



**Policy & Research Committee
Agenda**

Friday, October 17, 2008
10:00 a.m.

Council Chambers – Town of Huntsville
37 Main Street East, Huntsville

1. Welcome & Review of Minutes ([attached](#)) – Patricia Arney
2. Position Papers
 - [Wetlands](#)
 - [Power Generation](#) - SWOT Analysis Appendix to be handed out at meeting for further input and review
3. P&R Committee Work Program
 - Air Quality
 - SMDHU [Air Aware Newsletter](#)
 - Draft MWC [Position Paper](#) – Update needed
 - Low Impact Development – Direction from Executive Committee
 - Nuclear Waste Disposal – [Draft Letter](#)
4. Updates
 - Road Salts - Monitor implementation
 - Pharmaceuticals in Water
 - Green Roof Project
5. New Business
6. Next Meeting
7. Adjournment



**Policy & Research Committee
Minutes**

Monday, September 8, 2008
11:00 a.m.

Oak Room– District Municipality of Muskoka
70 Pine Street, Bracebridge

ATTENDEES:	Patricia Arney Anna Mallin	Mary McCulley Ian Turnbull	Lou Guerriero
STAFF:	Judi Brouse	Rebecca Willison	

Patricia opened the meeting at 11:05 a.m. with a review of the minutes from the last meeting.

Nuclear Waste Management

Ian has looked into the issue and has volunteered to draft a letter to the site selection committee of the Nuclear Waste Management Organization about why Muskoka would not be a good choice for burying uranium waste. The letter will be circulated to P&R through email and then taken to Executive Committee at their meeting on October 3rd. DMM is already on record for opposing a site in Muskoka.

Action

Ian

DMM Tree-Cutting Bylaw

The bylaw is slowly moving forward. A focus group meeting was held and changes are being incorporated into the bylaw. Patricia and Anna have volunteered to review the bylaw to ensure that it addresses MWC's concerns.

Patricia
Anna

Pharmaceuticals

Deb has spoken with Janette Sutey about developing a paper on pharmaceuticals and she has agreed to work on it.

Janette

Green Roof Project

The BMLSS pilot project has stalled so Committee members are investigating opportunities that may be available in Huntsville and Baysville.

Wetlands

A draft position paper was distributed with the agenda. Judi provided an overview of the content. The Committee agreed that the paper needed to stress the idea that we only have 11% wetlands and cannot afford to lose any. Judi will take the comments received and incorporate into the draft, which will then be distributed to Committee members for input before going to the Executive Committee meeting on October 3rd for approval.

Judi

Power Generation

A draft position paper was distributed with the agenda. The Committee discussed the idea of full-cost accounting versus true-cost accounting and what should be considered in the paper. Anna volunteered to rework the principles and distribute them through email to the rest of the Committee. Lou will add a section about the real cost of energy to the Conservation SWOT, and all Committee members are to add a "Bottom Line" section to their SWOT analysis that relates back to the reworked principles. This is to be accomplished by the next P&R Committee meeting in October.

Anna
Lou
Committee

Committee Work Program

A report is currently at Executive Committee that discusses option for aligning the Committees with the new goals and objectives. Until this structure is determined, P&R will wrap up its current projects and wait before initiating new ones.

Green Building Project

Judi left a message with Gail Stiver and is waiting to hear back from her. In the meantime, Lou will look into the status of the development.

Lou

New Business

Judi provided a brief overview of the Interim Report Card on Municipal Planning that will be brought to MWC on September 19th.

Next Meeting

The next meeting is scheduled for Friday, October 17th at 10:00 am in the Town of Huntsville Council Chambers.

Adjournment

The meeting was adjourned at 1:10 pm.

WETLAND POLICY PAPER

October 2008



Muskoka
WATERSHED COUNCIL

WETLAND POLICY PAPER

EXECUTIVE SUMMARY

Mission Statement

The Mission of the Muskoka Watershed Council is “to champion watershed health”. Healthy wetlands are the foundation of a healthy watershed.

Muskoka Watershed Wetlands

The underpinning of Muskoka's life and economy is excellent water quality. Approximately twenty-five percent of Muskoka's area is covered by wetlands, distributed unevenly. Because of this wonderful resource Muskoka does not suffer from severe flooding and enjoys excellent water quality and healthy natural areas. We need to be vigilant *now* to prevent reduction in the extent of Muskoka's wetlands that will impact on both the Muskoka lifestyle and economy.

Muskoka Watersheds Report Card

The Muskoka Watersheds Report Card gave wetland protection a grade of 'C' noting that relatively few wetlands had been evaluated and therefore did not come under the provincial policy statement that protects provincially significant wetlands. The Report Card also noted that there were no programs to undertake the evaluation of additional wetlands. In addition, while municipal policy provided some protection for wetlands, where there was a development application, where there was no municipal approvals required wetlands were vulnerable to being filled and developed at a later date. Since the release of the Report Card in August 2007, some municipalities have passed by-laws to control site alteration activities, such as filling of wetlands.

Muskoka Watershed Council Position on Wetlands

Muskoka Watershed Council supports the protection and preservation of all wetlands and encourages agencies and organization to identify, evaluate and take protective measures to ensure the long-term health of these essential ecosystems.

Guiding Principles

Four guiding principles form the basis of Muskoka Watershed Council policy position:

- Wetlands are critical to sustaining surface and groundwater quality and quantity and therefore, essential to the well-being of humans and all other forms of life.
- Wetlands are core components of the natural heritage systems.
- Wetlands should be managed on a watershed and subwatershed basis.
- Wetland loss should be avoided.

To pursue these guiding principles the Muskoka Watershed Council will:

- encourage wetland evaluations by third parties and partner organizations;
- report to the public on wetland health and protection;
- advocate for wetland protection through municipal planning processes and encourage private land acquisition by land trusts and other conservation-minded bodies;
- communicate the importance of wetlands through education initiatives, support of best practices in management and development; and
- promote appreciation of wetlands through education, demonstration projects and events

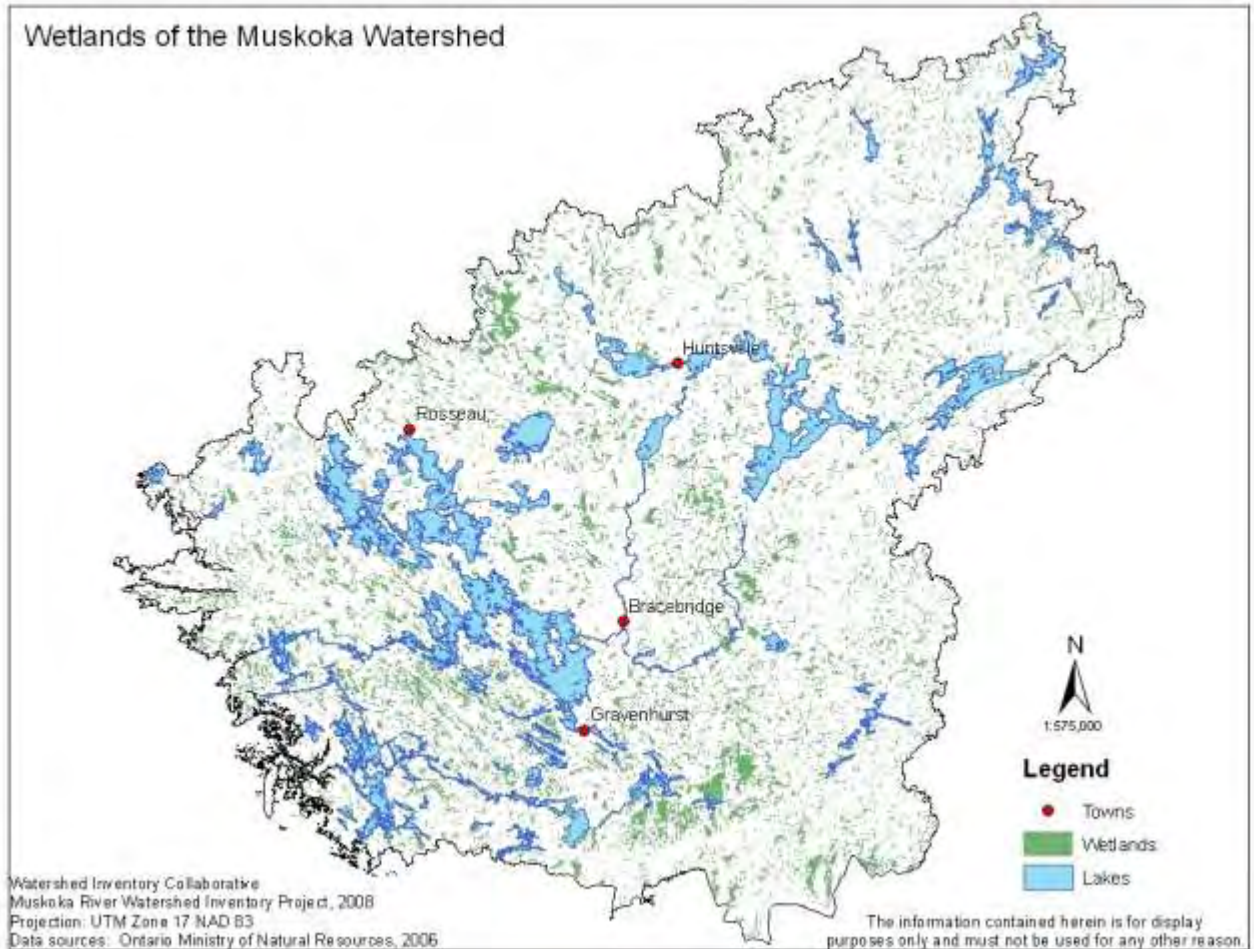
Principles for Municipal Policy

As municipalities prepare and implement planning documents, including official plans, zoning by-laws, and development applications, Muskoka Watershed Council will encourage them to incorporate policy, regulations and implementation measures that:

- Encourage sustainable management of all wetlands
- Manage wetlands as parts of larger ecosystems recognizing the diversity and connectivity of natural features in the area.

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- Maintain the long-term ecological function and biodiversity of wetland systems.
- Restore or, where possible, improve linkages between and among wetlands, surface water and ground water features.
- Prohibit development and site alteration in areas designated as Provincially Significant Wetlands.
- Define adjacent lands based on ecological function.



WETLAND POLICY PAPER

Background

Wetlands are defined as “lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens”.¹

Wetlands have been recognized by all levels of government as being important components of a healthy environment. The Federal government, through the National Round Table on the Economy and the Environment, considers wetland loss an indicator of environmental health.² The Provincial government has taken many steps to identify and protect wetlands, the most notable being the adoption of a protective policy statement in the mid 1990's.³

Wetlands are essential ecosystems and parts of ecosystems. Wetlands do not function in isolation and require the physical and biological interaction with the surrounding lands in order to continue to function and provide benefits. In conjunction with the surrounding land, wetlands create regional hydrological systems that help control surface water flow, purify the water, maintain soil moisture levels, and recharge both groundwater and surface water sources. Ninety percent (90%) of wildlife that rely on wetlands also live in upland areas for a portion of their life. Forty percent (40%) of endangered species rely on both the wetland and the surrounding land for all or a portion of their life cycle. Therefore, in order to ensure the continued functioning of wetland environments, consideration must be given to the wetland and the surrounding land as changes are proposed.

Types of Wetlands in Muskoka

In Muskoka, wetland types include swamps, bogs, fens, and marshes. A “marsh” is a wetland type without woody vegetation and features grasses, rushes, reeds, sedges, and other herbaceous plants. A “swamp” is a wetland type with a substantial amount of woody vegetation such as cedar, black spruce, silver maple, willows and hemlock. A “fen” is a wetland type that accumulates peat deposits. Fens are less acidic than bogs and have some flow through of water. A “bog” is a wetland type that accumulates acidic peat and has no flow of water through it.⁴

*Swamps, Fens, Bogs*⁵

Wetland areas are often composed of several wetland types. The diversity of wetland types in one area adds to its biodiversity and ecological value. A wide range of wooded wetland communities can be found in Muskoka. On clay and sandy substrates, deciduous forest swamps commonly include Red and Silver Maple, Black Ash, and Cedar and less commonly Balsam Fir.

Coniferous swamp forests are common in most parts of Muskoka, usually on organic mats at least one metre thick. Black Spruce is dominant in many of these community types, often associated with Tamarack and Balsam Fir. A dense shrub understory of Specked Alder, Labrador Tea, Northern Wild Raisin, Mountain Holly and Red Osier Dogwood is often present. The ground layer often has a carpet of Sphagnum and other mosses, with Yellow Clintonia, Canada Mayflower, Bunchberry, Starflower, Goldthread, and other herbaceous wildflowers,

¹ Government of Ontario, Provincial Policy Statement, Queen's Printer, 2005
(<http://www.mah.gov.on.ca/Page1485.aspx>)

² National Roundtable on the Environment and the Economy, 2005-2006 Departmental Performance Report (<http://www.tbs-sct.gc.ca/dpr-rmr/0506/NRTEE-TRNEE/nrtee-trnee-eng.pdf>)

³ Government of Ontario, Provincial Policy Statement, Queen's Printer, 1996

⁴ Wikipedia, wetland definitions. <http://en.wikipedia.org/wiki>

⁵ Reid and Bergsma Natural Heritage Evaluation of Muskoka, February 1994, pg. 24, 25

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Nutrient-poor peat lands support poor fens, including floating shrub mats of Leatherleaf and Sweet Gale, herb-rich mats with Virginia Chain Fern and Pitcher Plants on open graminoid mats. Scattered, stunted Black Spruce or Tamarack are often present on the open mats. These poor fens are usually ringed by an Alder –Black Spruce thicket swamp and a zone of open water up to 2 metres called a “lag”. Wild Calla and other aquatic submergents and emergents occupy this zone.

Thicket swamps are a common component of wetland systems in Muskoka, often along the transition zone to drier ground. Alder thickets and Winterberry-Mountain Holly-Wild Raisin thicket swamps are especially common. In the southern section of the District, Buttonbush-Silky Dogwood-water Willow thickets also occur.

Bogs and fens are rare habitats in the lower Great Lakes and are highly susceptible to changes in nutrient and water inputs, making them very difficult to rehabilitate once disturbed. The best management strategy for these types of wetlands is to protect them by securing their water sources and not altering their watersheds.

It may be several years before a created swamp becomes partially functional and a few decades may pass before trees have had sufficient time to grow and improve the newly-created swamp's function.

*Marsh Communities*⁶

Along the edges of lakes and ponds, marsh communities often soften the transition from water to land. In deeper water zones, submergent aquatic communities and floating-leaved species such as Bullhead Lily, Water Shield, and infrequently Wild Rice gives way in shallower water to more diverse emergent marsh communities of Pickerelweed, Rushes, Bur-reed, and Sedges. On seasonally-flooded drier sites, beaver meadows of Canada Bluejoint, Boneset, Rough-stemmed Goldenrod, and other herbs occur, often scattered shrubs of Meadowsweet and Sweet Gale.

One shoreline community which is relatively widespread in Muskoka is Atlantic Coastal Plain Flora, typified by Virginia Meadow-beauty, Slender Yellow-eyed Grass, Water Wort, and related species. This disjunct community occurs on sandy shorelines where fluctuating water levels prevent the invasion of shrubby species that might otherwise occupy the site.

Marshes are more readily restored due to their dynamic water and nutrient regime, and related higher primary productivity. A newly-created marsh exhibits some functions within a year or two.

Importance of Wetlands

Wetlands and the area that surrounds them provide continuous, sustainable environmental, economic and social benefits that contribute to the high quality of life in Muskoka. For convenience, wetland values are generally grouped into biological, hydrological and socio-economic benefits; however, many of the values contribute to all three broad categories.

Wetlands and their surrounding area:

- Are important for the control and storage of surface water and the recharge and discharge of groundwater;
- Maintain and improve water quality, aid in flood control, and protect shorelines from erosion;
- Trap sediments which would otherwise fill watercourses;
- Support and initiate complex food chains which are ultimately essential for a broad spectrum of living organisms, including humans;
- Provide important habitat for a wide variety of plants and animal species;
- Immobilize some contaminants and nutrients;

⁶ *ibid*

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- Reduce other contaminants to less damaging compounds;
- Assist in maintaining water quality in adjacent lakes and streams that support fish populations;
- Provide valuable resource products such as timber, fish and wild rice on a sustainable basis;
- Contribute substantial economic and social benefits to the municipality through trapping, hunting, fishing and outfitters; and
- Sequester carbon
- Provide active and passive recreational opportunities, including canoeing, bird watching, hunting and fishing.

Although all wetlands have importance, it is broadly recognized that larger wetlands that support regional hydrological systems or are home to rare, threatened and endangered species require an extra level of protection.

Economic Value of Wetlands

Valuing the economic benefits of wetlands can help set priorities and allocate spending on conservation initiatives. Valuation can also be used to consider the public's values of wetland systems and encourage public participation in certain initiatives. For instance, valuation may be applicable in environmental assessment (EA) processes. More specifically, valuation could assist EA decision-making by providing a reference value against which other economic factors could be compared in order to determine the significance of environmental effects - the bottom-line in most EAs.

Establishing an economic value for an abstract concept such as the ecological services of a wetland is difficult. Commonly, the open market puts dollar values on society's goods and services. In the case of wetlands, there is no direct market for services such as clean water, maintenance of biodiversity, and flood control. There is, however, a growing recognition that such natural benefits do have real economic value and that these values need to be included in decision-making processes.

The first step in addressing the full economic picture of wetland benefits is to recognize that the non-market benefits wetlands produce are every bit as important as more traditional commodity (good) values.

Table 1 gives examples of economic wetland benefits. In many ways, the economic benefits received from wetlands are comparable to the benefits received from social services such as public schooling, health care and municipal infrastructure.

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Table 1 Examples of Economic Wetland Benefits⁷

USE BENEFITS			NON-USE BENEFITS
Direct Use Benefits	Indirect Use Benefits	Option Benefits	Existence Benefits
<ul style="list-style-type: none"> ● recreation <ul style="list-style-type: none"> - boating - birding - wildlife viewing - walking - fishing ● trapping-hunting ● commercial harvest <ul style="list-style-type: none"> - nuts - berries - grains - fish - peat - forestry 	<ul style="list-style-type: none"> ● nutrient retention ● water filtration ● flood control ● shoreline protection ● groundwater recharge ● external ecosystem support ● micro-climate stabilization ● erosion control ● associated expenditures, e.g., travel, guides, gear, etc. 	<ul style="list-style-type: none"> ● potential future uses (as per direct and indirect uses) ● future value of information, e.g., development of new pharmaceuticals based on wetland species, educational opportunities for children and adults. 	<ul style="list-style-type: none"> ● biodiversity ● culture ● heritage ● bequest value

Unfortunately, to date, society has generally only realized the benefit of wetland services after they have disappeared. Problems with flooding, lost recreational opportunities, reduced fish populations and more costly water treatment are examples of costs understood only after a wetland ecosystem has been degraded or destroyed.

The idea behind putting an economic value on wetland benefits before ecosystem-altering decisions are made is to recognize the potential costs up front and thereby put wetland-related decisions on a more economically sound footing. In considering the value of natural areas such as wetlands, one is trying to determine people's willingness to pay for benefits ranging from aesthetic beauty to recreational opportunities to clean water.

If ecosystem values are as real as other economic values, why do economic decisions tend to favour the destruction of natural ecosystems rather than their retention?

Economists trace this problem to the failure of markets to reflect the full or true cost of goods or services. In the case of a wetland, the calculation of the economic value of filling in a wetland to build housing does

⁷ Modified from Barbier, E.B., M. Acreman, and D. Knowler. 1997. Economic Valuation of Wetlands, A Guide for Policy Makers and Planners. Ramsar Convention Bureau, Gland, Switzerland.

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not, in most cases, include costs such as loss of water quality or flood control because these services do not have readily available dollar values. These ecosystem services are provided for free - they do not have to be purchased. It is only when these services are lost that actual monetary costs are incurred. So paradoxically, the zero price for wetland services is of very high value to human well-being. Since it is difficult for an individual owner to receive direct monetary benefit for the benefits which a wetland provides to others (e.g., downstream water quality improvement or providing habitat for waterfowl which migrate elsewhere), the true value of such benefits is generally not taken into account in land use decisions.

There are a few factors that contribute to market failure when it comes to natural systems.

- 1. Distribution of costs and benefits between owners and non-owners.**

Unlike other assets, a wetland may deliver more benefits to the community than to an individual owner. Compared to the general community, the individual owner may receive only a small proportion of benefits, such as groundwater replenishment, and therefore will tend to undervalue these benefits. The owner may even feel economically penalized for preserving a wetland for the good of the community and may see more immediate value in developing the wetland, for which the community will bear most of the costs in terms of lost benefits.

- 2. The tragedy of the commons**

With a widely shared resource there is little incentive for an individual to curb activities to benefit others. For example, a wetland may support large populations of frogs, but without any sort of limits or fees, there is no incentive for any individual harvester to limit the number of frogs taken for bait, food or classroom dissection. Overharvesting would result in a rapidly shrinking frog population and the reduction of a specific benefit for everyone who uses the wetland.

- 3. Missing costs**

The market price of a good may not reflect all of the production costs. For example, if a company freely discharges its waste into a stream that feeds into a wetland, the economic damage done to the wetland, whether it's fewer fish produced or impaired water quality, is not reflected in the market price of the company's goods. The market does not include the lost economic value of the wetland in the company's production costs.

- 4. Cumulative effects**

When taken together, a combination of relatively small incremental changes to a wetland or a number of wetlands within a watershed, can have more dramatic effects than those recognized when individual changes are made. These cumulative effects result from past, planned and future changes and are difficult to recognize and assess physically as well as economically in part because of the dynamic nature of ecosystems.

- 5. Limited understanding of science**

The ability to measure value is also limited by scientific understanding of the ecological functioning of wetlands. Biologists, hydrologists and engineers do not yet fully appreciate or understand all of the benefits that wetlands provide to protect ecosystem stability. This lack of scientific understanding undervalues wetland benefits and contributes to market failure.

WETLAND POLICY PAPER

Wetlands in Muskoka

Wetland loss and degradation have been significant, particularly in southern Ontario. In Muskoka we are fortunate to be stewards of relatively intact ecosystems with many healthy and functioning wetlands. A high proportion of Great Lakes fish and wildlife species, including many species at risk across Muskoka, inhabit wetlands during part of their life cycles.

Wetlands are the kidneys of the watershed and clean water before it reaches lakes and rivers. In excess of thirty provincially significant wetlands have so far been identified in Muskoka but there is no program to evaluate additional wetlands. As development occurs across the watershed, programs are required to ensure that wetlands remain well distributed across each sub-watershed.

Experience in the Great Lakes basin has shown that in order to reduce flooding and protect base flows⁸ wetlands need to comprise a minimum of 10 percent of a watershed. In the Muskoka River watershed we still enjoy a wetland area of about 25% of the land area or 170,750 hectares⁹. Evaluated, provincially significant wetlands account for just 4,554 hectares or 2.6% of the total wetland area in Muskoka. Many of the wetlands in the watershed are in relatively undeveloped or remote areas which masks the importance for wetland protection in subwatersheds where more development pressure is experienced. It will be important, as development occurs, to ensure that wetlands in smaller subwatershed are protected and continue to provide a wide range of ecological services. By maintaining this natural balance we can work with the natural system to strengthen nature's capacity to cope with change and development pressure.

Wetland Locations

Wetlands are beneficial anywhere within a watershed; however, particular ecological functions can be met by maintaining or restoring wetlands in key locations, such as:

1. Headwater areas to protect the sources of streams,
2. Groundwater recharge areas for maintaining stream flow and temperature,
3. Floodplains for flood attenuation and water storage, and
4. Shoreline areas for fish production.

Large swamps tend to have a greater variety of habitats, which in turn tends to support more wildlife species. Marshes also benefit from this effect in terms of "interspersion" or juxtaposition of different marsh communities (e.g., emergent versus submerged vegetation). Smaller marshes will be less likely to have multiple marsh communities of sufficient size for use by wildlife. However, wetlands of various sizes and types will be used by wildlife, including small wetlands used by breeding amphibians and seasonally flooded wetlands used for fish spawning.

Legislation

There is no specific wetlands legislation in Ontario or Canada. Wetlands receive indirect protection through Ontario's *Planning Act*, *Fish and Wildlife Conservation Act*, *Municipal Act*, *Endangered Species Act*, *Lakes and Rivers Improvement Act*, *Conservation Land Act*, *Conservation Authorities Act*, *Environmental Assessment Act*, and *Ontario Water Resources Act*. Wetlands are also specifically recognized in the natural heritage protection measures of Ontario's *Planning Act*. However, other legislation, such as the provincial *Tile Drainage Act*, still works against wetland conservation by permitting wetland drainage for agricultural purposes. In most cases, the installation of municipal drains significantly alters the local water cycle, resulting in dramatic changes to wetland area and function.

⁸ Base flow is the portion of streamflow that comes from groundwater and not runoff.

⁹ Muskoka Watershed Inventory

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At the federal level, the *Canada Wildlife Act*, *Fisheries Act*, *Migratory Birds Convention Act*, *Species at Risk Act*, and *Canadian Environmental Assessment Act* provide some protection to wetlands through species and habitat conservation measures.

Municipal Wetland Policy

The Official Plan of the Muskoka District Area requires that regard is given to the preservation and protection of all wetlands. Limited development, compatible with wetlands, may be permitted in wetlands where the integrity of the wetland can be preserved and the suitability of the lot is confirmed by a site evaluation report. Although this policy provides general direction to preserve and protect wetlands it does not prohibit development. Each Area Municipality has implemented this strategic policy approach through more specific policy in the local official plan.

All municipalities prohibit development within provincially significant wetlands as required by the Provincial Policy Statement. Other wetlands are provided a lesser degree of protection, which varies from municipality to municipality. Generally, a municipality will require a report, prepared by a qualified biologist that demonstrates how development can occur without a negative impact on the wetland features or functions. Again, generally, where a wetland has not been identified as being of provincial significance, some level of development is often permitted.

In most local municipalities, where there is no development application, there is currently no control over filling or altering wetland habitat. The exception would be in the waterfront area of the Townships of Seguin and Muskoka Lakes where they have adopted a tree cutting and site alteration by-law, and in the waterfront area of the Township of Lake of Bays where they have adopted a development permit by-law. The Town of Bracebridge is currently considering a tree cutting and site alteration by-law for a limited area of the municipality that would address the issue of filling in wetlands in selected areas. Other local municipalities should be encouraged to consider similar regulation in vulnerable areas of their municipality.

Conclusion

Wetlands are an important component of the Muskoka landscape. They are the kidneys of the watershed and ensure that we continue to enjoy excellent water quality. Approximately twenty-five percent of Muskoka's area is covered by wetlands and we need to remain vigilant now to prevent any significant reduction in the extent of Muskoka's wetlands that will impact on both the Muskoka lifestyle and economy.

Muskoka Watershed Council supports the protection and preservation of all wetlands and encourages agencies and organization to identify, evaluate and take protective measures to ensure the long-term health of these essential ecosystems.

Power Generation Policy Paper

EXECUTIVE SUMMARY

Mission Statement

The Mission of the Muskoka Watershed Council is “to champion watershed health”. Power generation and the resulting transmission lines can have an impact on the watershed through the potential loss of some large undisturbed natural areas and the potential impact on shorelines and fish habitat.

Muskoka Watersheds Report Card

The Muskoka Watersheds Report Card gave the protection of large natural areas a grade of ‘A’ noting that many of our large natural areas are either within one of the two large provincial parks within the watersheds or they are comprised of Crown land. It is likely that the two Provincial Parks will remain intact, however, Crown land may support generation facilities or transmission lines in the future if it is deemed to be in the best interests of the people of Ontario.

The Muskoka Watersheds Report Card gave Shoreline Habitat a grade of ‘A-’ and Fish Habitat a grade of ‘C’ noting that although most shorelines support natural vegetation, increased human activity is impacting fish habitat.

Muskoka Watershed Council’s Position on Power Generation

Muskoka Watershed Council strongly supports aggressive energy conservation programs that result in reduced carbon emissions and improved air quality. In conjunction with a conservation program, Muskoka Watershed Council supports increased efficiencies in existing facilities.

Muskoka Watershed Council supports the concept of whole life costing that ensures that the cost of hydro to the consumer reflects all the costs of the electricity including development, construction, operation and maintenance, decommissioning, and disposal of any waste product.

Where new power generation facilities are deemed necessary, it is Muskoka Watershed Council’s position that any proposal be reviewed based on the following principles:

1. Renewable energy sources are sustainable and therefore more desirable than non-renewable energy sources.
2. Small scale power generation projects are preferred over large scale power generation projects as they require a smaller footprint and minimize disruption of the natural environment
3. Decentralized power generation projects are preferred over centralized power generation projects as they minimize the requirement for new transmission lines which, in turn, minimizes habitat fragmentation.
4. Ontario should be self-sufficient in fulfilling its power needs and not rely on out-of-province sources.
5. All new projects should limit any impact on shorelines.

Power Generation Policy Paper

Background

The Policy and Research Committee of Muskoka Watershed Council has undertaken an extensive review of power generation options in order to better understand the impact of various forms of future power generation on our watersheds.

Power Generation has both positive and negative impacts for the social, economic and environmental health of Muskoka. The Ontario Power Authority predicts that there will be a 1.26% annual growth and 1.23% annual peak growth in electricity requirements between 2007 and 2027.

The Muskoka Watershed Council recognizes that additional power generation will be required in the future if we are to maintain our current standard of living and accommodate future growth. Those power needs can be met through various program options that include increased conservation, increase efficiencies in existing generation facilities, and the development of new power sources. It is likely that a combination of these components will provide the best alternative to meet the social, economic and environmental goals of watershed residents.

The Ontario Power Authority has proposed a 20 year plan that includes new and refurbished nuclear sources, oil and gas and coal gasification and new hydro installations but with minimal new power generation using renewable sources such as solar, wind, or use of waste heat recycling, cogeneration or biomass generation. Nor does the 20 year plan emphasize reduction of power use with, conservation and demand management. The proposed reliance on new, large projects will result in increased transmission requirements in addition to construction of new facilities.

The Muskoka Watershed Council has concern with the Ontario Power Authority proposal because it relies heavily on large decentralized and new sources of power generation that may result in new transmission lines through the watershed that will fragment habitat and encroach on large natural areas that provide habitat to significant species. It also removes the onus for managing future power demand from the consumer and does not encourage sustainable long-term growth and development. **Are we only concerned about transmission lines?**

Review of Alternative Scenarios

The World Wildlife Foundation-Canada and Pembina Institute report, Renewable is Doable, provides two alternate scenarios. Its "Soft Green Plan" provides for nuclear power generation from existing sources and no new nuclear power plants. The Soft Green Plan also calls for increased consumer demand management, cogeneration using combined heat and power technology, and electricity imported from other provinces and the United States. The report's "Deep Green Plan" is based primarily on consumer demand management and renewable energy sources to enable rapid phasing out of coal, gas and nuclear power sources. Both Plans suggest increased decentralized power generation, thus limiting the number of required new transmission lines. The report is comprehensive and provides cost analysis between the Ontario Power Authority proposal and the Soft and Deep Green scenarios as well as a discussion of the feasibility of each of their calculations of the potential for renewable sources.

Although the WWF/Pembina document provides insight into some alternative methods to meet Ontario's energy demands of the future, Muskoka Watershed Council is not in a position to endorse the proposed approaches without fully understanding the potential economic and social implications of each proposal.

Muskoka Watershed Council's Interest in Power Generation

Power generation and transmission has the potential to have a significant impact on the health of the watersheds of Muskoka. The key messages from the 2007 Muskoka Watersheds Report include:

- Protect shoreline vegetation
- Reduce hardened surfaces
- Protect significant wetlands

Power Generation Policy Paper

- Reduce habitat fragmentation
- Maintain large natural areas
- Remediate degraded sites
- Contain urban sprawl
- Reduce carbon emissions

Muskoka Watershed Council Policy Position

The position of the Muskoka Watershed Council on power generation is framed within the context of the findings of the 2007 Watersheds Report Card.

As the foundation of any power management program, Muskoka Watershed Council strongly supports aggressive energy conservation programs that result in reduced carbon emissions and improved air quality. Watershed Council's 2006 Report Card gave air quality in Muskoka a grade of 'C-' because of the number of poor air quality days experienced on an annual basis. Climate change is also an important concern with predictions of an increase in temperature of 2 to 4 degrees Celsius.

A second cornerstone of any power management program should include increased efficiencies in existing facilities. This approach would reduce the need for new facilities that might lead to habitat fragmentation, either by the facility itself or the need for new transmission lines.

In order to encourage the development of both conservation programs and programs to increase the efficiency of existing plants, Muskoka Watershed Council supports the concept of whole life costing that ensure that the cost of hydro to the consumer reflects all the costs of electricity including development, construction, operation and maintenance, decommissioning, and disposal of any waste product.

Construction of any form of power generation has unique strengths and weaknesses (see appendix A). As such, Muskoka Watershed Council does not support or reject any specific form of power generation but rather has developed a set of guiding principles with which specific applications can be reviewed for their impact on the watershed.

Where new power generation facilities are deemed necessary, it is Watershed Council's position that any new proposal be reviewed based on the following principles:

1. Renewable energy sources are sustainable and therefore more desirable than non-renewable energy sources.
2. Small scale power generation projects are preferred over large scale power generation projects as they require a smaller footprint and minimize disruption of the natural environment.
3. Decentralized power generation projects are preferred over centralized power generation projects as they minimize the requirement for new transmission lines which, in turn, minimizes habitat fragmentation.
4. Ontario should be self-sufficient in fulfilling its power needs and not rely on out-of-province sources.
5. All new projects should limit any impact on wetlands, fish habitat, shorelines and large natural areas.



To: Chair and Members, Policy & Research Committee
Re: Nuclear Waste, Siting Process – For Discussion
From: Ian Turnbull
Date: October 10, 2008

Recommendation

None – for discussion.

Background

2002 The Nuclear Fuel Waste Act of the Government of Canada came into force. Among other things, it requires the nuclear industry to set up a waste management organization to manage long-term waste management activities.

The nuclear industry formed the Nuclear Waste Management Organization (NWMO). Canada's major nuclear fuel waste owners are Ontario Power Generation, Hydro-Quebec and NBPower.

2005 NWMO completed its first mandate and submitted to the federal government its study on options for long term management of nuclear waste.

2007 The federal government supported NWMO's recommendation for an ultimate goal of centralized containment and isolation of used nuclear fuel in a deep geological repository in the Canadian Shield.

2008 From September to December, the NWMO invites input to the design of a siting process.

2009 NWMO will publish in the spring a draft Siting Process Plan for wide consultation.

2010 The siting process will be launched. The earliest possible date for deep geological repository operation is likely in the late 2030's.

Origin and Key Points

1. NWMO now invites input to design of a siting process relative to questions including:

- Does the framework of stated objectives, ethical principles and requirements provide a sound foundation for designing a site selection process?
- How can the process be fair?
- From what models and experience should information be drawn?
- Who should be involved in selecting a site?

2. The issue

- Nuclear energy produces 15% of Canada's electricity: Ontario 50%; New Brunswick 30%; Quebec 3%
- Used nuclear fuel is highly radioactive and must be contained and isolated from humans and the environment indefinitely
- Since the beginning of its nuclear energy program, Canada has accumulated about 2 million used fuel bundles; stacked tightly it would fill 6 hockey rinks from the ice to the top of the boards
- If current reactors operate on average 40 years, they will produce 3.6 million used fuel bundles
- Like most countries, Canada has not yet adopted a long-term nuclear waste management program
- Other countries plan to have deep geological repository operation
 - i. China by 2050; Finland by 2020; France by 2025;
 - ii. Germany by 2030; Japan by 2035; Sweden by 2020;
 - iii. Switzerland by 2040; USA by 2021

3. No particular sites are being considered. NWMO has committed to siting its facilities in a willing host community. There is no specific timetable for selecting a site. The Siting Process Plan will be released in 2009.

4. Over the next 30 – 100 years, the key activities of the NWMO will be the identification of a central site in a willing community, construction of the surface and underground facilities, transport of nuclear waste to the central facility and placement of fuel in the facility.

5. Selected site considerations

- Nuclear waste will be transported by road, rail and/or water
- Security would comprise trained on-site response force; arrangements with an off-site local, provincial or federal force
- Site would be continuously illuminated
- The site will occupy a space of about 2 kilometres by 3 kilometres. Underground, the repository will be about 1.8 square kilometres in area. It will consist of a network of horizontal tunnels and rooms excavated in stable rock at a depth of approximately 500 to 1,000 metres.

6. Climate change

- The range of impacts from global warming to glaciation must be factored into long-term management of nuclear waste

- NWMO notes that
 - i. In the forestry sector, drier conditions will create more droughts increasing the probability of forest fires
 - ii. In coastal communities sea level rise may increase flooding
 - iii. For communities dependent on natural resources or tourism, a changing climate may threaten economic sustainability
 - iv. The effects of glaciation decrease with depth of the repository; main potential effects are stresses on used fuel containers, earth quakes, and changes in ground water flow
7. The hazard
- Used nuclear fuel has an inherent radiological hazard to humans and the ecosystem if it enters the environment; the main potential pathways for exposure are through groundwater flow and entry into the food chain.
8. The sources of nuclear waste
- Used fuel is currently stored at sites where it is produced
 - Muskoka is located approximately in the centre of those sites

Discussion

1. Participation in design of the site selection process appears to be beyond MWC operating criteria and expertise. No action is recommended.
2. Reviewing the key points above, Muskoka could be considered an appropriate location for a deep geological repository:
 - Muskoka is located on the Canadian Shield in a location central to the generation of nuclear waste in Canada
 - Muskoka is well served by road and rail transport; transport by ship to Parry Sound could link to Muskoka by road or rail
 - The impact of climate change on Muskoka will likely be less severe than in other areas of Canada
 - In 2007, the District Municipality of Muskoka advised the federal government that it did not want a nuclear waste facility located in Muskoka
3. Relative to MWC operating criteria, siting a nuclear waste facility in Muskoka would have potential negative impact
 - Escape of nuclear waste could damage human and watershed health
 - Building a nuclear waste facility would further fragment the watershed and reduce potential for large natural areas
 - Nuclear waste storage initiatives may impact negatively on ecotourism, an economic strategy supported by MWC
 - Nuclear waste storage does not suit the 'promote clean industry' economic strategy supported by MWC

4. The NWMO makes clear that a deep geological repository site will be located within a willing community. Muskoka's local government has made clear that is not a willing community.
5. If MWC chooses to comment to NWMO, the time is not now. It may be appropriate to monitor the process until the host community is identified.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'J. R. R.', written in a cursive style.

Note: The factual information in this report was drawn from the NWMO web site at <http://www.nwmo.ca>