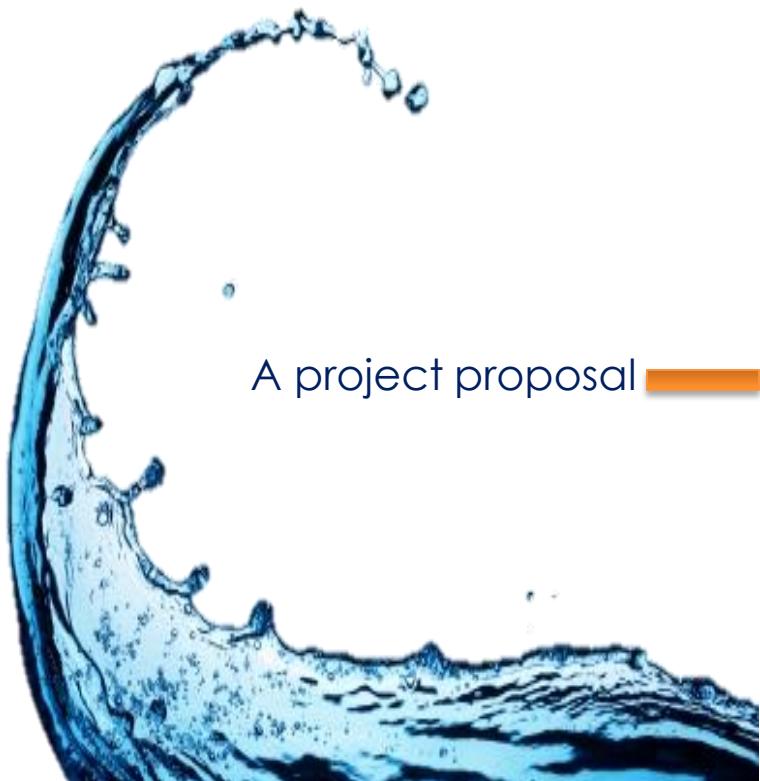
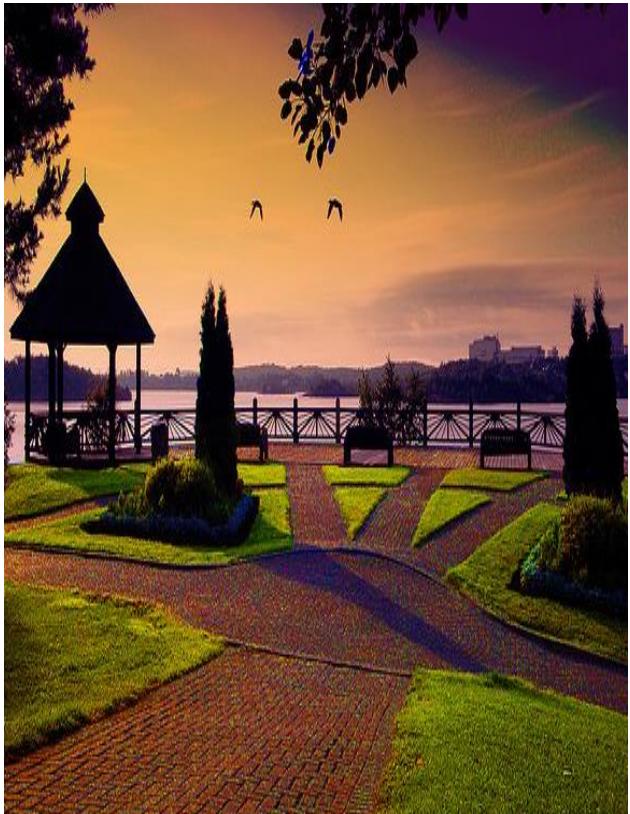




# EOS Action Plan: Ramsey Revival



A project proposal



# Table of Contents

<u>The Proposal</u>	2
<b><u>Part One: Act</u></b>	3
<u>    EOS in Action</u>	4
<u>    Active Partnerships</u>	5
<u>    Identifying the need for action</u>	6 - 7
<b><u>Part Two: Educate</u></b>	8
<u>    Education Strategies</u>	9
<b><u>Part Three: Expand</u></b>	10
<u>Dollars and Sense: Innovative funding</u>	11
<u>References</u>	12

# The Proposal

**The EOS Action Plan for Ramsey Revival** is a proposed 3 part project that will pair innovative technology, community education, and long-term thinking to achieve healthier lakes and communities. Specifically, it is proposed that - through a unique partnership between active citizens, Science North and WCI Environmental Solutions - the health of Ramsey Lake be improved and sustained and subsequently influence the health of other lakes and communities.

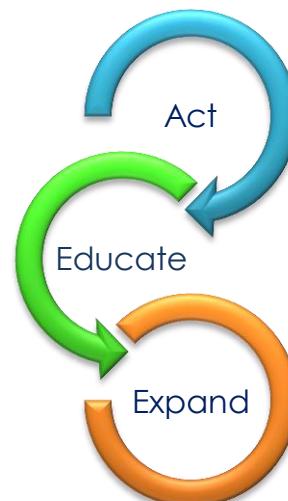
## **Pairing innovative technology, proactive education and long term thinking to revive our lakes.**

**1** This project's primary goal is to improve the quality of water in Lake Ramsey. In harmony with other greening initiatives the application of the EOS-2000 unit will achieve improved water quality by improving levels of aerobic activity and thereby increasing the lake's ability to self-cleanse.

**2** The second tier of the action plan involves educating the community about the importance of lake stewardship,

relevant environmental issues and instilling a sense of pride and responsibility in the people and businesses in Greater Sudbury, a region of 300 + lakes. This will be achieved by the implementation of an active communication campaign, educational activities and workshops and a proposed interactive exhibit at Science North.

**3** Finally, part 3 will place emphasis on setting a broader example of the partnerships, alternative technologies, and education-for-sustainability initiative employed in the EOS Action Plan. Positioning Science North and Sudbury as trend setters in sustainability.





Taking action

# Part One: Act

## EOS in Action

Part one of the Ramsey Revival Project will be to take physical **action** and improve the quality of the lake's water. The installation of the EOS-2000, a sustainable, innovative and cost-effective approach to water remediation will achieve this first step.



## The EOS-2000 has received certified Approval from the Ministry of Environment

## Simple Science

WCI's EOS-2000 System provides benefits to improve water eco systems including increasing the oxygen throughout the water body. With increased oxygen, aerobic conditions prevail and clean the water via various chemical, biochemical and biological pathways, along with boosting the natural cleansing mechanisms of a water body.

## Innovative Technology

Unlike traditional methods of water remediation, which often involve chemicals, mechanical aeration, or highly disruptive methods such as dredging, the EOS approach is low impact, chemical free and sustainably operated.

The EOS-2000 has proven success in the remediation of:

- ✓ Lakes & ponds
- ✓ Waste water lagoons
- ✓ Storm water ponds
- ✓ Water reservoirs



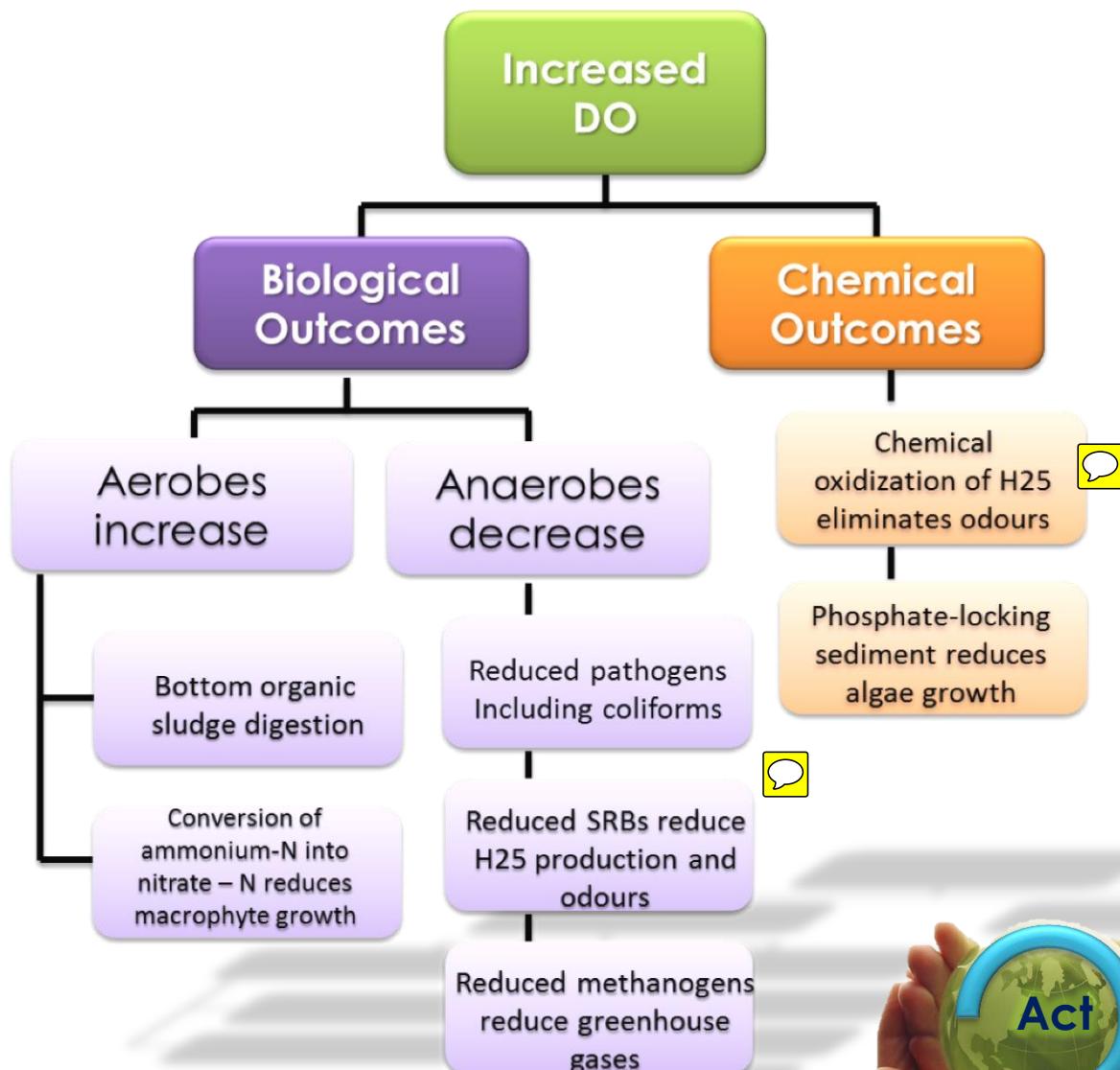


# EOS in Action

Taking action

## Benefits & Core Principal

The EOS-2000 operates on the core principle that the bottom sediment controls the water quality in the water column and by increasing oxygen throughout the water body and by maintaining aerobic conditions in the bottom sediment many direct and indirect benefits to the water are achieved.





Taking action

# Active Partnerships

## WCI Environmental Solutions



The Ottawa-based team at WCI Environmental Solutions is the brains behind, and provider of, the EOS-2000 technology. WCI works with municipal, industrial and non-profit clients to implement innovative, sustainable and cost effective for their most pressing environmental problems.

### Active Participation: Assessment

Lead by company president, Joe Kennedy, P.Eng. WCI will provide an assessment of the current conditions in Lake Ramsey to accurately identify:

- ✓ Root causes of water body distress
- ✓ Sustainable solutions
- ✓ Performance parameters and criteria
- ✓ Goals Strategies and activities
- ✓ Outcomes

### Active Participation: Implementation

Following the assessment of Lake Ramsey WCI will install the EOS-2000 system as well as working with Science North to maintain efficacy and efficiency of the EOS unit and restoration plans through training, monitoring and reporting.





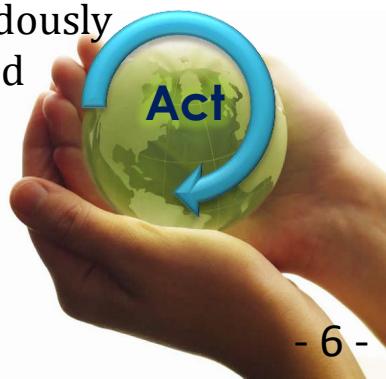
## Part One: Act Identifying the need for action

Taking action



### Greater Sudbury – “land of lakes”

The Sudbury region is a text book case in industrial degradation of the environment. (Leadbeater, 106) Decades of intense industrial activity in the Greater Sudbury area have had dramatic impacts on the region's living ecosystems. The story of acid rain, deforestation, soil erosion, sulphur dioxide emissions and the acidification of thousands of lakes is frequently cited in environmental resource management textbooks. The region is blessed and burdened with hundreds of freshwater lakes that demand responsible stewardship under such intense industrial conditions. Encouragingly, Sudbury's re-greening efforts over the last 30 years have been granted nearly equal recognition and have been in many cases tremendously effective. Despite progress, the need for continued environmentally sustainable efforts is present.

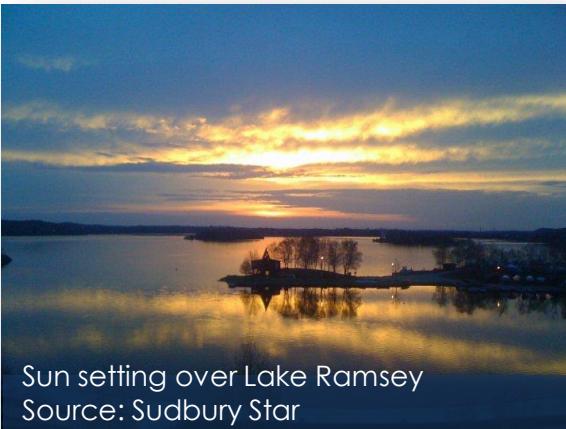




## Part One: Act

### Identifying the need for action

Taking action



Sun setting over Lake Ramsey  
Source: Sudbury Star

### Lake Ramsey

Of the many ecosystems impacted by the region's industrial past and present, the region's lakes suffered greatly. When acidification levels in water could no longer support aquatic plant and animal life entire lakes were deemed dead.

Though many of the lakes impacted by the acidifying effects of airborne metals and emissions may never recover, Lake Ramsey was actually protected by a base of minerals which neutralize acidity as they weather. However, Lake Ramsey continues to display symptoms of an imbalanced ecosystem.

### Symptoms of Imbalance

The Lake Ramsey Stewardship committee have listed several concerns on their website regarding the health of Lake Ramsey. Some of these include:

- ✓ Rising levels of phosphorus
- ✓ Rising levels of salt
- ✓ Presence of heavy metals  in lake sediment 
- ✓ High **bacteria**  levels close beaches in summer
- ✓ Blue-green algae blooms
- ✓ Foul odours
- ✓ Lack of clarity 



Moonlight beach closed due to water quality Source: Sudbury Star





# Part two: Educate

*Growth through Learning*

Action is only part of the solution. Part two, “educate” means to present the community of Greater Sudbury with transformative environmental learning tools and instill a sense of responsibility for, and understanding of, lake health and stewardship.

## Mobilizing the Community

It is broadly accepted that education mobilizes and empowers citizens to better themselves and their communities/ environments.

**“together we can make a difference”** Community members are a crucial part of the solution. It is important that people become active in the achievement of environmental goals rather than being apathetic. Education will provide incentive to feel a personal responsibility for our environment and water. Part two involves identifying an education plan that addresses the needs of a unique community.

## A Cross-Continental Context



**EUROPE** - When WCI developed one of the first integrated composting facilities in Poland the company sponsored a competition with all of the schools in the municipality to select an educational theme. The octopus with many arms was selected to emphasize the need for sorting waste, a major campaign was launched and received recognition from the president and UN.

**Latin America** - Currently, WCI is working on the restoration of Lake Amatitlan in Guatemala. The emphasis on community involvement is central to the success of this project. The continued progress of this project is largely hinged on a saying central to the nation’s founding principals; “only together can we make a difference.”





# Education Strategies

Growth through Learning



Science North at Ramsey Lake

Source: [www.sciencenorth.ca](http://www.sciencenorth.ca)

Part two is where Science North really comes in. The Science center is positioned to access and inform community members of all ages. It is recognized by developers at the Science Centre that physical exhibits “pique interest, provoke response, promote learning and stimulate progress.”

Through a partnership between active citizens, WCI Environmental Solutions and Science North an interactive, educational exhibit could be developed to provide a starting point for a water awareness and stewardship education.

## The Interactive Exhibit

Plenty of empirical exists to support the efficacy of interactive science exhibits. With the help of the experts at Science North an exhibit that accommodates a variety of learning styles and audiences should be developed.

- ✓ Know your H2O: magnetic Q& A board
- ✓ Scavenger hunt: signs of a healthy lake
- ✓ Audio/video: History of Ramsey
- ✓ Water Test station: DO / PH
- ✓ EOS result monitoring station

## Broader Education

The exhibit installation will be one of many education strategies. A website with downloadable information, bi-weekly blog posts, updated progress reports and frequent interaction with local media outlets among other communication efforts will be maintained. Further, workshops, activities and themed fieldtrips may be developed with the science center in a similar format as those currently provided.





# Part three: Expand

**Thinking Big**

## Accessible Sustainability

The final tier of the action plan involves situating Science North and simultaneously Sudbury (representing Northern Ontario) as a leader in the application of innovative water treatment programs and sustainable development. WCI would like to make the EOS system a feasible choice for communities open to alternative water treatment and importantly those which are facing economic challenges. This project in its simple conception, low cost, **low impact**, innovative partnering and funding method is attempting to achieve sustainable, long term results that may applied to other lakes in the Greater Sudbury region, other communities in the province, country and broader.





# Dollars and Sense

Risk Free Solution

## Crowd-Funding

The initial phases of the proposed project will be funded entirely through a **90 day crowd-funding campaign**. This collective effort to raise funds will highlight the power and strength of the community. The success of this fundraising campaign serve as proof of a mobilized community empowered with the ability to better themselves and their environments. By utilizing this modern community-based funding tool the EOS Action plan is breaking boundaries that too often prevent progress and exercising open-mindedness; demonstrating that alternative technologies, partnerships and projects are possible.



## Rocket Hub

RocketHub has been selected as the most appropriate crowd-funding platform for the EOS Action Plan. Accessible to Canadians, RocketHub acts as a partner and provides support and innovative planning for each of the projects it hosts.



## Money Talks

A successful crowd-funding campaign speaks volumes about the project it funds, and the community it ignites. Essentially, interest in the project generates social proof, this project is worthwhile, and people care about it.

## Brass Tax & Generosity

Other projects of this type have cost municipalities and businesses millions of dollars. WCI is making this project possible for a low-cost, as a pilot educational project. A 90 day campaign to raise 25,000 dollars will be carried out. The funds will cover the costs of installing an EOS-2000 unit, exhibit materials and construction, a remote monitoring device, 4% processing fee and 4% crowd-funding platform fee.



# References

---

Allan, Sue and Joshua Gutwill. *Designing Science Museum Exhibits with multiple interactive features*, 2004

Leadbeater, David. Mining Town Crisis. Fernwood Publishing, 2008

Greater Sudbury Development Corporation. *Sudbury a learning city*. Retrieved from :[www.investsudbury.ca](http://www.investsudbury.ca), 2013

Nickel District Conservation Authority. *Water Shed Management*. Retrieved from: [www.nickeldistrict.ca](http://www.nickeldistrict.ca), 2013

Sudbury, City of. *Lake water quality program:2012 annual report*, 2012

Vashisht, Astha. DO system helps restore lakes, ponds and lagoons, 2012



*"If there is magic on this planet it's contained in water."*