# Ramsey Lake Subwatershed Study And Master Plan

## Public Information Centre #3

November 1, 2017

Greater Grand Sudbury
www.greatersudbury.ca

Aquafor Beech Limited

# Objective of Public Information Centre #3

## Tonight's Public Information Centre (PIC) will:

- Introduce the study area
- Provide an overview of the Subwatershed Study purpose and objectives
- Review the Subwatershed Study process
- Present an overview of the evaluation process
- Provide a list of alternatives to be considered in the Subwatershed Master Plan
- Introduce the Ramsey Lake Water Quality Model
- Provide an opportunity for the public to review the work completed to date as well as upcoming work
- Allow the public to provide input to the study, and to discuss questions and issues with staff


# Subwatershed Study/Environmental Assessment Process

The Subwatershed Study is being conducted as a Master Plan and is intended to satisfy Phases 1 and 2 of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment Act (Class EA) process. This will involve a process of problem/opportunity identification, evaluation of alternative solutions, and selection of a preferred solution.

**We are here**

Stakeholder consultation is an important part of the EA process and a key component of the study.

Consultation with Stakeholders, the Public, and Agencies

**PIC #1** ↔ **Inventory existing environmental conditions** — Subwatershed Study Stage 1

**PIC #2** ↔ **Identification of environmental constraints & opportunities**

**Impact analysis for future landuses and climate change**

**Problem/opportunity identification** — Subwatershed Study Stage 2

**EA Phase 1**

**Set goals/objectives/targets**

**PIC #3** ↔ **Develop alternative subwatershed management strategies**

**Evaluate alternative subwatershed management strategies** — Subwatershed Study Stage 3

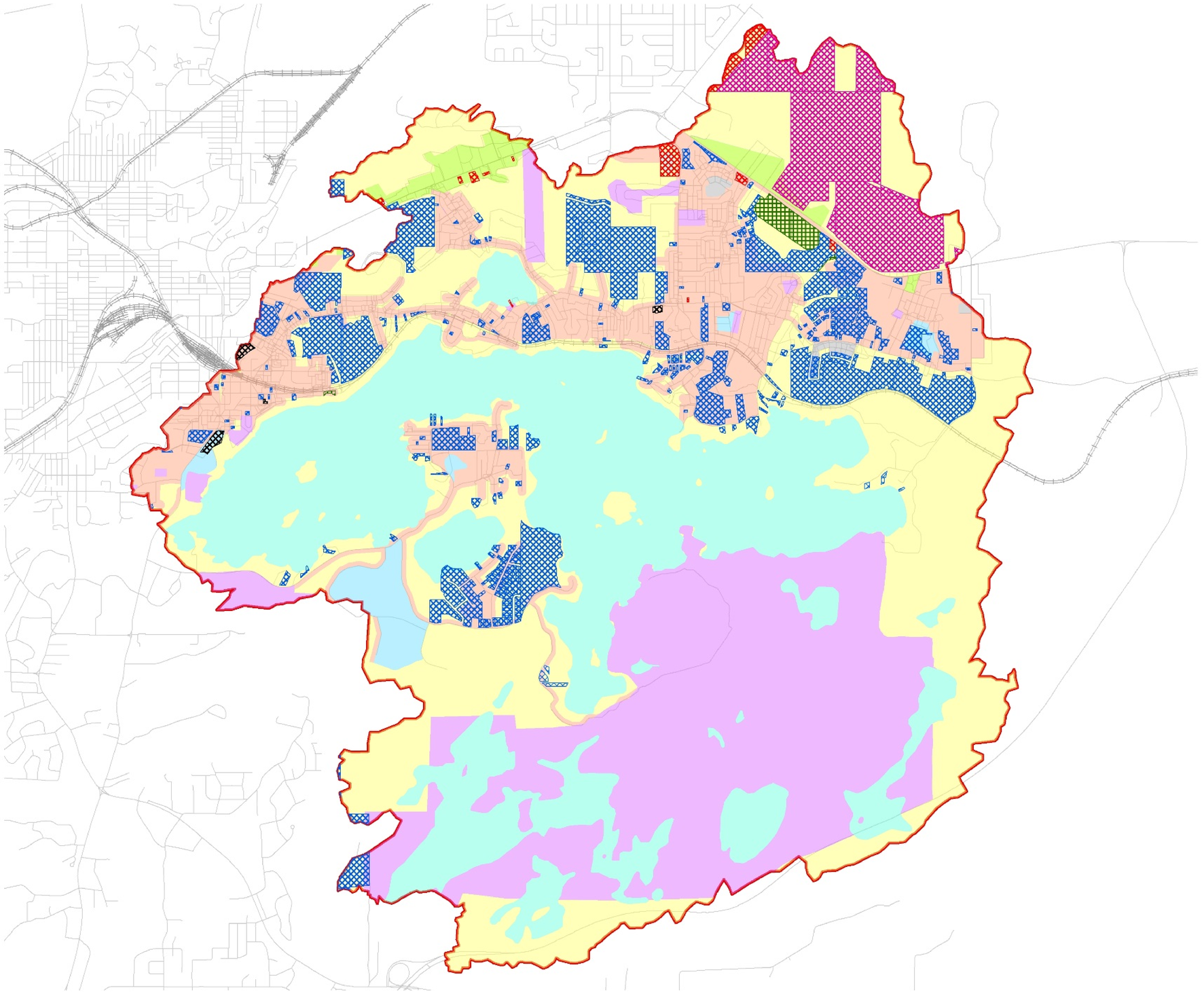
**PIC #4** ↔ **Select preferred subwatershed management strategy**

**Develop implementation/monitoring plans** — Subwatershed Study Stage 4

**PIC #5** ↔ **Finalize subwatershed plan** — Subwatershed Study Stage 5

**EA Phase 2**

# Land Use



## Ramsey Lake Subwatershed Study

### Legend

**Proposed Land use**

- General Industrial
- Institutional
- Living Area 1
- Living Area 2
- Mixed Use Commercial
- Parks & Open Space

**Existing Land Use**

- Commercial
- Government and Institutional
- Open Area
- Parks and Recreational
- Residential
- Resource and Industrial
- Waterbody
- Subcatchments
- Study Area
- Road_Network
- Railways

Landuse - Development

0 0.250.5 1 1.5

Kilometers

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# Summary of Existing Conditions

## Erosion:

- One high priority erosion site

## Hydraulics:

- 15 buildings are located within the floodplain

## Hydrogeology:

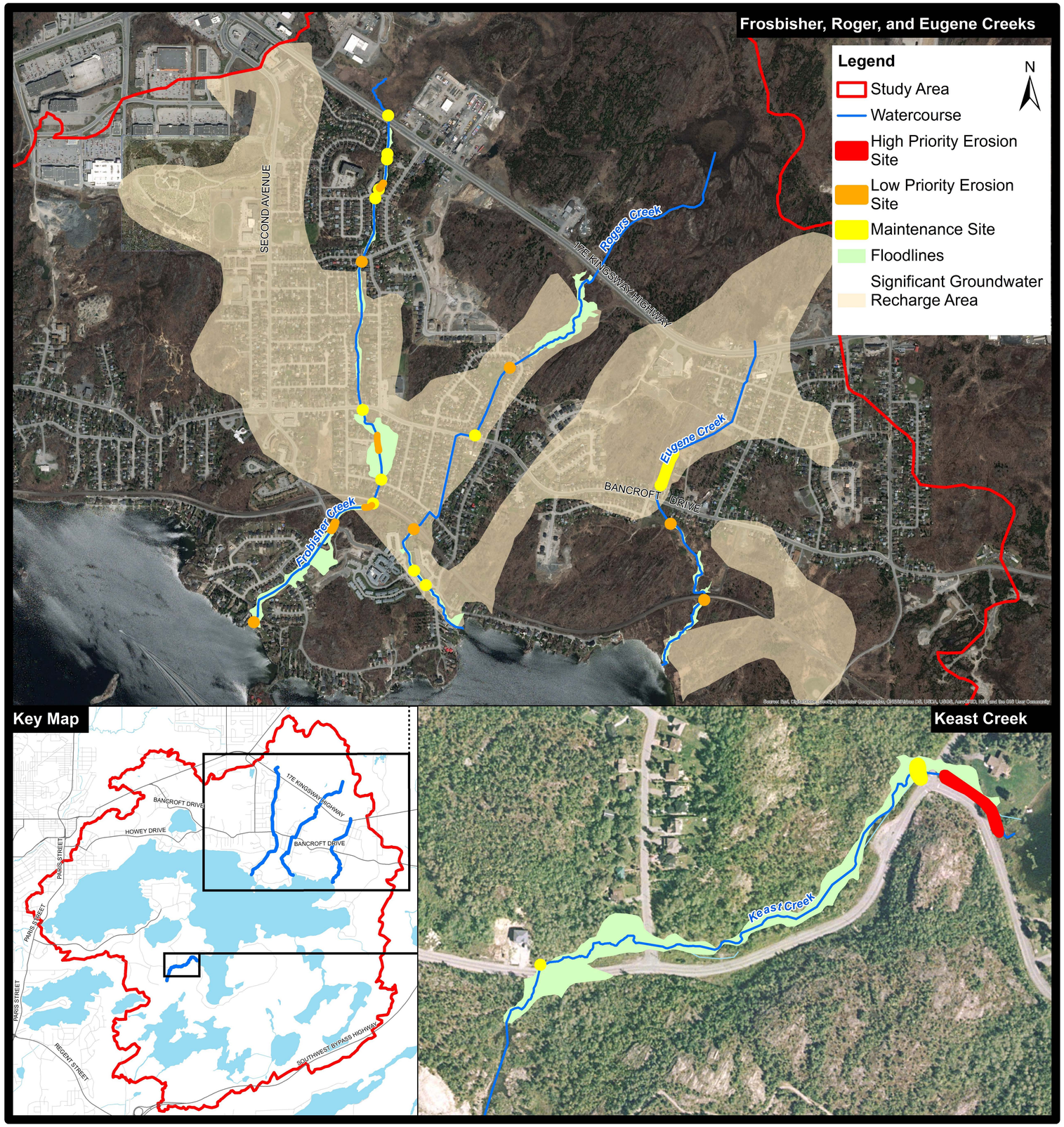
- Primarily bedrock system with local pockets of sand gravel

## Water Quality

- Sodium and chloride concentrations have increased but are within accepted limits
- Phosphorus levels varied over time and are within accepted limits

## Aquatic Resources

- Development along shoreline with extensive altering of natural habitat
- Locations of extensive aquatic vegetation growth in shallow waters



# Goal, Objectives & Targets

**Provided below are definitions for goals, objectives and targets. Goals, objectives and targets will be developed for the Ramsey Lake Subwatershed and will be used together with the Evaluation Criteria to evaluate the Alternatives.**

**Goals:** Environmental goals are broad aims associated with the conservation or restoration of natural features and processes within the study area.

**Objectives:** Environmental objectives describe how an environmental goal can be achieved. Objectives often relate to specific technical principles. Objectives can be specific to geographical areas within your municipality or can be municipality-wide.

**Indicators:** Indicators are pieces of information that describe the current condition of the ecosystem or one of its components.

**Targets:** Targets are specific aims that are associated with measurable parameters. Targets are needed to evaluate how successful alternatives are in achieving stated objectives. Targets can range from short-term to long-term depending on level of effort required and the response rate of the environment.

# Approach for Evaluations Alternatives

An *Alternative* is a measure, or series of measures, which, when implemented, will protect, enhance or restore the environmental resources.

The approach used for evaluating alternatives will be similar for lands which are already developed or will remain undeveloped (termed *Existing Lands*), and for lands which are proposed for development (termed *Proposed Development Lands*).

The Environment Assessment process will be used to assess Alternatives for Existing Lands while Municipal, Conservation Authority, Provincial, and Federal policies, regulations, and acts will be used to assess Alternatives for Proposed Development Lands. Provided below is a summary of Environmental Assessment Approach.

## Environmental Assessment Approach

- Develop a long list of alternatives
- Establish a set of evaluation criteria
- Evaluate the alternatives
- Select the preferred solution(s)

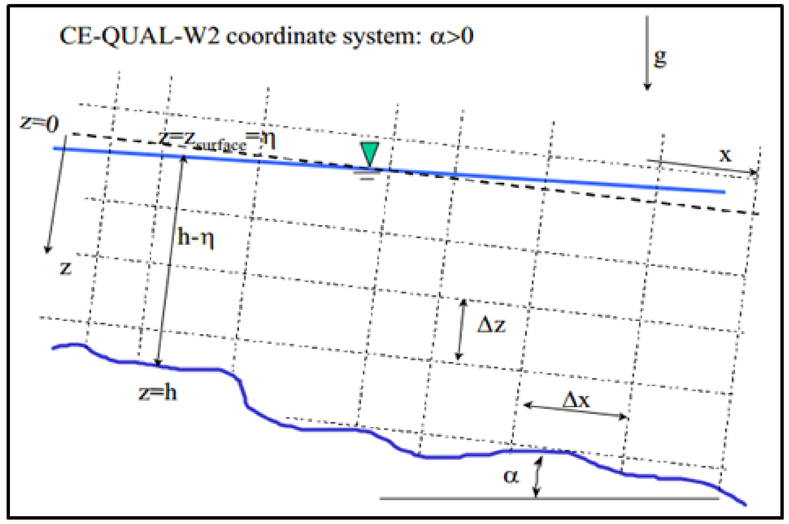
## Planning Approach

- Review appropriate Municipal, Conservation Authority, Provincial, and Federal policy, regulations, and acts
- Define appropriate policy, regulations, and acts
- Develop a framework for ensuring Proposed Development is consistent with policy, regulations, and acts

# Ramsey Lake Water Quality Model

**A water quality model is being developed for Ramsey Lake. The objective of this model together with the other models that are being used are to:**

- Develop a hydrodynamic and water quality model for Ramsey Lake
- Define existing water quality conditions within Ramsey Lake
- Use the model to assess the effectiveness of various alternatives with respect to water quality improvement




# Alternatives – Proposed Development

## The impacts associated with proposed development typically include:

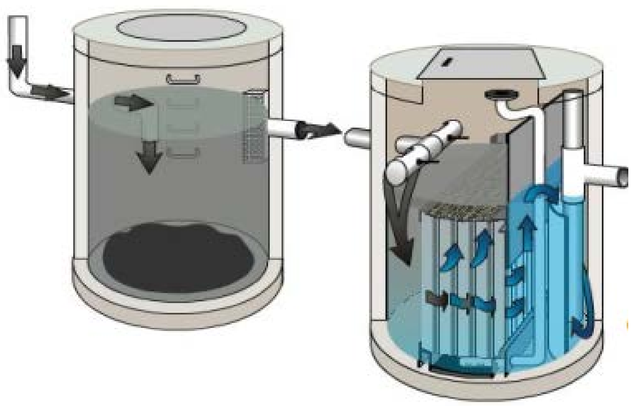
- Increased runoff volumes
- Increased flood flows
- Decreased water quality
- Lower groundwater recharge
- Potential decreased baseflow
- Negative impacts to downstream fisheries

The City of Sudbury, together with Conservation Sudbury (CA) , Ministry of Environment and Climate Change (MOECC), Ministry of Natural Resources and Forestry (MNRF), and Fisheries and Oceans Canada (DFO), have a series of standards which, collectively, are designed to protect the environment as development proceeds. The following board illustrates typical alternatives that are implemented as part of the development of a site. The alternatives generally fall under the categories of source, conveyance and end-of-pipe, and restoration measures.

# Stormwater Management (SWM) Alternatives

## Traditional Source Control Measures

These measures are typically used within high-density forms of development such as commercial or industrial landuses. Rooftops, parking lots, or oversized storm sewers can be used to temporarily store rainfall from large storm events, while oil-grit separator devices can improve water quality.



## Low Impact Development (LID) Source Control Measures

This option involves addressing SWM using lot level controls/source controls that encourage the infiltration of water into the ground and reduce stormwater runoff. These systems would be integrated into the design of further urban developments and can include green roofs, permeable pavement, soakaway pits, bioretention, downspout disconnection etc.

# Stormwater Management (SWM) Alternatives

## Conveyance Control Measures

These controls are linear stormwater transport systems that are generally located within the road right-of-way where they encourage infiltration of water into the ground, improve water quality and reduce runoff. They can include traditional curb and gutter systems, bio-swales, grassed channels and subsurface perforated pipe systems.




## End-of-Pipe Control Measures

This option involves addressing SWM using conventional stormwater facilities at the end of the flow conveyance system. These facilities are utilized for erosion, water quantity and quality control applications.



## Restoration Measures

This option involves the replanting of floodplain and native stream side vegetation to improve stream corridor functions and water quality, slowing runoff, moderating stream temperatures, reducing erosion and improving aquatic and terrestrial habitat conditions.



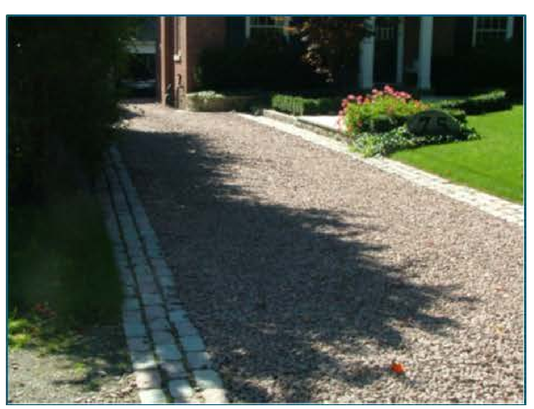

# Alternatives – Existing Lands

The objective for selecting and implementing alternatives on existing lands is to enhance or restore existing environmental conditions. The alternatives will be similar to those as described for proposed lands.
The alternatives, as illustrated below, may be implemented by the City, CA, local stewardship groups, businesses or homeowners. The alternatives have been broadly classified as source, conveyance, end-of-pipe, and restoration measures.

## Source Control Measures

Homeowners, together with business, can implement measures which are both aesthetically pleasing and assist in cleaning, cooling, and reducing the rate of runoff from their property.





## Conveyance Control Measures

There are several local streets within the Ramsey Lake watershed which are serviced by ditches. As shown below, Low Impact Development measures can be incorporated into the design when the roads are reconstructed.

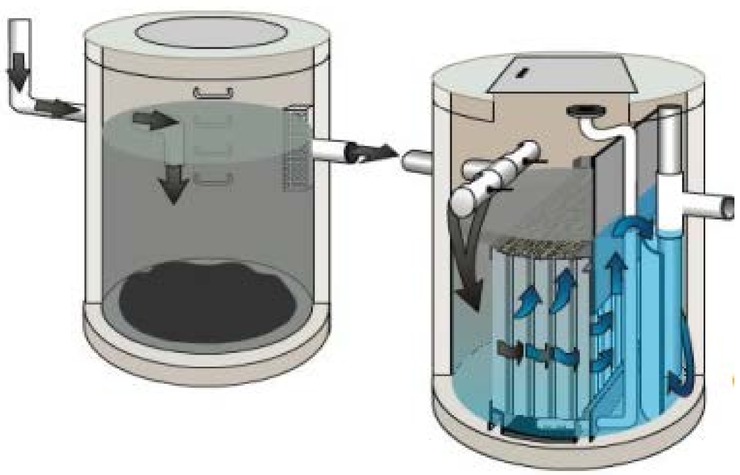
Victor Street


Example of a local street where runoff from the road is directed to bioswales, which assist in cleaning, cooling, and infiltrating runoff prior to discharge to the stream.

# Alternatives – Existing Lands

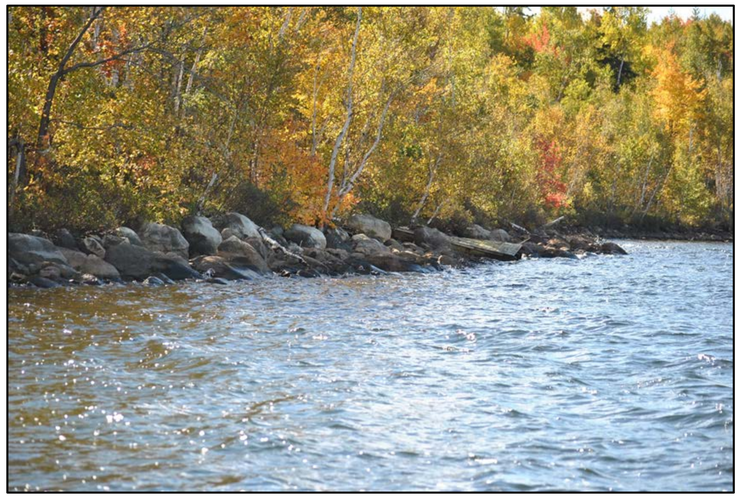
## End-of-pipe Measures

There may be opportunities within the existing lands to implement measures such as Oil-Grit separators or stormwater ponds. These facilities would treat water prior to discharge to the local stream or Ramsey Lake.



## Restoration Measures

Development along the shoreline is extensive. In some locations the has been altered, thereby impacting aquatic habitat conditions. Restoration of the shoreline to provide conditions more suitable to aquatic habitat can be undertaken.



# How You Can Help

We look forward to working through the Ramsey Lake Subwatershed study with residents and stakeholders. If you wish to participate, please complete our sign-in sheet at the entrance and we will send you updates on study progress and opportunities to participate.

For this stage of the study to introduce the Alternatives and Evaluation Approach for the Ramsey Lake Subwatershed, we wanted to introduce the study and share our preliminary findings with you. We are interested to hear from you on observations and input regarding additional issue, opportunity (for enhanced of ecosystem health) and constraint (sensitive to disruption) areas within the Ramsey Lake subwatershed.

To share you observations and ideas, or to obtain further information, please:

- Speak to any of our representatives present tonight; they will be pleased to help you
- Complete our feedback survey on paper (available at the registration desk), or online at: http://www.greatersudbury.ca/living/lakes-facts/watershed-study-2016/
- Contact the study project managers at any time:


**Paul Javor**, MASc, P.Eng.
City of Greater Sudbury
Phone: 705-674-4455 ext. 3691
Fax: 705-560-6109
Email: Paul.Javor@greatersudbury.ca

**Dave Maunder**, P.Eng.
Aquafor Beech Limited
Phone: 905-629-0099 ext. 290
Fax: 905-629-0089
Email: maunder.d@aquaforbeech.com


*The display boards from tonight's meeting are available online at the City website noted above.*