Muskoka
WATERSHED COUNCIL

STORMWATER MANAGEMENT POSITION PAPER

Water bodies in Muskoka are recreational resources, primary sources of drinking water for public and private systems, home to fish and aquatic populations and the centerpiece of an environment that attracts both permanent and seasonal residents and visitors. The economy of the region is heavily dependent upon excellent water quality.

While water quality in Muskoka is generally good, it is the position of the Muskoka Watershed Council that poorly managed stormwater is a contributing factor to the degradation of water quality.

It is the position of Muskoka Watershed Council that stormwater runoff entering our lakes, rivers and streams should carry no pollutants other than would have been conveyed through direct precipitation, and that there should be no increase in stormwater quantity or rate of flow caused by human development.

The Council believes that this objective will only be achieved through strategies, action plans and programs that clearly define the roles and responsibilities of municipal and provincial governments, as well as private individuals and organizations, in stormwater issues. It is only through clear direction that the contamination of our watercourses can be avoided, and human health, wildlife and recreational uses can be protected.

The Muskoka Watershed Council recommends:

1. Development and implementation of comprehensive Stormwater Management Strategies which incorporate:
    a. Municipal approaches that address both quality and quantity of stormwater runoff for new development and for redevelopment of existing sites including, but not limited to, commercial, industrial, residential subdivision, resorts, golf courses and recreational trails;
    b. Corporate co-operation to address litter control and parking lot design and maintenance; and
    c. Public education campaigns in conjunction with stakeholder organizations to address the harmfulness of polluted stormwater runoff to our water bodies.
2. Monitoring and enforcement of Stormwater Management Plans and relevant site plan requirements on an ongoing basis.
3. Promotion of the development of Environmental Farming Plans outlining control of agricultural operations including, but not limited to, restrictions on livestock watering and field fertilizing in proximity to surface water sources and requiring undisturbed vegetative buffers between agricultural operations and watercourses.
4. Provision of incentives for demonstration projects to improve stormwater management practices and to encourage private and commercial property owners to upgrade stormwater controls.
5. Promotion of the importance of wetlands and of vegetative buffers adjacent to watercourses to filter stormwater flowing into water bodies, as well as the maintenance of free water flow in watercourses so that stormwater runoff may be accommodated. This may involve the trimming of invasive overgrowth such as ‘tag alders’.
6. Promotion of leadership by municipal councils and staff through demonstrations of the highest level of stormwater quality and quantity controls in construction and maintenance projects on municipal roads, bridges and properties.

The recommendations of Muskoka Watershed Council are based on a detailed review of literature[1] and local pilot projects undertaken in the summer of 2006[2,3].

The Muskoka Watershed Council is concerned about the impact of stormwater from both urban and urbanizing areas on these water bodies. In the summer of 2004, the Council undertook preliminary monitoring of two areas:

- Muskoka River as it flows through the Town of Bracebridge; and
- The flow of water from a series of commercial parking lots in Huntsville into Fairy Lake.

Muskoka Watershed Council volunteers collected stormwater samples in both locations under the supervision of scientists from Gartner Lee Limited. Samples were submitted to an accredited lab and tested for several basic parameters. In both locations, sampling results indicated elevated levels of Total Suspended Solids (TSS) and turbidity. Total Suspended Solids is an important indicator of surface water pollution from runoff as nutrients and bacteria attach themselves to the solids and wash into streams and rivers as stormwater moves over the landscape.

In 2006, The Muskoka Watershed Council obtained funding support from the District Municipality of Muskoka, the Towns Bracebridge and Huntsville, and Red Leaves Development in the Township of Muskoka Lakes to undertake a summer project to further research the impact of urban stormwater and understand the extent of the need for ongoing review and improvement in stormwater management in Muskoka. The Pilot Project consisted of two Case Studies.

- Case Study 1: A review of runoff from a series of parking lots in the urban area of Huntsville; and
- Case Study 2: A review of the Beaver Creek subwatershed as it flows through the Town of Bracebridge and Township of Muskoka Lakes.

The results of this research indicated that:

- Stormwater runoff from urban areas can carry:
    - Sediment and particulates from construction, winter road sanding, vehicle emissions;
    - Chemicals from de-icing materials (chloride, sodium, calcium, cyanide);
    - Hydrocarbons from vehicle emissions, spills, leaks, etc;
    - Nutrients and pathogens from poor housekeeping practices; and
    - PCBs, etc.

- Stormwater runoff from rural areas can carry:
    - Sand and clay from stream bank erosion caused by agricultural livestock, poorly designed recreational trails, and high volumes of stormwater; and
    - Nutrients from agricultural operations, golf courses and residential properties, etc.

- In both urban and rural areas, stormwater can also lead to significant erosion and loss of habitat.

Sampling undertaken as part of the pilot projects in Bracebridge and Huntsville demonstrated that stormwater in both locations carried many of these toxins into local recreational water bodies and resulted in significant erosion issues.

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[1] **Urban Runoff Management: Background Report.** Prepared by Luke Paddle for the Muskoka Watershed Council Policy & Research Committee, September 2006.

[2] **Urban Runoff Management Case Study: Huntsville's Commercial Development in a Sensitive Receiving Environment.** Prepared by Luke Paddle for the Muskoka Watershed Council Policy & Research Committee, September 2006.

[3] **Beaver Creek Subwatershed Stormwater Study.** Prepared by Rochelle Rumney for the Muskoka Watershed Council Policy & Research Committee, September 2006.

While many preventative and remedial means were identified, it was also noted that this problem could not be remediated through legislation alone. Individual property owners, the corporate community, and all levels of government must work together to develop programs and stewardship activities in order to develop workable solutions. In all cases, municipal and provincial legislation must be designed to ensure that good stormwater management practices are required and enforced and that governments are encouraged to lead by example.

A wide variety of measures to prevent or remediate contamination of water bodies by stormwater runoff are available, ranging from

- Local litter clean-up events;
- Vegetative buffers along the shores of watercourses;
- Catch basins with oil and grease traps, and traps for litter and course debris;
- Dry detention ponds;
- Green roofs; and
- Constructed wetlands.

There are many options for individuals, organizations, corporations and governments to address the protection of our watershed from stormwater degradation.

Additional Sources of Information

Stormwater Management Planning and Design Manual. Ontario Ministry of the Environment, March 2003. Available at www.ene.gov.on.ca/envision/gp/4329eindex.htm.

Stormwater Management for a Single Lot. District Municipality of Muskoka, 2004. Available at www.muskoka.on.ca/planningeconomic/brochure-stormwatermgmt.pdf.