



# Northern Roads Summit

Building Resiliency  
in a Changing Climate

**October 11 - 12, 2023**

Conference Proceedings,  
Feedback, and Recommendations

**Updated October 30, 2024**



Nishnawbe  
Aski Nation  
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# 2023 NORTHERN ROADS SUMMIT

## EXECUTIVE SUMMARY

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Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Ministry of Northern Development (MND)  
Indigenous Services Canada (ISC)

## Background

Nishnawbe Aski Nation hosted the Northern Roads Summit: Building Resiliency in a Changing Climate in Thunder Bay, Ontario on October 11-12 in response to concerned voices of remote communities that rely on the province's winter road network. The Summit was attended by community representatives as well as by provincial and federal governments and technical experts.

### *Government Attendees:*

Crown Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Ministry of Northern Development (MND)  
Indigenous Services Canada (ISC)  
Ministry of Transportation (MTO)  
Ministry of Natural Resources and Forestry (MNRF)  
Ministry of the Environment, Conservation and Parks (MECP)  
National Research Council Canada (NRCC)  
Indigenous Affairs Ontario (IAO)



# Key Findings

- Ontario's approach to addressing climate change threats to the winter roads system remains reactive and piecemeal.
- Winter road funding has increased at a rate of 0.6%/year, compared to a 2022 inflation rate of 6.8%.
- Enhancing the climate resiliency of the transportation network in the Far North demands a radical change in the funding model.
- The current winter road permitting system is fragmented and complex.
- Ontario lacks mandatory winter road technical and safety standards, creating safety liabilities for winter road construction and road users.



## In 2020...

the Ontario government released an interim transportation plan – Connecting the North: A Draft Transportation Plan for Northern Ontario was finalized three years later with the 2023 Transportation Task Force Report, which includes several commitments for action on winter roads.

The actions address similar concerns identified in the 2023 Northern Roads Summit, highlighting the urgency for action to ensure the long-term safety and viability of Ontario's winter road system.





# Recommendations

Some recurring themes and clear priorities illustrate the need for a radical change to the funding model, as well as a First Nations-led Roads Agency, with the mandate to support strategic planning and centralized coordination of funding and permitting for winter and all-season road construction. In cooperation with government and experts, the agency would provide much-needed technical & safety expertise and develop standards for the Far North road system. Better coordination will support many other areas of road management, including the transition in some areas from winter to all-season roads.

The following recommendations were developed from a review of past roads forums (2005-2023), the most recent Northern Roads Summit, as well as a literature review, interviews and a 2008 NADF feasibility study on winter road governance.

1 Immediate funding reform was identified as a top priority by delegates in attendance as there is currently inadequate funding for the construction and maintenance of the winter roads. Current funding has not kept up with rising inflation rates, and the cost of fuel alone as increased substantially in remote communities, in addition to rising equipment and associated maintenance costs. Increased funding will be necessary as remote communities adapt to climate change.

- 2 Establish a First Nation-led Far North Road Agency to coordinate strategic planning, funding advocacy, permitting and the development of technical & safety standards for the winter road system.
- 3 Complete a comprehensive assessment of Far North Transportation system vulnerabilities, integrating both scientific and traditional knowledge in collaboration with remote communities and winter road users.
- 4 Embed climate change impacts into all policy, planning, funding, and decision-making processes for winter and all-season road networks.
- 5 Establish a one-window, streamlined provincial and federal environmental assessment and permitting process for roads and water crossings.
- 6 Improve traffic safety immediately by working with the Ontario Ministry of Transportation and commercial transport companies to enhance safety practices.

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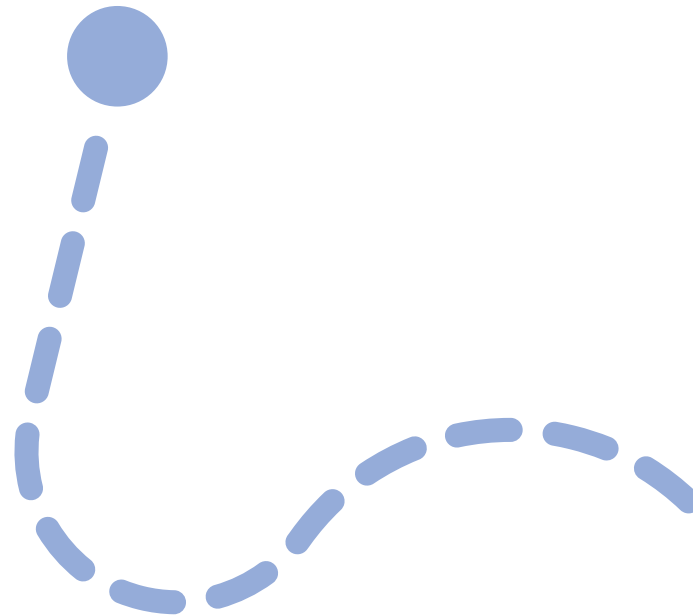


# Introduction

Ontario's 3,200 km winter road network is a vital transportation link for many communities in the province—particularly in the Far North—servicing more than 24,000 northern residents across 32 remote Indigenous communities, one community with a Local Service Board (Moose Factory) and two towns of Moosonee and Pickle Lake<sup>1</sup>. Winter roads are unpaved, un-graveled routes constructed annually over frozen earth, wetlands, lakes, and rivers. They allow vehicles weighing up to tens of thousands of kilograms to travel over the frozen terrain, which, compared to air transport, provides local members and businesses with an opportunity to access more affordable food, building materials, fuel, and other essential goods and services. Some communities race to transport a year's diesel supply on the roads before they thaw out in the spring to avoid possible delays or complete road shutdowns<sup>2</sup>. For many, the winter road network also allows more frequent, inexpensive travel during the winter months to pursue personal activities such as visiting family and friends, servicing their vehicles, shopping, and enjoying entertainment.

From October 11-12, 2023, Nishnawbe Aski Nation (NAN) led The Northern Roads Summit: Building a Resiliency in a Changing Climate at the Best Western Plus Nor'wester Hotel and Conference Centre in Thunder Bay, Ontario. The Summit was part of an ongoing and decades-long process to improve winter roads management, given their importance to remote communities.

These concerns relate to increasingly challenging winter road operability due to climate change, construction, maintenance, safety, and funding. The Summit was attended by northern remote community members, provincial and federal government partners and technical experts who offered presentations.



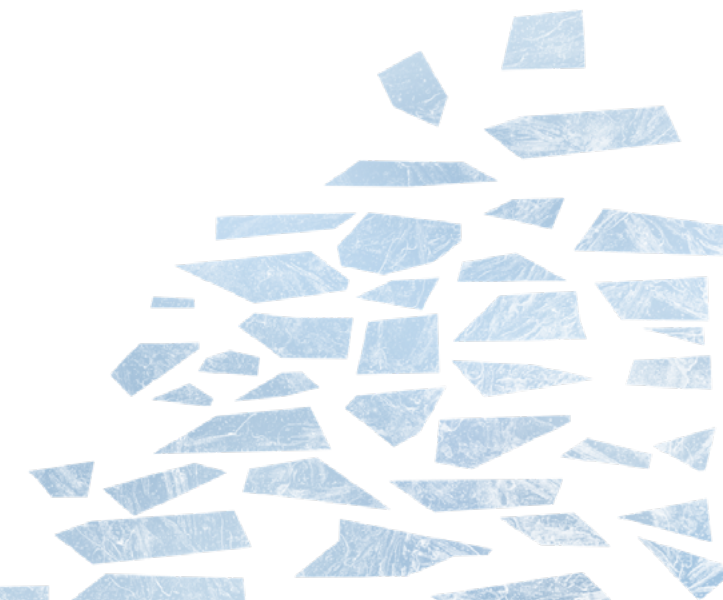
<sup>1</sup> [www.ontario.ca/page/far-north-ontario](http://www.ontario.ca/page/far-north-ontario)

<sup>2</sup> [www.cbc.ca/news/canada/thunder-bay/climate-change-threatens-winter-roads-connecting-northern-ontario-s-remote-communities-1.6993030](http://www.cbc.ca/news/canada/thunder-bay/climate-change-threatens-winter-roads-connecting-northern-ontario-s-remote-communities-1.6993030)

The main body of the report provides a general overview of the Ontario winter road management system, including issues and gaps identified by the Summit participants. The appendices include more detailed and technical information used in the development of the report, including:

APPENDIX A	Summit Compendium: summaries of presentation and discussion sessions
APPENDIX B	Example of Ontario and Federal winter road funding for the 2022-2023 season
APPENDIX C	Canadian jurisdictional comparison of roles and responsibilities of winter roads network management

Based on the information gathered at the Summit and post-conference, six recommendations were developed to address gaps and reinforce priorities for action as identified by the participants, interviewed community members and technical experts, as well as a literature review of current sources and past road forum reports.



# Ontario's Winter Road Network

The road network in the Far North of Ontario consists of two all-season roads and eight winter road corridors. The two all-season roads are the Nungesser Road, leading from Red Lake to the Berens River, and the Pickle Lake Road (NORT Road). Historically, the Pickle Lake Road provided access to the Township of Pickle Lake and Musselwhite Mine, terminating at Windigo Lake. This road now extends to Weagamow (North Caribou Lake First Nation) as a result of a bridge installation. Two additional winter road corridors connect communities further South<sup>3</sup> (Figure 1)



Figure 1. Winter road corridors in Ontario.<sup>4</sup> Full map available in Appendix E on page 52.

<sup>3</sup> DRAFT TECHNICAL BACKGROUNDER: Northern Ontario Multimodal Transportation Strategy for Winter Roads (Nov 2016): [northernontariommts.wordpress.com/wp-content/uploads/2016/11/ttr\\_winter\\_roads\\_techbackgrounder\\_2016-11-10.pdf](http://northernontariommts.wordpress.com/wp-content/uploads/2016/11/ttr_winter_roads_techbackgrounder_2016-11-10.pdf)

<sup>4</sup> The map from IBI GROUP DRAFT TECHNICAL BACKGROUNDER: WINTER ROADS. Prepared for the Ontario Ministry of Transportation and Ministry of Northern Development and Mines (2016) [northernontariommts.wordpress.com/wp-content/uploads/2016/11/ttr\\_winter\\_roads\\_techbackgrounder\\_2016-11-10.pdf](http://northernontariommts.wordpress.com/wp-content/uploads/2016/11/ttr_winter_roads_techbackgrounder_2016-11-10.pdf)

Table 1.  
Ontario's Winter Road Network Overview

Extent of Winter Roads	<ul style="list-style-type: none"><li>3,200 km total</li></ul>
Road Season	<ul style="list-style-type: none"><li>6-11 weeks (January-March)</li><li>Road season is decreasing under climate change</li></ul>
Population Served	<ul style="list-style-type: none"><li>32 communities (including Town of Moosonee)</li><li>24,000 residents</li></ul>
Funding Model	<ul style="list-style-type: none"><li>Contributions from provincial (MND) and federal (ISC) governments.</li><li>Per kilometer funding formula set annually by the Province based on cost estimates for construction, operation and maintenance with 50% of costs provided to successful applicants.</li><li>Historically, federal funding has matched provincial funding, however, contributions are determined on an annual basis dependent on budget availability.</li><li>Excess costs are borne by the communities</li></ul>
2018-2023 Base Funding	<ul style="list-style-type: none"><li>Base provincial funding and federal funding with equal contributions from ISC and MND amounting to 11.4 million to 12 million</li></ul>
New MND Bridges and Culverts Stream Funding (2023-2028)	<ul style="list-style-type: none"><li>\$5 million/per year for 5 years</li></ul>
Governance	<ul style="list-style-type: none"><li>Regulated by <i>Highway Traffic Act</i>, however, roads are constructed and maintained by communities with responsibilities for specific segments.</li></ul>
Safety & Enforcement	<ul style="list-style-type: none"><li>Voluntary standards apply – “Best practices for Building and Working Safely on Ice Covers in Ontario”.</li><li>Ontario Provincial Police (OPP) and Nishnawbe Aski Police Services (NAPS) work together on patrolling, including enforcement of Highway Traffic Act</li></ul>





At around 3,200 kilometres, Ontario's winter road network is the longest in Canada. The network is constructed and maintained by First Nations communities and serves a population of approximately 24,000 across 32 remote Indigenous communities and the Town of Moosonee. Typically, these roads are open for approximately 6 to 11 weeks per year from late January until the end of March, though climate change is shortening the winter road season<sup>5</sup>.

The Ministry of Northern Development's Winter Roads Program provides annual provincial funding for Northern Ontario winter roads, representing about 50% of the cost to construct and maintain the road system. The remaining 50% is funded by Indigenous Services Canada (ISC), who also fund 100% of the construction costs for the winter road connecting Fort Severn to Shamattawa in Manitoba. These cost sharing agreements between both levels of government support the winter road network for 32 First Nations in Ontario<sup>6</sup>, with any cost differentials between available budgets and construction costs being funded by communities<sup>7</sup>.

Appendix B provides an example of current winter road funding levels by community for the 2022-2023 season, with approximately \$6 million in provincial base funding as well as \$7.0 million in federal base funding, of which \$5.7 million went to construction and maintenance and \$1.3M to other winter road improvements. There is an additional \$5 million available for 5 years (2023-2028) through the province's new Culverts and Bridges program aside from the \$6 million provincial base.

The warming climate has shortened the periods of consecutive freezing degree days needed for construction at the beginning of the winter road season and earlier breakup of winter roads.

Extreme weather events resulting in high snow and rain fall in early winter road season increases water levels and water movement speeds, resulting in slower freeze times of water crossings. Extreme events also challenge winter road maintenance to keep the roads safe.

A gradual transition to a network of winter roads on higher ground and all-season roads is needed.

<sup>5</sup> [www.ontarioconstructionnews.com/ontario-funding-seasonal-ice-road-construction/](http://www.ontarioconstructionnews.com/ontario-funding-seasonal-ice-road-construction/)

<sup>6</sup> Question Period Note: Winter Roads. 2021. [search.open.canada.ca/qpnotes/record/isc-sac,ISC-2022-10023](https://search.open.canada.ca/qpnotes/record/isc-sac,ISC-2022-10023)

<sup>7</sup> [www.northernpolicy.ca/article/weathering-winter-roads-%E2%80%93-what-is-the-best-route-1354.asp](http://www.northernpolicy.ca/article/weathering-winter-roads-%E2%80%93-what-is-the-best-route-1354.asp)

# Key Issues and Findings

## 3.1 Climate Change



The rate at which the climate is changing is unprecedented in human history. Further, this change is more profound in Canada, with temperatures increasing by 1.7 °C by 2016<sup>8</sup>. The warming effect is expected to be higher during winters than in other seasons and more substantial at higher latitudes<sup>9</sup>.

<sup>8</sup> Temperatures increased by 1.7 C between 1948 and 2016 [www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services/basics/trends-projections/changes-temperature.html](https://www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services/basics/trends-projections/changes-temperature.html)

<sup>9</sup> [www.davey.com/media/3qaex23l/ca-ontario-projections-623.pdf](http://www.davey.com/media/3qaex23l/ca-ontario-projections-623.pdf)



A growing body of research across Canada<sup>10</sup> shows that climate change is reducing the connectivity of Northern communities and damaging their socio-economic well being by increasing the reliance on costly air transportation of goods and people. Climate change impacts on winter roads are more challenging to predict from year to year as they are highly dependent on weather variations, however, consensus among scientists and communities suggests that the winter road season has been shortening as the climate warms and winters are becoming shorter and milder. Two key issues are associated with an increase in temperature:

- Safety concerns:** Delays in achieving target ice thickness will increase the likelihood of having users access the over-ice segments earlier than they should. This results in more frequent breakthroughs.
- Operational challenges:** Issues that normally affect winter road operations (e.g. ground thawing, large snow falls, softening of the ice surface) on an occasional basis may occur more frequently because of climate change<sup>11</sup>.

To date, no comprehensive assessment of the specific vulnerabilities of Ontario’s winter road system to climate change has been completed. Communities are left largely to their own devices to hire technical experts and undertake road and water crossing upgrades. The current approach to addressing climate change threats can be considered as reactive and piecemeal, as opposed to a systematic approach.

Key Findings

Climate Change

- Climate change has resulted in increased construction challenges, cost and safety concerns for the winter roads systems.
- To date, no comprehensive or systematic assessment has been completed to understand the specific vulnerabilities of Ontario’s winter road network to climate.

<sup>10</sup> How it affects transportation, infrastructures and indigenous lifestyle in the Arctic (Pearce and Smit 2013, Tam et al 2013), How it affects winter road operations (CIER 2006, Rawlings et al. 2009, Knowland et al. 2010, Strandberg et al. 2014), A projection of operational lifespan in the future (Hori and Gough 2017), The establishment of statistical links between FDD and winter roads opening dates (Hori et al. 2017), Historical trends and how ice bridges on the St. Lawrence can be used as an index of winter severity (Houle et al. 2007), Risk to communities, e.g. ability to resupply and difficulty to plan because of unpredictable seasons conditions (Golden et al. 2015).

<sup>11</sup> IBI Group (2016) in Barrette, P. 2018. Winter roads and climate adaptation: Prospective solutions through R&D. Natural Research Council, Ottawa.

3.2 Funding Models



In Northern Ontario, winter road operations are funded on a per-kilometre basis. However, as per a 2018 transportation study and noted in the 2023 Northern Ontario Transportation Task Force Report, communities that have complex terrain and/or numerous or difficult water crossings along their route are compensated the same way as those with fewer challenges<sup>12</sup>. Collecting more accurate route data would substantially improve the knowledge base to develop appropriate funding models.

Ontario currently uses a three-tiered funding system for winter roads based on the type of road.

The rates for 2023 were as follows<sup>13</sup>:

- Trunk roads (primary roads leading to community connector roads) : \$4589.49 per kilometre
- Community connector roads: \$3376.39 per kilometre
- Low-use trail roads with typically no commercial loads: \$2086.43 per kilometre

<sup>12</sup> IBI Group (2016) in Barrette, P. 2018. Winter roads and climate adaptation: Prospective solutions through R&D. Natural Research Council, Ottawa

<sup>13</sup> Personal communication with MND staff (Jan 2024).

While this funding per kilometre is higher compared to what Manitoba Transportation and Infrastructure (MTI) pays for its community contractors for building and maintenance activities<sup>14</sup>, communities in Ontario face additional workload from planning, to permitting, to assessing realignments and new routes – tasks that often require technical expertise and funds that are not readily available.

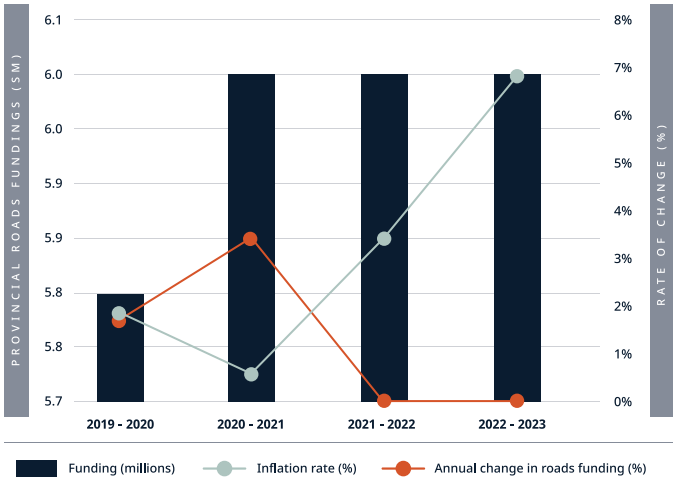
As winter roads and access trails become increasingly unreliable with changing weather patterns, characterizing the winter road segments, and updating this information annually to reflect changes (e.g., increase in crossing infrastructure required, relocation of road segments to higher ground, etc.) is critical to improve budget forecasting and assign appropriate spending to properly support winter road construction. Online tools for communicating live road conditions are also urgently needed, to provide access to a reliable and current source of information about road conditions.

Over the past few years, provincial base funding for winter roads has seen little change. It has remained around the \$6M mark since 2020, despite high inflation rates leading to increasing fuel and equipment costs with federal funding matching the base funding amount of \$6M.

The snow and ice bridges on water crossings are usually considered the weakest links on winter roads. These are vulnerable to flooding due to increased precipitation or snowmelt and can be difficult to freeze at the beginning of the season due to moving water. Hence, there is a general effort made by communities towards upgrading these crossings to temporal or permanent water crossing structures. This comes with a large cost, as well as permitting burden.

### PROVINCIAL WINTER ROADS FUNDING 2019 - 2023

Figure 2. Provincial winter roads funding 2019/2020 to 2022/2023 fiscal years (Source: Government of Ontario).



<sup>14</sup> Personal communication with MTI staff (Nov 2023)

According to the Memorandum of Understanding (MOU) between the Ministry of Northern Development (MND) and Indigenous Services Canada (ISC), federal funding matches Ontario’s base annual funding. In 2023, a new Bridges and Culverts funding stream under the Ontario Winter Roads Program was launched. This funding stream will provide an additional \$5M annually for 2023-2028 for installing water crossing infrastructure (pre-engineered bridges and culverts) and repairing existing structures aligned with the program stream objectives. The matching by ISC does not apply to the new Bridges and Culverts stream<sup>15</sup>. Considering that the cost of a bridge easily varies from hundreds of thousands of dollars to over \$5M, the program funding amount was deemed insufficient by several Summit participants. Furthermore, given the lack of a comprehensive assessment of winter road vulnerabilities it is unclear how the new funding matches the long-term, strategic infrastructure need.

### Key Findings

- The per km funding model does not reflect differences in the characteristics and complexity of different winter road segments.
- Funding has not kept pace with inflation rates.
- It is unclear whether the new bridges and culverts funding will be sufficient to meet infrastructure needs.

<sup>15</sup> Personal communication with MND staff (Nov 2023).

### 3.3 Governance



Ontario currently has no approved strategic direction guiding transportation development for remote fly-in communities. In 2020, the Ontario government released *Connecting the North: A Draft Transportation Plan for Northern Ontario* that included a Task Force to develop actions coming out of the draft plan.

Under Goal 6 of the 2020 Connecting the North, the Task Force developed several recommendations related to winter roads. These reflect similar issues identified in the 2023 Northern Roads Summit, including the need to adjust funding models, improve safety as well as establishing a Far North roads forum.

Establishing a roads agency for the Far North has long been identified as a need but has proven challenging. Ontario's situation is unique compared to other jurisdictions in Canada, where Transportation Ministries have historically overseen winter road systems. In Ontario, there is a longstanding tension between the interest in maintaining community control over the Far North roads system, and the technical capacity to do so under current funding models. Ongoing concern over jurisdiction has created some challenges for achieving a higher level of coordination.

As a result, a key priority identified is the need to move forward with a Far North roads forum. High level coordination and planning would help address many of the ongoing winter road issues identified by previous technical and consultation reports published over the years. These include issues of funding, safety, and long-term vision for the roads system.

The governance model should reflect the interests of Ontario's Far North communities to retain jurisdiction over roads. At the same time, it should recognize the need for building technical capacity for managing that roads system, including the development and enforcement of construction and operating standards, training as well as road condition monitoring and reporting to ensure safe, reliable operation of the winter roads system under changing climate conditions.

## Reliable Travel Options for Remote and Far North Communities (Goal 6 of Connecting the North Plan)

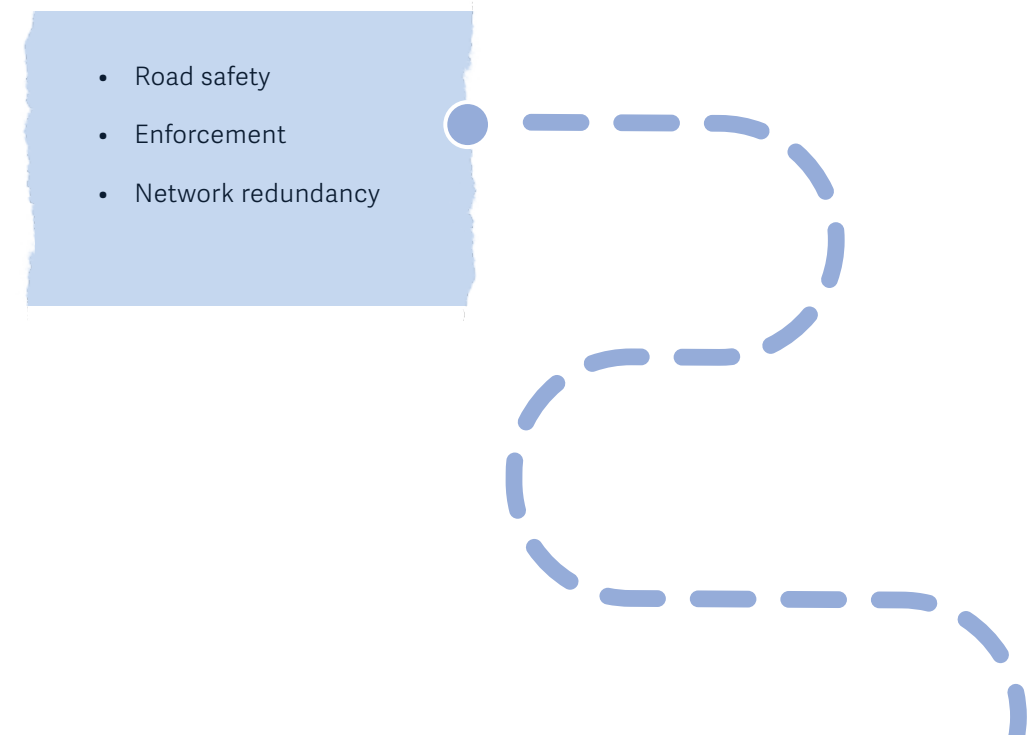
### Actions

Increase funding for winter roads, with funding models reflecting actual and increasing costs due to climate change and inflation.

Establish a roads forum including Indigenous communities, provincial and federal governments for strategic planning, operations, and oversight of both winter and all-season road networks.

Explore additional opportunities to improve the winter road system, including:

- Road safety
- Enforcement
- Network redundancy





## Case Study Manitoba

- The winter road program is administered by the Manitoba Ministry of Transportation and Infrastructure.
- Manitoba started moving winter roads to higher ground in the early 2000s following a deadly ice-road accident.
- Winter roads were identified as a high priority for climate adaptation by policy makers, who dramatically increased spending on the winter road network.
- Between 2007 and 2011, the average cost of the winter road network rose to \$13 million annually.
- Funding has gone towards upgrading existing winter roads, relocating roads, constructing new roads on overland routes, and regular inspections of and communication of road conditions.

### Key Findings

#### Governance

There is an urgent need for a first nations-led roads agency, to bring improved co-ordination, funding and technical standards to the Far North winter and all-season road system. This should happen in collaboration with governments, technical experts, operators, commercial road users and community road users.

## 3.4 Safety



A barge delivering housing materials to Fort Severn First Nation

Although winter roads are regulated under the provincial *Highway Traffic Act*, there is little involvement by the province on the development or enforcement of winter road technical standards. Communities generally operate independently to assess need and secure funds and technical experts to conduct feasibility assessments of substantial realignments of their roads or new routes and juggle complicated permitting and the environmental assessment landscape. The result is a piecemeal, reactive approach where the most problematic short sections of the road are rerouted, or critical water crossings are addressed with individual bridge or culvert installations as needed.

The lack of oversight and coordination on winter road planning, construction, and monitoring leads to safety concerns for operators, as well as commercial and community users of winter roads. In fact, a fatal incident in the early 2000s prompted Manitoba to overhaul its approach, leading to significant changes in governance, safety standards, inspection, and monitoring of the winter roads system.

### 3.4.1 Construction, Maintenance and Monitoring

Compliance with current Ontario winter road guidelines is voluntary. The document states, *“It is the responsibility of each First Nation community or winter road corporation to develop their own specific document and policies related to winter road construction and maintenance.”* This approach may provide flexibility in local conditions and the ability to adapt the construction practices. While local knowledge of winter road construction is significant, resources are often limited, equipment break downs happen frequently, and take considerable time and resources to solve. Communities may struggle to keep up with weather opportunities for construction or the need for maintenance.

Voluntary standards also create concerns related to the safety of the road network. As there is no required standard, there is no provincial program to inspect the safety of Ontario’s winter road network, aside from the water crossing inspections of permanent structures as of 2015 when the Ministry of Natural Resources and Forestry (MNRF) began a comprehensive inspection of the winter road network bridges to identify those needing maintenance or replacement.

Manitoba Transportation and Infrastructure (MTI) employs 12 winter road inspectors who drive the routes and report back the observations every four days at a minimum. MTI also works closely with community contractors with weekly progress reporting requirements on construction and maintenance activities. This enables making additional resources available as required and helping with any technical advice.

### 3.4.2 Traffic Safety and Enforcement

The Ontario Highway Traffic Act applies to road users on Ontario winter roads, requiring a driver’s license and registered vehicle. The Ontario Provincial Police (OPP) have the authority to enforce the law on winter roads and may partner with the Nishnawbe Aski Police Services (NAPS) to conduct patrol of some areas of the winter road network<sup>16</sup>. However, due to limited resources they patrol infrequently and there is uncertainty about which of these two organizations is responsible for things like speeding, driving under influence and otherwise dangerous driving, and responding to emergencies.

Obtaining driver’s licenses and getting vehicles licensed continues to be a challenge for residents of the Far North, with licensing and registration only available in larger centers.

<sup>16</sup> NAPS 2021-2022 Annual Report. [issuu.com/nishnawbeaskipoliceservice/docs/annual-report-2021-2022](https://issuu.com/nishnawbeaskipoliceservice/docs/annual-report-2021-2022)

The lack of training for commercial truck drivers is also identified as a gap. While rules about driving apply under the Highway Traffic Act, trucking companies are generally responsible for training their staff in winter road safety. By contrast, MTI conducts annual truck driver training sessions and requires drivers to obtain permits free of cost to operate on winter roads.

#### Key Findings

##### Safety

- Voluntary winter road construction standards combined with a lack of regular road inspections continue to create safety concerns for commercial and community winter road users.
- There is a lack of clarity around roles and responsibilities for Highway Traffic Act enforcement activities as well as limited resources for implementation.
- Driver and vehicle licensing to comply with the Highway Traffic Act remain challenging for remote community members.

## 3.5 Environmental Approvals

### 3.5.1 Permitting

Unlike all-season roads, the construction of new winter roads is not defined in the federal Impact Assessment Act (IAA) regulations. As such, new winter roads can meet federal requirements by addressing the environmental permitting requirements under the *Fisheries Act* and the *Migratory Birds Convention Act*.

However, siloed jurisdiction for permitting between the province and federal government creates a highly fragmented roads permitting system for proponents to navigate. For example, in Canada, fish and their habitats are regulated under the *Fisheries Act*, enforced by the Department of Fisheries and Oceans Canada (DFO). By contrast, species at risk and their habitats are mainly protected by provisions in the *Ontario Endangered Species Act* (ESA, 2007) and managed under a separate permitting system. Proponents are left navigating separate approval processes, often requiring technical expertise and know-how that may not be readily available to First Nation communities and frequently resulting in lengthy delays (Figure 3).

There are multiple consequences to this framework:

- The proponent carries a significant portion of the bureaucratic burden.
- The lack of inter-agency coordination often results in requests for redundant information, increasing the proponent's burden, costs, and development timelines.
- A proponent's lack of know-how or experience can lead to unnecessary delays.
- The technical nature of some permits and limited guidance often force proponents to rely extensively on professional consultants at a high cost.

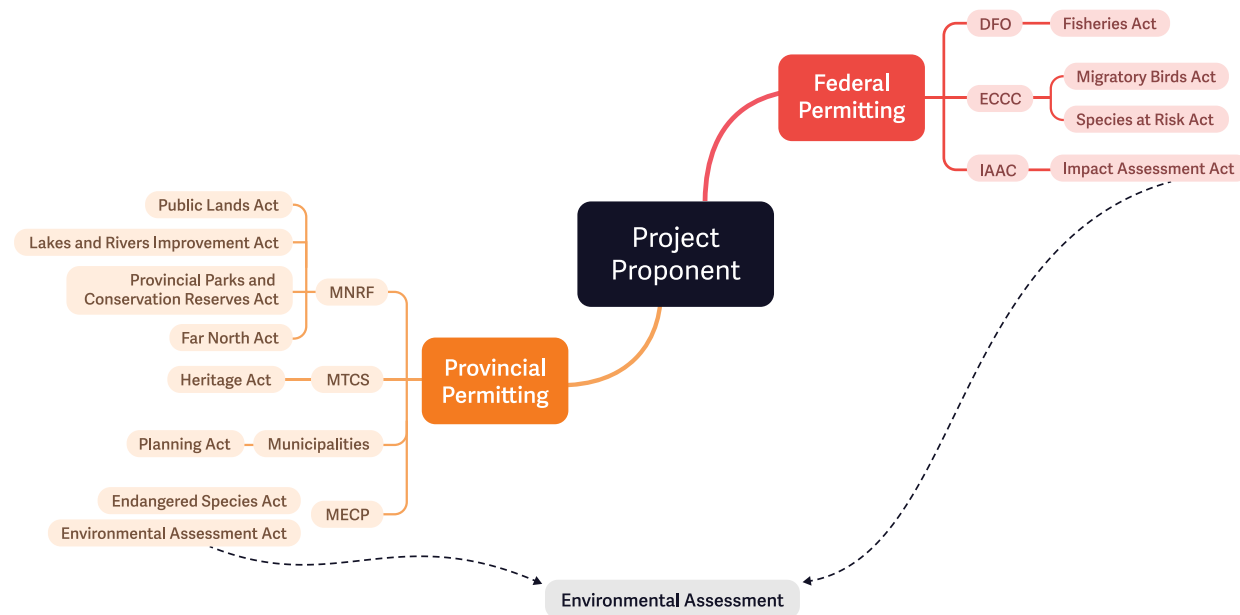


Figure 3. Diagram of the environmental permitting framework for winter and all-season roads in Ontario, Canada.



### 3.5.2 Provincial and Federal Environmental and Impact Assessment

Transitioning from winter to all-season roads is regulated under both provincial and federal environmental assessment law. The development of new all-season roads may be subject to the federal Impact Assessment Act (2019) and the Ontario Environmental Assessment Act (1990). In Canada, new all-season roads longer than 75 km must complete a federal Impact Assessment (IA). In Ontario, an EA is not mandatory but can be designated by Ministerial order.

Completing an environmental assessment is a costly and lengthy process that may delay Northern communities' transition to a more resilient transportation system. This highlights the need to invest in maintaining the winter roads network as an essential steppingstone in supporting the transition. The federal government is currently preparing amendments to the Impact Assessment Act in response to a Supreme Court's decision that regarded the Act as largely unconstitutional. So far it is unclear if the amendments could affect the development of new winter and all-season roads.

#### Key Findings

##### Environmental approvals and permitting

- A siloed permitting approach leads to unnecessary confusion and delays for winter road planning and construction.
- The complexity of the environmental/impact assessment process for all-season roads creates barriers for communities seeking to transition winter road systems to more permanent settings.

## Key Messages and Recommendations

The critical take-home message for most participants of the Summit was to develop and instill creative and simplified solutions to deal with Ontario's current winter roads system. The participants also identified a few significant issues that require the action of federal and provincial regulators.



Consolidating jurisdictional duties over the management of winter roads under one organization could address many shortcomings in the current winter road system and processes.



Access to inflation-adjusted funding must be the top priority for the Ontario winter roads program.



Climate change will increasingly—and negatively—impact winter roads. A strategic, coordinated approach based on a comprehensive assessment of Far North transportation vulnerabilities is urgently needed.



Current safety standards are insufficient to manage the winter roads, so safety improvements must be prioritized.



A comparative case study of Manitoba's winter road system could help identify actions and opportunities to improve Ontario's management.



First Nation communities must be part of the decision-making processes regarding winter road development and climate change adaptation.



Multiple research studies from feasibility, case-study comparisons, climate change impact assessments, knowledge gap assessments, and socioeconomic development reviews are needed from the federal and provincial governments.



Economic and social development projects must integrate winter road construction, maintenance, and climate change adaptation.



From safety regulation to permitting, standardization is needed within the province of Ontario.



Streamlining the permitting process would significantly remove barriers that plague the application and funding process.



The provincial government must engage with local communities to collaborate and co-manage projects.



Specialized training is needed to address all aspects of winter road management (permitting, construction, operation, etc.).



Enhanced communication between federal and provincial regulators and First Nation communities is essential.



Based on the information gathered at the Summit and post-conference, **six recommendations** were developed to address gaps and reinforce priorities for action as identified by the participants, interviewed community members and technical experts, as well as a literature review of current sources and past road forum reports.

### Recommendation 1:

Immediate funding reform is required to address critical gaps in winter roads funding.

Immediate funding reform was identified as a top priority by delegates in attendance as there is currently inadequate funding in the construction and maintenance of the winter roads. Current funding has not kept up with rising inflation rates, and the cost of fuel alone has increased substantially in remote communities, in addition to rising equipment and associated maintenance costs. Increased funding will be necessary as remote communities adapt to climate change.

### Recommendation 2:

Establish a First Nations-led Far North Road Agency to coordinate strategic planning, funding advocacy, permitting and the development of technical & safety standards for the winter road system. A 2008 NADF feasibility study offers useful guidance on governance models for the roads agency.

The province should support the establishment a formal collaborative framework among First Nation communities in Ontario to enhance their collective involvement in all aspects of winter road management, encompassing coordination of road operational activities, planning, permitting, advocacy for policy development and funding, and knowledge exchange.

Establishing a forum to improve Ontario's winter road network, including transitions to all-season roads, was also one of the recommendations from the interim report of the Task Force established under the Connecting the North: A Draft Northern Ontario Transportation Plan (2020).

Fostering knowledge exchange and capacity-building initiatives among First Nation communities to share traditional knowledge, best practices, and technological advancements related to winter road management will enhance collective expertise and contribute to the network's long-term sustainability.

### Recommendation 3:

Complete a comprehensive assessment of transportation system vulnerabilities in the face of climate change and other stressors.

Ontario's winter road network is a crucial lifeline for remote northern communities, providing access to essential goods, services, and infrastructure. For some goods, these roads are the only option for transportation, such as bringing heavy equipment to the community. The cost of air transport of heavy materials and equipment is multifold. To date, efforts to address climate change impacts to winter roads have been piecemeal and reactive.

Vulnerability assessments of each winter road corridor would provide valuable insights into the specific risks and enable prioritization in funding, policy, and other resource decisions. A vulnerability assessment is a systematic process of identifying and evaluating the potential harm climate change could cause. It is an effective tool for developing adaptation strategies to reduce the negative impacts of climate change in consideration of funding, operational capacity, knowledge, and other limitations. A climate change vulnerability assessment would enable a proactive approach to preventing future issues rather than the current reactive approach that is oriented towards solving urgent problem areas on winter roads.

It is imperative that a comprehensive assessment of vulnerability be undertaken to allow for a more strategic approach to maintaining the viability of the winter road system.

### Recommendation 4:

Embed climate change impacts into all policy, planning, funding, and decision-making processes for winter and all-season road networks.

A growing body of research across Canada shows that climate change is reducing the connectivity of Northern communities and damaging their socio-economic well being by increasing the reliance on costly air transportation of goods and people. All decision-making about the winter roads system should integrate the best available scientific and traditional knowledge to ensure appropriate planning, funding and realignment of winter road corridors to minimize economic and social disruption to Far North communities.

### Recommendation 5:

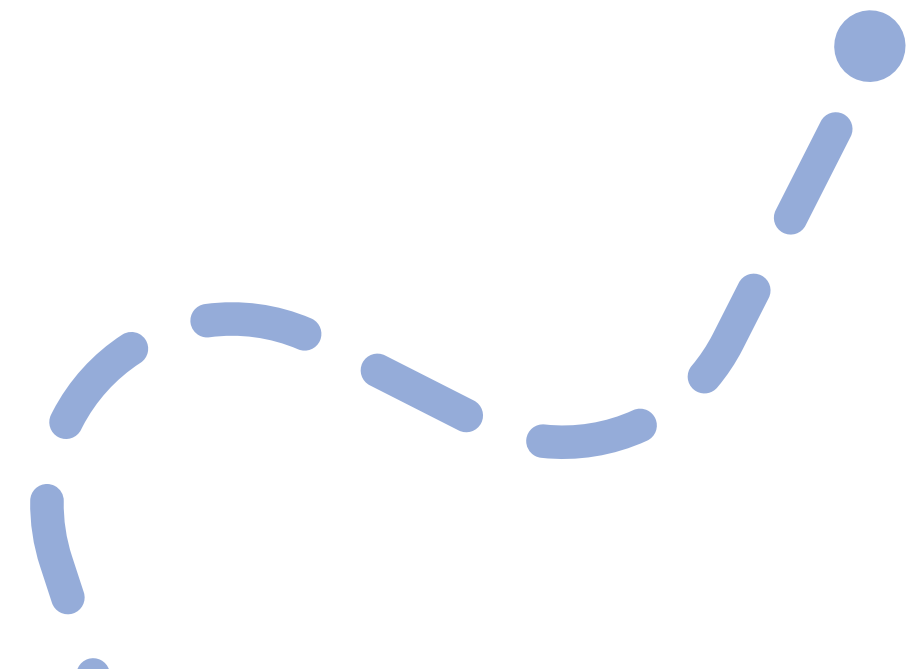
Establish a one-window, streamlined provincial and federal environmental assessment and permitting process for roads and water crossings.

The summit identified a need to simplify (from a proponent perspective) a highly complex and fragmented roads permitting system. With climate change forecasts driving an increasing need for route realignments and more all-season road construction, questions and uncertainties related to permitting will need to be resolved to maintain transportation systems in the Far North.

### Recommendation 6:

Improve traffic safety on winter roads immediately by working with the Ontario Ministry of Transportation and commercial transport companies to enhance safety practices.

Although the Ontario Highway Traffic Act applies to the winter roads, law enforcement for infractions such as speeding, driving under the influence and other dangerous driving practices remains minimal. Often, poor signage introduces uncertainty on speed limits and increases safety concerns on difficult sections of winter roads. From safety regulation to permitting, standardization is needed within the province of Ontario. Improving traffic safety would require multiparty solutions between community leadership, road construction staff and road users, government, law enforcement and commercial vehicle operators.





# Appendix A: Summit Compendium

## 5.1 Presentations

### 5.1.1 Northern Winter Roads and Climate Change – Fort Severn First Nation Case Study – KGS Group in Partnership with Keewaytinook Okimakanak and Fort Severn First Nation

#### Highlights

- Implementing ASR (All-Season Road) Strategies in constructing winter roads could provide a viable solution to Northern First Nation communities facing climate change.
- Climate change is set to alter the course of conventional winter road building, making it no longer sustainable or viable.
- Alternative routing—while also factoring ASR strategies—has been suggested to alleviate winter roads in poor condition.

In partnership with Keewaytinook Okimakanak and Fort Severn First Nation, KGS Group showcased a case study of applying the ASR (All-Season Road) strategy, a climate-sensitive winter road strategy, to the Shamattawa-Fort Severn Winter Road. This winter road stretches over 305 km and is currently managed by Fort Severn First Nation. However, this road is under threat due to the rapidly increasing effects of climate change. The closure of this winter road could devastate local Northern communities as it allows the transport of vital goods, and it is the only vehicular access point to the Shamattawa community.

Increasingly warmer weather shortens the winter road seasons by thawing the frozen ground (permafrost) and reducing the stability of the roads. Conventional winter road routing methods favour flat, wet terrain paths, usually over wetlands, to reduce costs and avoid grading and tree clearing. However, rising instability and dangerous driving conditions have pushed First Nation communities to consider and apply other winter road-building methods. One of these methods, the ASR Routing Strategy, involves finding higher ground and aggregate/borrow sources on dry year-round sites. Ideal sites include well-drained, glacial fluvial ecosites such as moraines, eskers, and deltas. The ASR Routing Strategy also minimizes water crossings to reduce the occurrence of wet, weak spots along the road.

The team developed three alternative high-ground route options using the ASR strategy to address these climate challenges. Two options were placed on beach ridges along the coast—with one pilot project completed successfully—and the third followed a southern river system.

Implementing one of these alternative routes would alleviate many of the problems with the existing winter road. Although further research and creative approaches will be needed before decommissioning the current winter road, this case study shows that ASR Routing Strategies are a viable alternative to traditional winter road routing methods.

Throughout the presentation, the presenter or the audience identified the following as highlights:

- The current permafrost data has not been updated since the 1990s
  - Additional data must be collected to make better decision-making on winter roadbuilding
- Identified challenges/problems with conventional winter road building
  - Unstable terrain (muskeg/water crossings)
  - Erratic weather patterns/behaviours threatening road stability/integrity
    - Warmer weather that lasts longer
    - Sudden heavy snow periods in the winter
    - Less freezing degree days
- Land conversion
  - Forested areas —> muskeg/wetlands
- Stated solutions:
  - Utilizing high, dry grounds
  - Minimizing water crossings
  - Building on dry sands and gravel
  - Considering transitioning winter roads to a year-round strategy
- If unable to go around water crossings, install floating embankments or bridges

#### Expanded Highlights

## 5.1.2 Winter Roads Program: Bridges and Culverts Stream – Ministry of Northern Development

### Highlights

- A new stream program called the Bridges and Culverts Stream is set to help Northern First Nation communities further improve their winter roads via the Ministry of Northern Development (MND).
- Through this newly announced Stream, eligible participants can apply for funding for projects related to the purchase and installation of bridges and culverts.
- Joint applications are highly encouraged; however, there are stipulations to the application process that must be followed.
- \$5 million is portioned for the program, and applications are ongoing.
- There are two annual assessment periods, and the program will continue until 2028.

### Expanded Highlights

- The Ministry of Northern Development received an annual increase of \$5 million for the Bridges and Culverts funding stream.
- Complete applications will be assessed during two annual assessment periods.
- Applications received after the submission deadline will be evaluated in the next available assessment period. The current timeline is posted from 2023-2028.
- Work with communities and Indigenous organizations (e.g., Tribal Councils and winter road corporations) to identify opportunities to work together to maximize funding benefits through joint applications.
- The MND will have one application assessment period for 2023-24.
- Submission of applications for all permits and approvals is required for the project before applying to the program.

## 5.1.3 Winter Roads Climate Risk and Vulnerability Research – National Research Council Canada

### Highlights

- A climate report by the National Research Council of Canada (NRCC) showcases the impacts of climate change on winter roads in Northern Ontario.
- According to the research, warmer climate conditions are expected to degrade winter road conditions and shorten operational days.
- The team conducted a case study on a specific area or “Corridor” and found that winter temperatures tread above the standard by 2-3°C.
- Such findings can help winter road operators and builders decide when to open and operate on winter roads before it gets too warm.

A report by the National Research Council of Canada illustrates the vulnerability of winter roads in Northern Ontario due to climate change. As future weather projections indicate a warming North, the main objective of this research was to develop methods to systematically assess and quantify the impact of a warming climate while examining the current winter road system. Building such a study involves looking at these critical data sets:



Once data was collected, identifying the winter road network was next to match local weather stations to each route. By amalgamating the patchwork system of road networks and local weather stations, “corridors” were formed. Out of the five corridors, the research group conducted a case study on Corridor 1, including Pikangikum, Poplar Hill, McDowell Lake, North Spirit Lake, Deer Lake, Keewaywin, and Sandy Lake (Far North locations).

Examining current and projected average temperatures for Corridor 1 showcases higher than normal temperatures with winters treading above 2-3°C. The 2024 winter alone is projected to have above-normal early temperatures with just enough freezing-degree days (FDD) to sustain the winter roads through early March. This, in turn, causes winter roads to be operational for fewer days. For example, Deer Lake winter road has operated with less than 30 days (open to full load) in 6 out of 7 recent years<sup>17</sup>. Overall, operating seasons are becoming less certain and unpredictable with warmer winters, which are expected to worsen over time. The case study findings helped to establish a baseline for operating conditions in each corridor. In doing so, the climate data can aid winter road operators in determining when to open winter roads. However, the researchers noted that a road’s unique operating circumstances mean that some routes require more cold temperatures than others to open, especially for full loads.

Expanded Highlights

- The average temperature in Canada rose by 1.7 degrees Celsius between 1948 and 2016.
- The climate data mainly looked at daily temperature, snow on the ground, and ice thickness measurements.<sup>18</sup>
- The further North, the sparser the distribution of weather stations.
- For Corridor 1, winter 2024 seems to be on track to be comparable to 2020, 2022, and 2023.
- Winter 2024 average temperature and daily high are projected to be below 0 between December and early February to March.
- Some weather stations either had missing data or had no route information.
- Consultation with the Province of Ontario has established a 30-day operating window as a threshold for community resupply (open to full load).
- Climate data shows that, generally, winters have been cold enough for winter roads to open within corridor 1, but the length of time in the future is currently undetermined.

<sup>17</sup> See PPT presentation for reference to data

<sup>18</sup> Winter Road Climate Risk & Vulnerability 2020-2023 Research Summary. 2023. Crown-Indigenous Relations and Northern Affairs Canada & Indigenous Services Canada. [nrc-publications.canada.ca/eng/view/ft/?id=811fed70-eb56-4f3b-b795-201695feb6ae&dsl=en](https://nrc-publications.canada.ca/eng/view/ft/?id=811fed70-eb56-4f3b-b795-201695feb6ae&dsl=en)

5.1.4 Net Zero Deaths and Serious Injury– Assembly of Manitoba Chiefs First Nation Road Safety

Highlights

- Highlights the need to develop a First Nation-oriented winter road safety program, similar to the Manitoba First Nations Road Strategy.
- Such a program would reduce the number of fatalities and severe injuries on winter roads and focus on economic and social development goals for First Nation communities.
- The program could also provide collaborative opportunities between different agencies and organizations on the management and building of winter roads.

This presentation focused on the dire need for developing a road safety program for winter roads in Manitoba (Manitoba First Nations Road Strategy). Safe roads are a vital infrastructure component needed for the economic and social development of First Nations. These winter roads provide access to essential services and goods, not to mention economic development within the region. However, due to poor climate conditions, winter roads are in dire need of repair and management. Apart from unsafe road conditions, barriers to driver training and licensing services lead to dangerous accidents that further exacerbate road hazards. The implementation of a Manitoba First Nations Road Strategy would not only reduce the number of fatalities and severe injuries but also focus on economic and social development goals for First Nations.

The AMC (Assembly of Manitoba Chiefs) would form a First Nations Technical Advisory Committee upon adopting such a policy. The newly appointed committee would work with the AMC Employment, Economic Development, and Income Support Committee to make roads safer and inspire First Nations to make smart driving choices. The presenter then provided some policy points that the committees would tackle:

- 1

Developing a Road Safety Strategy.
- 2

Creating awareness of existing road safety legislation and policies with First Nations.
- 3

Improving access to MPI (Manitoba Public Insurance Company) driver testing and licensing.
- 4

Improving access to MPI services and accredited garages in First Nations.
- 5

Outreach information awareness and campaign.
- 6

Developing First Nations standards for collecting and distributing data on First Nations.



Once the work has begun, the following steps would be to encourage, build, and strengthen relationships between Assembly of Manitoba Chiefs, Manitoba Keewatinowí Okimakanak Inc., Southern Chiefs' Organization and Tribal Councils for road safety. This also includes MPI and MTI (Manitoba Transportation and Infrastructure), which have been unsuccessful with the latter. The presenter also identified other important goals, such as creating respectful standards for collecting First Nations' safety data. These standards would abide by First Nations principles of ownership, control, access and possession. Finally, collaborative projects revolving around First Nation economic development opportunities, such as Indigenous tourism, additional involvement from owner-operators, and supply chain optimization would be another top priority defined by the presentation outline.

## Expanded Highlights

Certain portions of the presentation were not recorded in the topic overview but are worth mentioning here as highlights provided:

- The Assembly of Manitoba Chiefs (AMC) and the Grand Chief's Office began discussions with Manitoba Public Insurance Corporation (MPI) in September 2021. In December 2021, MPI committed funding through a Letter of Intent; however, MTI denied requests to sign an MOU.
- The AMC Secretariat hired a First Nations Road Safety Coordinator on July 11, 2022.
- Any development from the strategic plan must have the Chiefs' oversight.
- In 2022-23, Manitoba had over 2,375 kms of winter roads. These roads serve over 30,000 people from 22 First Nations.
- The winter roads provided employment and training opportunities for more than 250 people and transported 2,500 goods shipments.

## 5.1.5 Manitoba Transportation and Infrastructure —Winter Roads in Manitoba

### Topic Overview

#### Highlights

- Case-study comparison of how Manitoba manages its winter roads today and the evolution of winter roads in the province.
- Information on the basics of winter roads is provided.
- Winter road safety protocols involve routine maintenance and inspections by certified and trained workers.
- Illustrates how winter roads are constructed, and identifies operational challenges that Manitoba faces.

This presentation provided a comprehensive look at the evolution of winter roads in Manitoba and how they operate today. In the late 1970s, privately constructed winter roads were transferred to the Ministry of Transportation and Infrastructure (MTI). Currently, these roads comprise 2,334 km and are entirely managed by the MTI. Locally, the MTI hires 22 contractors and maintains 20 construction contracts, plus maintenance contracts, employing roughly 250 workers. Other important key players in managing winter road operations include the following:

- |  |  |
|--|--|
| 1 Remote communities                   | 4 Indigenous Services Canada                     |
| 2 Indigenous Contractors               | 5 MHCA (Manitoba Heavy Construction Association) |
| 3 Motor carrier permit and enforcement | 6 Trucking Industry                              |

Typically, most winter roads are built on land (can be graded) or bodies of water such as lakes, rivers, or pure ice. Those on the ice must follow specific building codes and be given special attention before opening. Further North, however, muskegs or swamps replace solid ground with their own set of caveats. Winter roads are routinely maintained and inspected by certified and trained workers. It is policy and procedure that any new crew and individual worker undergo rigorous training and obtain a Certificate of Recognition (COR) to understand winter road standard specifications and safety protocols. If ever there is an issue related to the condition or safety of or on a winter road, dispatch reports can be made through [manitoba511.ca](http://manitoba511.ca). Important information found on this site includes local road maps, safety tips, and contact information for maintenance or assistance.

Associated winter road issues stem from poor weather conditions or dangerous accidents, but at times can be related to operations such as contractor performance. These problems can be mitigated through network improvements such as grading, bridge and culvert installations, and rerouting roads.

## Expanded Highlights

- MTI sets aside an annual budget of \$9.5M, of which \$5M goes to construction, \$3M to maintenance, and the rest to administration. However, a 50/50 cost-sharing approach is coordinated with Indigenous Services Canada (ISC).
- \$1-2M in Capital for bridges and improvements.
- 50% of the loads of freight are for fuel.
- Around 64km of the northern winter road system is made of lake ice.
- Ice roads are made using Gold's formula, which describes how the strength of a cold, black ice sheet increases with the square of the thickness. For example, 2" ice will support four times more load than 1" ice, all other factors being equal.<sup>19</sup>
- Based on moving loads, not stationary loads.
- The capacity of the ice is dependent on the thickness and quality, presence of cracks, extreme temperature changes, vehicle speed and load amount.
- GPR (Ground Penetrating Radar) or simple drilling techniques are utilized to test the ice.
- Winter road operators work a 96-hour/week schedule for 7-10 weeks.
- Staffing, accommodations, meals and transportation, and communication methods are all accounted for before the season starts.
- Overland flooding, snowstorms, and creek blowouts are some of the main weather-related winter road operational issues that lead to accidents and dangerous driving conditions.
- Other network improvement techniques include capping, rock removal, and the installation of Acrow® bridges.

## 5.2 Discussion Sessions

After the presentations, the attendees were split into multiple groups to discuss various topics ranging from funding to permitting protocols concerning winter roads. Each group was tasked with answering a set of guiding questions. The topics covered by these questions were grouped under three overarching and interconnected categories. Later, they transcribed their opinions and suggestions on paper. Participants then discussed and highlighted winter road areas threatened by climate change, safety, environmental, and cultural concerns in this activity. Using printed maps, managers and users identified the location of concerns and discussed the climate change resilience of each road. This discussion was guided by three questions about the specific location of risk areas and their adequacy to support roads under climate change scenarios, the availability of adaptation plans, and the need for community collaboration.

### Highlights

- Most participants were concerned about insufficient funding to address safety issues.
- The participants also expressed concerns about the fragmented jurisdiction and lack of government oversight of winter road safety.
- The participants agreed that climate change may exacerbate and create new safety issues.

The following questions guided this discussion session:



What are your community's concerns regarding winter road safety?



What are the current best practices?

## ◀ Safety



Figure 4. Topics mentioned by the participants in the "Winter Road Safety and Best Practices" discussion session. The size of each word or idea is proportional to how frequently it was mentioned in the discussion. The frequency determines the importance of said word or idea amongst the group members.

Highlights of the discussion included the following points of concern:

### Funding



Concern that Ontario's yearly winter road funding increments have not kept up with inflation rates.

Current funding model hinders new winter and all-season road planning and development - limited funding availability and lack of community technical expertise often leads to piecemeal projects and timely road development.

### Roles and Responsibilities



Fragmented jurisdiction over winter roads - lack of jurisdictional oversight has raised safety concerns e.g., lack of emergency and policing services along the winter roads or sometimes inadequate road maintenance.

## Climate Change



Concern about effects of climate change on the safety and reliability of the winter road networks and the piecemeal approach to addressing this issue.

Need to develop winter road safety standards.

Need for a coordinated, community-based approach to managing the safety of winter roads.

## 5.2.2 Streamlining the Permitting Process

The following questions guided this discussion session:



What has your experience been with the permitting process in winter road funding applications?

What do we need from partners in the government to streamline the process?

## ◀ Streamlining



Figure 5. Topics mentioned by the participants in the "Streamlining the Permitting Process" discussion session. The size of each word or idea is proportional to how frequently it was mentioned in the discussion. The frequency determines the importance of said word or idea amongst the group members.



Highlights of the discussion included the following points of concern:

## Permitting Process



Process is cumbersome, unclear, time-consuming, over-complicated, and unstandardized.

There is a lack of coordination on environmental jurisdiction between federal and provincial governments.

A single-window approach for permitting is needed. The current process involves multiple agencies that define information requirements that are often contradictory or duplicated and lack regulated timelines.

## Technical Expertise



Communities often lack in-house technical expertise required for the permitting process, increasing cost and reliance on external experts, cutting into budgets for road construction and maintenance.

Lack of flexibility and unnecessary complexity in the application processes, including requirement for separate applications for each alternative route.

Need for guidance documents, such as permitting roadmaps and checklists to facilitate applications and to avoid costly delays caused by incomplete applications.

Improved online tools e.g., ability to track the status of their applications online.

The groups concluded that the current permitting system must be overhauled and reformed, ideally as a standardized, central system.

### 5.2.3 Funding

The following questions guided this discussion session:



What are the current gaps in funding for winter roads?

What supports are needed at the community level to complete funding applications?

Among all the topics discussed at the Summit, funding was raised as the most important and relevant issue across all groups (Figure 7). It must be noted that funding throughout the discussions was deeply interconnected and intertwined with the other topics and dominated the group conversation.

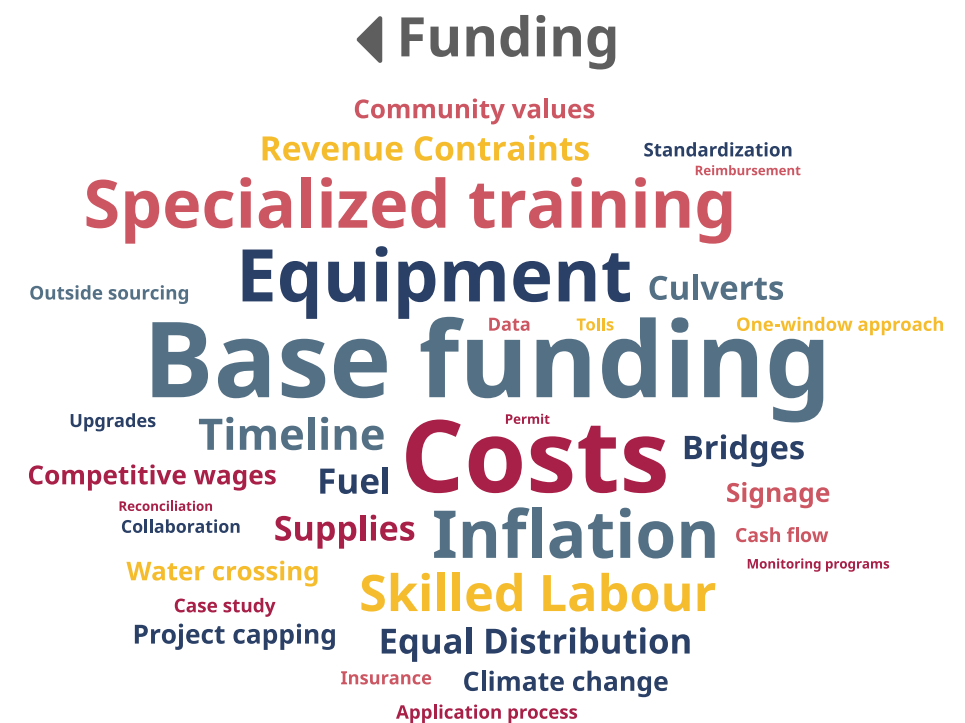


Figure 6. Topics mentioned by the participants in the “Funding” discussion session. The size of each word or idea is proportional to how frequently it was mentioned in the discussion. The frequency determines the importance of said word or idea amongst the group members.

## Funding Amounts



Current funding is not sufficient and not reflecting inflation - the rise in costs is substantial and disproportionately affecting First Nation communities.

Base funding should increase to meet the current inflation rates and protect the viability of projects dealing with increased costs.

If not possible, a fall-back proposal such as a reimbursement-based program should be implemented to aid those needing immediate funding.

## Funding Barriers and Constraints



Participants identified specific constraints including:

Lack of skilled personal to submit applications – need better training

Revenue allocation – need different & long-term funding streams (seasonal, year- round and stretched term)

Allocation timelines – can make or break a winter road project

Jurisdictional oversight – system is currently fragmented and complex, lacking safety standards and oversight

Governments should consider conducting regional feasibility and geographical case studies to identify spending gaps to make the system more efficient.

Governments should coordinate on a single-window approach to facilitate and speed funding applications.

The discussion showed interconnections between these concerns and the need to address them in a holistic way. Enhancing the climate resiliency of the transportation network in the Far North demands a radical change in the funding model. This includes addressing the regulatory power fragmentation to ensure the adequate support of all jurisdictions.

## Appendix B: Ontario Winter Road Funding for the 2022-2023 Season

Community/ Funding Recipient	Federal Funding (ISC)	Provincial Funding	Total Investment	Project
Amimakee Wa Zhing #37 (Northwest Angle #37)	\$77,226	\$80,861	\$158,087	Winter road from Windigo Island to Kenora
Bearskin Lake	\$166,630	\$167,117	\$333,747	Winter road running northeast from Muskrat Dam to the community
Cat Lake	\$276,669	\$277,478	\$554,147	Winter road running from Pickle Lake to the community
Deer Lake	\$138,649	\$138,739	\$277,388	Winter road running west from North Spirit Lake
Eabametoong (Fort Hope)	\$155,626	\$173,423	\$329,049	Winter road from the community to Kabania Staging Grounds
Fort Severn	<i>Ontario Portion</i> <b>\$367,843</b> <i>Initial MB Portion (50%)</i> <b>\$141,479</b> <i>Final MB Portion (50%)</i> <b>\$141,479</b>	\$368,919	\$1,019,720	Winter road from the community to the Ontario border near Shamattawa, Manitoba
Kasabonika Lake	\$81,743	\$81,982	\$163,725	Winter road from the community to Wawakapewin
Keewaywin	\$141,478	\$149,775	\$291,253	Winter road from the community to the eastern shore of Weagamow Lake
Kimesskanamenow LP*	\$587,726	\$589,443	\$1,177,169	Winter road from Moosonee to Attawapiskat via Fort Albany and Kashechewan
Kingfisher Lake	\$290,187	\$291,035	\$581,222	Winter road from Kingfisher Lake to North Road Junction (Hwy 599)
Kitchenuhmaykoosib Inninuwig (KI)	\$191,782	\$571,321	\$763,103	Winter road from the community to Kingfisher Lake, and bridge repairs
Marten Falls	\$220,078	\$320,721	\$540,799	Winter road from the community to end of Anaconda Road
McDowell Lake	\$47,286	\$47,348	\$94,634	Winter road from the community to the North Spirit Lake winter road
Moose Cree	\$380,346	\$381,457	\$761,803	Winter road connecting Moose Cree First Nation to Otter Rapids

Community/ Funding Recipient	Federal Funding (ISC)	Provincial Funding	Total Investment	Project
Town of Moosonee		\$23,561	\$23,561	Two ramps required for the winter road to Moose Factory
Muskrat Dam	\$166,669	\$167,155	\$333,824	Winter road from the community to Weagamow Lake
Neskantaga	\$352,568	\$353,598	\$706,166	Winter road from Pickle Lake North Road to Neskantaga
Nibinamik	\$161,914	\$162,387	\$324,301	Winter road from the community to Common Road
North Caribou Lake	\$126,960	\$126,438	\$253,398	Winter road from Windigo Lake to the community and from the community to the west shore of Weagamow lake.
North Spirit Lake	\$245,729	\$246,447	\$492,176	Winter road from the community to the all-season Nungessor Road.
Northwest Angle #33	\$19,428	\$19,484	\$38,912	Winter road from the community to Northwest Angle #37.
Pikangikum	\$51,876	\$52,027	\$103,903	Winter road from the community to the all-season Nungessor Road.
Poplar Hill	\$77,027	\$77,252	\$154,279	Winter road from the community to Pikangikum
Sachigo Lake	\$110,038	\$110,360	\$220,398	Winter road running northeast from Muskrat Dam to the community.
Sandy Lake	\$172,918	\$173,423	\$346,341	Winter road connecting with the Deer Lake Winter Road System and connecting to Keewaywin Road.
Temagami	\$18,863	\$18,918	\$37,781	Winter road from Temagami Access Road to Bear Island.
Wapekeka	\$50,304	\$50,450	\$100,754	Winter road from the community to Big Trout Lake Connection
Wawakapewin	\$205,131	\$195,534	\$400,665	Winter road from the community to Highway 599
Webequie	\$172,918	\$173,423	\$346,341	Winter Road from the community to Common Road
Weenusk	\$314,397	\$315,316	\$629,713	Winter Road from the community to Fort Severn
Windigo First Nation Council**		\$2,000,000	\$2,000,000	Replacement of eight ice bridges with pre-engineered portable bridges and culverts
Wunnumin Lake	\$94,319	\$94,594	\$188,913	Winter road from the Assine Lake turn-off to Wunnumin Lake
Total Funding 2022-2023	\$5,747,286	\$7,999,986	\$13,747,272	

Additional Funding support for WRs in 2022-2023	
Additional maintenance funding	\$595,183.00
Funding for work on Road Realignments	\$3,650,000.00
Funding for Bridge / Water Crossings Improvements and Repairs	\$2,695,072.38
Funding for Feasibility Studies - WR and ASR	\$412,971.00
Total	\$7,353,226.38

\* serves all three communities of Attawapiskat via Fort Albany and Kashechewan.

\*\* Serves the communities of Bearskin Lake, Cat Lake, Koocheching, North Caribou Lake, Sachigo Lake, Slate Falls and Whitewater Lake





# Appendix C:

## Canadian Jurisdictional Comparison of Roles and Responsibilities of Winter Roads Network Management

PROVINCE

Ontario

KM OF WINTER ROAD AND POPULATION SERVICE

3,200 km  
32 communities

**GOVERNMENTAL RESPONSIBILITY**  
MND administers the program and funding.

**COMMUNITY RESPONSIBILITY**  
First Nations are responsible for planning, permitting, construction, maintenance and monitoring.

**FUNDING MODEL**  
Cost sharing agreement between MND and ISC - \$6M, in addition to the MND bridges and culverts program - \$5M.

**CONSTRUCTION, MAINTENANCE AND MONITORING STANDARDS**  
“The best practices for Building and Working Safely on Ice Covers in Ontario” are voluntary guidelines.

**INSPECTIONS**  
MTO has previously contracted out inspection services.

**INFORMATION ON WINTER ROAD CONDITIONS**  
The Ontario government lists contact information for each winter road. NAN provides updates but refers to the communities for confirmation: [www.nan.ca/news-events/winter-road-updates-2](http://www.nan.ca/news-events/winter-road-updates-2)

PROVINCE

Manitoba

KM OF WINTER ROAD AND POPULATION SERVICE

2,400 km  
18 communities

**GOVERNMENTAL RESPONSIBILITY**  
MTI administers the program and is responsible for planning and coordinating construction, maintenance, and inspections. MTI contracts local communities for construction and maintenance.

**COMMUNITY RESPONSIBILITY**  
MTI contracts community-owned businesses for road construction and maintenance.

**FUNDING MODEL**  
Cost-sharing agreement between province and ISC. ISC provides \$5.5M annually.

**CONSTRUCTION, MAINTENANCE AND MONITORING STANDARDS**  
“Contractor’s Manual for the Construction and Maintenance of Manitoba Infrastructure & Transportation – Winter Roads” is bringing enforcement by the MTI inspectors.

**INSPECTIONS**  
MTI staff inspect road conditions, reporting to the managers responsible for the construction and maintenance contracts to ensure compliance of safety procedures and standard specifications.

**INFORMATION ON WINTER ROAD CONDITIONS**  
Winter road conditions are displayed in the interactive map Manitoba 511 managed by MTI: [www.manitoba511.ca](http://www.manitoba511.ca)

TERRITORY

Northwest Territories

KM OF WINTER ROAD AND POPULATION SERVICE

1,400 km  
10 communities

*The Tibbitt to Contwoyto Winter Road is one of the world’s longest heavy-haul ice roads, stretching roughly 400 kilometres and servicing three N.W.T. diamond mines.*

**GOVERNMENTAL RESPONSIBILITY**  
Department of Transportation administers the program and coordinates all activities. It contracts construction and maintenance to private contractors, including First Nation-owned companies.

**COMMUNITY RESPONSIBILITY**  
Department of Transportation contracts community-owned businesses for road construction and maintenance.

**CONSTRUCTION, MAINTENANCE AND MONITORING STANDARDS**  
“A Field Guide to Ice Construction Safety” and “Best Practices Guide for the Construction, Maintenance, and Operation of Winter Roads”.

**INFORMATION ON WINTER ROAD CONDITIONS**  
Northwest Territories Highway Conditions Interface, Including Winter Roads Information: [www.dot.gov.nt.ca/Highways](http://www.dot.gov.nt.ca/Highways)

# Appendix D: Resolution

## RESOLUTION

Nishnawbe Aski Nation

(807) 623-8228  
[FAX] 807-623-7730

nan.ca

100 Back Street, Unit 200  
Thunder Bay, ON P7J 1L2

### 24/17

### SUPPORT FOR NORTHERN ROADS SUMMIT REPORT AND CALLS TO ACTION

**WHEREAS** the current winter road network in northern Ontario services 32 communities, including 30 Nishnawbe Aski Nation (NAN) remote communities, directly connecting to the provincial highway network for a short period of time each winter;

**WHEREAS** the Ontario winter road network is becoming increasingly vulnerable to climate change impacts, so that radical change is required for the current funding structure to ensure sustainability for access to critical goods and services;

**WHEREAS** NAN hosted the Northern Roads Summit in October 2023 to bring together remote First Nations across Ontario currently funded for winter roads through the Ministry of Northern Development (MND) and Indigenous Services Canada (ISC);

**WHEREAS** the Northern Roads Summit included several remote First Nations, Tribal Councils, government partners and technical experts, who identified key priorities and recommendations to improve the current winter road system;

**WHEREAS** the "Northern Roads Summit: Building Resiliency in a Changing Climate" draft report was developed in collaboration with NorthWinds Environmental Services, who attended the event in person to capture feedback from all delegates, and the report includes key recommendations and priority areas;

**WHEREAS** Northern Roads Summit draft report was presented to the Chiefs Committee on Housing and Infrastructure for review and input on January 24, 2024;

**THEREFORE BE IT RESOLVED** that NAN Chiefs-in-Assembly support the Northern Roads Summit report and calls to action;

**FURTHER BE IT RESOLVED** that Chiefs-in-Assembly direct the NAN Executive Council to utilize the Northern Roads Summit report in their advocacy efforts to improve the current winter road network in Ontario;

**FINALLY BE IT RESOLVED** that Chiefs-in-Assembly direct the Executive Council to collaborate with remote First Nations, Tribal Councils, and government partners to develop solutions that meet the needs of all NAN remote First Nations, particularly in relation to the Ontario winter road system.

### RESOLUTION 24/17: SUPPORT FOR NORTHERN ROADS SUMMIT REPORT AND CALLS TO ACTION

DATED AT THUNDER BAY, ONTARIO, THIS 8<sup>TH</sup> DAY OF FEBRUARY 2024.

**MOVED BY:** Chief Michael Sugarhead, Nibinamik First Nation  
**SECONDED BY:** Chief Lefty Kamenawatamin, Bearskin Lake First Nation  
**DECISION:** CARRIED

  
Grand Chief Alvin Fiddler

  
Deputy Grand Chief

# Appendix E: Ontario's Road Network Map



Base map information derived from the Land Information Ontario Warehouse, Land Information Ontario, Ministry of Natural Resources and Forestry with modifications by staff of the Ministry of Energy, Northern Development and Mines. Other sources are: Transport Canada

The winter roads map currently available on the ministry's website is intended to be a schematic overview generally reflective of the existing network; no substantive changes have been made to any of the corridors.

Please note - this map is for illustrative purposes only, and should not be used for navigation. It is important to reach out to the community(ies) to which you are traveling to obtain the most current status of the route(s) being used.



Nishnawbe Aski Nation  
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Nishnawbe  
Aski Nation  
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