about the amount of water removed from the lake by the Whispering Pines Golf Club for irrigation purposes that affect the lake level and impact recreational use.

II.3. - Water Quality

Most Pine Lake residents are concerned about water quality (78%), reinforcing the results obtained Village-wide in the WP Land Development and Use Survey (93% felt that it was important for the Village to maintain water quality).

(10.) The WP Land Development and Use survey indicated high importance for maintaining water quality, which is affected by a variety of factors.

() I am concerned about lake water quality. 38

() I have no concerns about water quality 5
in WP lakes.

Overall, only about 30% of respondents (on- and off-lake residents) considered overall water quality to be of no or little problem.

No Problem → Big Problem (percentages)

(1.) Overall water quality.	ON	10	20	30	23	17
	OFF	11	11	44	22	11

II.3.1. - Water Clarity

Most residents considered water clarity to be satisfactory (46%), though few felt it was highly satisfactory. Water clarity is perceived to have declined over the past 10 years.

Highly Unsatisfactory → Highly Satisfactory (percentages)

(18.) Water clarity.	5	37	12	44	2
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II.3.2. - Pollution Sources.

Pollution sources with which Pine Lake residents indicated concern were septic tank leakage (52%), fecal coliform levels (59%), runoff of pesticides and herbicides from lawns (67%), and animal wastes (3%). Some concern was expressed for trash, grass clippings, and gas/oil from boats with outboard motors when brought to Pine Lake. Nevertheless, the situation for trash and debris was generally perceived as satisfactory (84%).

(11.) If concerned, CHECK all that apply. (percentages)

() Septic tank leakage	65
() Lawn runoff [pesticides/herbicides]	67
() Fecal coliform levels	59
() Animal wastes	35
() Storm water inflows	25
() Sedimentation	43

(12.) Then CIRCLE your highest concern: (percentages)

() Septic tank leakage	25
() Fecal coliform levels	10
() Lawn runoff [pesticides/herbicides]	8
() Sedimentation	8
() Storm Water inflows	2

Highly Unsatisfactory → Highly Satisfactory (percentages)

(13.) Trash and debris in the lakes.	0	14	7	67	12
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Although septic system leakage was considered the pollution source of greatest concern, only a small percentage of respondents (on- and off-lake) indicated that it was a big problem (23%).

No Problem → Big Problem (percentages)

(2.) Lake pollution due to faulty/substandard septic systems	ON	24	16	32	16	11
	OFF	22	11	33	11	22

Pine Lake residents were evenly divided on perceptions of adequacy of septic contamination monitoring by the Village.

Strongly Disagree → Strongly Agree (percentages)

(40.) Monitoring for septic contamination in Village lakes is adequate.	8	28	33	23	8
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Although runoff from lawns is considered of lesser concern than septic tank leakage, Pine Lake residents feel strongly that use of lawn herbicides should be restricted (67%).

Strongly Disagree→Strongly Agree (percentage)

(46.) Use of lawn herbicides near shorelines should be restricted. 8 10 15 **46 21**

Residents and their lawn care services should be asked to refrain from fertilizing close to the lake’s edge. We should encourage a buffer zone.

People must be made aware of what chemicals do to the water quality when runoff from their property occurs. Pine Lake residents feel strongly that they should be provided with better information on practices to minimize pollution.

Strongly Disagree→Strongly Agree (percentages)

(54.) The Village should provide residents with technical information on watershed and lake management “best practices.” 0 2 5 **56 37**

Specific comments noted water quality highly unsatisfactory, sanitary facilities could be better, pet policies need enforcement. Strict guidelines should be enforced as to what should be done with pet waste so as not to contaminate the lake.

Concerns for the impact of herbicides, fertilizers, septic systems etc, should not be limited to those around the lake, but to include any watershed area that feeds Pine Lake.

II.3.3. - General Water Quality Monitoring

Pine Lake residents feel strongly that monitoring programs should be put into place to track water quality status and changes.

Strongly Disagree→Strongly Agree (percentages)

(39.) Periodic monitoring of lake water quality should be conducted. 0 0 0 **37 63**

To establish status and detect trends, each lake should have a monitoring kit with tests capable of being done by volunteers (established by the lake rep). Sampling should be done at fixed stations on a regular basis and the results maintained in a log. Some tests will have to be done in a lab. Attributes to be monitored need to be identified and frequency of sampling established.

Pine Lake residents (89%) feel strongly that they should be informed of the results of water quality monitoring.

Strongly Disagree→Strongly Agree (percentages)

(43.) The water quality and fishery testing program for our lakes should be formalized and results published. 2 2 7 48 41

Results of these tests should be published in the Pitch, Village Topics, and any other media outlets available to WP residents. We should attempt to get county grants to help for the maintenance of our lakes.

II.4. - Aquatic Vegetation

Algae and aquatic weeds are not much of a problem for some residents, but considered very problematic where they occur. About 36% of respondents indicated algae and aquatic weeds as problematic, and 53% of residents noted dissatisfaction with aquatic weeds.

No Problem→ Big Problem (percentages)

(3.) Algae/aquatic weed growth ON 17 19 24 19 21

OFF 22 33 11 11 22
 Highly Unsatisfactory→Highly Satisfactory (percentages)
23 30 12 26 9

(14.) Aquatic weeds.

Residents overwhelmingly agree that vegetation is not adequately monitored and controlled.

Strongly Disagree→Strongly Agree (percentages)

(41.) Aquatic vegetation in the lakes is adequately monitored. **12 45** 20 17 6
 (45.) Aquatic weeds are being adequately controlled. **20 45** 20 15 0

Residents are in favor of natural weed control (drawdown) rather than chemical control, although drawdowns do not seem to occur often and do not seem to be as effective on Pine Lake. Occasional winter drawdowns are anticipated to keep most weeds under control. If chemicals are required, keep them to a bare minimum and only to control nuisance/invasive species.

It has been determined in the Foster Report that there were insufficient amounts of Grass Carp to help control vegetation growth, and it was determined that more should be added to be effective. This measure has been ineffective if this procedure has been followed.

Aquatic vegetation is an important habitat for waterfowl, which use the lake as year-round residents and as migrants. Pine Lake residents are basically satisfied (few strongly disagreed or strongly agreed) with adequacy of waterfowl management.

Strongly Disagree→Strongly Agree (percentages)

(47.) The management of the lakes as habitat for waterfowl is adequate. 5 8 49 35 3

II. 5. - Winter Water Level Drawdown

Winter water level drawdown is perceived to have greatly improved water quality and controlled aquatic weeds. There is strong support for this management practice, however Pine Lake residents are hesitant due to the drastic lake level fluctuations and the inability of the lake to refill itself.

Strongly Disagree→Strongly Agree (percentages)

(49.) Water levels should be drawn down periodically. 14 14 19 **43 10**

Drawdown will also provide residents, and the Village, the opportunity to inspect/repair bulkheads and docks, clean- up waterfront areas, and do any lake/dam maintenance while lake levels are low. The Village should be more involved with trash and debris cleanup during this time. During drawdown, the Village could also provide improvement of swimming areas.

At the time of the next drawdown, the letter to all lake front residents, apprising them of the drawdown, should include recommendations regarding what a homeowner can accomplish while the water level is down.

II.6. - Boating

Boating, along with swimming and fishing, is among the highest recreational use of Pine Lake by its residents (51%). Canoeing and kayaking activities also involve 29% of residents.

II.6.1.- Regulations

Most residents (76%) agree with current boating regulations. Most residents (58%) feel that boating regulations are adequately posted or understood, although minimal postings exist on Pine Lake.

Strongly Disagree→Strongly Agree (percentages)

- (29.) Boating regulations are appropriate as currently written. 2 0 22 **61 15**
- (30.) Boating regulations are posted where required and are easily understandable. 0 7 35 **48 10**

Some support (53%) exists for modification of the Village ordinance restricting night-time boating.

Strongly Disagree→Strongly Agree (percentages)

- (33.) After-dark use of watercraft should be extended provided that proper safety lights are displayed. 10 14 23 **36 17**

Relative to hours of operation, revise the present ordinance to be a noise ordinance. Boats, kayaks, and canoes should be allowed after dark providing they display proper running lights and observe the noise ordinance. Inexpensive clip-on lights should suffice. The safe operation of any water craft is the responsibility of the operator.

II.6.2. - Boat Registration

According to ordinance, the lakes of Whispering Pines are intended for the sole use of the residents and their guests. Under the ordinance, all boats are required to have a decal. The Village clerk must be prepared to ensure that the applicant is a resident. Pine Lake residents strongly agree (76%) that registration costs are reasonable.

Strongly Disagree→Strongly Agree (percentages)

- (32.) Fees for boat decals are reasonable and should be collected. 5 7 12 **47 29**

A graduated fee should be considered, differentiating boats with motors from those without, using different decal colors.

Most users of Pine Lake (66%) considered un-permitted boats to be non-problematic

No Problem→ Big Problem (percentages)

- 9. Presence of boats without current lake sticker

ON	45 21	15	8	11
OFF	50 38	0	0	12

Residents feel strongly that registration requirements should be firmly enforced (75%).

Strongly Disagree→Strongly Agree (percentages)

- (31.) Current decals for all watercraft should be stringently enforced by the Village. 5 0 16 **42 37**

Violators of the registration requirements should be penalized by both a fine and confiscation of the boat until penalty is paid.

II.7. - Fisheries

Fishing is an important activity for Pine Lake residents (57 %). Although few indicated high satisfaction with fishing, most (40%) indicated satisfaction, and few were highly dissatisfied. Most (58%) were also satisfied with the shoreline fishing areas.

Highly Unsatisfactory → Highly Satisfactory (percentages)

(16.) Fishing.	2	24	33	33	7
(24.) Fishing areas (shoreline/parks)	0	0	42	52	6

However, concern exists for fishing in the proximity of swimming areas, especially the presence of rusty hooks and lines which pose safety hazards. Restriction of shoreline fishing to the boat launch area, away from swimming areas, should be considered.

Residents were in noticeable disagreement (39%) that fish monitoring is adequate. They firmly believe that monitoring results should be publicized.

Strongly Disagree → Strongly Agree (percentages)

(42.) Status of fish populations is adequately monitored.	5	34	39	17	5
(43.) The water quality and fishery testing program for our lakes should be formalized and results published.	2	2	7	48	41

Pine Lake residents strongly support (63%) supplemental fish stocking as a management tool for Pine Lake, but that all fisheries management should be tailored to individual lake needs (68%).

Strongly Disagree → Strongly Agree (percentages)

(48.) The Village should stock the lakes for fishing when needed.	0	5	32	39	24
(50.) Fish management programs should be tailored to individual lakes.	0	5	27	56	12

Stocking, if done, should be done in conjunction with other management, e.g., habitat management and harvest strategies, allowing nature to take care of much of the need.

It needs to be established whether fish harvested from Pine Lake are edible. Mercury is commonly a problem in soft, acidic lakes.

It should be determined whether grass carp densities are appropriate.

II.8. - Parks

Although Pine Lake does not have a recognized park, the residents and off-lake users are quite satisfied with the adequacy of Village parks (about 70%).

II.9. - Swimming

Like boating, swimming is a common use of Pine Lake by residents (51%). Swimming in Pine Lake is an activity emanating from various locations; lakefront lots, dams, access

areas, boats, and inflatable rafts. Issues related to swimming are largely those of safety. Pine Lake residents were generally satisfied (50%) with the swimming areas.

Unsatisfactory → Highly Satisfactory (percentages)

(22.) Swimming areas

0 11 39 45 5

II.9.1. - Maintenance of Swimming Areas

Swimming areas should be cleaned on a regular basis by village employees. Volunteers should be utilized on an organized basis. The Village should provide major maintenance of swimming areas annually during drawdown with the use of their heavy equipment.

II.9.2. - Segregation of Activities

Although the questionnaire item regarding segregation of park activities apparently was not well understood (answered by the fewest respondents, and most neutral - 37%), comments were received expressing better segregation of swimming from fishing and boating activities.

Highly Unsatisfactory → Highly Satisfactory (percentages)

(28.) Spatial segregation of park activities

0 3 58 29 10

Segregation of swimming and fishing should reduce the safety issues associated with lost/discarded fishing hooks and lines.

For the safety of open-water swimmers, including distance-swimmers, boaters must be aware that they will see swimmers in the lake and should be on the lookout for them. Swimmers should also take responsibility for making boaters visually aware of their presence. Swimming should be limited to daylight hours only.

II.9.3. - Floats and Rafts

The principal swimming issue is that of floats and rafts. New floats are now prohibited by ordinance J-II-4, section 8 paragraph b. If a resident would like a float, inflatable or other, it would be necessary to petition the village council for an ordinance change. The ordinance reads that “New floats are prohibited”. One rule should govern all. Floats should either be allowed or prohibited.

Approximately 65% of Pine Lake residents and off-lake users do not consider the existing floats to be problematic.

No Problem → Big Problem (percentages)

(8.) Presence of semi-permanent floats

ON	43	23	19	5	10
OFF	25	38	12	0	25

Attitudes toward large, inflatable floats anchored temporarily in open water were less favorable. Over half (64%) of Pine Lake residents disagree that such floats should be allowed, although 25 % were in agreement. If allowed, the floats should be restricted in size (62%) and distance offshore (64%)

Strongly Disagree→Strongly Agree (percentages)

- (35.) Offshore anchoring of large inflatable floats should be allowed. **33 31 11 18 7**
- (36.) If so, floats should be restricted in size. **5 3 29 42 21**
- (37.) If allowed, distance offshore should be restricted. **9 0 26 35 29**

II.10. – Enforcement

Pine Lake residents (59%) and off-lake users (75%) felt the enforcement of Village ordinances is adequate.

No Problem→ Big Problem (percentages)

- (4.) Enforcement of current lake ordinances
- | | | | | |
|-----|--------------|----|----|----|
| ON | 35 24 | 32 | 8 | 0 |
| OFF | 25 50 | 0 | 12 | 12 |

Strongly Disagree→Strongly Agree (percentages)

- (57.) Village lakes are adequately patrolled and regulations enforced. **7 27 34 32 0**

Enforcement issues of concern were principally those of lake and park use by non-residents. Greater pro-active enforcement by Village police is needed at parks, launch areas, and on the lake. Employment of a part-time enforcement officer during high use periods is an alternative to expecting greater police presence.

Better identification of residents/guests would be attained if decal requirements were expanded (from boats) to include decals for vehicles at parking areas and identification bracelets for lake and park users.

Ordinances should be enforced stringently on all users, including lake residents and those impacting the watershed through off-lake activities, especially construction/development.

A Lake Watch program should be implemented for all lakes. Pine Lake should have a responsible Lake Watch representative, and volunteers, individually responsible for looking at parks, boating, fishing, etc. These people could also act as a community watch and be used as volunteers elsewhere in lake management as needed.

II.11. - Communication

Effective communication is essential at many levels for effective management of Pine Lake. Residents felt that communication about lake matters was not very good. The need to know was particularly evident in responses to queries regarding water quality and management (approximately 90%)

Strongly Disagree→Strongly Agree (percentages)

- (43.) The water quality and fishery testing program for our lakes should be formalized and results published. **2 2 7 48 41**
- (54.) The Village should provide residents with technical information on watershed and lake management “best practices.” **0 2 5 56 37**

Every available means for communication should be used, such as The Pitch, The Village Topics, The Web Page, and Channel 18, with possible monthly topics.

The Pine Lake Core Group comprised of the Lake Representative and individuals with interest/knowledge in specific aspects of lake aspects/activities should be more active in communication (two-way) with residents, carrying their concerns to the LWB, and informing them of actions at the Board and Village levels. The Core Group could also

serve as a Lake Watch team. An annual Pine Lake forum should be held to enhance communication and address actions under the lake plan.

II.12. - General Satisfaction with Lake Management

Most Pine Lake residents and off-lake users judge the overall quality of the lake to have changed little over the past 5 years (55-63%) Respondents more often judged the overall quality to have declined than improved.

(10.) Over the past *five years*, would you say the overall quality of this lake is: (percentages)

	Getting better	About the same	Getting worse
ON	3	55	42
OFF	0	63	37

Pine Lake residents feel strongly (93%) that effective management is important.

[Strongly Disagree](#)→[Strongly Agree](#) (percentages)

(56.) Effective management of Village lakes is important to maintaining a high quality of life for Village residents. 2 0 5 **29** **64**

Residents were neither strongly satisfied (0%) nor dissatisfied (3%-5%) with current management. Nevertheless, only 36-44% indicated that they felt that the overall quality is adequately maintained.

[Strongly Disagree](#)→[Strongly Agree](#) (percentages)

(58.) Overall, I am satisfied with the current management of Village lakes. 3 32 29 36 0

(55.) The overall quality of the Village lakes is adequately maintained. 5 22 29 44 0

III.—PINE LAKE ACTION PLAN

Goal 1. To maintain and enhance the esthetic values and recreational opportunities of Pine Lake.

Objectives:

1. To bring the dam and spillway up to specifications for safety and effective function. [\(High Priority\)](#)
2. To concrete the boat launch and add a dock [\(Medium Priority\)](#)
3. To establish containment basins on all lake inlets. [\(High Priority\)](#)
4. To dredge coves exhibiting excessive sedimentation. [\(High Priority\)](#)
5. To draw water level down periodically for water quality and aquatic vegetation control benefits. [\(Low Priority\)](#)
6. To minimize chemical control of aquatic weeds via use of drawdown and herbivorous fish, such as grass carp. [\(Medium Priority\)](#)
7. To amend Village ordinance to allow night-time boating and fishing with proper vessel lighting. [\(Low Priority\)](#)
8. To conduct fish management comprehensively in accord with specific expectations. [\(High Priority\)](#)
9. To segregate swimming areas from boat and fishing areas. [\(Medium Priority\)](#)
10. To provide adequate parking and boat storage spaces. [\(Low Priority\)](#)
11. To maintain boating and swimming areas via an established coordination of volunteers and Village personnel during drawdown. [\(Low Priority\)](#)
12. To update signage at access areas. [\(Medium Priority\)](#)
13. To amend Village ordinance to allow temporary floats, with restriction on

- size and distance offshore. (Low Priority)
- 14. To strictly enforce all ordinances. (Medium Priority)
 - docks and bulkhead condition
 - watershed activities and disturbances
 - noise
 - boat registration
 - parking
 - non-resident usage of lake and parks
 - pets
- 15. To develop a WP lake enforcement program. (Medium Priority)
- 16. To establish a Lake Watch program. (Low Priority)

Goal 2. To base management on a thorough and reliable data base.

Objectives:

1. To establish a volunteer water quality assessment program for water clarity and certain water chemistry parameters. (Low Priority)
2. To establish a sampling program for water quality parameters requiring lab analyses (nutrients, coliform bacteria, contaminants). (Medium)
3. To establish a monitoring program to assess septic system leakage. (Medium)
4. To conduct periodic fishery assessments. (Low Priority)
5. To determine whether contaminants affect edibility of fish. (High Priority)

Goal 3. To effectively communicate needs and actions (among residents, lake representatives, LWB, and the Village).

Objectives:

1. To inform residents of BMPs for lawn and shrub care. (Medium Priority)
2. To inform residents of results of water quality and fish surveys. (Medium)
3. To inform residents of opportunities for maintenance of structures during lake drawdown. (Low Priority)
4. To engage the Core Group in two-way communication with Pine Lake residents and users. (High Priority)
5. To use all avenues of communication available. (High Priority)