Northwest Territories Transportation Strategy

2015-2040

Northwest Territories Transportation

Minister's Message

The road, air, rail and marine transportation system has played a key role in the history and development of the Northwest Territories, and will continue to support sustainable communities and a growing economy into the future.

Over the past year, the Department of Transportation engaged a broad base of stakeholders to discuss the challenges and opportunities facing our northern transportation system. These engagements helped identify the vision and strategic priorities for enhancing our transportation system to meet the future needs of residents, communities, businesses and industry. As we mark the 25th anniversary of the Department of Transportation, established in 1989, and reflect on the great accomplishments achieved to date, it is the perfect time to redefine the path forward over the next 25 years.

This strategy, *Connecting Us*, presents a vision for the transportation system and the strategic long-term priorities that will guide future actions of the Department of Transportation. It also outlines a framework for measuring and reporting on our success into the future. Northerners are strong, resilient people and we must continue working together to strengthen connections, capture opportunities and embrace innovation. Doing so will improve and enhance our transportation infrastructure, services, programs and policies, which will, in turn, lead to a sustainable economy, vibrant communities and self-reliant people.

The Department of Transportation is dedicated to working with all stakeholders and partners so that our transportation system continues to evolve to ensure *northerners are connected to opportunities* for a strong and prosperous future.

Tom Beaulieu
Minister of Transportation

Acknowledgements

Many individuals and organizations provided valuable input into *Connecting Us: Northwest Territories Transportation Strategy 2015 to 2040*. We wish to thank over 500 residents who responded to an online transportation survey on the Department of Transportation's website; and the residents who participated in focused discussions on the strategy at engagement sessions in each region of the territory. Members of the Legislative Assembly, our Member of Parliament, Aboriginal leaders, and transportation and business sector representatives all shared their transportation system perspectives and advice through in-depth discussions with us. We also acknowledge the valuable input of department staff and perspectives received from our colleagues in other Government of the Northwest Territories departments.

Background documents that supported the development of *Connecting Us* can be found at **www.dot.gov.nt.ca**.

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Connecting Us:

At a Glance

Vision:

Northerners Connected to Opportunities

Mission:

To provide and promote a safe, reliable and sustainable multi-modal transportation system by strengthening connections, capturing opportunities and embracing innovation.

Connecting Us: At a Glance
(continued)

Core Values:

C	ollaboration and partnership
O	ngoing improvement
N	orthern innovation and resilience
N	orthern capacity building
E	nvironmental sustainability
C	are, respect and integrity
T	eamwork
E	xcellence in safety
D	edication to service

Strategic Priorities and Long-term Actions

Strengthening Connections

Continue to maintain and improve our existing transportation system to enhance the level of service, increase reliability, improve transportation safety and build on partnerships.

- Continue maintaining and upgrading the existing transportation system by:
  - promoting and capturing partnership opportunities with industry, other levels of government and other sectors to improve the existing transportation system across all modes as opportunities arise;
  - improving the existing transportation system in partnership with Canada under the New Building Canada Plan, Airport Capital Assistance Program, Parks Canada and other federal funding programs;
  - securing stable long-term funding through the capital planning process to address reconstruction needs across the transportation system; and
  - securing sufficient operational funding to address incremental maintenance requirements.
- Extend winter road, ice crossing and ferry seasons through innovative operational practices with the goal of reducing service disruptions and increasing operating seasons.
- Encourage CN Rail to continue improving the NWT rail line to Hay River to serve resupply needs and expand the system as required by demand.
- Encourage the Canadian Coast Guard and Fisheries and Oceans Canada to sufficiently maintain federal community resupply port facilities and marine services in the NWT and restoring safe marine operating conditions in the Port of Hay River and at key sections of the Mackenzie River Corridor.

Connecting Us: At a Glance
(continued)

Capturing Opportunities

Continue to expand the transportation system through partnerships to better connect our communities and support our economic development potential.

- Develop the following priority transportation corridors, which will support a lower cost of living, improved quality of life, sustainable resource development, tourism and other economic activities:
  - Mackenzie Valley Highway from Wrigley to Tuktoyaktuk;
  - all-weather road from Highway 3 to Whatì; and
  - improved access into the Slave Geologic Province from Yellowknife to Nunavut.
- Promote and capture partnership opportunities with industry, other levels of government and other sectors to expand the transportation system across all modes as opportunities arise.
- Investigate opportunities to develop a new program to incrementally convert segments of winter road to all-weather highways as a step toward the development of priority corridors and to build community capacity and readiness skills.
- Advocate for improved transportation connections in our neighbouring jurisdictions that support trade and travel into the NWT.
- Continue to increase the length of season that communities are connected to the all-weather highway system by replacing ferry and ice crossings with permanent bridges.
- Seek additional funding for the Community Access Program to increase the number of small community-based projects to construct local access roads, trails and boating facilities, which create local employment and training and improve access to recreation, cultural and local tourism opportunities.
- Continue to monitor air transportation infrastructure and incrementally expand facilities such as air terminal buildings, aprons, runways and commercial development areas as required to enable economic development and efficient air transport.

Embracing Innovation

Continue to improve the way we do business by improving service delivery, modernizing transportation programs and policies, communicating better with the public to improve awareness and safety, applying new technologies, adapting the system to the effects of climate change and promoting environmental stewardship.

- Continue to innovate operation and maintenance approaches and practices across the system to improve efficiency and effectiveness.
- Continue to improve safety across the transportation system to reduce incidents, fatalities and loss of property by:
  - implementing the Road Safety Plan, including infrastructure safety improvements, regulatory changes, increased enforcement and public awareness;
  - working with enforcement partners to increase levels of enforcement and regulatory compliance;
  - modernizing and enhancing safety legislation and regulations; and
  - increasing safety public education and awareness.

- Continue enhancing services to the public, including communications, vehicle registration, driver licensing and testing, and the collection of fees and tolls to clients in all NWT communities by:
  - increasing accessibility to the full range of driver and motor vehicle services as well as commercial permitting services, online as well as in person; and
  - improving the timeliness and availability of transportation system information communication.
- Continue to implement Green Light, the Department's environmental strategy, to uphold high standards of environmental stewardship by:
  - developing and implementing an environmental management plan to support activities and improve environmental compliance monitoring; and
  - enhancing vehicle and equipment procurement, operations, maintenance and asset management procedures to support NWT greenhouse gas reduction objectives.
- Continue to implement the Climate Change Adaptation Plan to protect infrastructure and maintain transportation service levels with expected increased permafrost degradation and severe weather events by:
  - continuing to partner with the academic and engineering community and other levels of government to advance climate change adaptation research; and
  - continuing to monitor the condition of infrastructure and implement innovative cost-effective solutions in response to changing climatic conditions.
- Continue to harmonize motor transport regulations in the NWT with regulations in neighbouring jurisdictions to improve the efficiency and lower the cost of transport.
- Continue to modernize legislation, policy and programs across the system to adapt to emerging technologies and change.
- Enhance existing information technology systems and add new data collection platforms across the NWT transportation system to monitor traffic, weather and the condition of our infrastructure to improve asset management and service delivery.
- Advocate for program and regulatory improvements that better support the northern transportation system by:
  - encouraging Transport Canada and NavCanada to improve air safety in the north, including improve weather and navigational aids;
  - encouraging Transport Canada to improve rail safety and capacity in the north; and
  - encouraging Transport Canada and Canadian Coastguard to improve marine safety in the north, including improved charting and navigational aids.

1.0

Connecting Us from the Past to the Future

Access to safe, reliable and sustainable transportation is essential to all Northwest Territories (NWT) residents, communities, businesses, industries and visitors. The transportation system influences our quality of life, cost of living and the economic opportunities available to us. The Department of Transportation (DOT) is dedicated to continuing to work with all stakeholders to ensure the transportation system is well positioned to meet current and future needs across the NWT. *Connecting Us*, the NWT Transportation Strategy for 2015 to 2040, sets forth this path.

1.0 Connecting Us from the Past to the Future (continued)

DOT's mandate, as per the *Transportation Establishment Policy*, is to "plan, design, construct or reconstruct, acquire, operate and maintain public transportation infrastructure in the NWT, including community airports, docks and the highway system, pursuant to devolved authorities and/or Memoranda of Understanding between the Government of the Northwest Territories and federal government, and to regulate and license individuals and vehicles operating in the NWT."

DOT issued its first NWT Transportation Strategy in 1990, which defined the path forward for the newly created Department of Transportation, addressing each transportation mode serving the NWT, which, at that time, also included Nunavut. The 1990 strategy helped identify investment priorities and served to focus the DOT's efforts to achieve significant improvements to the transportation system over the past 25 years, since the Department was established in 1989.

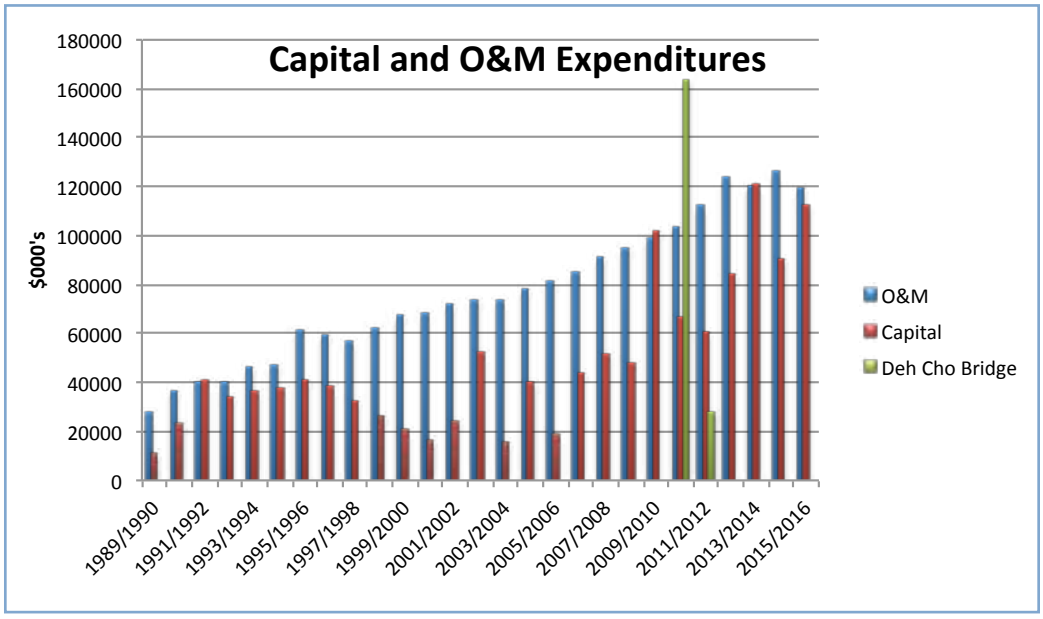
Over the last 25 years the Department of Transportation has:

- improved transportation safety and reduced accidents and fatalities across the NWT transportation system;
- invested over one billion dollars in capital improvements to highways, winter roads, airports and ferries;
- developed a skilled and competent northern transportation workforce;
- developed and adopted new and emerging technologies such as ice spray construction techniques, online driver and motor vehicle services, Remote Weather Information Systems, and automatic toll collection;
- supported over 320 local Community Access Program projects such as community access roads, trails and local marine facilities, benefitting subsistence harvesting, cultural initiatives and tourism;
- improved client services, including online motor vehicle services and mobile issuing stations, to better serve our remote communities;
- established new highway access to the communities of Wrigley, Jean Marie River, Nahanni Butte and Tuktoyaktuk (in progress);

- established new annual winter road access to the communities of Wekweètì and Colville Lake;
- reconstructed and relocated several NWT community airports, built new air terminal buildings and lengthened runways;
- built 37 new permanent bridges along the Mackenzie Valley Winter Road;
- completed the Deh Cho Bridge, spanning more than a kilometre, over the Mackenzie River near Fort Providence;
- advanced climate change research and adopted climate change adaptation strategies; and
- began construction of the northernmost segment of the Mackenzie Valley Highway, from Inuvik to Tuktoyaktuk.

While many improvements have been accomplished, it is important for the NWT transportation system to be well positioned to address the emerging challenges and opportunities over the next 25 years. The NWT has much to gain by continuing efforts to expand and improve the transportation system, which, in turn, supports further development of a sustainable northern economy and communities. The NWT Transportation Strategy 2015 to 2040 defines the vision for the transportation system in 25 years, and identifies the strategic priorities and actions required to achieve that vision. It also redefines the Department of Transportation's mission and core values, which will be employed in our work. The implementation of the transportation strategy, and the continual improvement of transportation infrastructure and services, will address the challenges our transportation system and users may face over the coming decades and maximize the opportunities that are before us. *Connecting Us* will ensure that northerners are connected to opportunities through a safe, reliable and sustainable transportation system into the future.

Expenditures (1989/90–2015/16)



2.0

Connecting Us as Transportation System Partners

The Northwest Territories is served by an extensive and effective multi-modal transportation system, consisting of road, air, rail and marine services owned and operated by a range of partners. Operating an effective multi-modal transportation system takes collaboration, partnership and effective ongoing communication between all transportation system partners.

2.0 Connecting Us as Transportation System Partners (continued)

The GNWT Department of Transportation owns, maintains and operates existing NWT public highways, the public winter road system, community airports and marine ferries, and regulates and licenses public and commercial drivers and vehicles. These responsibilities were transferred to the GNWT from the federal government through various devolution agreements in the early 1980s and 1990s. The federal government still retains the responsibility for new highway infrastructure, even following the recent transfer of responsibility for lands and resources to the GNWT in 2014. Investment in strategic infrastructure that promotes and supports sustainable development provides even greater benefit to the GNWT and Aboriginal governments in the NWT since 2014 as devolution of lands and resources has provided a mechanism to share in the benefits accruing from development.

Transport Canada regulates the transportation of dangerous goods, motor vehicle safety standards, airports, aircrews and aircraft, commercial marine operators and commercial vessels, and rail operations in the NWT.

NavCanada, Canada's private air services provider, delivers air traffic control, airport advisory, and flight and aeronautical information at airports across the country and throughout the NWT.

The Canadian Coast Guard and Fisheries and Oceans Canada are responsible for the delivery of marine support services in the NWT, including marine search and rescue, aids to navigation, marine communications, charting, navigation channel maintenance, icebreaking support, and community marine resupply facilities.

Parks Canada owns and operates roads within National Parks such as a 90 kilometre section of NWT Highway 5 that passes through Wood Buffalo National Park. DOT maintains this segment on behalf of Parks Canada under a Memorandum of Understanding.

Northwest Territories' communities own and operate local community roads within municipal boundaries and some also operate community airports (Behchoko and Fort Simpson) that are not part of the GNWT airport system.

The private sector also owns and operates transportation infrastructure in the NWT. Privately owned infrastructure includes private roads (ie. Tibbett to Contwoyto Winter road), private airports and airstrips (ie. mines and exploration camps), private marine facilities (ie. shore facilities in Hay River and Norman Wells), and rail to Hay River, NT.

The NWT system interfaces with transportation systems serving the Yukon, British Columbia, Alberta and Nunavut, thus supporting trade and travel across northern and western Canada.

Realizing the vision of the transportation system will take ongoing collaboration and partnership between transportation system operators, providers, regulators, and public and commercial users.

3.0

Connecting Us to Territorial and National Objectives

The transportation system supports several of the key objectives of the GNWT and Government of Canada.

3.0 Connecting Us to Territorial and National Objectives (continued)

Priorities of the NWT's 17th Legislative Assembly – Believing in People and Building on the Strengths of Northerners: Improving the transportation system helps to build a strong and sustainable future for the NWT, increases employment opportunities where they are most needed, and strengthens and diversifies our economy.

Canada's Northern Strategy: The Government of Canada established a comprehensive northern strategy to meet the challenges and opportunities of a changing north. Canada is committed to helping the north realize its true potential as a healthy, prosperous and secure region within a strong and sovereign Canada. Improving transportation systems across northern Canada is integral to promoting social and economic development, and to exercising our Arctic sovereignty.

Connecting Now to the Future: A Vision for Transportation in Canada: Federal, Provincial and territorial governments, through the Council of Minister's Responsible for Transportation and Highway Safety, developed a common vision document, which states that, "In 2030, Canada will continue to maintain, promote and enhance safe, competitive, viable and sustainable transportation networks that enhance economic prosperity and quality of life." Improving the NWT transportation system will help achieve this national vision for transportation in Canada.

NWT Economic Opportunities Strategy: Reliable, efficient and cost-effective transportation services greatly helps to strengthen and diversify the NWT economy by stimulating investment, expanding potential, enhancing communities, building sectors using regional strengths, establishing a positive entrepreneurial environment and preparing NWT residents for employment opportunities.

NWT *Mineral Development* Strategy and the Oil and Gas Strategy (in progress): Mineral exploration and development is largely dependent upon the availability and adequacy of transportation infrastructure and services. Transportation system improvements and expansion to key areas of mineral and oil and gas potential can lower exploration costs and facilitate development.

NWT *Land Use and Sustainability Framework:* Working together, northerners will responsibly and sustainably manage the lands, waters and natural resources of the Northwest Territories for the benefit of current and future generations. Accessibility via the transportation system is an important component of land use. The availability and capacity of the transportation system influences current and future land uses.

A Greenhouse Gas Strategy for the Northwest Territories 2007-2015 and NWT Climate Change Impact and Adaptation Plans: Recognizing the adverse effects of climate change on the north, the GNWT committed to make best efforts to reduce greenhouse gas emissions across the NWT. These strategies inform and guide efforts to reduce carbon emissions and develop climate change mitigation and adaptation plans.

NWT Tourism 2020 (in progress), and *NWT Energy Action Plan:* These strategies recognize the need to improve transportation infrastructure and services to promote tourism and enable energy development.

Strategies supporting the social development of the north are also influenced by transportation. Transportation improvements support business and employment opportunities, help reduce the cost of living and develop local skilled workforces. The transportation system also supports access to health care, personal mobility, educational opportunities and other social needs that keep our residents healthy, productive and safe.

Fort Providence 140 km
Yellowknife 445 km
Fort Simpson 372 km

4.0

Our Multi-modal System

Each mode of transportation in the NWT relies on well-maintained infrastructure, efficient service providers and an effective regulatory regime that supports, governs and monitors transportation-related activities. The following section provides a snapshot of the current transportation system.

4.0 Our Multi-modal System
(continued)

With a land mass roughly the area of Alberta and Saskatchewan combined, the NWT transportation system connects 33 relatively small, dispersed communities across an enormous land mass.

- 29 of 33 NWT communities currently have access to the NWT Highway System for at least part of the year.
- 4 remote NWT communities rely exclusively on air and marine services.
- 27 NWT communities have public airports and the remaining six communities have ready access to airports in neighboring communities.
- 11 communities rely on a combination of air, winter road and summer marine services.

Map of the NWT Transportation System

4.0 Our Multi-modal System
(continued)

4.1 Connecting Us by Road

The NWT is currently linked to the National Highway System through the Yukon Territory, British Columbia and Alberta.

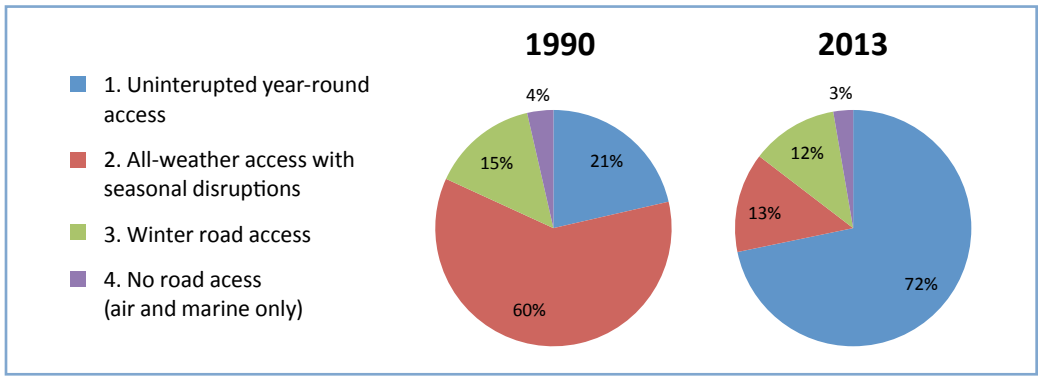
The NWT Highway System, operated by DOT, consists of 2,200 kilometres of all-season highway and 1,625 kilometres of public winter roads. Four marine ferries in summer and four ice crossings in winter seasonally bridge the highway system across the Liard, Mackenzie, Peel and Arctic Red/Mackenzie Rivers. The private sector also maintains and operates roads to service mines and oil and gas exploration sites in the NWT.

There are currently over 35,000 registered motor vehicles in the NWT. Several experienced commercial motor transport operators, based in the NWT and southern Canada, deliver essential freight and bulk fuel supplies to clients across the highway system. There is significant competition for the provision of motor transport services across the NWT.

Currently:

- 12 communities – 36% have uninterrupted access via the all-season highway system;
- 6 communities – 18% have seasonally interrupted access via the all-season highway system;
- 11 communities – 33% of NWT residents have access via seasonal winter roads; and
- 4 communities – less than 12% of communities have no access to the highway system.

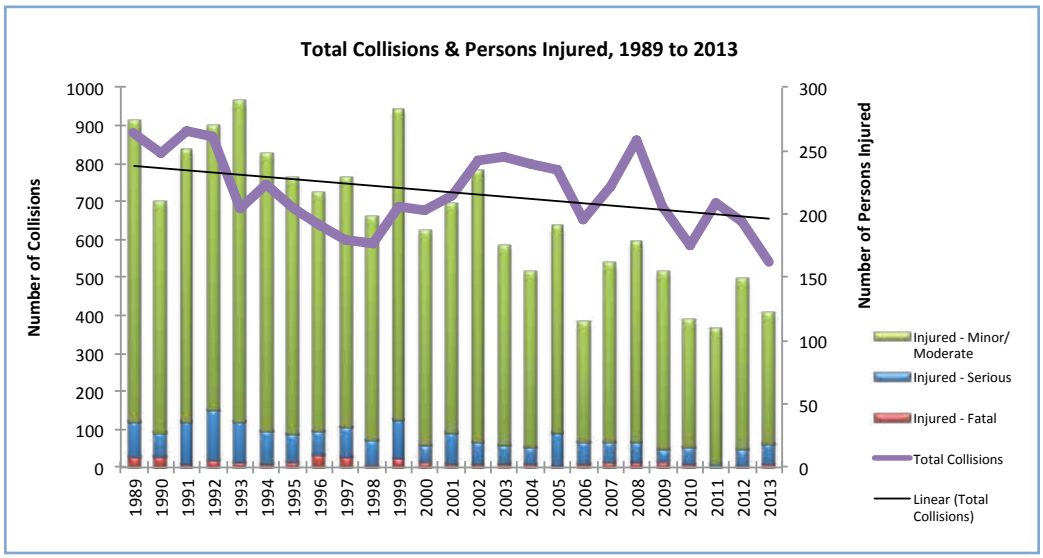
Highway Access Status 1990 vs. 2013 (by population)



Motor vehicle traffic is anticipated to continue to increase across all highways and winter roads, with levels increasing substantially in response to resource development activities, inter-community travel and tourism.

Despite increased traffic volumes, road safety continues to improve. In 2015, DOT developed a Road Safety Plan that analyzed road safety trends and identified actions to continue improving road safety in key areas.

Traffic Collision Trends – Collisions, Injuries and Fatalities



Much of the highway system in the Northwest Territories was constructed in the 1960s through the federal "Roads to Resources" program. The highway system was constructed to minimum standards and never completed as planned through the Mackenzie Valley or Slave Geologic Province into Nunavut. The highway system has the greatest level of outstanding capital needs of all GNWT infrastructure categories. Highway Functional Assessments, completed in 2014, indicate that significant reconstruction efforts are required across the system. In addition, highway expansion is required to improve community connections and enable resource development.

4.0 Our Multi-modal System
(continued)

4.2 Connecting Us by Air

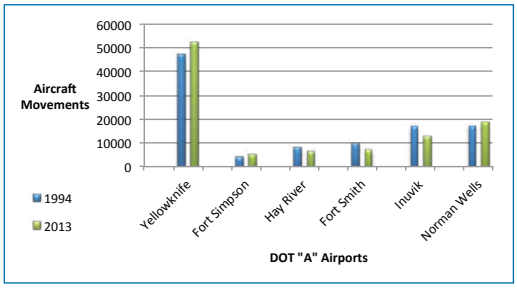
The NWT Airport System consists of 27 GNWT operated community airports, water aerodromes, private airports and licensed air carriers operating fixed wing and rotary winged aircraft. The NWT currently benefits from direct air links with the Yukon, Nunavut, Alberta and Ontario. Licensed and certified airports are regulated by Transport Canada.

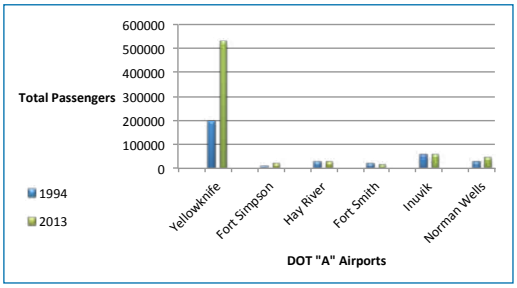
Air traffic volumes are anticipated to increase across the system, with levels rising substantially in response to resource development activities, inter-community travel and tourism.

Several NWT-based and national air carriers provide scheduled and chartered services throughout the NWT. The viability and cost of air services on each route is dependent upon passenger and freight volumes, and flight operation costs. There is significant competition in the NWT air sector on major routes, while completion on minor routes is more limited.

DOT continues to evaluate the impact of air carrier plans, anticipated changes in critical aircraft serving the NWT, air traffic volumes across the air system, and developments in the resource sector to ensure that priority airport improvements are identified. In 2014, DOT evaluated the length of all community airports to ensure that they meet the current and anticipated future needs of air carriers. The Northern Air Transport Association and individual carriers operating in the NWT confirmed to DOT that all existing airport runways currently meet their operational requirements. Military operations in the western Arctic may require runway infrastructure expansion in future.

Aircraft and Passenger Movements at NWT "A" Airports





4.3 Connecting Us by Rail

The NWT is connected to the national rail system by CN Rail, which operates a 311 kilometre single-track line extending from High Level, Alberta, to Hay River, NWT. This is the northernmost rail service in Canada, constructed by the Government of Canada in 1961 to 1964 to support base metal mining operations along the southwestern shore of Great Slave Lake. CN Rail reacquired the Meander River Subdivision in 2006 in recognition of the revenue potential for the line related to future resource development in the NWT. Rail equipment personnel and operations are regulated by Transport Canada.

- Approximately 3,000 rail car loads deliver cargo, mainly bulk fuel, from southern Canada to Hay River each year.
- There is minimal return cargo on rail cars routed back south to Alberta.
- Speed limits, weight restrictions and capital investment are continually required by CN Rail to operate and maintain the Meander River Subdivision, especially over sections underlain by permafrost, making it one of the most costly subdivisions to operate in CN Rail's system.
- Future expansion of the rail system serving the NWT is dependent upon resource development needs.

Although an extension of the NWT rail system is not anticipated in the near future, rail traffic on the existing line may increase beyond current levels in response to resource development activities. CN has plans to continue investing in the current rail system to maintain and incrementally improve existing capacity of the line.

4.0 Our Multi-modal System
(continued)

4.4 Connecting Us by Water

The NWT marine resupply system consists of 14 federally owned and operated community marine facilities, extensive federal marine support services and several experienced NWT-based marine carriers. Resupply cargo is transferred from rail or motor transport systems to marine carriers in the five main cargo marshaling ports – Hay River, Fort Simpson, Yellowknife, Inuvik and Tuktoyaktuk.

- 12 communities depend on marine carriers for the delivery of essential resupply cargo.
- 4 communities have no access to the highway system and rely exclusively on marine and air deliveries.
- Oil and gas explorers and producers in the central Mackenzie Valley and Beaufort Region rely heavily on marine carriers to support their activities.
- Future mining operations in the NWT and western Nunavut will depend on the provision of commercial marine services.

Marine traffic to NWT communities is anticipated to decline slightly across the system as the NWT all-season highway system expands to Tuktoyaktuk and north of Wrigley along the Mackenzie Valley. However, commercial marine services will continue to increase to remote NWT communities and in direct response to resource development. The commercial marine sector will continue to be challenged by a variety of factors, including competition from motor transport carriers and by air carriers in remote communities, fluctuating water levels across the system, finding capital resources to invest in new marine equipment to meet federal regulations, and fluctuations in the level of resource sector activities, especially in the oil and gas sector.

The provision of well-maintained community ports and marine support services across the NWT is the responsibility of the Government of Canada. This includes operation and maintenance of federal marine resupply sites, maintaining key ports and waterways to safe operating drafts, navigational aids and charting.

If Arctic marine shipping, mining and offshore oil and gas development increase in the future, the community of Tuktoyaktuk is poised to serve as a regional marine centre for the Beaufort Delta region once linked by an all-weather road.

CLEARANCE 5.18m

5.0

Opportunities and Challenges Ahead

A number of external and internal factors, which were identified during the environmental scanning processes, will present both challenges and opportunities for the NWT transportation system over the next 25 years.

5.0 Opportunities and Challenges Ahead (continued)

Aging and Underdeveloped Existing System

Much of the transportation system infrastructure is in need of reconstruction. Preserving existing infrastructure is essential for the safe and reliable movement of people and goods. Much of the existing infrastructure in the NWT was built to a minimum surface and geometric standard, which was suitable for the traffic loads of the day. However, highways and airports now require reconstruction to ensure they are capable of withstanding the demands of increased and heavier traffic associated with economic developments. Major culverts, bridge structures, pavements, runways and buildings, such as maintenance garages and air terminal buildings, are reaching the end of their lifecycles and in need of rehabilitation or replacement. These are capital-intensive projects that will compete for limited funding. There is also a lack of supporting infrastructure, such as communications and power, which increases the challenge of enhancing transportation services.

Incomplete Highway Infrastructure to Maximize Opportunities

There is an increasing demand for new roads or upgraded winter roads to support economic development and diversification, inter-community travel and to reduce the cost of living in communities. Expansion of the NWT transportation system will facilitate economic diversification and improve the quality of life for residents, who will gain increased access to essential services, economic opportunities, mobility and a reduced cost of living. The NWT's vast mineral potential alone is consistently ranked by mining companies surveyed by the Fraser Institute as one of the highest in North America, yet the NWT continues to have insufficient infrastructure required to achieve its full potential. There are also world-class oil and gas reserves in the Mackenzie Valley and Beaufort Delta. With the GNWT now receiving resource revenues following devolution, pressure will increase from industry to expand the system, strengthen inter-modal capabilities and develop serviced land at airports to unlock that potential. The GNWT is examining processes to make sound investment decisions related to investments to promote development.

Human Resource Pressures

DOT, transportation contractors and transportation companies are challenged in retaining and attracting skilled workers to work in the NWT transportation sector. Traditional transportation careers, particularly at the technical level, have lost some of their appeal among younger generations, making it a challenge for employers to attract and retain new skilled employees. In addition, many transportation professionals are nearing retirement and it will be difficult to extract and retain corporate knowledge. Upgrading the skills of current employees will also become a greater concern due to the pace of technological change and new specializations in transportation information and communication technologies.

Climate Change

Changes to the active layer and permafrost degradation have a particularly significant impact. Infrastructure, once thought to be robust and secure, is becoming unstable and unreliable. Not only must significant repair and maintenance costs be incurred, but economic development that is reliant on the transportation system is hindered.

Fluctuating climatic conditions across the north present increasing challenges to the transportation system, affecting highway, winter road, air, rail and marine transportation infrastructure and related services. These challenges include significant changes in air temperatures, changes in precipitation patterns, increasing frequency of storms and high wind events, and extensive forest fire activity.

Northern waters have become increasingly active and this trend is likely to continue growing with longer ice-free seasons. Also of concern is that milder Arctic summers are sending dangerous multi-year ice flowing into the shipping lanes of the Canadian archipelago. With more traffic in those lanes, there could be greater incidence of marine emergencies and a greater need for adaptive technologies to ensure sustainable, safe and efficient transportation routes.

High Cost of Living and Transportation Services

The lack of basic transportation infrastructure contributes to a high cost of living across the north. Improving road, air, rail and marine services directly reduces the cost of living. Infrastructure enhancements and effective transportation regulations improve the business environment for transportation carriers. This results in increased competition, operational efficiencies and direct transportation cost savings to customers. Improving all-season highway access to communities and resource projects reduces holding costs. Attracting new resource sector investment increases transportation activity, netting economy of scale benefits to other transportation customers.

5.0 Opportunities and Challenges Ahead (continued)

Limited Resources and Competing Priorities

Transportation infrastructure and support services across the NWT compete for limited resources with other high priority territorial programs. With limited funding opportunities available, new partnership opportunities and financing alternatives for capital project delivery are being explored. The federal government's New Building Canada Plan presents an opportunity to continue ongoing system-wide improvements.

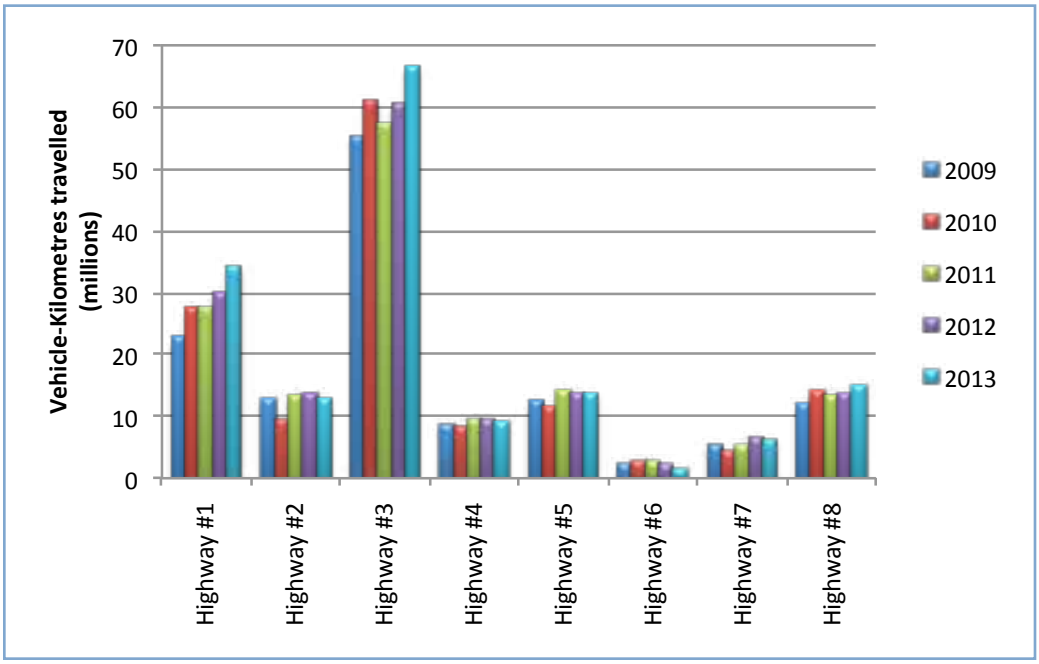
Sustaining the funding necessary to maintain and expand NWT transportation infrastructure and support services will require building effective partnerships between public governments and industry, priority setting to address highest priority concerns, developing innovative infrastructure financing models and using efficiencies to deliver more with less.

Increased Expectations and Demand

Expectations for improved mobility will continue to increase into the future. Improving and expanding the highway system, improving the seasonal operation of public winter roads and ferry services, and creating a climate for improved air services substantially increase the mobility of NWT residents and visitors through reducing isolation, lowering the cost of travel, improving access to medical services, education, sport, recreation and cultural opportunities.

With the recent success in undertaking major infrastructure upgrading projects, the Department will experience heightened public expectations regarding improved levels of service and safety. The travelling public has come to expect safe, uninterrupted and trouble-free travel throughout the NWT. The Department will be challenged to continue the pace of improvements. There will also be regional demands for equitable distribution of funding.

Vehicle Kilometres Travelled in the NWT



New Technologies and Vehicle Types

Technology in the transportation sector is developing quickly and the transportation system must be able to adapt to the changes. Fuel efficient, zero emission vehicles are nearing the possible. High tech electronics may enable vehicles to drive themselves, communicate with each other, with the road and with traffic signals. Vehicles of the future may use vision enhancement devices to help navigate through bad weather and warn of a possible collision with a pedestrian or animal. They may also be able let you know if you are getting drowsy or straying from your lane. On the freight side, commercial transport vehicles are getting larger, longer and more efficient. For resupply, airships may even become possible. The transportation system must be adaptable to these changes in the future.

Regulatory and Land Management Regimes

DOT operations and construction activities, as well as those of our partners, are subject to an array of federal transportation safety, security and environmental regulations. Examples include Safety Management System requirements for the air system, the requirement for double-hulled fuel barges and new salt management techniques on the highway system. Modified or new regulations are being brought forward on an ever-increasing basis. Parallel to these new regulations is an expanded monitoring and enforcement requirements.

5.0 Opportunities and Challenges Ahead (continued)

Changes in Demand, Service and Pricing for Transportation Services

Transportation service providers respond to customer demand and their operations in the NWT can be challenged by competition, the state of supporting infrastructure, high operating costs, fluctuations in resource exploration and resource production activity, and transportation-related regulations.

Governments need to monitor free market activities to ensure that cost-effective and essential transportation services remain viable to support NWT communities and residents. It is essential for DOT to remain engaged with motor transport, air, rail and marine operators serving NWT customers to understand their challenges and determine the appropriate role of government to maintain adequate service levels for all regions.

Increased Arctic Resource Development and Shipping

It is expected that as resource development increases in the Arctic, claims to Arctic sovereignty from other nations will also increase. Further development of the transportation system in northern Canada strengthens Canada's claim to resources in the northernmost regions of the country:

- sustaining the viability of northern communities, especially the remote communities along our Arctic coast;
- supporting the sustainable development of resource projects in remote areas of the NWT;
- improving access to our National Parks and to tourism and scientific research sites in remote areas of Canada's north; and
- supporting the operations of Canada's military and civil agencies in their mandated task to monitor and protect Canada's Arctic.

Global interest in Arctic resources, including minerals, oil and gas, is intensifying and will create emerging transportation security issues. The potential increase in the shipping required for sustainable development, as well as an increase in cruise ship traffic and tourism, may require improved shore-based infrastructure and services.

Shifting Global Freight and Commodity Flows

Longer Arctic shipping seasons may create opportunities, including the development of new routes to resupply communities, transportation of natural resources extracted from the north to southern markets, and a shorter route between the Atlantic and Pacific Oceans. However, these opportunities also introduce new risks to the transportation system, be it on the safety, security or environmental front. Increased traffic will require an examination of the current transportation infrastructure in the north. Changes within any mode of transportation will impact other modes and an integrated planning approach must be taken.

Increased Environmental Sensitivity

The GNWT recognizes the interdependence between conservation and development in the application of the sustainable development policy. When applied to transportation, it means that environmental, social and economic considerations must be factored into decisions affecting transportation activities. The Department must lead by example and promote environmental stewardship and sustainability within a fully integrated territorial transportation system.

Transportation infrastructure impacts natural drainage conditions and the condition of the underlying permafrost. Transportation activities can impact wildlife. Vehicle and facility emissions can affect the atmosphere and local ecological assets. It is important that the NWT transportation sector continues to adapt strategies to minimize adverse impacts on the environment and that infrastructure is designed, constructed and maintained with due respect to the protection of the natural environment. Multi-use corridors that combine energy, communications and linear modes, such as roads, pipelines and rail, should be established to minimize the total environmental footprint.

6.0

Connecting Us: Our Vision and Mission

Vision:

> ***Northerners Connected to Opportunities***

What does it mean to be connected to opportunities? It means that transportation infrastructure, services and programs will safely, reliably and effectively link residents, businesses, industry and visitors to their needs and wants. The transportation system will provide Northerners with transportation options, affordable goods, personal mobility and access to health care, education, recreation, employment and business opportunities. The future transportation system will connect northerners to opportunities for a healthy, sustainable and prosperous Northwest Territories.

Mission:

> ***To provide and promote a safe, reliable and sustainable multi-modal transportation system by strengthening connections, capturing opportunities and embracing innovation.***

The Department of Transportation's mission defines our core purpose. It guides the work that we do and helps to inform our direction, priorities and decisions. Our Mission will help us achieve our Vision for the transportation system.

7.0

Connecting Us: Our Three Strategic Priorities

Connecting Us defines the following three strategic priorities for action. These priorities will guide and direct our long-term, four year and annual incremental actions.

7.0 Connecting Us: Our Three Strategic Priorities (continued)

Strengthening Connections

Continue to maintain and improve our existing transportation system to enhance the level of service, increase reliability, improve transportation safety and build on partnerships.

Capturing Opportunities

Continue to expand the transportation system through partnerships to better connect our communities and support our economic development potential.

Embracing Innovation

Continue to improve the way we do business by improving service delivery, modernizing transportation programs and policies, communicating better with the public to improve awareness and safety, applying new technologies, adapting the system to the effects of climate change and promoting environmental stewardship.

8.0

Connecting Us: Our Core Values

The Department of Transportation's core values are the common ideals and beliefs that define and guide us. They are a statement of things that are important to us collectively and will help guide our decisions and actions through the next 25 years as we implement *Connecting Us*.

8.0 Connecting Us: Our Core Values
(continued)

Core Values:

C	ollaboration and partnership
O	ngoing improvement
N	orthern innovation and resilience
N	orthern capacity building
E	nvironmental sustainability
C	are, respect and integrity
T	eamwork
E	xcellence in safety
D	edication to service

9.0

Connecting Us: 2015 to 2040 Action Plan

The long-term actions under each of the three strategic priorities outline how the vision of northerners connected to opportunities will be achieved over the next 25 years. The long-term actions also lay the framework for short-term actions that will be developed in each Four-year Action Plan and within the Department of Transportation's annual business planning processes.

9.0 Connecting Us: 2015 to 2040 Action Plan (continued)

Strengthening Connections

- Continue maintaining and upgrading the existing transportation system by:
  - promoting and capturing partnership opportunities with industry, other levels of government and other sectors to improve the existing transportation system across all modes as opportunities arise;
  - improving the existing transportation system in partnership with Canada under the New Building Canada Plan, Airport Capital Assistance Program, Parks Canada and other federal funding programs;
  - securing stable long-term funding through the capital planning process to address reconstruction needs across the transportation system; and
  - securing sufficient operational funding to address incremental maintenance requirements.
- Extend winter road, ice crossing and ferry seasons through innovative operational practices with the goal of reducing service disruptions and increasing operating seasons.
- Encourage CN Rail to continue improving the NWT rail line to Hay River to serve resupply needs and expand the system as required by demand.
- Encourage the Canadian Coast Guard and Fisheries and Oceans Canada to sufficiently maintain federal community resupply port facilities and marine services in the NWT and restoring safe marine operating conditions in the Port of Hay River and at key sections of the Mackenzie River Corridor.

Capturing Opportunities

- Develop the following priority transportation corridors, which will support a lower cost of living, improved quality of life, sustainable resource development, tourism and other economic activities:
  - Mackenzie Valley Highway from Wrigley to Tuktoyaktuk;
  - all-weather road from Highway 3 to Whatì; and
  - improved access into the Slave Geologic Province from Yellowknife to Nunavut.
- Promote and capture partnership opportunities with industry, other levels of government and other sectors to expand the transportation system across all modes as opportunities arise.
- Investigate opportunities to develop a new program to incrementally convert segments of winter road to all-weather highways as a step toward the development of priority corridors and to build community capacity and readiness skills.
- Advocate for improved transportation connections in our neighbouring jurisdictions that support trade and travel into the NWT.
- Continue to increase the length of season that communities are connected to the all-weather highway system by replacing ferry and ice crossings with permanent bridges.
- Seek additional funding for the Community Access Program to increase the number of small community-based projects to construct local access roads, trails and boating facilities, which create local employment and training and improve access to recreation, cultural and local tourism opportunities.
- Continue to monitor air transportation infrastructure and incrementally expand facilities such as air terminal buildings, aprons, runways and commercial development areas as required to enable economic development and efficient air transport.

Embracing Innovation

- Continue to innovate operation and maintenance approaches and practices across the system to improve efficiency and effectiveness.
- Continue to improve safety across the transportation system to reduce incidents, fatalities and loss of property by:
  - implementing the Road Safety Plan, including infrastructure safety improvements, regulatory changes, increased enforcement and public awareness;
  - working with enforcement partners to increase levels of enforcement and regulatory compliance;
  - modernizing and enhancing safety legislation and regulations; and
  - increasing safety public education and awareness.
- Continue enhancing services to the public, including communications, vehicle registration, driver licensing and testing, and the collection of fees and tolls to clients in all NWT communities by:
  - increasing accessibility to the full range of driver and motor vehicle services as well as commercial permitting services, online as well as in person; and
  - improving the timeliness and availability of transportation system information communication.

9.0 Connecting Us: 2015 to 2040 Action Plan (continued)

- Continue to implement Green Light, the Department's environmental strategy, to uphold high standards of environmental stewardship by:
  - developing and implementing an environmental management plan to support activities and improve environmental compliance monitoring; and
  - enhancing vehicle and equipment procurement, operations, maintenance and asset management procedures to support NWT greenhouse gas reduction objectives.
- Continue to implement the Climate Change Adaptation Plan to protect infrastructure and maintain transportation service levels with expected increased permafrost degradation and severe weather events by:
  - continuing to partner with the academic and engineering community and other levels of government to advance climate change adaptation research; and
  - continuing to monitor the condition of infrastructure and implement innovative cost-effective solutions in response to changing climatic conditions.
- Continue to harmonize motor transport regulations in the NWT with regulations in neighbouring jurisdictions to improve the efficiency and lower the cost of transport.
- Continue to modernize legislation, policy and programs across the system to adapt to emerging technologies and change.
- Enhance existing information technology systems and add new data collection platforms across the NWT transportation system to monitor traffic, weather and the condition of our infrastructure to improve asset management and service delivery.
- Advocate for program and regulatory improvements that better support the northern transportation system by:
  - encouraging Transport Canada and NavCanada to improve air safety in the north, including improve weather and navigational aids;
  - encouraging Transport Canada to improve rail safety and capacity in the north; and
  - encouraging Transport Canada and Canadian Coastguard to improve marine safety in the north, including improved charting and navigational aids.

Proposed Future All-Weather Routes

HIGHWAY
PATROL

10.0

Connecting Us: Evaluation Framework and Transportation Report Card

The Department of Transportation commits to collecting and compiling data on a range of transportation metrics to evaluate the success of *Connecting Us*. Transportation infrastructure, services, programs and policy effectiveness will be evaluated through a range of output and outcome measures. The *Connecting Us: Transportation Report Card* will be tabled during the final sitting of each Legislative Assembly every four years. The first Transportation Report Card, which will provide a baseline for future reporting, will be tabled in the fall of 2015. Future *Connecting Us: Transportation Report Card* documents produced for the 18th Legislative Assembly and beyond will also include reporting on outcomes and progress made on that period's four-year action plan.

10.0 Evaluation Framework and Transportation Report Card (continued)

Measure 1)
Strengthening Connections – Transportation infrastructure and services continue to improve

Measure 2)
Capturing Opportunities – Transportation infrastructure and services continue to expand

Measure 3)
Embracing Innovation – Transportation programs, policies and services continue to improve

Metrics and Data

- Operations expenditures
- Capital expenditures
- Analysis of capital needs
- Partnership funding
- Revenues
- NWT airports services
- Current critical aircraft and future potential future alternatives
- Aircraft movements A, B and C airports
- Enplaned and deplaned passengers
- Comparison of NWT air fares with southern Canada
- Airport certification status
- Highways services
- Changes in highway surface types
- Bridge inventory and lengths
- Highway bridge age distribution
- Culverts age distribution
- Culvert and bridge condition
- Length of each winter road

- Opening/closing dates all winter roads
- Opening/closing dates all ice bridges
- Estimated traffic on NWT highways
- Highway traffic volumes
- Ferry services
- Opening/closing dates all ferries
- Vehicles moved on ferries
- Number of registered vehicles
- Number of licensed drivers
- Total collisions
- Collisions per million vehicle kilometres travelled
- Total injuries
- Total fatalities
- Highway system collisions, rural collisions, collisions in communities
- Collisions involving alcohol
- Distracted driving collisions
- Seat belt usage rates
- Traffic offences – by offense
- Total collisions/injuries on winter roads
- List of driver and vehicle licensing issuing agents
- Number of online and in-person driver and motor vehicle services provided
- Wait times for Yellowknife motor vehicle services
- Community Access Program overview
- Sole-sourced and negotiated contracts
- Northern, local, other contracts
- Value of total contacts
- Social media and website usage
- Investment and partnership in research and development

CAT

11.0

Connecting Us: Four-year Action Plans and Business Planning Process

The Department of Transportation will produce a four-year action plan at the beginning of each Legislative Assembly. The actions contained within the four-year action plan will be developed in support of the priorities of the Legislative Assembly and the strategic objectives of *Connecting Us*.

11.0 Four-year Action Plans and Business Planning Process (continued)

The Connecting Us: Transportation Report Card produced at the end of the previous Legislative Assembly will help inform the priority action areas required to move toward the long-term vision. The four-year action plan will be Tabled in the Legislative Assembly every four years, during the first year of each Legislative Assembly. The four-year action plan will be incrementally implemented within the annual business planning process of the GNWT for the following four years. The first Connecting Us: Action Plan 2016-2020 will be tabled in 2016 during the first year of the 18th Legislative Assembly. The results of every four-year action plan will be reported in the following Connecting Us: Transportation Report Card.

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