Lake to Sky

# Farlain Lake Community Management Plan

*Engage Involve Educate*

**August 4, 2013**

# Contents

# Preamble

The Lake to Sky community management plan contains a summary of the state of Farlain Lake and its watershed as it relates to the plan's three priorities. Background reference on the goals and recommendations contained in this plan can be obtained by reviewing the separate State of the Lake Report. The state of the lake report lists known information and defines existing conditions and problems on the subjects of groundwater, surface water quality, climate, forest resources, wildlife, fisheries, shoreline and aquatic vegetation, land development, physical and recreational carrying capacity, the values/issues of Farlain Lake community residents, and other related topics. All the information presented in the Lake to Sky plan was generated through research and evaluation, field studies, stakeholder interviews, and through a Farlain Lake community survey and a Farlain Lake Community Association (FLCA) membership survey.

The goal of the Lake to Sky plan is to *Protect and enhance Farlain Lake and its surrounding watershed through proactive resource management and stewardship practices.*

Aims:

- Identify and protect characteristics of the lake and its watershed that are valued by the Farlain Lake community.
- Foster a sense of community through involvement, discussion, education, and action.
- Increase communication, coordination and cooperation between government agencies, stakeholder groups, and the Farlain Lake community to protect the lake's values and attributes.
- Recommend land use policies that influence land development in the watershed.
- Set environmental and stewardship goals to provide a healthy functioning ecosystem.
- Recommend personal stewardship practices for future generations.
- Help ensure money spent on Farlain Lake community projects by the FLCA is expended in a meaningful and effective way.

The Lake to Sky planning strategy was adopted by the FLCA Board in 2008. The need for a plan was approved by the FLCA at its Annual General Meeting in 2009; an integrated overarching plan has never been created for the management of water and land issues associated with Farlain Lake and its watershed. The Lake to Sky Plan was approved by FLCA members at the 2013 Annual General Meeting.

## Preamble (continued)

The plan emanated from a community led planning process that identifies the special character of the Farlain Lake community. It is imperative to involve community residents in the collaborative problem solving process to ensure that the solutions (some of which may be very creative or unconventional solutions) are tailored to the needs of Farlain Lake community. This plan, prepared by the FLCA Board of Directors, will provide the long-term direction necessary to achieve the overall mission of the FLCA to *preserve and protect the quality and health of Farlain Lake and its watershed.* The plan is also intended to serve as a roadmap and reference guide for both the FLCA and its community partners to identify projects that will prevent degradation to the lake and its watershed, and improve the quality of life of community residents and visitors.

It is important to remember that this plan does not indicate the completion of the lake community management planning process. The plan is intended to be a living dynamic document that will continue to evolve as new or better information becomes available, and as the various strategies and actions identified in the plan are developed and implemented.

There are a number of daunting challenges associated with implementing desired change. To begin, ten percent of the value of lake management planning is the creation of a credible plan that outlines strategic direction priorities for the future. However, ninety percent of the plan's value comes from the organization's ability to execute the plan. The FLCA will have to acquire funding and recruit volunteers to accomplish the goals and approved actions contained in the plan. Clearly, provincial agencies and municipal governments have a vital role and responsibility in managing the lake and its watershed in partnership with the Farlain Lake community. However, all of the government organizations have limited budgets and existing priorities to deal with. The challenge is to address the gap between what needs to be done to execute the plan successfully and the approach within the FLCA to make it happen. The following three key steps need to be undertaken by the FLCA:

1. ENGAGE
   Clearly define actions and accountabilities.
2. INVOLVE
   Connect the plan to the people in the Farlain Lake community. It is imperative to get the right people with the right skills to produce results.
3. EDUCATE
   Create a culture of change. Many problems in the lake and the watershed are exacerbated by human activities. To preserve and protect the lake and its watershed requires a change in the behaviour of individuals living in the watershed

## Preamble (continued)

Through its four years of efforts in assembling information to serve as the foundation of the community management plan, the FLCA has gained a better understanding of the complexities of the Farlain Lake watershed and the effect of human activity on water quality. Although a considerable amount of information about Farlain Lake and its watershed has been collected, there are also data gaps in our knowledge of basic watershed conditions that need to be filled in order to develop the best and most comprehensive management strategies for the lake and its watershed. Some of the information gaps include:

- The total contribution of surface water and groundwater to the hydrological cycle of Farlain Lake needs to be quantified.
- The amount of riparian and littoral zone vegetation area lost through disturbance needs to the quantified.

The three key priorities of the Lake to Sky community management plan are as follows:

1. **Water quality**

2. **Ribbon of Life**

3. **Sense of Community**

The plan contains specific goals and recommended actions targeted for implementation. The recommended actions are not quick fixes; they will set the stage for the continuing slow and steady improvement in the health of the lake and its watershed for generations to come. The long-term health of the lake will ensure the long-term well being of the community residents and the economic prosperity of the Township of Tiny. It is important to highlight that the goals and recommendations that have been set forth in this plan are to be implemented by the FLCA and its community partners. Not only should the FLCA implement the recommendations pertaining to its mandate but the Association should encourage all residents of the Farlain Lake community to take part in the implementation of the plan.

The plan will provide a benchmark against which the effectiveness of future Farlain Lake community stewardship activities and best management practices aimed at improving the health of the lake and its watershed can be assessed. Just as the lake and its watershed are unified, solutions to current challenges and future issues must be applied on an integrated watershed basis to have a real and lasting effect.

# The Lake and its Watershed at a Glance

## *Natural*

- Lake shoreline length: 6.95 kilometres
- Lake surface area: 1.10 square kilometres
- Maximum depth: 5.0 metres
- Estimated water volume: 2,682,381 cubic metres
- Shallowness ratio: 0.203
- Shoreline development factor: 1.87
- Mean elevation above sea level: 208 metres
- Average depth: 1.7 metres
- Total area that is 1.5 metres deep or less: 22.27 hectares
- Lake fetch: 2.6 kilometres

## *Physical*

- Number of residential properties in watershed: 361
- Township maintained roads in watershed: 15.2 km
- Number of private septage disposal sites in watershed: 1
- Number of private water wells in watershed: Unknown
- Number of Township large green spaces: 3
- Number of boathouses: 28
- Non-power boat area of lake: 22.7 hectares
- Estimated population: 975 permanent and seasonal residents
- Number of septic systems in watershed: 287
- Number of properties serviced by Township water system: 90
- Number of Township unopened shoreline road allowances: 10
- Number of Township shoreline parks: 1
- Number of watercraft in watershed: 387
- Power boat usable area of lake: 109.59 hectares.

## *Social*

Community Values

- Clean Water
- Swimming
- Protection of natural shoreline
- Scenery/view
- Public safety (land and water)
- Tranquility/peace
- Night skies (no light pollution)
- Enjoyment of all water sports including safe and responsible powered and non-powered boating activities

Community Issues/Concerns

- Water quality
- Septage management
- Environmental (e.g. invasive species)
- Land development
- Water safety/boating
- Fisheries
- Public safety (e.g. speeding, theft, vandalism, etc.)
- Wildlife habitat

# Summary

## *Water Quality*

Farlain Lake is a shallow seepage lake located on the Penetanguishene Peninsula. This attractive lake community lies adjacent to Awenda Provincial Park and is the largest inland lake in Tiny Township. However, despite its large surface area, the warm water lake is relatively shallow. The lake has a maximum depth of five metres and an average depth of 1.7 metres. The lake receives water from a continuous flowing stream and groundwater from upland recharge area located to west of the lake, precipitation, and snowmelt runoff, and one intermittent stream located on the south end of the lake. Water levels of the lake are relatively stable as there are not direct outflow from the lake. Water levels of the lake fluctuate naturally in response to precipitation, runoff, groundwater flow, and evaporation.

Based on historical data, results from the ongoing MOE Lake Partner Program water quality monitoring, and the conclusions of the SSEA water quality study, we conclude that Farlain Lake and its watershed is reasonably healthy with some problem areas. The water residence (retention) time is considered to be very long. The lake is considered moderately productive (mesotrophic) to mildly over productive (eutrophic), receiving the majority of it's externally nutrients from land use activities in the watershed.

The one common denominator that defines the experiences of Farlain Lake community residents is the quality of the lake itself. The water quality of the lake and its surrounding watershed is ever changing. The accelerated change in the evolution of the lake can be attributed to intensifying land development, conflicting demands for recreational opportunities, and climate change. While the extent of climate change impacts are unknown, it is predicted that climate change will affect water quality and supply, fish and wildlife habitats and populations, and human activities that are linked to the natural environment. Poor water quality will lead to algal blooms, increased aquatic plant growth, low oxygen levels resulting in fish and wildlife mortality, and degraded habitat.

What may not always be understood or appreciated are the effects that some cultural activities have on the quality of the lake and its watershed. There is a direct link between the water quality of the lake and the land use of its watershed area.

The County of Simcoe, Tiny Township, Farlain Lake community residents, and visitors must be made aware of the importance of preserving and protecting the health of the lake and its watershed. The loss of tax revenues from property owners no longer interested in living next to a polluted lake, the decline in property value, the remedial cost of reducing aquatic plant growth and improving water quality, the subsequent loss of recreational value of the lake, and the public health risks associated with toxic algal blooms are all factors that need to be considered by all concerned. Simply stated, it is cheaper (stewardship) to protect the lake and its watershed than it is to fix problems (reclamation, restoration, etc.) after the fact.

## Summary (continued)

### *The Ribbon of Life and Beyond*

The shallow water (littoral zone) and the first 10 - 15 metres of the riparian zone form the ribbon of life around the lake. The ribbon of life is essential to the protection of water quality and the habitat for plants, micro-organisms, insects, amphibians, fish, mammals, and birds.

Due to the shallowness of the lake the littoral zone extends into the lake at different distances around the lake. For the purpose of this plan, the littoral zone is deemed to be the area defined by the integrated delineation of the Department of Transport's power boating restricted area (30 metres from shore) and the 1.5 metre depth or less contour. Currently there are no municipal ordinances that protect the littoral zone, including the shoreline, from the removal of woody debris and aquatic vegetation. Littoral zone modifications will affect fish, aquatic invertebrates, and amphibian communities. There has been a significant decrease in the walleye and largemouth bass fishery. While the cause of the decline is uncertain, the combination of loss of fish habitat through the removal of natural aquatic vegetation, power boat activity in shallow waters, angler harvesting pressures, and predators such as the double crested cormorant and common merganser threaten the health of the lake's fisheries.

Farlain Lake can be considered an urbanized lake with a high-density ratio. Almost the entire shoreland has been ringed with first tier (shoreline) and second tier (inland) development. Urban landscaping, particularly along the shoreline, is replacing the natural vegetation in the riparian zone. The riparian zone, including the vegetative buffer zone can extend 75 to 300 metres inland depending on soil conditions and topography. Many of the shoreline properties have been urbanized through the installation of fertilized lawns, swimming pools, spas, patios, stone retaining walls, walkways, boathouses, and cabanas. The lack of a vegetated shoreline in many shoreline areas is a cause of concern. With the exception of Township shoreline unopened road allowances and park reserves, private property on the southwest part of the lake and a few individual shoreline properties around the lake, the Farlain Lake shoreline for the most part can be considered disturbed and void of natural vegetation. Maintaining a natural vegetative buffer along the shoreline is very important to maintaining the aesthetic character and the ecological integrity of the shoreline. The shoreline vegetative buffer zone should be a chemical free zone wherein no fertilizers, pesticides, or herbicides are applied. Without stormwater runoff control (i.e. natural vegetation) excess water flowing over impervious surfaces can carry a variety of pollutants into the lake which will contribute to water quality degradation.

## Summary (continued)

### *The Ribbon of Life and Beyond* (continued)

The greatest threat to water quality and natural resource protection is land conversion. As most of the shoreline has been developed, land conversion occurs inland in the zone of influence. This zone extends beyond the outer edge of the riparian zone to the outer edge of the lake's watershed. Land development in this zone has outpaced land conservation. Over the past half century greenspace around the lake has become developed.

The natural intact forest and vegetation are an essential part of maintaining the ecological integrity of Farlain Lake for a number of reasons (i.e. water quality, connectivity, etc.) and the large forested areas act as refuge habitat for a number of species (e.g. songbirds, animals, small mammals, raptors, etc.) that may otherwise not inhabit the watershed. Land use practices and excess development, if left unchecked, will only exacerbate the problem of groundwater and surface water quality degradation due to the clearing of vegetation and tree cover. The more developed the watershed becomes, the more the lake and its streams will exhibit declines (short term and longer) with water quality. Further development should be based on the features of approved building lots through the preservation, conservation, and enhancement of natural features, such as the drainage patterns and existing vegetation. There are important issues of density and lake capacity that require attention. There is a lack of appropriate planning regulations in the Tiny Township's Official Plan for the preservation and protection of natural features on an inland body of water such as Farlain Lake. Unsustainable development within the watershed may impact the lake's natural landscape, water quality, and overall health.

While there are no obvious known environmental crises in the watershed, we do need to avoid complacency. Without implementing recommended changes contained in the Lake to Sky management plan, the community would have to accept that the current state of Farlain Lake and its watershed will continue to deteriorate resulting in poor water quality and clarity, invasive dominated submergent plant (i.e. curly-leaved pondweed, Eurasian water-milfoil, etc.) species, continued loss of walleye and largemouth bass, loss of lake depth due to increased sedimentation, decline in real estate values, and other impacts.

## Summary (continued)

### *Sense of Community*

The lake forms the very heart of the community within a spectacular rural and natural landscape. However, the Farlain Lake community is demographically diverse and geographically dispersed. The Farlain Lake community is a community of neighbourhoods.

To create a friendly and environmentally aware community, the Lake to Sky community plan defines what is important to community residents. Recommended actions create a focus on building a common sense of stewardship responsibility for protecting the lake and its watershed. It is imperative to create a sense of community among community residents resulting in an increased awareness that Farlain Lake and its watershed is a fragile resource, and the community's reputation, property values, and future depends on a unified community that embraces the principles of personal stewardship.

The FLCA can play a leading role in fostering a sense of community by providing a range of social and recreational activities that are consistent with the natural character of the lake and preserves the health and ambience of the watershed. Youth should be involved in FLCA sponsored stewardship projects aimed at taking care of Farlain Lake and its watershed. Community residents should be involved in municipal land use decision making to ensure future land development is oriented towards the protection of the natural landscape and the needs and values of the community.

# Section: 1. Natural

## 1.1 Wetlands

Issues and Concerns

- There is a lack of current and historical data on aquatic bed wetland evaluations around the Farlain Lake shoreline

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Identify, prioritize, restore, protect, and enhance wetland areas in the watershed. | Request the Severn Sound Environmental Association, (SSEA) to undertake a wetland inventory to identify sensitive areas around in the watershed. | • Identify and prioritize areas in the watershed that provide or have the potential to provide habitat. |

## 1.2 Groundwater

Issues and Concerns

- There is a lack of data regarding the quality of groundwater in the watershed.
- The vertical separation between the surface of the septage disposal field and groundwater is a concern.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|

| | | |
|---|---|---|
| Protect and enhance groundwater quality and quantity.<br><br>Protect groundwater recharge areas. | Request the Township to:<br>1) Undertake groundwater analysis to determine nutrient levels and ground water flows in shallow groundwater around the lake. Groundwater mapping will help identify recharge and discharge areas.<br>2) Develop a zoning by-law to protect groundwater recharge areas against degradation and destruction of woodlands and steep slopes. | • Encourage community residents with wells to test their water for coli form bacteria and nitrate-nitrogen.<br>• Coordinate lake community nitrate testing. |



# Section: 1. Natural

## 1.3 Surface Water Quality

Issues and Concerns

- Uncontrolled nutrient inputs (e.g. phosphorous from lawn fertilizers) into the lake can lead to increased aquatic plant growth, algae blooms, and increased sediment.
- Drinking water quality, public health, and recreational values are at risk.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|

| | | |
|---|---|---|
| Improve water quality and water clarity where monitoring shows it is impaired.<br><br>Identify and quantify principal nutrient sources of the lake.<br><br>Limit the use of lawn fertilizer on shoreline properties and reduce phosphorous loading from inland residential properties.<br><br>Determine the lake's water budget which is the analysis of the lake and groundwater input (i.e. precipitation) and output (i.e. evaporation, human use, etc.) | Request Simcoe Muskoka District Health Unit conduct bacterial testing of Township's park swimming/boat launch area.<br><br>Request the Township to:<br>1) Work with the SSEA to monitor precipitation levels in the watershed. | • Continue annual water quality monitoring program with MOE Lake Partner Program and ensure the lake is monitored in winter, spring, and summer.<br>• Continue bacterial and nitrate testing through FoTTSA coordinated program to determine E.coli form levels.<br>• Establish FLCA Water Quality Monitoring Committee and enlist more volunteers to assist with monitoring.<br>• Keep community residents informed of water quality monitoring results.<br>• Educate residents regarding issues (i.e. use of fertilizers, etc.) affecting water quality and desirable lake-friendly practices. |

# Section: 1. Natural

## 1.4 Forest Resources

Issues and Concerns

- There has been no scientific data collected about the forested land in the watershed. The current number of acres of harvested forest in the watershed is unknown. While there is a mix of pine plantations and core woodlands in the watershed, the actual threshold level of forest cover is unknown.
- Threats from climate change, disease, invasive species (i.e. dog-strangling vine, etc.), forest pests (i.e. Gypsy Moth, etc.) and land development are a concern to the future quality of forests in the watershed.
- There has been no land classification mapping of watershed.
- The greatest threat to the watershed's forest cover is the conversion of private forest land to other uses.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Preserve tree cover and reduce the impacts of forest cover removal on water quality in the watershed. | Request MNR to determine the watershed's land cover, tree loss, and forest health. | • Based on MNR's assessment of the lake's watershed forest cover, develop a long-term strategy to increase the total forest cover across the watershed and increase the percentage of natural cover in riparian zones along the shoreline if required. |

# Section: 1. Natural Resources

## 1.5 Wildlife

Issues and Concerns

- Habitat is diminished by the high population density and the high road density in the watershed.
- There is limited data collected about the current wildlife population trends and conditions in the watershed.
- While there is no roosting Double Crested Cormorant in the watershed, several Cormorants frequent the lake feeding on small fish.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Protect and enhance the diversity of wildlife resources that depend on Farlain Lake and its watershed.<br><br>Protect habitat connectivity.<br><br>Manage the Canada Geese population in order to prevent water quality impacts and alleviate conflicts with community residents. | Request the Township to:<br>1) Enact zoning regulations that protect Township property wildlife habitat which is not detrimental to the lake community.<br>2) Maintain large intact green spaces of native vegetation to prevent fragmentations of those green spaces by land development.<br>3) Maintain connections among wildlife habitats by identifying and protecting corridors for movement.<br>4) Enact zoning regulations that would ban residents or visitors from feeding or otherwise encouraging nuisance wildlife such as Canada Geese. | • Coordinate input from community residents and visitors on wildlife management topics such as habitat projects, nuisance species (i.e. Canada geese, etc.) management.<br>• Support and participate in projects that enhance wildlife habitat on private property and public Township properties in the watershed.<br>• Inform and educate community residents about the value of protecting wildlife habitat and the ways to protect wildlife on their property.<br>• Support the Turtle Watch Program through the recording of turtle observations and identifying nesting sites. |

# Section: 1. Natural

## 1.6 Species at Risk

Issues and Concerns

- While a number of species (e.g. Blanding's turtle, monarch butterfly, red-headed woodpecker, least bittern, eastern fox-snake, etc.) of risk are known to exist in the Penetanguishene Peninsula, there has been little recent scientific data collected about endangered species, threatened species, and species at risk within the Farlain Lake watershed.
- The slow maturation rate, boat and road mortality, egg predation by raccoons and striped skunks, and littoral/riparian habitat destruction threatens the snapping turtle… a species of concern.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Contribute to the conservation and recovery of species at risk and to prevent other species from becoming endangered due to human activities. | | • Educate community residents and visitors about the MNR species at risk program and the proper identification and reporting of rare species in the watershed.<br>• Report sightings to the Natural Heritage Education Department, Awenda Provincial Park.<br>• Work with MNR to develop a Snapping Turtle protection/recovery program. |

# Section: 1. Natural

## 1.7 Fisheries

Issues and Concerns

- Fishing opportunities are declining to loss of habitat, destruction of aquatic plant communities, angling pressures, and a decline in water quality.
- In addition to recreational opportunity loss that results from declining fisheries, the resulting ecological ramifications may be profound.
- Invasion of exotic species and invasive species will have a long-term negative impact on the health of the fishery.
- Lack of enforcement, particularly during the opening of the bass season, potentially contributes to angling pressure on the fishery.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Maintain a healthy fishery with desirable species including, but not limited to walleye, largemouth bass, smallmouth bass, and yellow perch in the lake.<br><br>Balance healthy fish communities maintained through sustainable management practices (e.g. catch and release).<br><br>Promote a self-sustaining fishery. | Request MNR to;<br>1) carry out a summer creel census with the help of FLCA volunteers,<br>2) identify important spawning and nursery areas,<br>3) denote physical habitat, and<br>4) lake characteristics. | • Enlist anglers to form a Fisheries Committee that will be responsible for monitoring and protecting the fishery.<br>• Provide support to MNR to conduct fish population studies and surveys to inventory fishery populations and fishing activities.<br>• Educate community residents and visitors regarding the current state of the fishery.<br>• Implement a volunteer creel survey to encourage anglers to maintain an angling diary; FLCA will collect data from anglers and provide harvesting information to MNR. |

# Section: 1. Natural

## 1.8 Vegetation
### a) Shoreline

Issues and Concerns

- There is no scientific recent inventory and assessment of shoreline conditions of the riparian and littoral zones.
- The lack of natural vegetated shoreline surrounding Farlain Lake is a cause of concern due to the lack of habitat and the lack of stormwater runoff control; most of the shoreline is considered 'disturbed.'
- Shoreline property owners are not aware of the benefits of vegetation buffers and that disturbed shorelines contribute negatively to water quality and deprive wildlife and fish of food and shelter.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>Community Partners |
|---|---|---|
| Increase shoreline vegetation to produce a productive buffer that minimizes water pollution and enhances natural aesthetics.<br><br>Identify riparian and littoral areas that are in need of restoration or improvement in order to help preserve the health of the lake. | Request the Township to:<br>1) preserve and protect habitat for turtles, amphibians, fish, and wildlife in the riparian and shoreline areas of Township shoreline properties.<br>2) drop aged and diseased trees into the water along Township shoreline properties to create habitat.<br>3) retain all Township properties in a natural, undisturbed state in order to protect the natural elements of the area and sustain the health and recreational capacity of the lake. | • Form a Shoreline Stewards Group to bring community residents together who are interested in learning more about shoreline protection and/or restoration.<br>• Educate shoreline property owners about the value of rain gardens, natural vegetation buffers, riparian habitat, and how to install and maintain them.<br>• Partner with property owners to create demonstration model sites of rain gardens, native vegetation buffer areas, and enhanced riparian vegetation. |

# Section: 1. Natural

## 1.8 Vegetation
## b) Aquatic

Issues and Concerns

- Information on aquatic plants is outdated; the last inventory was reported by MOE in 1973.
- 2012 study undertaken by FLCA identified eight submerged aquatic species, two of which (Eurasian water-milfoil and curly-leaved pondweed) are invasive. The amount of submerged aquatic vegetation varies from abundant to sparse or non-existent. The overall state of submerged plants within Farlain Lake is unknown.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Maintain the existing submerged and floating native plant communities while promoting non-destructive recreational uses of the lake and near shore activities.<br><br>Restore desirable vegetation in the Farlain Lake watershed. | | • Establish an Aquatic Vegetation Committee<br>• Obtain and distribute literature from Federal and Provincial resource agencies that describe the benefits and importance of native plant species and how the natural lake system functions.<br>• Monitor the watershed for the presence and spread of all invasive and exotic species and continue to provide educational information to the community.<br>• Develop inventories of aquatic vegetation for existing and past conditions and monitor aquatic vegetation patterns on an ongoing basis. |

# Section: 1. Natural

## 1.9 Invasive/Exotic Species

Issues and Concerns

- The only invasive species known to be present in Farlain Lake watershed are the curly-leaved pondweed, Eurasian water-milfoil, European common goutweed, and glossy buckthorn. While not considered an invasive species, the giant floater mussel is an exotic freshwater mussel in the watershed.
- Introduction of exotic or non-native species into Farlain Lake affects the natural balance of the ecosystem.
- Curly-leaved pondweed, Eurasian water-milfoil, and European common reed can be extremely invasive.
- A survey of upland invasive species throughout the watershed has not been undertaken to identify invasive plant species.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Prevent the expansion and new infestation of invasive and exotic species into the Farlain Lake watershed.<br><br>Develop an ongoing program for early detection of new invasive species.<br><br>Improve Farlain Lake habitat by increasing the extent and diversity of favourable native aquatic and shoreline vegetation. | In conjunction with MNR and SSEA identify extent of existing lake, shoreline, and upland invasive species.<br><br>Request the Township to install an educational kiosk/sign at the Township Park that informs boaters to clean boat hulls and trailers before entering the lake and after exiting the lake to prevent the transport of invasive and exotic species. | • Continue to monitor the lake for the occurrence or spread of invasive and exotic species.<br>• Educate community residents and visitors regarding the prevention of the introduction of invasive and exotic species.<br>• Knowledgeable volunteers should be present at the Township Park boat launch on opening fish season and civic holiday weekends to distribute educational material. |

# Section: 2. Physical

## 2.1 Infrastructure

Issues and Concerns

- Stormwater run-off from roads and paved surfaces in developed urban areas often contains oils, greases and other hydrocarbons, nutrients and organic matter, pathogens, and other pollutants.
- The Township relies on road salt (NaCl) to safeguard roads during winter months because it is cost effective and efficient; accumulation of road salt in soil can have a negative long-term environmental impact on surface water and groundwater resources used for drinking water.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Minimize negative environmental impacts of sediments, nutrients, and salt associated with road maintenance.<br><br>Adopt better stormwater management practices to improve water quality. | Request the Township to:<br>1) Continue monitoring the water quality of the lake for contaminants carried from roadways through stormwater run-off.<br>2) Inventory all culverts in terms of culvert size, elevation, flow direction, maximum capacity, and direct/indirect impacts on surface waters.<br>3) Implement a stormwater strategy to minimize the effect of impervious areas on Township property and direct stormwater runoff onto vegetated areas that treat, filtrate, and dissipate the runoff through transpiration. | |

# Section: 2. Physical

## 2.2 Official Plan and Zoning By-Laws

Issues and Concerns

- Land uses have not been planned to reflect ecological considerations of the Farlain Lake watershed; it is imperative to find a balance between new development and protecting the lake's values.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Promote the wise and sustainable development and use of land in the Farlain Lake watershed. | Request the Township to:<br><br>1. Make improvements to the Official Plan and Zoning By-Laws to ensure reasonable and manageable growth with appropriate carrying capacity limits.<br><br>2. Adopt policies to better protect shorelines through the retention of natural vegetation within the lake's ribbon of life.<br><br>3. Enact a tree cutting by-law to protect forest cover on properties within the watershed that are less than 2.5 acres in size that would prevent landowners from clearing the majority of healthy tree cover. This by-law should not restrict the removal of dead or diseased trees or the reasonable pruning of branches for safety or aesthetics. | • Host an annual get-acquainted meeting with FoTTSA representatives to discuss common land use issues.<br>• Educate community residents and visitors on the importance of the lake's ribbon of life and natural shoreline buffer areas, and the value of forest cover along the shoreline and in other areas of the lake's watershed. |

# Section: 2. Physical

## 2.2 Official Plan and Zoning By-Laws (continued)

Issues and Concerns

- There are no environmentally related shoreline protection by-laws.
- By-law enforcement (historically) has been inadequate.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Promote the wise and sustainable development and use of land in the Farlain Lake watershed. | Request the Township to:<br><br>4. Adopt a zoning by-law to ensure dwelling units, accessory buildings and structures do not encroach into a 20 metre setback from the high water mark. The setback should not apply to dry land boathouses and is reduced to 3 metres for pump houses, sheds and other minor accessory buildings and structures less than or equal to 10 square metres, (108 square feet) floor area.<br><br>5. Adopt a by-law prohibiting the use of non-environmentally friendly herbicides, pesticides, and fertilizers extending within 30 metres from the high water mark.<br><br>6. Adopt a by-law providing for public notice of zoning by-laws and development infractions, and the actions taken by the Township. | |

# Section: 2. Physical

## 2.3 Land Development

Issues and Concerns

- The environmental carrying capacity of the watershed is unknown.
- The Township's population growth for the Farlain Lake community does not factor the carrying capacity of the watershed.
- The availability of Township staff to conduct site supervision, inspections, and regulation enforcement is often inadequate.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Protect water quality, overall watershed health, and the character of the lake from degradation caused by excessive land development. | Request the Township to:<br>1. Revise the Official Plan so that land development will be considered within the context of sound environmental and ecological principles.<br>2. Ensure a physical carrying capacity study is undertaken by a land developer to define the maximum amount of growth or development that can be supported indefinitely in the Farlain Lake watershed without permanently impairing the sustainability of the lake and its surrounding watershed.<br>3. Adopt a zoning by-law that requires new lots that will be developed to be subject to site plan control | • Actively lobby the County of Simcoe and the Township of Tiny too;<br><br>1) integrate lake carrying capacity limits into the Official Plan, and<br><br>2) apply the most recent and accepted lake carrying capacity models that identifies the development capacity of the lake. |

# Section: 2. Physical

## 2.3 Land Development

Issues and Concerns

- Conversion of existing approved lots into residences and the creation of new lots severed from larger land holdings may increase the number of people living in the community; density issues may impact lake health and individual enjoyment of the lake.
- The rural and historical character of the lake may be compromised by development pressures (e.g. urbanization, mega-home construction, shoreline and riparian vegetation removal, increased light pollution at night, etc.).

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Ensure a transparent planning and development process. | Request the Township to promote:<br>4) Notify the FLCA of major Committee of Adjustment applications, proposed zoning changes, etc. that pertain to the Farlain Lake watershed.<br>5) Request the Township to view minor variances in context of similar applications that will be made in the watershed over the next 50 years and their ensuing cumulative impacts. | • Provide recommendations to the County and the Township that support the adoption of land use policies that encourage sustainable land development patterns. |

# Section: 2. Physical

## 2.4 Wastewater and Sewage Disposal

Issues and Concerns

- Close proximity of individual septic systems to the lake and drinking wells, especially sandpoint wells, pose a threat to human health.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Protect public health and prevent environmental degradation by reducing non-point source pollution to groundwater and surface water from septic system waste. | Request the Township to:<br>Conduct educational seminars and workshops on septic care and maintenance, including information on septic management systems, care in cold weather, and products to be avoided. | • Obtain and distribute educational material on proper septic system design and maintenance through programs administered by the Province and the Township. |

# Section: 2. Physical

## 2.5 Wellhead and Water Supply Protection

Issues and Concerns

- Abandoned wells can allow contaminants to enter groundwater more easily.
- Due to the sandy-loam composition of soil in the watershed, groundwater supply is naturally more susceptible to contamination from activities on the surface.
- It is not known to what extent private water systems filter or treat water for household use.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Protect and enhance groundwater quality and quantity. | Request the Township to:<br>1) Survey Farlain Lake community residents on the location of wells, types of wells, well water testing frequency, test results, and type of household water treatment.<br>2) Develop and implement a private drinking water system protection plan for the Farlain Lake community. There is a need to determine the location and condition (i.e. uncapped abandoned wells, etc.) of the wells. Information from this study will lead to a better understanding of the dynamics (i.e. flow rate, water depth, etc.) and condition (health) of source water (i.e. groundwater) within the watershed. It is not the mandate of the Township to regulate private drinking water systems; the Townships role will be to inform and educate (i.e. testing wells, etc.) private landowners. | • Support efforts of the Township to:<br><br>1) identify and properly seal abandoned wells, and<br>2) distribute information to community residents on the potential impacts of abandoned/failing wells, and the proper sealing of non-operational wells. |

# Section: 2. Physical

## 2.6 Open Space and Greenspace Protection

Issues and Concerns

- The lake is 'ringed' with cottage development resulting in few undeveloped stretches of natural shoreline.
- Township undeveloped shoreline properties are the few natural shoreline properties on Farlain Lake that 1) maintain an effective greenbelt buffer between human activities on land and the shoreline, and 2) provide wildlife habitat connectivity to inland forest habitat.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Maintain and protect undeveloped natural areas which are assets for both water quality and recreational uses.<br><br>Maintain environmental quality by protecting the natural life support system for the benefit of existing and future generations.<br><br>Allow permitted/compatible activities to occur on Township properties while maintaining the ecological function and integrity of the riparian and littoral zones. | Encourage the Township to retain all existing Township shoreline and inland properties in a natural, undisturbed state in order to protect natural elements and sustain the health and recreational capacity of the watershed. | |

# Section: 3. Social

## 3.1 Carrying Capacity - Recreational

Issues and Concerns

- Environmental quality, user enjoyment, and safety may decrease with increases in lake use. It is the cumulative impact of human activities around the lake that can cause deterioration in the quality of the water, a reduction in fish and wildlife, and a decline in the overall quality of life in the watershed.
- Recreational needs and uses on the lake and in the watershed will likely continue to increase as population and development increases.
- Additional access to the lake through Township shoreline properties will create additional pressures on the lake.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Maintain safe and desirable recreational experiences while minimizing any negative ecological impacts caused by recreation. | Request the Township to investigate the usefulness of recreation carrying capacity modeling in the evaluation of future development applications. | • Establish and distribute a community code of conduct. |

# Section: 3. Social

## 3.2 Carrying Capacity - Safety

Issues and Concerns

- The potential for conflict, accidents, and environmental damage to the lake exists… particularly on holiday weekends.
- High speed and reckless watercraft operation are safety concerns for other boaters and lake users.
- While there have been no extreme conflicts, increased power boating activity and actions by undisciplined watercraft operators pose safety and social conflict issues.
- Due to its overall shallowness, Farlain Lake will be prone to environmental impacts in shallow areas within 30 metres of the shoreline and depths of 1.5 metres or less from powerboat activity.
- Many community residents and lake users do not know who to contact regarding watercraft issues and concerns.

| Goal | Recommendation(s)<br>Community Partners | Recommendation(s)<br>FLCA |
|---|---|---|
| Promote the responsible use of watercraft in a manner that balances environmental, recreational, residential needs, and personal safety.<br><br>Minimize conflicts between users in a way that provides for maximum use of the lake, safety, and enjoyment. | 1) Partner with Transport Canada and the Ministry of Natural Resources to establish<br>a) an integrated 'slow-no wake' zone comprised of the VORR 30/10 speed limit regulation and the lake's 1.5 metres contour, and<br>b) restricted power boating areas on the lake.<br><br>2) Request the Ontario Provincial Police marine unit increase its presence on the lake.<br><br>3) Request the Township to erect information/educational signage at the Township park boat launch area. | • Provide information to community residents and visitors through newsletters, signage, and workshops of the current regulations regarding recreational boating and recreational use of the lake.<br>• Prepare a laminated boating card which includes the lake's bathymetry map denoting the lake's protected areas, rules of navigation, and a voluntary code of conduct. |

# Section: 3. Social

## 3.3 Recreation

Issues and Concerns

- Passive natural activities (i.e. bird watching, running, nature photography, bicycling, hiking, etc.) are undervalued as recreational uses of the watershed.
- The watershed lacks a continuous 'trail' around to the lake to accommodate passive recreational activities.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Where practical and feasible accommodate all compatible recreational uses within the watershed.<br><br>Create a vibrant lake community rich in recreational opportunities and social activities. | | • Maintain and develop new activities that promote a sense of community with people living, working, and visiting in the Farlain Lake area.<br>• Encourage and promote nature oriented recreation in the future.<br>• Promote the development of an educational walk that would encourage residents to learn more about the lake by featuring information on the oldest residences, oldest tree, Wendat people culture, etc. |

# Section: 4. Values/Issues

## 4.1 Balance and Diversity

Issues and Concerns

- The current community population of approximately 975 seasonal and permanent residents is geographically dispersed in the watershed.
- Community residents have diverse interests.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Encourage and support the development of a lake community that will work together to respect and balance various interests of the Farlain Lake community.<br><br>Provide targeted and meaningful educational materials for community residents so that they have a better understanding of Farlain Lake, its watershed, the factors impacting the quality of the resources, and what community residents can do to make a difference. | Request the Township to provide information on new property owners to the FLCA so Farlain Lake community and Township information can be conveyed to new residents. | • Establish approaches for recruiting and organizing volunteers to implement specific projects and programs emanating from the Lake to Sky Community Management Plan.<br>• Establish a network of 'area ambassadors' to distribute FLCA information and/or educational material, and to gather input from area neighbours to share with the FLCA Board.<br>• Purchase t-shirts to identify FLCA volunteers to community residents to increase awareness of volunteer activity and to promote volunteer participation.<br>• Develop and distribute a welcome package for new community residents. |

# Section: 4. Values/Issues

## 4.2 Education

Issues and Concerns

- Community residents and visitors have limited knowledge of environmental and ecology issues.

| Goal | Recommendation(s) Community Partners | Recommendation(s) FLCA |
|---|---|---|
| Create information and communication opportunities for Farlain Lake community residents and visitors to develop interactions with others that are involved in decisions that affect the lake and the watershed.<br><br>Encourage and promote active, broad, and ongoing involvement of community residents through the implementation of the Lake to Sky Lake Community Management Plan.<br><br>Create a dark skies environment. | | • Develop simple experiments and projects for children, designed to teach them about water protection.<br>• Develop a data sharing agreement with the Province, the County, and the Township to freely share any data related to the plan.<br>• Promote the sharing of the lake history by developing a Farlain Lake history book that would contain historical information, maps, and photographs.<br>• Encourage community residents to implement 'dark sky friendly' lighting initiatives such as appropriate shoreline and landscape lighting techniques.<br>• Conduct a 'dark sky' evening in the summer to promote 'night without light.' |

# Cooperative Management

There are several governmental agencies that have some level of responsibility for the overall management of Farlain Lake and its surrounding watershed. There will likely be some areas of overlap in regards to watershed management. Cooperation between these entities is crucial in achieving the goals of the Lake to Sky plan. This section is an attempt to highlight some of the responsible parties and their roles.

| Organization | Legislation Responsibility | Roles |
|---|---|---|
| Ministry of Natural Resources (MNR) | • Lakes and Rivers Improvement Act<br>• Fish and Wildlife Conservation Act<br>• Public Lands Act<br>• Endangered Species Act | • Enforcement of regulations regarding lakebed alterations, aquatic plant management, fishing, hunting, etc.<br>• Conducting research on wildlife and aquatic systems.<br>• Monitoring water quantity and protecting source water. |
| Ministry of the Environment (MOE) | • Environmental Protection Act<br>• Ontario Water Resources Act<br>• Safe Drinking Water Act<br>• Clean Water Act<br>• Environmental Assessment Act | • Protecting the quantity and quality of groundwater.<br>• Monitoring water quality.<br>• Issuing permits to take water.<br>• Managing well water data base.<br>• Developing stormwater management guidelines.<br>• Environmental management of air, land and water as well as safe drinking water. |
| Ministry of Agriculture, Food and Rural Affairs (OMAFRA) | • Nutrient Management Act | |
| Ministry of Municipal Affairs and Housing (MAH) | • Planning Act | • Land use planning |

## **Cooperative Management** (continued)

| Organization | Legislation Responsibility | Roles |
|---|---|---|
| Department of Fisheries and Oceans (DFO) | • Fisheries Act | • Monitoring fish habitat and addressing invasive species.<br>• Protecting and conserving fish habitat.<br>• Assessing projects for fish habitat impacts and issuing Fisheries Act Authorizations. |
| Department of Transport<br>Marine-Boating Safety<br>Ontario Region | • The Canada Shipping Act including Small Vessel Regulations, Competency of Operators of Pleasure Craft Regulations<br>• Navigable Waters Protection Act | • Boat licensing, registration, speed limits, equipment, compliance, etc.<br>• Recreational boat operators competency<br>• Private buoy regulations, docks and rafts compliance, etc. |
| Environment Canada – Canadian Wildlife Service | • Migratory Birds Convention Act<br>• Canada Wildlife Act | • Species at risk.<br>• Protecting wetlands<br>• Research and education on weather and climate. |

## **Cooperative Management** (continued)

| Organization | Legislation Responsibility | Roles |
|---|---|---|
| County of Simcoe | | • Managing population growth<br>• Managing solid waste and land fills<br>• Bringing Official Plans into conformity with provincial policies. |
| Township of Tiny | | • Applicable local ordinances such as land use planning and development, building codes, storm water management, land zoning.<br>• Enforcing bylaws (i.e. construction, tree protection, septic systems, etc.).<br>• Providing water and wastewater treatment<br>• Managing stormwater and municipal road management. |
| Severn Sound Environmental Association | | • Acting as technical experts in a variety of watershed management disciplines<br>• Educating people about watershed management, the environment, and well head protection in general. |