LAKE WINNIPEG FOUNDATION

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lakewinnipegfoundation.org

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Introduction

Manitobans expect and depend upon clean, abundant fresh water. Freshwater resources support our province's thriving agricultural sector, offer world-class recreation and tourism opportunities, increase property values and support a strong municipal tax base, and provide safe drinking water to rural and urban communities throughout Manitoba. Careful stewardship of provincial water resources represents an important investment in economic growth and future opportunities in Manitoba, the land of 100,000 lakes.

Lake Winnipeg

Lake Winnipeg is the world's 10th largest freshwater lake. Lake Winnipeg's fisheries are worth $130 million, while tourism and recreation contribute $110 million annually to the provincial economy. The lake is the third-largest hydroelectric reservoir in the world, generating hundreds of millions of dollars' worth of green energy. Property values around the lake's south basin alone are worth $2.5 billion and collectively generate approximately $40 million in annual tax revenues, supporting vibrant communities and businesses on the lake's shores. Dozens of communities, including First Nations and Metis, depend on Lake Winnipeg for clean drinking water, sustainable livelihoods and viable subsistence fisheries.

Yet Lake Winnipeg is suffering from accelerated eutrophication, caused by excess phosphorus. As a result, potentially harmful algae blooms are negatively impacting water quality, tourism and recreation, fisheries, real estate markets and local economies. Rightfully, Manitobans are increasingly concerned about Lake Winnipeg's long-term health.

Budget 2019

Budget 2019 represents an important opportunity to invest in freshwater protection for all Manitobans. Making small but meaningful commitments to cost-effective solutions today will greatly reduce future water management and mitigation costs, enabling an enormous return on investment in the years to come.

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Protecting Manitoba's threatened wetlands

Across Manitoba, 70 per cent of wetland habitats have been drained, damaged or destroyed. This loss of water-retention and filtration capacity has increased flood risk and severity, and reduced water quality, with attendant negative economic impacts for all Manitobans.

Ongoing drainage and damage to Manitoba's remaining wetlands represents a considerable economic liability to the province. In contrast, strong regulatory protection provides an opportunity to leverage the existing natural infrastructure that wetlands represent, already in place at no cost, throughout our watersheds. **A province-wide drainage moratorium on all Class 3, 4 and 5 wetlands (Stewart & Kantrud, 1971) represents the single most cost-effective means of maintaining existing natural infrastructure capacity, and reducing future costs to Manitobans from flood, drought and water-quality deterioration.**

Recognizing the value of our remaining wetlands, Manitoba's Sustainable Watersheds Act (June 2018) legislates no net loss of wetland benefits in the province. This is a commendable objective, and provincial resources must be invested to ensure it is achievable in practice.

The Sustainable Watersheds Act enables a new class of "registrable" drainage projects, which are exempt from the regular licensing process. The Lake Winnipeg Foundation (LWF) is concerned that the necessary information is lacking to enable both regulators and drainage proponents to effectively determine which projects are eligible for registration.

As proposed, the registration process requires drainage proponents themselves to correctly classify wetlands according to Stewart and Kantrud (1971), to determine if a project is eligible for registration ($100 fee) or if it must be licensed ($500 fee plus associated compensation costs of $6,000 per acre). In the absence of a pre-established classification of the wetland in question, the registration process creates a potential conflict of interest for proponents.

The government of Manitoba must fund a comprehensive provincial wetland inventory and publish maps of classified wetlands, to ensure that necessary information is readily available to both project proponents submitting applications and provincial regulators granting approval of registered projects. The government of Manitoba must also provide financial and human resources for a robust auditing program of both registered and licensed drainage projects.

To ensure compliance with provincial legislation requiring no net loss of wetland benefits, the government must also commit to conducting, within five years, an evidence-based evaluation of ecological outcomes achieved under the new regulations.

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Investing in Winnipeg wastewater treatment

Phosphorus, the nutrient that drives eutrophication and the growth of potentially harmful algae blooms in freshwater lakes, is being released in excess from the City of Winnipeg's wastewater treatment and sewer systems. Currently, the City of Winnipeg's North End Water Pollution Control Centre (NEWPCC) is the single largest point source contributor of phosphorus to Lake Winnipeg.

Under the Water Protection Act, the NEWPCC must not release wastewater effluent with a phosphorus concentration exceeding 1 milligram/litre. This limit, along with other operating requirements, must be achieved by Dec. 31, 2019, according to the NEWPCC's provincial operating licence.

While it is widely understood that it will not be possible to meet licence requirements for nitrogen reduction and biological treatment by the 2019 deadline, it is technically and economically feasible to achieve the licensed phosphorus limit, thereby ensuring the City of Winnipeg is taking immediate action to address the most pressing environmental impact of its treatment plant operations.

An interim retrofit to the NEWPCC, involving a simple adjustment to the timing and dose of the ferric chloride compound already used at the plant, could be completed at low cost by Dec. 31, 2019. This retrofit would achieve a 70 per cent reduction in phosphorus loading from the plant, protecting provincial waterways until permanent upgrades can be completed. This method of phosphorus reduction is widely applied in wastewater treatment plants in jurisdictions around the Great Lakes.

The government of Manitoba must commit to a cost-sharing agreement with the City of Winnipeg to support immediate action on phosphorus reduction through the proposed interim retrofit to existing NEWPCC infrastructure. This will ensure the plant meets the provincially legislated phosphorus limit by the current licence deadline. A collaborative cost-sharing approach to phosphorus reduction will also position both provincial and municipal governments to take advantage of federal funding for green infrastructure.

As the provincial regulator, the government of Manitoba must also commit to enforce violations of operating licences issued under the Water Protection and Environment Acts, and, as appropriate, to re-invest any fines collected from the City of Winnipeg into wastewater treatment plant upgrades.

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Data and information sharing

At the standing committee hearings for the Sustainable Watersheds Act, and subsequently in the legislature, Manitoba's Minister of Sustainable Development made a commendable and significant commitment to share provincial water-quality data online annually. Annual data sharing will increase transparency and public trust, encourage data integration and further research by partner agencies and institutions, and accelerate our collective ability to develop and implement strategic, cost-effective solutions.

Resources are required to fulfill Manitoba Sustainable Development's commitment to annual data sharing. Prior to dissemination, provincial water-quality data must be appropriately formatted and contextualized, which will require additional human resources within a department that has experienced considerable staff reductions over the past decade. **Funding must be provided to support a dedicated water-data management position, to ensure that provincial water-quality data is available in a timely manner, both for public dissemination, and to support ongoing evidence-based decision-making by department staff and provincial legislators.**

To ensure accessible water-quality data is shared with the public in a cost-effective manner, Manitoba Sustainable Development is encouraged to partner with external stakeholders, including the Canadian Watersheds Information Network at the University of Manitoba, and the Gordon Foundation, a national charitable organization dedicated to protecting Canada's water. In spring 2019, the Gordon Foundation will launch Lake Winnipeg DataStream, an online water-quality data-sharing platform. Modelled after successful platforms in the Mackenzie Basin and Atlantic Canada, Lake Winnipeg DataStream provides a robust, interoperable data-sharing platform that will benefit from ongoing technological development, tested and scaled across a national network at reduced cost.

To further support transparency and trust in provincial water monitoring and management, the government of Manitoba must dedicate the necessary staff time and resources to complete and publish a full technical report on the state of Lake Winnipeg in 2019, providing a long-awaited update to the previous report published in 2011. Subsequent to the 2019 report, the government of Manitoba must commit the resources required to publish an updated report every four years, in line with nutrient-reporting requirements recently legislated through the Sustainable Watersheds Act (Part 3, Section 58).

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Preventing the spread of aquatic invasive species

The arrival of zebra mussels in recent years signals a new reality for aquatic invasive species (AIS) management and prevention in Manitoba. Lake-lovers across the province are concerned about the impacts zebra mussels will have on their properties, their communities and their businesses. Resource managers are concerned the ongoing spread of zebra mussels is a precursor to an invasion of quagga mussels, a species which is potentially even better adapted to the cool temperatures and soft substrates found in Lake Winnipeg.

These invasive mussels are expected to displace native mussel species and alter the food chains of aquatic ecosystems, with potential impacts on Manitoba fisheries. The mussels will also have impacts on infrastructure as they colonize hard surfaces throughout the lake, increasing the maintenance and upkeep costs of water intake pipes, water treatment plants and hydroelectric generating stations. By increasing water clarity and promoting the growth of nuisance algae blooms in nearshore zones, the mussels may also cause economic losses to Manitoba's tourism and recreation industries. **Additional research is required to increase understanding of the potential ecological and socioeconomic impacts, and to support the development of an effective AIS management strategy for Lake Winnipeg.**

To protect the myriad lakes and rivers across Manitoba that have not yet been impacted by invasive mussels, prevention of AIS spread represents the most cost-effective strategy. **The government of Manitoba must dedicate additional human resources to ensure effective education, monitoring and implementation of prevention programs, to both limit the spread of zebra mussels and prevent the establishment of quagga mussels.** Effective prevention programs must include the establishment of permanent decontamination stations at high-risk boat launches and beaches, based on travel and recreational data.

Subsidies should be provided for local boat/equipment rental programs, outfitters lodges, municipalities and First Nations to support the installation, operation and maintenance of locally managed decontamination stations.

The government of Manitoba must increase investment in enforcement of legislation preventing the transport and possession of aquatic invasive species, with fines collected re-invested in decontamination equipment and/or subsidies.

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Conclusions

To fulfill the government's responsibility for the sustainable management of Manitoba's water resources, Budget 2019 must invest in:

- A comprehensive provincial wetland inventory and publication of wetland-classification maps to ensure necessary information is available to support application and approval of drainage projects through the newly proposed registration process;
- Financial and human resources to enable a robust auditing program of both registered and licensed drainage projects;
- Planning for a five-year, evidence-based evaluation of ecological outcomes achieved under newly proposed drainage regulations;
- A cost-sharing agreement with the City of Winnipeg to support immediate action on phosphorus reduction through an interim retrofit to existing NEWPCC infrastructure;
- A dedicated water-data management position to ensure that provincial water-quality data is shared publicly and supports evidence-based decision-making;
- The necessary staff time and resources to complete and publish a full technical report on the state of Lake Winnipeg in 2019; and
- Additional human resources to ensure effective monitoring, education and implementation of prevention programs for aquatic invasive species.

Meaningful cost savings can be achieved by the government of Manitoba through:

- A province-wide drainage moratorium on all Class 3, 4 and 5 wetlands to protect existing natural infrastructure and reduce the costs of flood, drought and water quality deterioration;
- A collaborative approach to phosphorus-reducing infrastructure upgrades, positioning the provincial government to leverage federal funding for green infrastructure;
- Enforcement of wastewater treatment plant operating licences, and re-investment of fines into plant upgrades;
- Partnerships with external stakeholders and use of existing online data platforms to share water-quality data with the public; and
- Enforcement of aquatic invasive species legislation, with fines collected re-invested in decontamination equipment.

About the Lake Winnipeg Foundation

The Lake Winnipeg Foundation (LWF) advocates for change and co-ordinates action to improve the health of Lake Winnipeg, now and for future generations.

Combining the expertise of our Science Advisory Council and the commitment of our members, LWF is nationally recognized for our unique capacity to link science and action. Our goal is to ensure policy and practices informed by evidence are implemented and enforced.

LWF is the only membership-based freshwater organization in Manitoba, working collaboratively with non-profit, academic, industry and government sectors, First Nations, and the public to restore and protect our great lake.

Our flagship initiative, the Lake Winnipeg Health Plan, identifies eight evidence-based actions to improve the health of Lake Winnipeg – providing a blueprint for cost-effective decision-making and long-term, evidence-based freshwater management.

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