

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Philip Townsend, Director, Infrastructure and Asset Management

DATE: May 13, 2010

SUBJECT: Residential Stormwater Management

INFORMATION REPORT

ORIGIN

This report originates from staff.

BACKGROUND

Common stormwater management problems include increased volume and velocity of watercourses in developed areas, decreased base flows in receiving waters, and contaminants being carried into watercourses.

Stormwater impacts have included loading of toxic substances such as heavy metals and hydrocarbons, increased nutrient loading from fertilizers and organic debris, increased levels of bacteria from animal waste, increased sedimentation, increased salinity from road salt, lower levels of dissolved oxygen, increased stream temperature and reduced biodiversity.

A major stakeholder that contributes to and experiences the results of stormwater impacts are HRM residents living near our many lakes. This report is intended to overview the impacts that a household may have on the lakes in their watershed, resulting from stormwater run off and the measure available to mitigate these.

Halifax Water and Halifax Regional Municipality (HRM) Sustainable Environment Management Office (SEMO) staff, are collaborating on enhanced public education around homeowner stormwater management.

DISCUSSION

Many lakes in Halifax Regional Municipality comprise part of the Stormwater Management Infrastructure. While these lakes are naturally existing waterbodies, many are receptors of input from the stormwater and municipal infrastructure. Stormwater drains from streets and roads through pipes and ditches directly into the lakes in our respective watersheds. In addition to being discharged into lakes, stormwater run off is discharged into rivers and brooks.

As stormwater flows over driveways, lawns and sidewalks, it picks up debris, chemicals, dirt and other pollutants. Stormwater can flow directly into a storm sewer or directly into a lake, stream, river, or coastal water. Anything that enters a storm drain enters the waterbody untreated. We may use that water body (lake, river, etc.,) for swimming, fishing, or even providing drinking water. Polluted run off is a great threat to clean water.



While the public should expect impacts to lakes following heavy rain events or dry periods, the ecological health of the lake can be protected through a number of common sense household actions.

The Pollution Prevention team from Halifax Water prepared the attached message which was then endorsed by Dr. Robert Strang, Chief Medical Officer, for public information:

<http://www.halifax.ca/pollutionprevention/StormwaterandYourHealth.html>

By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automobile fluids off the ground and out of stormwater.

The attached Environmental Protection Agency pamphlet (Attachment One) provides a listing of things that homeowners can consider. In addition, the Pollution Prevention Office (Halifax Water, formerly with HRM) provides education materials at:

<http://www.halifax.ca/pollutionprevention/index.html>

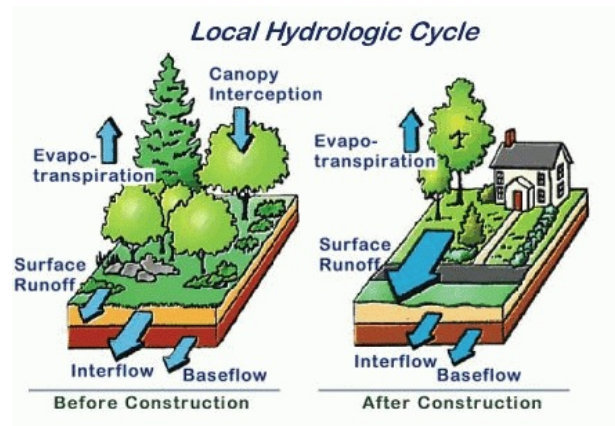
There are a couple of major focus points that HRM and Halifax Water will focus on with residents:

1. Pet Waste: Not only is it important to pick up after a pet, but proper disposal is important. Very often negative lake results are discovered to be caused by pet waste baggies thrown into catch basins.

2. Usage of fertilizers, particularly on lake bordering properties: Fertilizer does help lawns grow, but by getting into the stormwater it grows algae and lake organic matter, causing negative lake results.



Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?



3. Vegetative retention of stormwater on homeowner property: By incorporating vegetative buffers, keeping trees, and other landscaping solutions such as rain gardens, stormwater runoff from private property into the lake is reduced. This also includes green roofs and having adequate soil depth on any lawns. Staff will be responding to a recent Council request for an update on soil depth standards in a separate staff report. Having good soil depth not only improves water retention properties, but also makes a much healthier lawn which minimizes the need to weed or control pests.

When it comes to residential stormwater management, the landscaping industry is a largely untapped potential source of expertise. The installation of rain gardens, sound landscaping practices, and incorporation of green roofs, can greatly reduce the financial and economic impacts of the increased pressure for stormwater infrastructure. HRM enjoys a tremendous amount of landscaping expertise, both internally and through the many members of Landscape Nova Scotia (www.landscapenovascotia.ca).

Other residential impacts that residents can take actions towards mitigating stormwater run off include: littering, disposal of trash, washing cars on driveways, washing down driveways, changing motor oil in driveways, illegal disposal of waste paint, solvents and other household chemicals. Residents are able to report infractions by calling the HRM customer service phone number at 490-4000.

Aside from residential impacts, there are numerous other impacts that other stakeholders, including developers, the municipality, and other government bodies, need to mitigate. These include: road salt and sanding, road resurfacing operations, run off from construction and development activity, illegal discharges, accidental spills, as well as management of wild animals which may live near or on lakes which can contribute to physical, chemical and bacterial impacts. Protection of our water resources is a multi stakeholder responsibility, which we all must and do take seriously.

This public education effort, and community actions related to homeowner stormwater management, will help protect the environment and reduce increasing infrastructure pressures. These efforts to promote residential stormwater management activities makes sense through the economic,

environmental, and social lense of sustainability. Residential Stormwater efforts reduce infrastructure pressures and promote economic development in the landscaping industry. It reduces the ecological impacts and decline of lake water quality. It also promotes the intent to maintain lake water quality to a body contact standard.

BUDGET IMPLICATIONS

Funds for Public Education for Pollution Prevention/Stormwater Management in 2010/ 2011 are identified in D948 (the operating account that Sustainable Communities Reserve funds are directed towards).

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ATTACHMENTS

Attachment One: EPA brochure

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.



By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.
- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up **spilled fluids** with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- Recycle used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.



Lawn and Garden

- Use pesticides and fertilizers **sparingly**. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select **native** plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- **Sweep up** yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the **cool** times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate** bare spots in your yard to prevent soil erosion.

Home Repair and Improvement

- Before beginning an outdoor project, locate the nearest storm drains and **protect** them from debris and other materials.
- **Sweep up** and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the **smallest amounts possible**, and follow the directions on the label. Clean up spills **immediately**, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic, biodegradable, recycled, and recyclable** products whenever possible.
- **Clean** paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- **Reduce** the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.



Pet Care

- When walking your pet, remember to **pick up** the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Swimming Pool and Spa

- Drain your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the **sanitary** sewer system.
- Properly store pool and spa chemicals to **prevent** leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Septic System Use and Maintenance

- Have your septic system **inspected** by a professional at least every 3 years, and have the septic tank **pumped** as necessary (usually every 3 to 5 years).
- Care for the septic system drainfield by **not** driving or parking vehicles on it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, oil, and antifreeze can **destroy** the biological treatment taking place in the system. Other items, such as diapers, paper towels, and cat litter, can **clog** the septic system and potentially damage components.

Storm drains connect to waterbodies!

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For more information, visit
www.epa.gov/npdes/stormwater
or
www.epa.gov/nps

Remember: Only rain down the drain!



Make your home
The
SOLUTION
TO STORMWATER
POLLUTION!

A homeowner's guide to healthy
habits for clean water

