



**Lakehead**  
UNIVERSITY

**Written Submission for the Pre-Budget  
Consultations in Advance of the 2020 Budget**

**By: Lakehead University**

**Thunder Bay, Ontario**

**Recommendation 1:** That the Government of Canada invest in greening university infrastructure to reduce GHG emissions

**Recommendation 2:** That the Government of Canada further support evidence based research on climate change

**Recommendation 3:** That the Government of Canada Invest in transformational education and skills development that leads to land-based and socially and cultural relevant solutions to climate change

Lakehead University is pleased to respond to the House of Commons Standing Committee on Finance's invitation to share our priorities for the next federal budget. This year's theme: **Climate Emergency: The Required Transition to a Low Carbon Economy**, is especially aligned with Lakehead University's ongoing efforts of supporting those most vulnerable to the disastrous effects of climate change, Indigenous communities.

Lakehead University prides itself on creating flexible access to postsecondary education opportunities for Indigenous communities, we have developed programming in partnership with local Indigenous leadership to provide Indigenous youth with access to a university degree at a venue that truly reflects their community and supports their culture. The Lakehead University experience comes from our unique history, geography, culture and our diversity. Our student population includes over 1100 Indigenous students and over a thousand international students at our two unique campuses in Northwestern Ontario and Central Ontario. Our priorities complement the federal government's vision and actions to develop a renewed nation-to-nation relationship with Indigenous Peoples and to make *real progress* on the issues most important to First Nations, the Métis Nation, and Inuit communities, such as climate change.

In addition to the effect that climate change will have on remote northern and Indigenous communities, the expected impact on natural resource development could have serious economic consequences for the north. While Lakehead is a driver of efforts to diversify the local economy through developing highly skilled graduates in fields such as health care, business and engineering, the natural resource economy (including mining and forest management) attracts many students to Northern Ontario each year and is a large economic force for growth across the region.

**Recommendation 1: That the Government of Canada invest in greening university infrastructure to reduce GHG emissions**

Our public institutions must lead by example and establish the example for others to follow. Energy efficient and innovative education and research facilities help universities to lead the way by both developing and field testing the latest advancements in green technology. Each university, including Lakehead, has shovel ready projects that they know will reduce greenhouse emissions. Lakehead supports further partnerships with government, like the announced funding through the Low Carbon Economy Fund (LCEF) of \$145M for postsecondary institutions. As an example, through modernizing Lakehead University's central kitchen by replacing the HVAC, adding LED lighting and other initiatives, the school can reduce GHG emissions.

University campuses, like Lakehead University's Thunder Bay and Orillia Campuses, approach reducing emissions by operating environmentally sustainable buildings and establishing new efficient facilities. Not only does this put our institution on a better path, but these investments act as source of inspiration and influence on other facilities within the local community to change their infrastructure choices. Local businesses and developers will seek to adapt to new expectations, creating a building ecosystem that will have a greater impact on emissions reduction. This impact is even greater in smaller

communities. Universities have to lead the way, but they need further investments in university and research green infrastructure in order to achieve this goal.

### **Recommendation 2: That the Government of Canada further support evidence based research on climate change**

The best approach to dealing with climate change is to deal with the problem at the source. Reducing our CO<sub>2</sub> emissions is critical, and all strategies and technologies that help to achieve this must be adopted quickly. However, it is important that we prepare to adapt to a changing world as we deal with climate change. It is not simply the inhabitants of low-lying coastal regions that will be affected. The changing environment in northern regions is significant and this is already changing the lifestyle and sustainability of people in these regions. In Northwestern Ontario many communities are small, poorly connected to each other and rely on the environment for their livelihood and economic activity. Many people who live in this area are Indigenous and will need federal help to adapt to the impacts of climate change. We are already seeing the loss of winter roads, animal habitat loss, increase in forest fires and instability in weather.

Research to verify the extent of the problems and to identify solutions must to be supported. Such research must be informed by the people in the regions and also by the businesses that operate in the area. A major area of concern is how different forest species will react to climate change. Dr. Han Chen at Lakehead University is leading research focused on understanding the carbon dynamics of the Canadian forest. His Team is working in collaboration with the Canadian Forest Service to understand what species will adapt and which ones will be negatively affected.

Forestry is an important economic driver in Northwestern Ontario and for a number of Indigenous communities. Financial support for a program to understand the resilience and changing ecosystem of the Boreal Forest to climate change is necessary. Another leading researcher in the area of climate change and adaption at Lakehead University is Dr. Amanda Diochon from the Department of Geology. She is an expert on carbon sequestration in soils, peat and bogs in this region. As the region warms the release of stored CO<sub>2</sub> in the system is like adding accelerant to a fire. Understanding exactly how this happens and the actions that might be taken to minimize the effects will be essential to Canada's climate change strategy. An investment by the Federal Government to support evidence-based research on climate change in this region would enable Lakehead University to provide research leadership for Canada.

There is considerable concern for climate change adaptation in the Great Lakes region. According to a recent report by Environment Law and Policy Center in United States the increase in temperature in the Great Lakes region in recent years is significantly higher than in any other part of the United States. The highest concentration of population in Canada is within 250km of the Great Lakes and the St. Lawrence Seaway. The system is responsible for the movement of goods within our country and the production of electrical energy. The Great Lakes have a significant impact on regional weather patterns, and therefore on the economy of the region!

Other areas of concern that are identified in the report are: Heavy precipitation and flooding, water quality, agricultural production and decreased crop yield and recreation and beach closures. Canada has tremendous capacity in Great Lakes and St. Lawrence research from institutions like Lakehead University. Targeted research support for Great Lakes climate change and mitigation strategies must be provided. This could take on the form of a network of research excellence involving Ontario and Quebec research institutes with a specified mandate. Lakehead University has built up significant research collaborations with the University of the Windsor focusing on Great Lakes Research and an investment of \$10-15M over five years would enable us to take the lead on establishing such a Network of Research Excellence.

**Recommendation 3: That the Government of Canada Invest in transformational education and skills development that leads to land-based and socially and cultural relevant solutions to climate change**

Northwestern Ontario includes more than 60 First Nations in the Treaty #3, Nishnawbe Aski Nation, and Robinson-Superior Treaty territories, as well as seven Métis Nation of Ontario Chartered Community Councils and at least one independent Métis Nation. The vastness of the Nishnawbe Aski territory creates unique social, health, education, and economic challenges for Indigenous Peoples in Northwestern Ontario. Approximately half of Indigenous Northwestern Ontarians live on reserves and half live in towns and cities across the region.

While the level of university degree attainment has increased among the Indigenous population in recent years, only 10.9% of Indigenous people across Canada have a bachelor's degree or higher. Over the next 20 years, the Indigenous population will grow to an estimated 40% of the total population aged 15-19 in Northwestern Ontario. By ensuring Indigenous youth have access to postsecondary education, lifelong learning and skills development, and by ensuring that Indigenous peoples are able to participate meaningfully in land and community-based research, new and relevant solutions to social challenges like housing, food access and climate adaptation will be created and applied.

Lakehead University is seeking support from the Government of Canada in order to provide learners with access to a range of academic courses and credentials delivered using immersive video-conference configured classroom spaces. Immersive delivery can help transform postsecondary education in northwestern Ontario and reduce the environmental footprint that occurs as a result of having to travel great distances for services. These immersive learning spaces will enable Lakehead University and the Government of Canada to offer satellite programming directly to learners located in rural communities in northwestern Ontario, providing a high-quality interactive learner experience commensurate to the classroom experience on the Lakehead Thunder Bay campus, thereby helping students overcome barriers to accessing university education, improving social mobility and generating solutions to challenges at home and in our communities.

Many of Lakehead's programs result in a 100% graduate employment rate, addressing the need for highly skilled workers to support specific sectors of the northern economy.

The quality of programming delivered in Ontario's North and the imperative to respond to local industry needs for skilled workers must be interwoven. Development of science, engineering and technology-based training aimed at reskilling or upgrading in areas with evolving regional demands such as environmental and information technology-based industries will help support further economic growth and will help create climate change solutions. Offerings such as Lakehead's All Nations Access Program in Engineering and Certificate in Geology can be revised to meet the needs of this complex group of learners, while new curriculum will be developed to meet emerging environmental needs.

Specific to natural resources, and encompassing both local government and industry, there are opportunities to develop modular certificates in unmanned geomatics aerial vehicles used for geomatics for land, environmental, and wild life assessments. In addition, reskilling and upskilling options in basic forestry management will stimulate economic development in northern, rural and Indigenous communities.

We look forward to working with Parliament and the Government of Canada to take bold and meaningful action to protect the natural resources and beauty of our province and country.