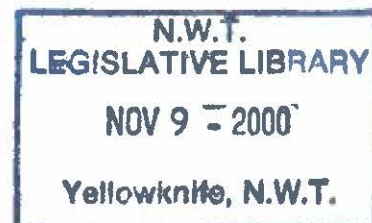


Investing in Roads for People and the Economy:

A Highway Strategy for the Northwest Territories



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**Investing in Roads
for People and the Economy:**
A Highway Strategy for the Northwest Territories

Department of Transportation
Government of the Northwest Territories
November 2000

MINISTER'S INTRODUCTION

The Northwest Territories transportation system allows for the movement of people and goods across the Northwest Territories and to our provincial and territorial neighbours. This access is key to the health and well being of our people and the economy.

We have worked hard over the past decade to improve our transportation system. Since the formation of the Department of Transportation in 1989, new airports, marine facilities, community access roads and extensive reconstruction of highways have all been realized. These accomplishments were guided by the strategic objectives and priorities set out in the 1990 Transportation Strategy and the 1994 Transportation Strategy Update.

As we move into the 21st century we must ensure that this transportation system continues to move forward: we must consider its expansion and improvement in a manner that will lead to a more prosperous and healthy Northern population.

In 1998 the Department of Transportation began the Highway Strategy initiative. This initiative earmarked special funding for planning studies on roads in the Northwest Territories. Over the past two years both technical studies and consultations with stakeholders have been undertaken. The results of this effort were first presented in the **Summary Report of the Highway Strategy** released in October 1999. The Summary Report presented a concise and comprehensive summary of the technical studies undertaken as part of the Highway Strategy.

Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories is the next step. This report presents a Vision for roads in the Northwest Territories, and a plan-of-action to achieve the Vision.

The Vision for roads in the Northwest Territories presented in this report is shaped by, and supports, the Government's broad vision for the Northwest Territories as outlined in the 14th Legislative Assembly's report **Towards a Better Tomorrow**, along with the Economic Strategy Panel's report **Common Ground**, and the Government of the Northwest Territories' **Non-Renewable Resource Development Strategy**.

Success in realizing our Vision will not be achieved over-night, but rather through the long-term, diligent effort of all stakeholders who recognize the benefits and opportunities that new roads can provide. The Department of Transportation is committed to the realization of this Vision for the benefit of all Northerners and Canadians.



The Honourable Vince Steen
Minister Responsible for Transportation



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INTRODUCTION

Since its creation in 1989 and the release of the 1990 Transportation Strategy document, the Northwest Territories Department of Transportation has placed a high priority on the maintenance and upgrading of existing roads and the expansion of the road network to improve access to communities and economic developments. This priority was repeated in the **1993 Transportation Agenda** and the **1994 Transportation Strategy Update**.

In the spring of 1998, the Department began the Highway Strategy initiative. This initiative earmarked special funding for background planning studies on road corridors. The technical studies that were undertaken added considerably to the volume of information available on road construction in the Northwest Territories. The initiative also involved a high degree of stakeholder involvement and public consultations which contributed greatly to its success.

The specific results of the technical studies undertaken as part of the Highway Strategy initiative are available in the **Summary Report of the Highway Strategy** released in October 1999. The specific findings of these studies are not re-discussed here, but have been used to form our Vision for roads as presented in this report.

In the last year there have been other Government of the Northwest Territories (GNWT) sponsored initiatives that have supported the call for new road construction.

The 14th Legislative Assembly's Vision, presented in **Towards and Better Tomorrow**, includes "... a strong, unified and self-reliant Northwest Territories that can take its rightful place in the federation and international community". A key ingredient to achieving this Vision is improved transportation infrastructure.

The final report of the Economic Strategy Panel, titled **Common Ground**, includes a total of five recommendations for new and improved transportation infrastructure.

The GNWT's **Non-Renewable Resource Development Strategy** identified the need for new and improved transportation infrastructure. In fact, transportation infrastructure needs make up fifty percent of the total funding needs identified in the Strategy.

Investing in Roads for People and the Economy: A Highway Strategy for the Northwest Territories presents our Vision for both the existing road network and for the construction of new roads in the Northwest Territories. Drawing upon the technical studies and consultations undertaken as part of the Highway Strategy initiative and the reports noted above, this report presents short-term actions to be pursued to achieve our long-term Vision.

The report is divided into five sections. The first section that follows presents our Vision for roads in the Northwest Territories, including both existing highways and new roads. The second section discusses the potential of the Northwest Territories, both the economic and people-potential. The third section presents eleven actions to be undertaken in pursuit of our Vision. The fourth section summarizes and discusses the funding requirements and funding sources for our Vision. The fifth and final section presents the conclusions.



OUR VISION FOR ROADS IN THE NORTHWEST TERRITORIES

Our Vision for roads in the Northwest Territories is based upon two objectives:

- creating opportunities for economic development, and
- connecting communities.

Our Vision Includes:

- **An upgraded highway system that provides improved safety and more reliability for people and resource development,**
- **A road down the Mackenzie Valley from Wrigley to Tuktoyaktuk to provide all-weather road access for communities and to facilitate development of the resources of the Mackenzie Valley and Delta,**
- **Greater northern involvement in land-based access into the Slave Geologic Province and new road infrastructure that is responsive to the needs of industry to create economic development opportunities, and**
- **New or upgraded community access roads to provide improved land-based access for communities.**

This Vision will:

- create opportunities to guarantee a prosperous future for all residents of the Northwest Territories;
- improve the health and well being of individuals and communities by providing better access to government services and employment in all sectors;
- provide better access to resources and improve opportunities for their development and related employment and trade; and
- unify communities and people and strengthen our connections to the rest of Canada.

Our guiding principles in implementing this Vision are:

- activities will be undertaken in cooperation with all stakeholders, including aboriginal and land claimant groups, industry, other governments, communities, and individuals;
- activities will maintain and, where possible, enhance road safety;
- activities must consider their environmental impacts, and we must work to minimize the negative and maximize the positive impacts;
- land claimant groups and land ownership issues must be considered in all activities; and
- in all activities we will maximize local and northern involvement.



OUR POTENTIAL

The Northwest Territories covers 1.2 million square kilometres. The 1996 census indicated a population of 39,672 living in 34 communities, with the largest concentration of people (17,275) living in Yellowknife. The population of the Northwest Territories is one-tenth of one percent of Canada's total population, while the land area is over 10-percent of the Canadian total

In the document **Towards a Better Tomorrow**, the 14th Legislative Assembly describes a Vision that includes "... a strong, unified and self-reliant Northwest Territories that can take its rightful place in the federation and the international community". Today the Northwest Territories has perhaps its best opportunity to realize this Vision.

It is not only the Northwest Territories that will benefit from development of our potential. Canada will also benefit. In fact, a report prepared by the Conference Board of Canada indicated that the majority of benefits of economic developments in the Northwest Territories flow to southern Canada.

A brief discussion of our economic development potential is provided below.

➤ **Oil and Gas**

The oil and gas industry in the Northwest Territories is relatively young, with great potential for future growth.

Geologically, the rich Western Canada Sedimentary Basin, from which the oil and gas activity in Alberta is derived, extends north into the Northwest Territories from Alberta and British Columbia. Historically the majority of oil and gas activity in the Northwest Territories was centred around the relatively large oil field at Norman Wells and the Pointed Mountain gas deposit near Fort Liard.

In the past two years exploration activities in the Northwest Territories have increased significantly. This is due to an increase in natural gas prices which is being driven by increasing continental demand for natural gas and decreasing conventional reserves.

Overall, the Northwest Territories is expected to contain 70 to 80 trillion cubic feet of natural gas, with an estimated total value of over \$200 billion.

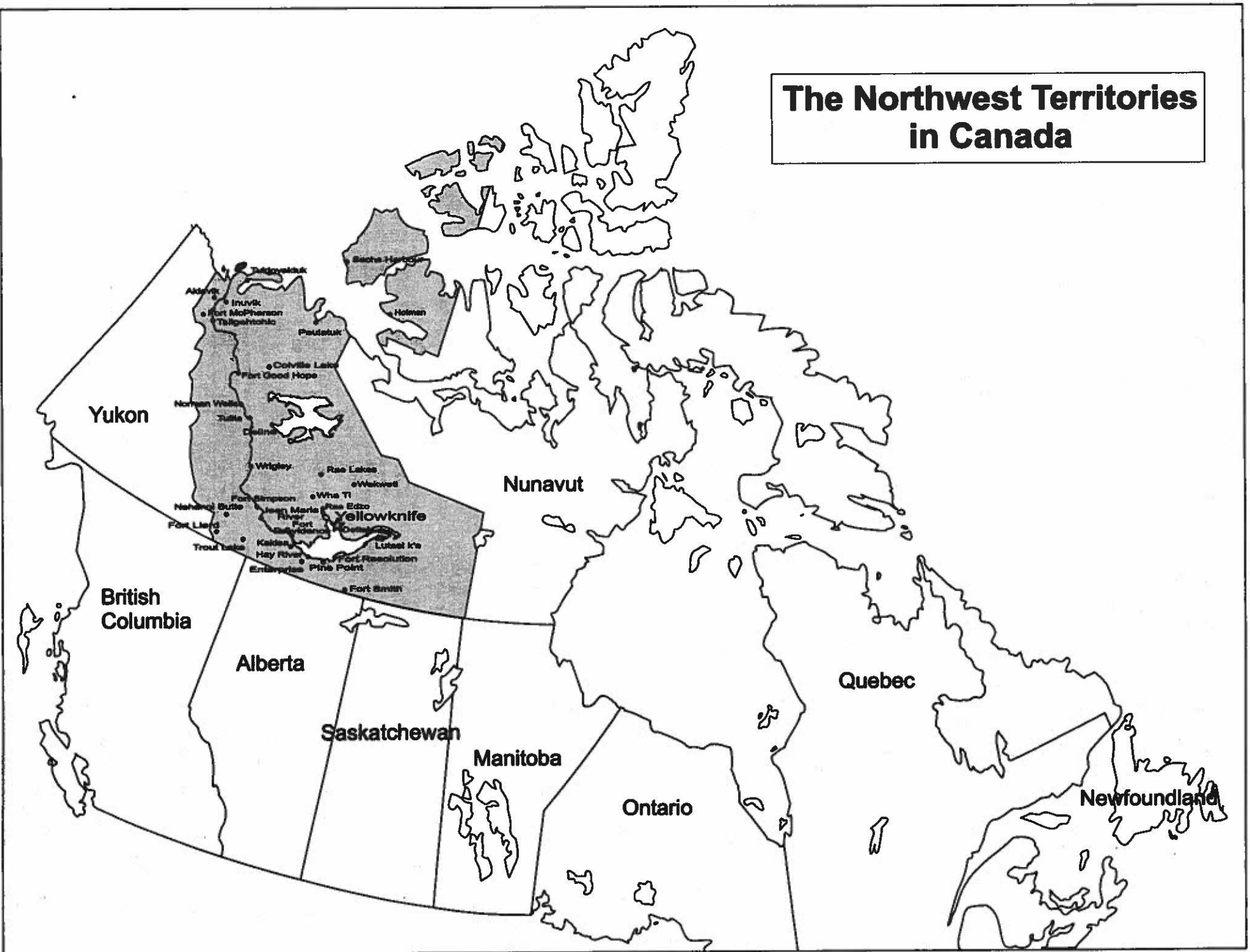
Over the past two years exploration investments have resulted in four world-class discoveries of natural gas in the Fort Liard area. Investment in exploration and infrastructure in this region has exceeded \$100 million per year and is expected to remain strong for the foreseeable future.

In the central Mackenzie Valley, exploration licenses were granted in 2000 for six parcels of land, with work expenditures bids totalling \$57.5 million. This is in addition to the 14 existing parcels of land with bids totalling \$49 million. A parcel of land has also been released privately near Tulita.

In the Mackenzie Delta, rights issuances by the federal government in the summer of 2000 has resulted in bids totalling \$467 million for nine parcels. The Inuvialuit have also released four



The Northwest Territories in Canada



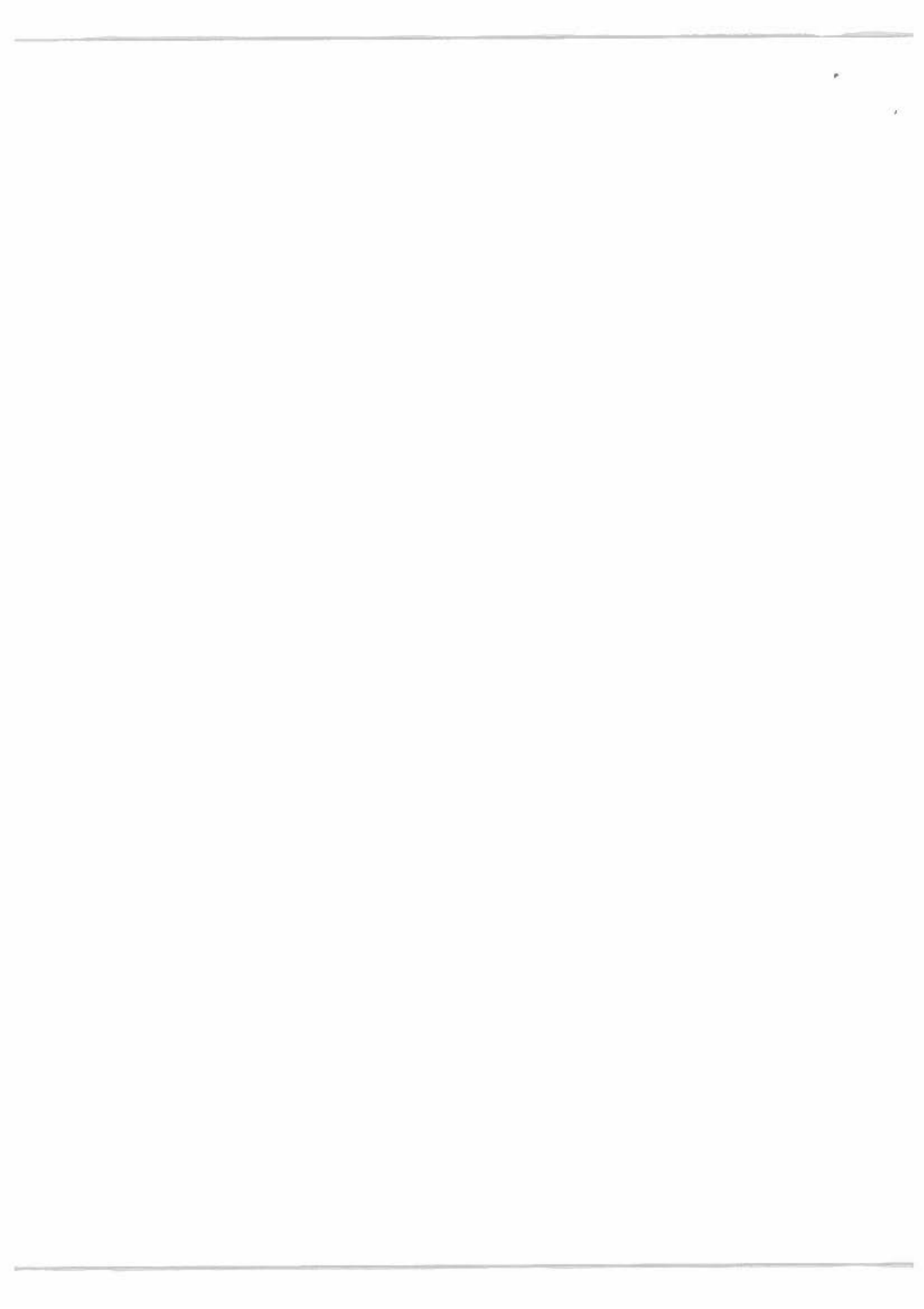


**Existing and Possible Resource Development Projects for the Northwest Territories
(\$billions)**

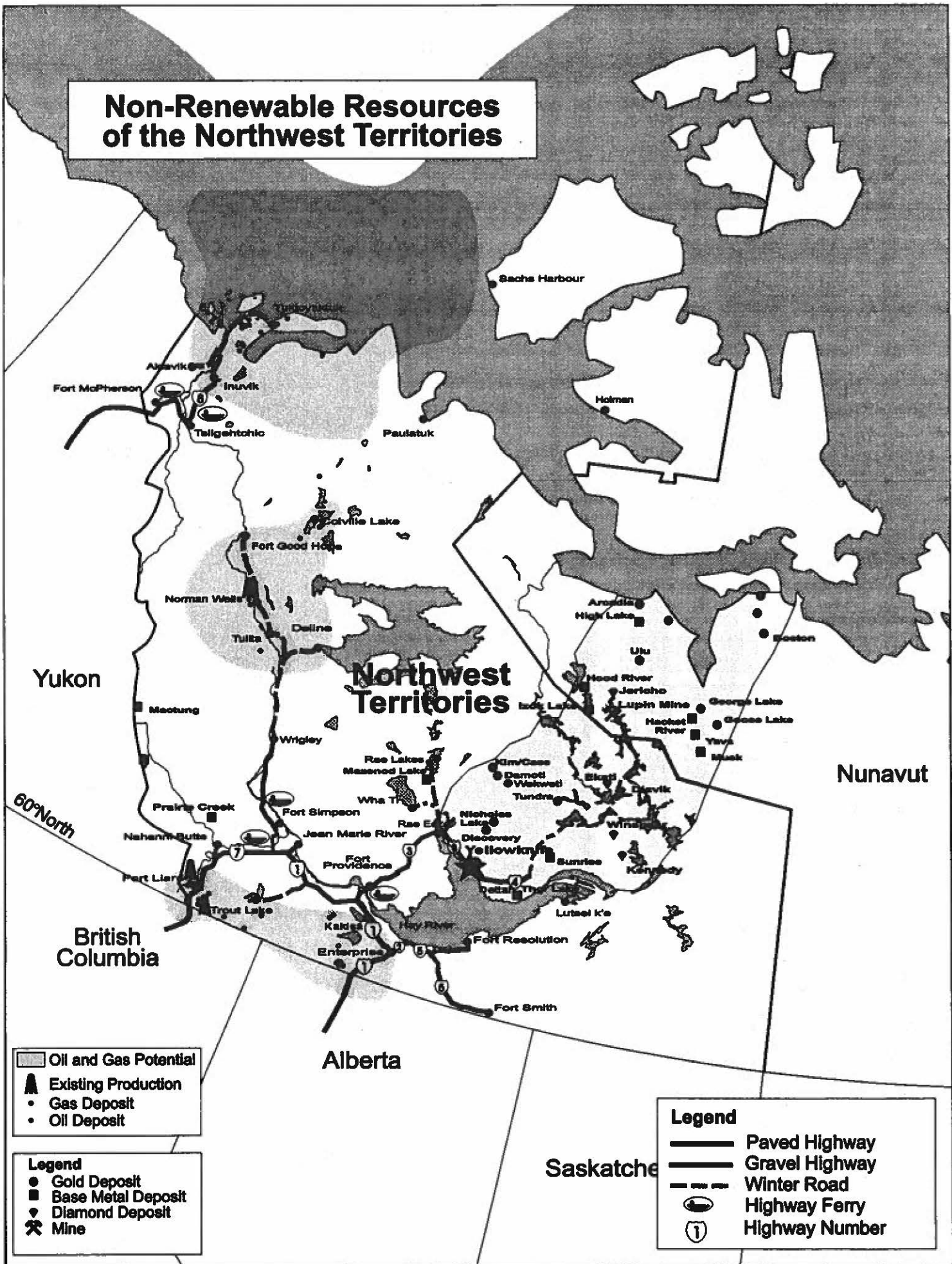
Comodity	Projects Reserves	Gross Revenue	Royalties	Federal Taxes	NWT Taxes
Existing Projects					
Natural Gas	1 Tcf	2.7	0.6	0.5	0.2
Oil	0.107 billion barrels	3.4	0.8	0.3	0.1
Diamonds	173.2 million carats	23.9	1.6	3.0	1.4
Gold	0.65 million oz.	0.3	0.0		
	Total	30.3	3.0	3.8	1.7
New Projects					
Natural Gas	8.2 Tcf	14.3	2.0	2.4	1.1
Diamonds	41.9 million carats	6.0	0.5	0.9	0.4
	Total	20.3	2.5	3.3	1.5
Possible Projects					
Natural Gas	70.8 Tcf	184.1	20.0	24.0	11.0
Oil	1.65 billion barrels	39.4	9.5	7.6	3.7
	Total	223.5	29.5	31.6	14.7
Total		274.1	35.0	38.7	17.9

Note: NWT taxes are prior to formula financing grant offset - net revenue approximately \$4 billion as the GNWT only realized 20% of the gross revenue.

(Source: Non-Renewable Resource Development Strategy for the NWT - Draft 8)



Non-Renewable Resources of the Northwest Territories



- Oil and Gas Potential
- Existing Production
- Gas Deposit
- Oil Deposit

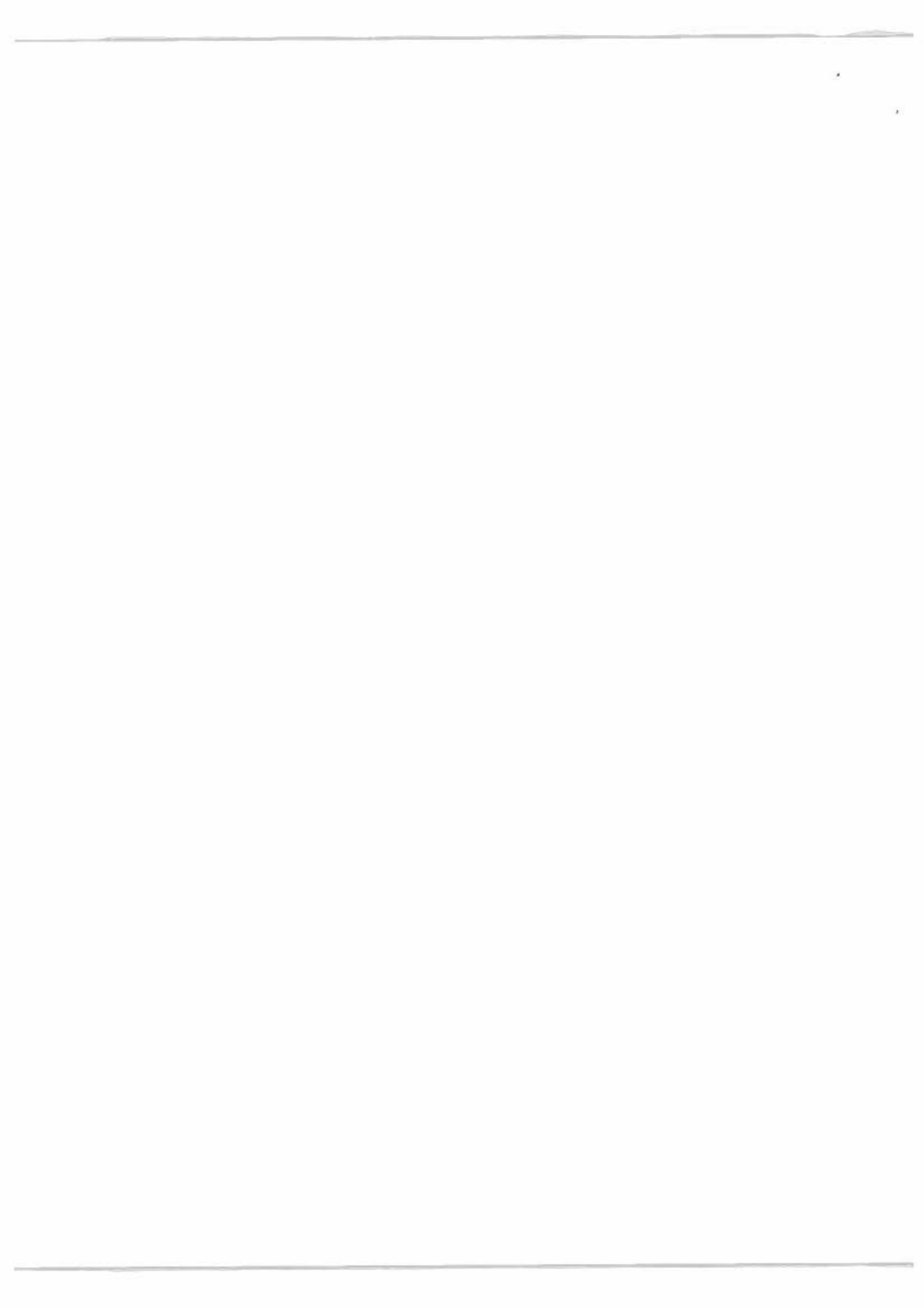
- Legend**
- Gold Deposit
 - Base Metal Deposit
 - Diamond Deposit
 - Mine

- Legend**
- Paved Highway
 - Gravel Highway
 - Winter Road
 - Highway Ferry
 - Highway Number

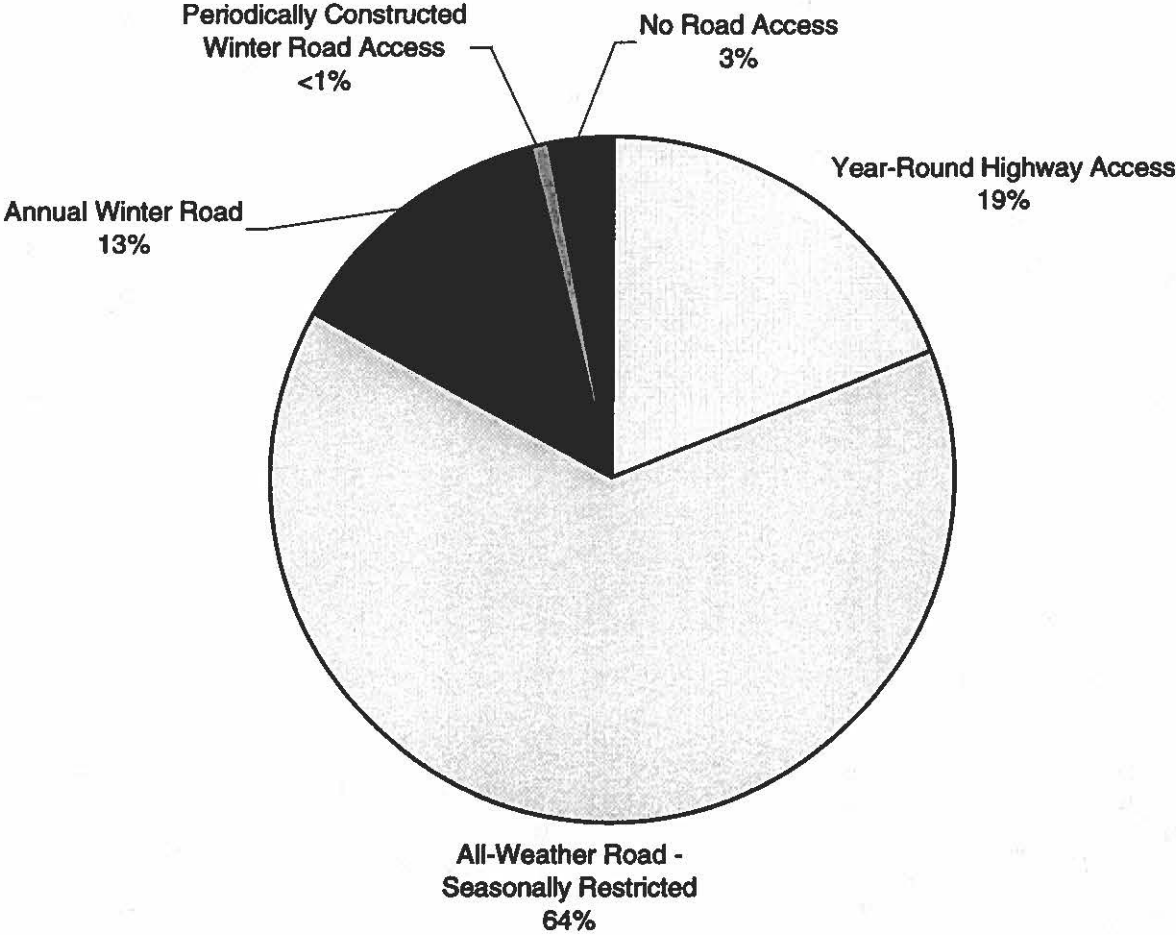


Northwest Territories Communities by Available Land-Based Transportation Mode

Community	Population (1996 Census)	Land-Based Transportation Mode					Marine Access Only
		Year-Round Highway Access	All-weather Road Seasonally Restricted	Annual Winter Road	Periodic Winter Road		
Aklavik	727				X		
Cotville Lake	90				X		
Deline	616				X		
Dettah	190		X				
Enterprise	86	X					
Fort Good Hope	644				X		
Fort Liard	512	X					
Fort McPherson	878		X				
Fort Providence	748		X				
Fort Resolution	536	X					
Fort Simpson	1,257		X				
Fort Smith	2,441	X					
Hay River	3,611	X					
Hay River Reserve	253	X					
Holman	423						X
Inuvik	3,296		X				
Jean Marie River	53	X					
Kakisa	36	X					
Lutsel'ke	304						X
Nahanni Butte	75				X		
Norman Wells	798				X		
Paulatuk	277						X
Rae Lakes	256				X		
Rae-Edzo	1,662		X				
Sachs Harbour	135						X
Wekweti	135					X	
Trout Lake	68				X		
Tsilgehtchic	162		X				
Tuktoyaktuk	943				X		
Tulita	450				X		
Wha Ti	418				X		
Wrigley	164		X				
Yellowknife	17,275		X				
Percent of Population	100%	19%	65%	13%	<1%	3%	



Northwest Territories Population by Available Transportation Mode





parcels in 2000. Annual exploration expenditures are expected to total over \$200 million next year and for the next several years.

All this activity has led to renewed discussions of a pipeline extending down the Mackenzie Valley leading to development of the gas fields in the Mackenzie Delta. A recent report prepared by the Canadian Energy Research Institute (CERI) compared the economics of alternative pipeline routes and concluded that Canada benefits most from the development of a Mackenzie Valley pipeline with an offshore pipeline to Prudhoe Bay, compared to routes through Alaska and the Yukon. The Mackenzie Valley route also generates larger revenues to producers, minimizes costs, and results in greater government revenues. There are many opportunities for development of new roads associated with these developments.

➤ **Diamonds, Gold and Base Metals**

In recent surveys conducted by the Fraser Institute, the mining industry has consistently ranked the mineral potential of the Northwest Territories as one of the highest in Canada. This ranking is evidenced by the high level of mineral exploration expenditures in the Northwest Territories over the past decade. However, at the same time the Fraser Institute survey also noted the lack of infrastructure as a strong deterrent to mineral exploration investment in the Northwest Territories.

At the present time there is one major diamond mine in production (Ekati), another under construction (Diavik), and at least two more in the pre-feasibility stage. There is also one gold mine in operation near Yellowknife (Con). Outside of government, mining is currently the largest economic driver in the Northwest Territories.

Considerable efforts have been undertaken to establish a value-added diamond industry. This industry includes sorting, cutting, polishing, grading and jewellery manufacturing, offering employment and business opportunities for northerners.

The Northwest Territories has potential for many more mineral developments. Our full potential is yet to be realized. Known deposits are remote and lack transportation infrastructure that mines in southern Canada and the rest of the world enjoy. The lack of infrastructure also increases the cost of exploration programs. To overcome this deficit, deposits must be larger and higher in grade to be considered for development compared to other regions having better transportation access.

➤ **Tourism**

The tourism industry in the Northwest Territories is relatively small. In 1998 just over 45,000 people visited the Northwest Territories for leisure travel. While the tourism is rapidly expanding industry throughout the world, in the Northwest Territories the industry has been experiencing relatively low growth rates.

Given our great natural heritage and abundant wilderness, opportunities for growth in the tourism sector are great. These opportunities would be enhanced through improved and expanded transportation infrastructure.



➤ **Small Business**

As noted in **Common Ground**, small business is a cornerstone of the economy, touching every community and every economic sector. While the major economic developments in the North are led by large businesses, it is the small independent community-based businesses that provide the services and secondary jobs related to developments. These small businesses also provide services to local residents.

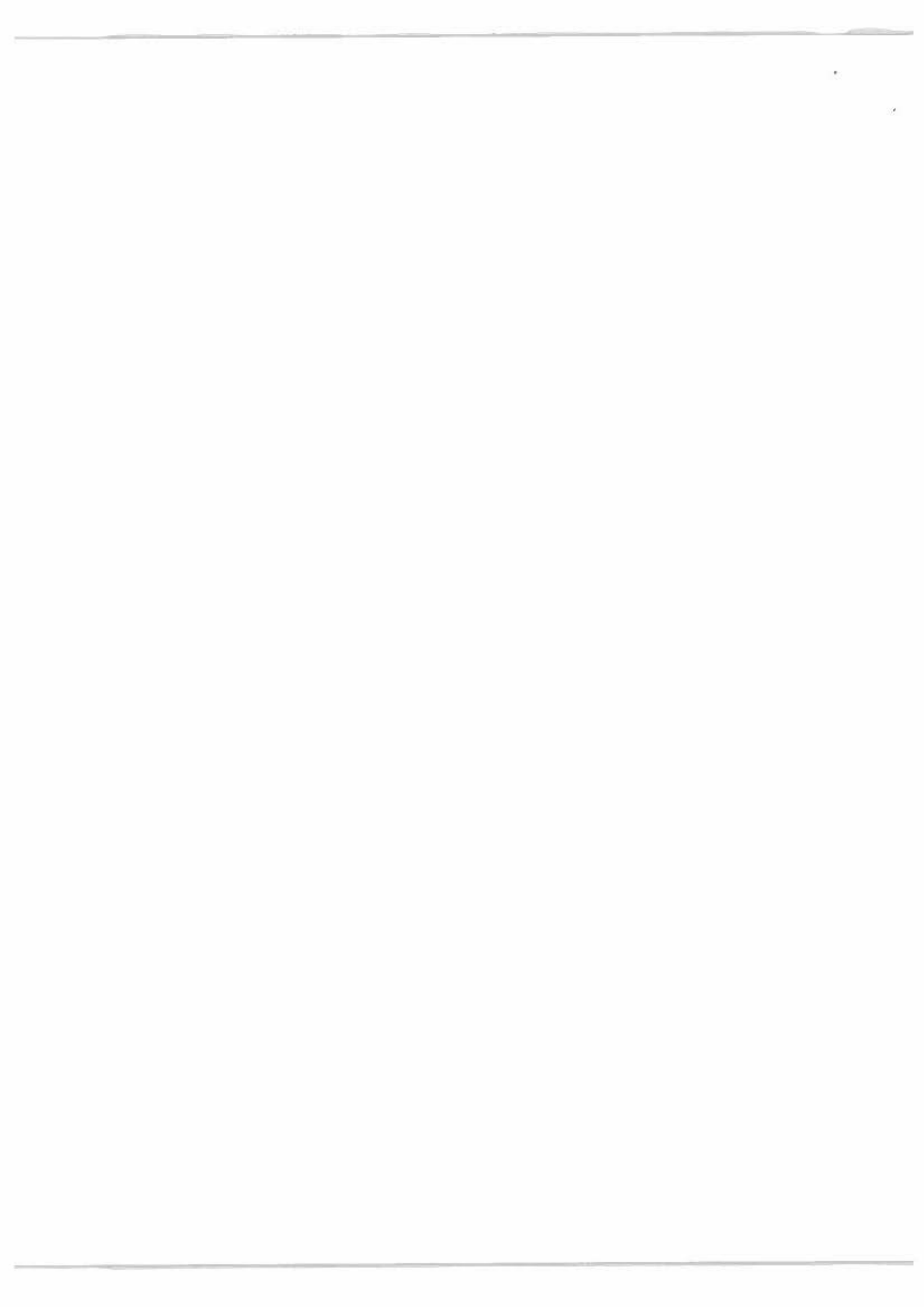
Reliable and cost-effective transportation is critical to the financial viability of these businesses. Improved transportation infrastructure can stimulate many small business opportunities.

➤ **People**

The Northwest Territories is home to a small population that is big in spirit and resourcefulness. People have shown for many years the ability to get things done under difficult circumstances.

Ongoing improvements in healthcare, education, housing and social programs are vital to improve our well-being. It is also critical to provide the employment opportunities which result from new economic developments.

Upgraded and expanded road infrastructure to connect communities would reduce the cost-of-living in communities, and provide for local business opportunities. It would also allow for inter-community travel to meet the social and political needs of individuals.



OUR PLAN OF ACTION

In pursuit of our Vision for roads in the Northwest Territories, we will:

- Preserve and Upgrade our Existing Highway Infrastructure;
- Pursue the Construction of the Mackenzie Valley Highway from Wrigley to Tuktoyaktuk;
- Pursue the Construction of a Slave Geologic Province Transportation Corridor; and
- Pursue the Construction of Roads to Connect Communities.

Each of these broad actions is described below. Falling out of each action is a number of specific actions to be pursued in the short-term.

➤ ***Preserve and Upgrade our Existing Highway Infrastructure***

“Our Vision includes an upgraded highway system to provide safe and reliable access for people and resource development.”

The existing highway network provides mobility for individuals and businesses in support of economic development. Preserving and upgrading the existing highway network will improve highway safety and reliability, and will reduce transportation costs for people and industry. The current highway inventory and travel volumes are provided in the tables attached.

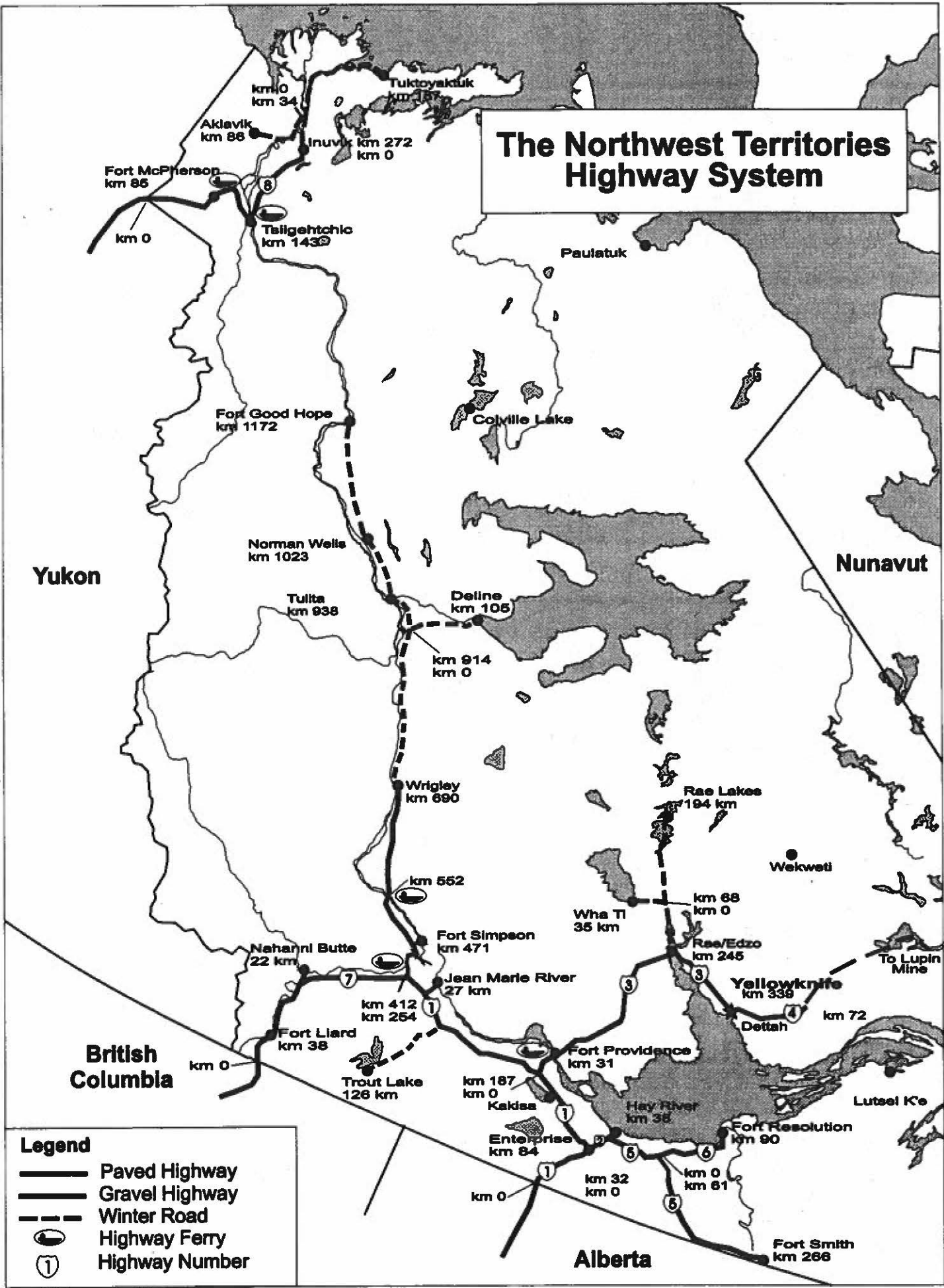
The Economic Strategy Panel noted that transportation is critical to the movement of people, both residents and tourists. People need mobility to take advantage of new employment opportunities. To take full advantage of tourism we need to expand access to communities and other destinations. The extent and quality of our road system are major factors in realizing benefits from these opportunities.

Much of the existing road infrastructure in the Northwest Territories was built to a minimum surface and geometric standard, which was suitable for the traffic loads of the day. However, these roads now require reconstruction to ensure they are capable of withstanding the demands of new economic developments. A good example is the Liard Highway (No. 7), which is being used extensively for gas exploration and development. Without reconstruction this road is not capable of withstanding the year-round demands of the industry.

Maintaining and upgrading the highway network is the highest priority for the Department's existing highway resources. This was noted in both the 1990 and 1994 Transportation Strategy documents. Over the past decade the Department has made significant improvements in the arterial highway network from Alberta to Hay River and Yellowknife, part of the National Highway System. The Department has also reconstructed and paved highways near communities where traffic demands are higher. We have been able to maintain the level-of-service on the rest of the highway network, despite pressures on our financial resources. In fiscal 2000/01, the Department of Transportation has budgeted approximately \$16 million to maintain and reconstruct



The Northwest Territories Highway System



Legend

- Paved Highway
- Gravel Highway
- Winter Road
- Highway Ferry
- Highway Number



Highway System Classification (1999)

Classification	Length (kilometres)				Total
	Paved	Dust- Controlled Gravel	Untreated Gravel	Winter Road	

All-Weather Highways

Highway 1 (Mackenzie Highway to Wrigley)	191.2	299.8	199.0	-	690.0
Highway 2 (Hay River Highway)	43.7	-	-	-	43.7
Highway 3 (Yellowknife Highway)	248.3	90.5	-	-	338.8
Highway 4 (Ingraham Trail)	22.3	46.9	-	-	69.2
Highway 5 (Fort Smith Highway)	122.0	144.0	-	-	266.0
Highway 6 (Fort Resolution Highway)	23.5	66.5	-	-	90.0
Highway 7 (Liard Highway)	-	142.2	111.9	-	254.1
Highway 8 (Dempster Highway)	10.0	103.2	156.1	-	269.3
Total	661.0	893.1	467.0	0.0	2,021.1

Access Roads

Kakisa Lake Access	-	12.9	-	-	12.9
Fort Simpson Access	3.4	-	-	-	3.4
Jean Marie River Access	-	-	27.0	-	27.0
Fort Providence Access	5.5	-	-	-	5.5
Rae Access	10.5	-	-	-	10.5
Dettah Access	-	11.3	-	-	11.3
Hay River Reserve Access	-	14.2	-	-	14.2
Fort Liard Access	-	5.3	-	-	5.3
Hay River Hwy. No. 2 Km 43.7 - 48.6	4.9	-	-	-	4.9
Yellowknife Access	1.7	-	-	-	1.7
Fort McPherson Access	-	1.1	-	-	1.1
Inuvik Access	0.6	-	-	-	0.6
Inuvik Marine Bypass	-	3.2	-	-	3.2
Miscellaneous Minor Access	3.5	22.2	53.4	-	79.1
Total	30.1	70.2	80.4	0.0	180.7

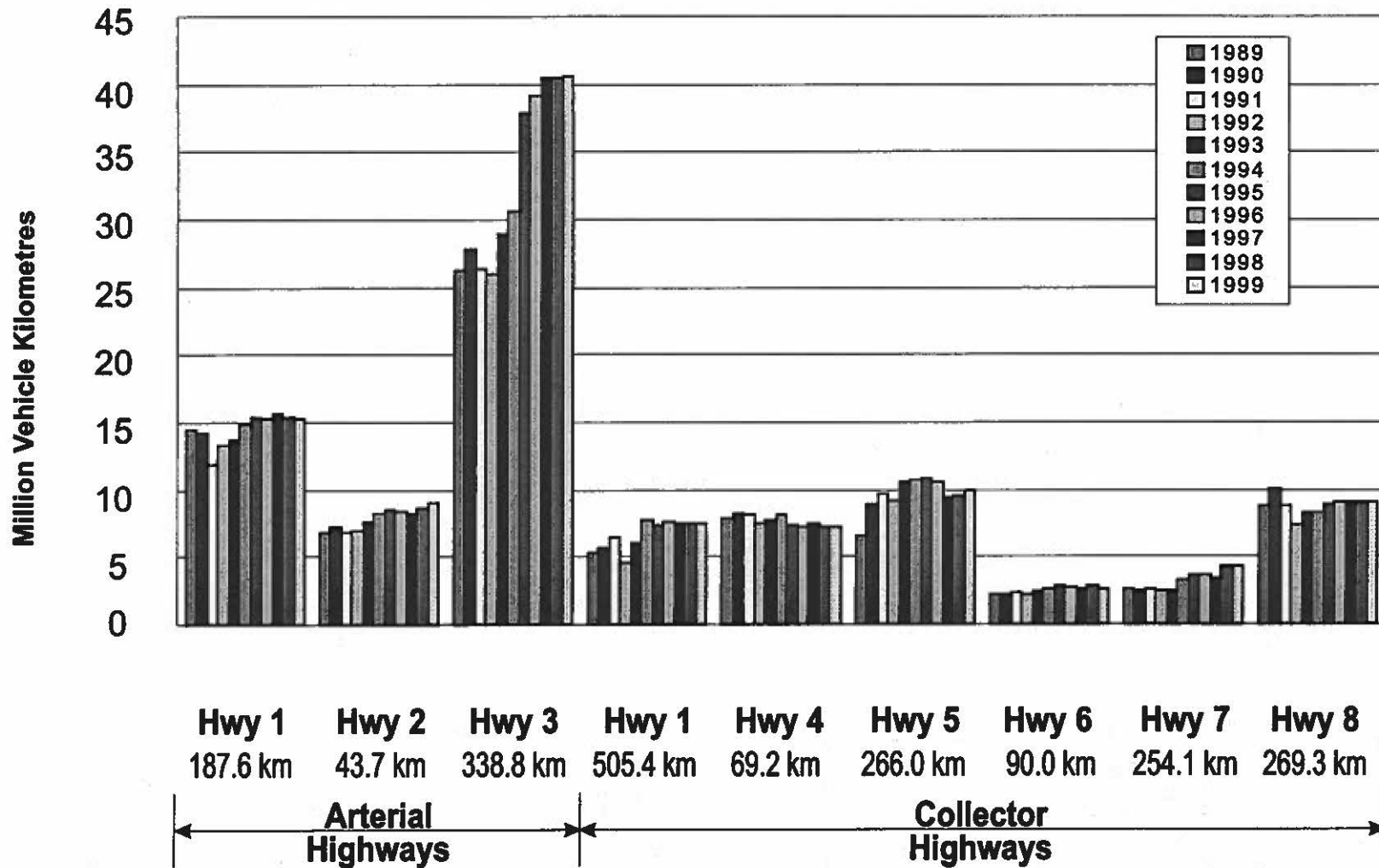
Winter Roads

Highway 1 (Mackenzie Highway, Wrigley to FGH)	-	-	-	480.0	480.0
Highway 3 Ice Crossing	-	-	-	13.0	13.0
Trout Lake Access	-	-	-	126.0	126.0
Deline Access	-	-	-	105.0	105.0
Wha'ti Road	-	-	-	145.0	145.0
Rae Lake Road	-	-	-	100.0	100.0
Nahanni Butte Access	-	-	-	22.0	22.0
Tuktoyaktuk Access	-	-	-	194.0	194.0
Aklavik Access	-	-	-	86.0	86.0
Dettah Access	-	-	-	6.0	6.0
Total	0.0	0.0	0.0	1,277.0	1,277.0

Total All-Weather Roads	2,201.8
Total Winter Roads (Department of Transportation)	1,277.0



Vehicle Kilometres Traveled on Northwest Territories Highways



Note: Vehicle kilometres for years 1989 to 1992 estimated based on historical data.



highways and related facilities. However, if these improvements are to continue in the future, additional resources will be required to complete upgrades of the highway network in a reasonable period of time.

As noted in the **Non-Renewable Resource Development Strategy**, the lack of transportation infrastructure has been cited by industry as a primary deterrent to mineral exploration and development. The GNWT's ability to upgrade infrastructure is hampered by the fact that we receive only minimal royalty and tax benefits from resource developments, despite incurring the direct costs of infrastructure stressed by industrial use.

As noted by the Economic Strategy Panel it is the federal government that should provide funding to meet the immediate demands created by resource development since it is the federal government that reaps the majority of benefits from developments in the Northwest Territories.

The consultations conducted as part of the Highway Strategy initiative provided strong support for continued improvements to our existing highways. Residents and businesses are demanding upgraded highways to reduce costs and improve safety and reliability.

Action Plan

1. Continue with the current Highway Reconstruction Program

We must continue to cost-effectively invest our current resource base to maintain and reconstruct existing highways. Within this, our first priority is to undertake activities to maintain and preserve highways and the related support infrastructure. Our second priority is to reconstruct and upgrade highways. Priorities for reconstructing and upgrading are:

- reconstruction and paving of Highway No. 3 between Rae and Yellowknife,
- reconstruction of the Dempster Highway (No. 8),
- selected improvements to the Ingraham Trail (Highway No. 4), and
- selected improvements to the Liard Highway (No. 7).

As noted in the table, our currently justified need in these two priorities is over \$195 million. Our twenty-year need is over \$430 million. Given the current resource allocations of \$80 million over the next five years, only a fraction of these needs can be addressed. To address these unfunded needs the Department will pursue additional funding as noted in the next two actions.

2. Pursue equitable federal funding under a National Highway Program

The 562-kilometres of highway from the Alberta border to Hay River and Yellowknife is a part of the National Highway System. Provinces and



Highway Program Capital Needs (2000 \$000's)

Objective/Task	5 Year Capital Plan Allocation	Currently Justified Needs	Future Needs	Total Needs
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EXISTING HIGHWAYS

Capital Rehabilitation and Preservation				
Bridge Rehabilitation and Culvert Replacement	3,800	3,800	11,400	15,200
Pavement Rehabilitation	7,500	7,500	49,000	56,500
Maintenance Infrastructure (includes camps and mobile equipment)	3,100	3,100	9,400	12,500
Ferry Infrastructure	900	900	2,700	3,600
Subtotal	15,300	15,300	72,500	87,800
Reconstruction and Upgrading of Highways				
Yellowknife Highway No. 3 (km 243-333 reconstruction/paving)	30,100	66,000		66,000
Dempster Highway No. 8 (km 0 - 257 reconstruction)	12,000	70,000		70,000
Ingraham Trail No. 4 (km 0 - 69 reconstruction/paving)	13,000	14,000	36,000	50,000
Access Roads (see note below)	1,500	1,900	17,000	18,900
Liard Highway No.7 (km 0 - 254 reconstruction)	2,100	18,000	40,000	58,000
Fort Smith Highway No. 5 (km 88 - 232 reconstruction/paving)	0	0	33,000	33,000
Fort Resolution Highway No. 6 (km 0 - 90 reconstruction/paving)	0	0	21,000	21,000
Mackenzie Highway No. 1 (km 187 - 471 reconstruction)	0	0	60,000	60,000
Subtotal	58,700	169,900	207,000	376,900
Improve Winter Roads and Ice Crossings (includes winter road bridges)	6,500	11,000	13,000	24,000
New/Upgraded Bridges	0	0	130,000	130,000
Ferry Replacement	0	0	11,000	11,000
Total Capital Needs - Existing Highways	80,500	196,200	433,500	629,700

NEW HIGHWAYS

Mackenzie Valley Highway Extension - Wrigley to Tuktoyaktuk	0	40,000	460,000	500,000
Slave Geological Province Transportation Corridor to Nunavut Border	0	0	250,000	250,000
Total Capital Needs - New Highways	0	40,000	710,000	750,000

Note: Current Access Roads include Fort Simpson and Nahanni Butte. Future Access Roads include; Dettah, Fort Liard, Fort McPherson, Hay River Reserve, and Kakisa.



Territories have been working cooperatively over the past decade to persuade the federal government to establish a National Highway Program. Arguments for this program are well documented. While the federal government has recently committed some funding to highways over the next several years, the allocations are considerably less than the needs.

We will continue to work with other jurisdictions to persuade the federal government to commit significant resources to a National Highway Program. We will also work to ensure that the Northwest Territories receives an equitable share of funding when it becomes available. This funding would be used to accelerate the reconstruction and paving of the highway between Rae and Yellowknife. A total of \$66 million is required to complete the reconstruction and paving of this section.

3. Pursue additional federal funding for highway reconstruction under the Non-Renewable Resource Development Strategy

The federal government derives the vast majority of royalty and tax benefits from economic developments in the Northwest Territories. However, the GNWT incurs the costs associated with increased use of infrastructure. In concert with the **Non-Renewable Resource Development Strategy**, we will pursue additional funding from the federal government to upgrade existing highways for resource development. Priorities for upgrading include the Liard Highway (No. 7), the Dempster Highway (No. 8), the Ingraham Trail (Highway No. 4), and the Mackenzie Highway (No. 1) including the winter road sections.

➤ ***Pursue the Construction of the Mackenzie Valley Highway from Wrigley to Tuktoyaktuk***

“Our Vision includes a road down the Mackenzie Valley from Wrigley to Tuktoyaktuk to provide all-weather road access for communities and to facilitate development of the resources of the Mackenzie Valley and Delta.”

The final report of the Economic Strategy Panel presented a Vision for the Northwest Territories that included new road construction. The Vision included:

“... communities, linked together with a transportation corridor that extends down the Mackenzie River from the Beaufort Delta to the Alberta border.”

The Panel then went on to note that:

“The road is a boon to our economy. It increases the flow of tourists into our communities, reduces costs and fosters inter-community trade resulting in our increased dependence on each other”.



It is for these reasons that the Department will pursue construction of this new road.

At present in the Mackenzie Valley the Department annually constructs a 482-kilometre long winter road from Wrigley to Fort Good Hope, with a 105-kilometre spur to Deline. In the Mackenzie Delta the Department constructs a 187-kilometre ice road from Inuvik to Tuktoyaktuk, with an 86-kilometre spur to Aklavik.

The Mackenzie Valley and Beaufort Delta contain abundant renewable and non-renewable resources. Exploration and development of oil and gas reserves in these regions is accelerating rapidly due to the improved economics of developing northern gas. There may be opportunities to partner with these gas developments, particularly if a Mackenzie Valley gas pipeline becomes reality.

To facilitate oil and gas exploration in the Colville Lake area, and to meet the community's resulting need for improved access, the Department has begun the process to add a 165-kilometre long public winter road from Fort Good Hope to Colville Lake. It is hoped that permits will be in place to allow for construction of this public road during the upcoming winter. The Department intends to add this winter road to the network of public winter roads constructed annually.

Improved all-weather road access down the Mackenzie Valley would also connect communities to the highway network, providing social and economic opportunities for individuals and businesses. A Mackenzie Valley road would help attract tourists by creating a "loop" with the Dempster Highway through the Yukon, and by providing the opportunity to drive to the Arctic Ocean on the road to Tuktoyaktuk.

As noted in the engineering studies conducted for the Highway Strategy initiative, the cost to extend the Mackenzie Highway to Fort Good Hope, a distance of 460 kilometres, is estimated to be \$220 million, and \$400 million if extended an additional 345 kilometres to the Dempster Highway south of Inuvik. The cost to extend the highway to Tuktoyaktuk is estimated to be \$100 million for the 140 kilometre-long road.

Action Plan

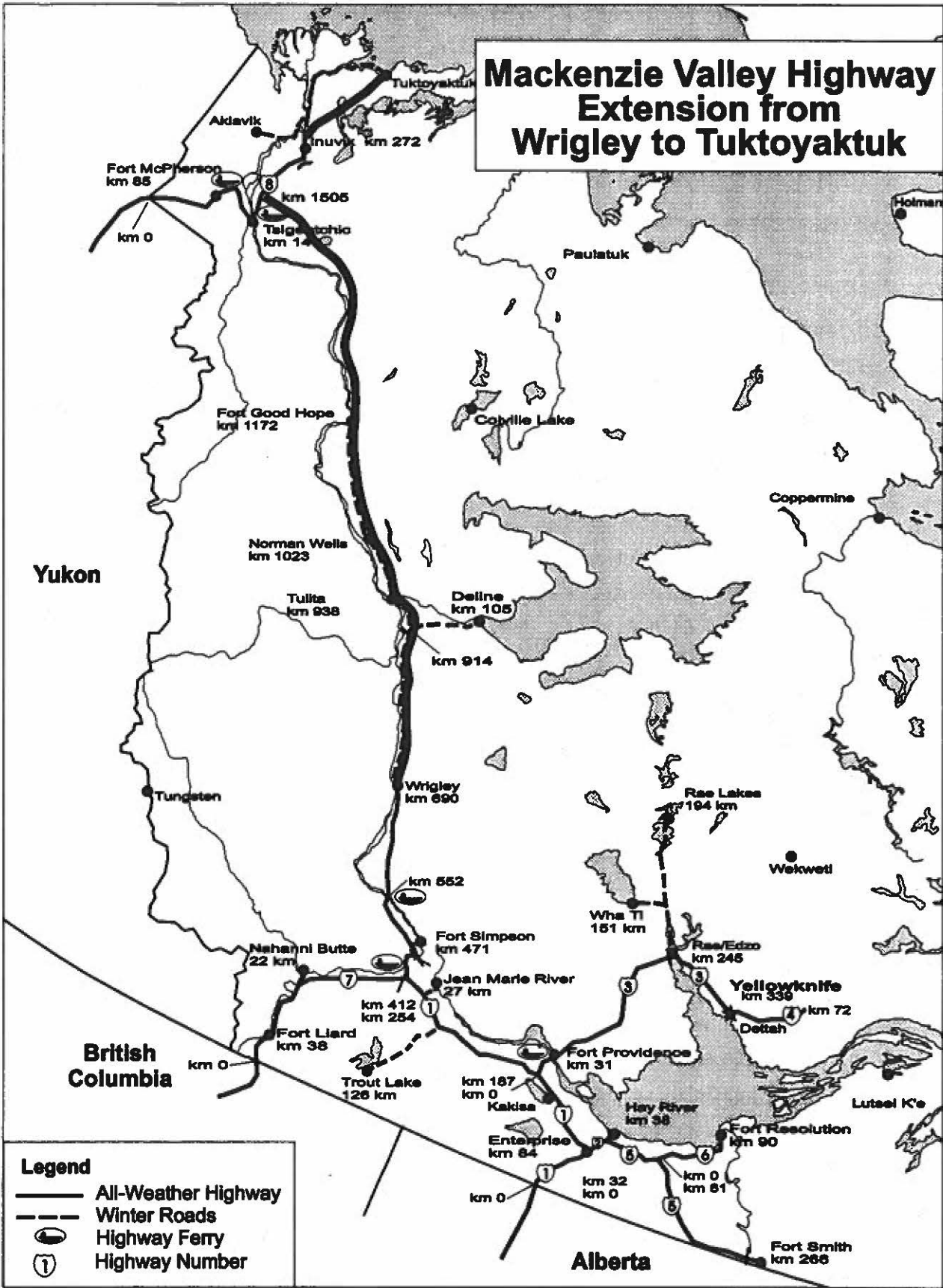
4. Accelerate the Bridge-Building Program on the Mackenzie Valley Winter Road

At present the Mackenzie Valley Winter Road is only open to heavy loads for an average of five weeks. For the oil and gas industry this short winter road window results in higher expenditures on transportation and logistics and less on actual exploration. The short window also restricts opportunities for intercommunity travel and community resupply. To expand the winter road window and to reduce environmental concerns the Department is undertaking a bridge-building program on the winter road, with the objective of expanding the winter road season to eight weeks.

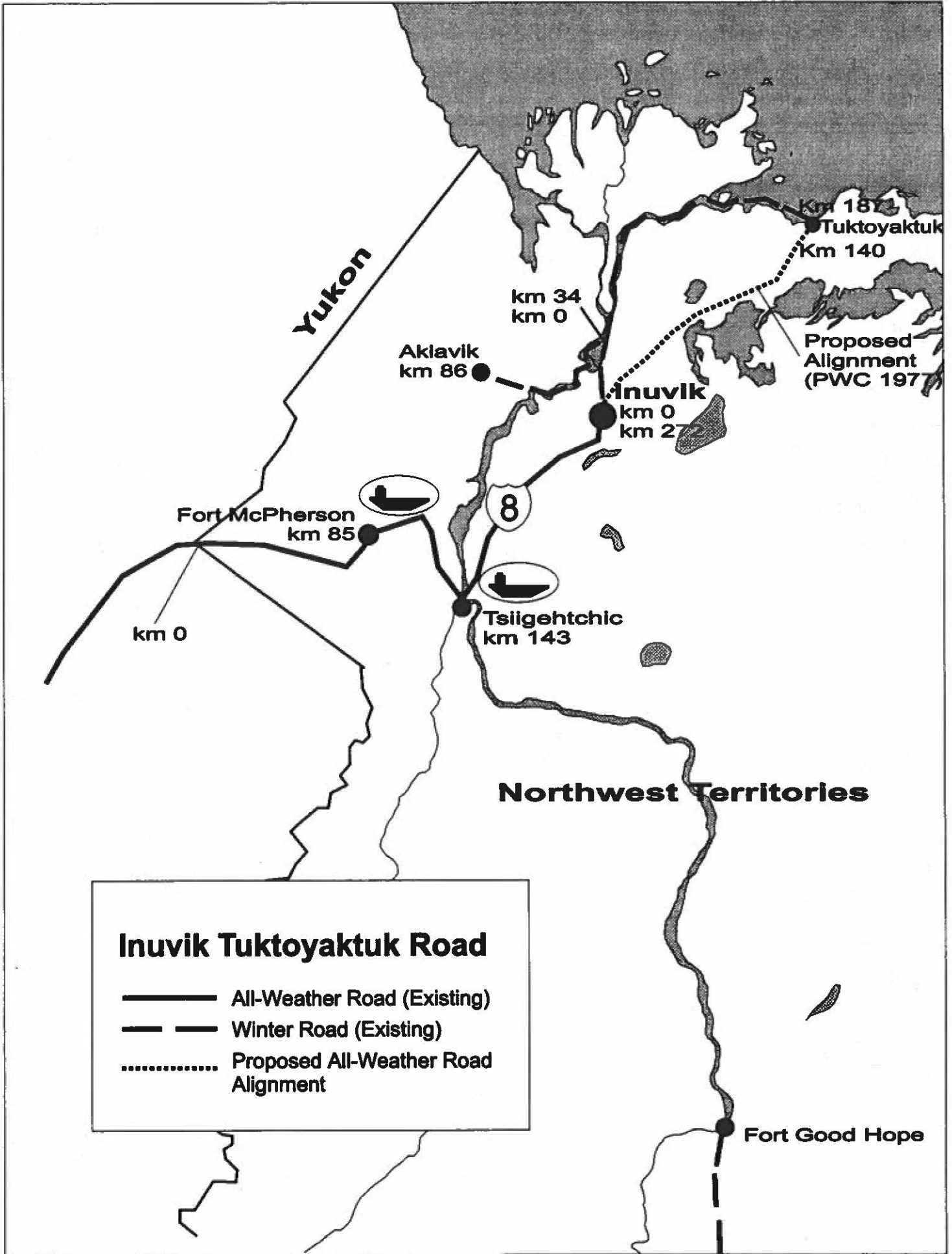
The Department has developed and submitted a proposal to Indian and Northern Affairs Canada for incremental funding to accelerate this



Mackenzie Valley Highway Extension from Wrigley to Tuktoyaktuk









program so that the eight-week window can be achieved in two years. The Department is currently working with federal officials in response to requests for additional information. The Department will continue to undertake improvements to the winter road beyond the two-year accelerated program (assuming funding is received from the federal government) to further expand the winter road season and to reduce environmental concerns. The oil and gas industry will also be approached for partnering opportunities.

5. Explore opportunities for partnering with oil and gas developments

With the renewed interest in oil and gas exploration, and the discussions on a Mackenzie Valley pipeline, come opportunities for partnering with developers on transportation infrastructure improvements. While the current winter road does facilitate exploration, the lack of an all-weather road results in high expenditures on transportation and logistics, and less expenditures on actual exploration work. In discussions with potential pipeline developers it has been pointed out that concurrent development of roads and pipelines will produce economies. In partnership with industry, the Department will study the opportunities for improving transportation infrastructure for the mutual benefit of communities and industry.

6. Pursue additional federal funding for the Mackenzie Highway Extension under the Non-Renewable Resource Development Strategy

The development of new roads in the Northwest Territories is an acknowledged federal responsibility. The federal government also reaps the majority of royalty and tax benefits from developments in the Northwest Territories. Under the **Non-Renewable Resource Development Strategy** the Department will approach the federal government about partnering in background studies and funding for the needed road improvements.

7. Investigate the possibility of starting construction as a small-scale, community-based construction program.

One option to start construction of the Mackenzie Valley road is to provide a contribution to each local community and begin a number of small-scale construction projects. Funding would allow for a practical demonstration or a pilot-project approach to construction. The program would also provide for employment in each community and heavy-equipment training opportunities. While new funding would need to be found to begin this program, the more-manageable level of funding may make the program more achievable in the short-term. Potential sources of funding include the GNWT, federal government, existing employment and training programs, and industry.



➤ ***Pursue Construction of a Slave Geologic Province Transportation Corridor***

“Our Vision Includes greater northern involvement in land-based access into the Slave Geologic Province and new road infrastructure that is responsive to the needs of industry to create economic development opportunities.”

As noted previously, the Northwest Territories has enormous mineral development potential. National and international markets are available if these resources can be developed and transported to market at competitive prices and on a reliable basis. The present lack or inadequacy of surface transportation infrastructure impedes non-renewable resource development.

At present the only land-based transportation infrastructure serving exploration and development activities in the Slave Geologic Province is a privately constructed winter road. This winter road, referred to as the Lupin Winter Road, is constructed under a License of Occupation, issued by Indian and Northern Affairs Canada, to Echo Bay Mines, owners of the Lupin gold mine. The Lupin mine is located approximately two-thirds of the way to the Arctic Coast in the Nunavut Territory. Both the Ekati mine and the Diavik mine presently under construction are/will be resupplied via this winter road. Other exploration activities also use this winter road. This road has evolved into a multi-user transportation corridor vital to resource development in the Slave Geologic Province.

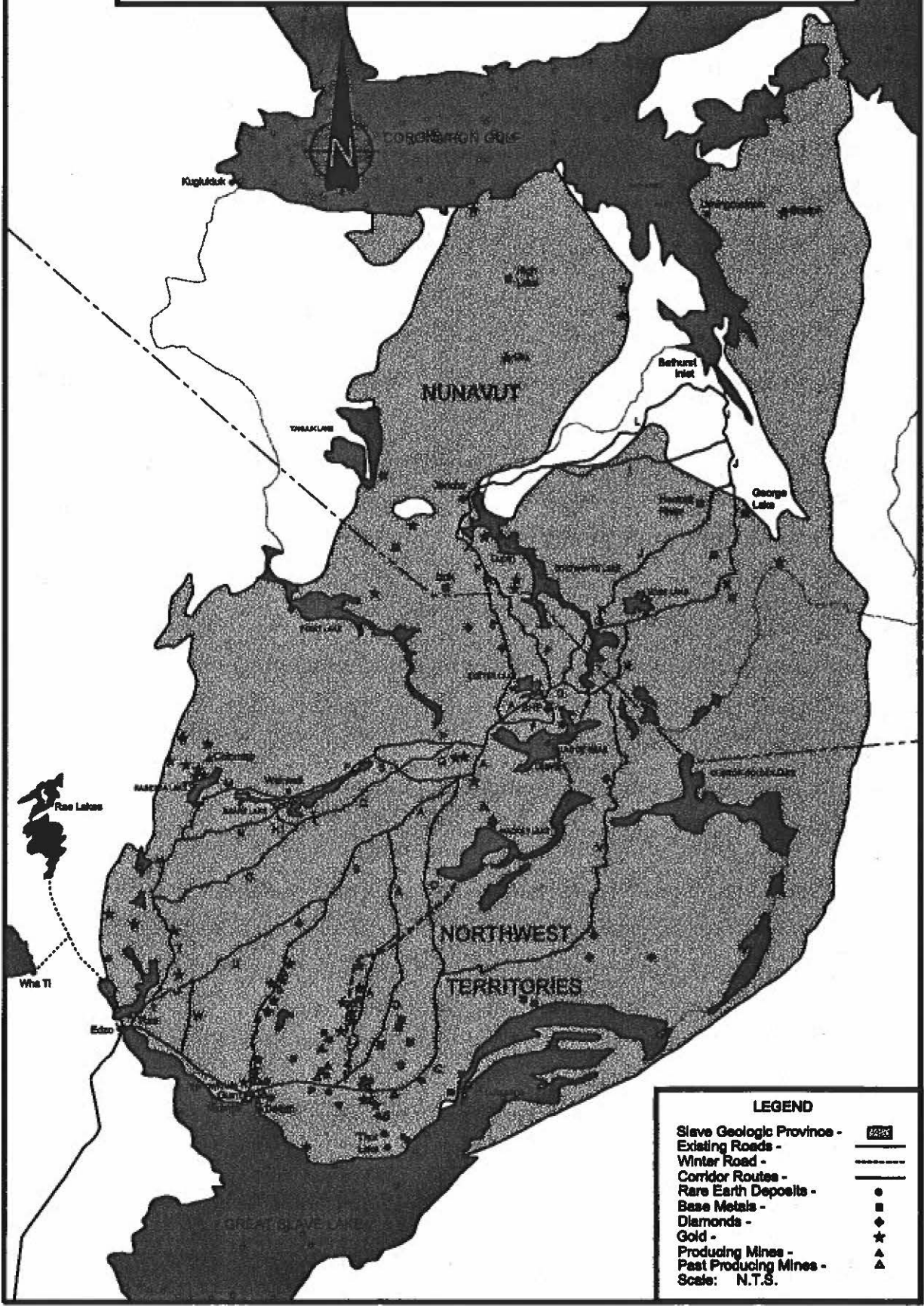
Given the critical importance of this corridor to resource development in the Northwest Territories, the Department of Transportation is leading an initiative to obtain greater northern control of the road. This initiative is being pursued in support of resource development since it is believed that the GNWT can better guarantee access for all developers, and do a better job of dealing with the road-related issues including environmental concerns, enforcement, wildlife, aboriginal interests and traffic linkages to the Ingraham Trail.

While a winter road is sufficient to meet the short-term needs, the construction of an all-weather corridor has also been considered. An all-weather corridor would facilitate exploration and development in the Slave Geologic Province by providing a less-expensive and more reliable means of resupply. Construction of this corridor has been studied for many years, with federal government reports dating back to the 1960's. This corridor has also been a long-term objective of the Department as noted in the 1990 and 1994 Transportation Strategy documents. The Department has organized many workshops/meetings with stakeholders to discuss the project need and to explore creative ideas to implement the project, including those undertaken as part of the Highway Strategy. As more development occurs, the need for improved access will increase, and the economic justification for an all-weather road will improve. The Kitikmeot Inuit Association, with other private sector partners, are actively promoting the construction of an all-weather road in Nunavut to serve the Izok Lake base metal deposit and other mineral-related opportunities.

The construction of a 450-kilometre transportation corridor from the Great Slave Lake region to the Nunavut Border near Contwoyto Lake is estimated at \$250 million. This



**SLAVE GEOLGIC PROVINCE TRANSPORTATION CORRIDOR
POTENTIAL CORRIDOR ROUTES**



LEGEND

- Slave Geologic Province - [Stippled Area]
- Existing Roads - [Solid Line]
- Winter Road - [Dashed Line]
- Corridor Routes - [Dotted Line]
- Rare Earth Deposits - [Circle]
- Base Metals - [Square]
- Diamonds - [Diamond]
- Gold - [Star]
- Producing Mines - [Circle]
- Past Producing Mines - [Triangle]
- Scale: N.T.S.



alignment would extend through the Nunavut Territory to Bathurst Inlet an additional 235 kilometres.

Action Plan

8. Pursue greater northern involvement in the Lupin winter road

As noted above, the Department is analyzing options to obtain jurisdiction over the Lupin winter road. At present Echo Bay Mines holds a License of Occupation for road construction, which is issued by Indian and Northern Affairs Canada. If successful in obtaining jurisdiction, the Department can then determine the best option for operation and management of the road. This would allow for greater involvement of all bona fide stakeholders.

9. Pursue improved transportation infrastructure to serve developments in the Slave Geologic Province

As mineral developments proceed, the demand for improved transportation infrastructure will increase. While it is noted that the development of an all-weather road is a long-term Vision, the Department must be diligent to ensure that any new road development resulting from increased industry demands is orderly and cost-effective. This process must involve all stakeholders and ensure that developments are mutually beneficial. As with any development in the Northwest Territories, the federal government is a major stakeholder since it is responsible for road construction in the Northwest Territories, since it controls most of the land, and since it is a major beneficiary, along with industry, in mineral developments.

We must also work with the Government of Nunavut and other aboriginal and private partners, as they pursue an all-weather road in the Nunavut Territory.

Federal involvement in identifying appropriate solutions to transportation problems that may result from development in the Northwest Territories is critical. The Department will work to ensure federal involvement.

➤ Pursue the Construction of Roads to Connect Communities

“Our Vision includes new or upgraded community access roads to provide improved land-based access for communities.”

The Northwest Territories is geographically large and its small population is scattered in 34 communities. The absence of year-round all-weather road access to many of these communities penalizes them in terms of socio-economic opportunities and costs.



As noted in the table and chart, 19-percent of the population has year-round highway access, while another 65 percent of the population has highway access that is seasonally disrupted at winter freeze-up and spring break-up. Thus, 84-percent of the population has direct highway access. In the winter an additional 13-percent of the population is connected to the highway network via winter roads. That leaves four communities (Holman, Lutsel'ke, Paulatuk and Sachs Harbour, with three percent of the population) reliant on barges for annual resupply, and one community (Wekweti, with less than one percent of the population) with a winter road constructed only when cost-effective for resupply.

As noted, our Vision is to improve land-based access to communities where it is cost-effective. Recent initiatives of the Department of Transportation to improve road access include completing the all-weather highway from Fort Simpson to Wrigley, and upgrading the winter road to Jean Marie River to an all-weather road. At the present time the Department is upgrading the winter road to Nahanni Butte to an all-weather road, and will construct a public winter road to Colville Lake for the first time this winter to serve oil and gas exploration in the area.

Several communities have expressed a desire to obtain better surface access. This includes Wha Ti and Aklavik who have requested the construction of all-weather roads, and Wekweti which has requested an annual winter road.

Action Plan

10. Continue with Nahanni Butte and Colville Lake road improvement initiatives

The Department is presently improving the land-based access to the communities of Nahanni Butte and Colville Lake. In Nahanni Butte the winter road is being upgrade to all-weather status, with the exception of crossing the Liard River where the community will operate a water-taxi once the road is complete. In Colville Lake the Department is beginning the process of constructing an annual public winter road. This road will facilitate both community access and oil and gas exploration in the area. The Department will continue to undertake these road improvements.

11. Investigate alternatives for improving surface access to communities

The Department will evaluate the implications of improving surface access to other communities as the need arises. These needs may be either for resource development or for community needs. In the analysis the Department will consider the cost-effectiveness of providing the access, budget constraints, other available transportation modes to the community, and the ability to partner with other stakeholders in the improvements.



FUNDING REQUIREMENTS AND FUNDING SOURCES

Funding Requirements

Total funding requirements for each of the action items are summarized below.

- Preserve and Upgrade our Existing Highway Infrastructure - \$196 million in currently justified needs, and an additional \$433 million in future needs over the next 20-years.
- Mackenzie Valley Highway from Wrigley to Tuktoyaktuk - \$500 million.
- Slave Geologic Province Transportation Corridor - \$250 million.
- Roads to Connect Communities – funding dependent on future needs.

Funding Sources

The first source of funding to undertake these initiatives is the Government of the Northwest Territories and, more specifically, the allocations provided to the Department of Transportation. At present \$16 million per year is allocated to the highways capital program. All of this funding is used to preserve and, where possible, upgrade existing highway infrastructure to address safety and level-of-service deficiencies. There are not enough resources available to fund new infrastructure.

While the Department has recently obtained additional funding from the GNWT for the Colville Lake winter road initiative, the current financial position of the GNWT precludes any significant increase in funding to the Department to realize our long-term Vision. New funding sources and/or innovative approaches must be pursued.

The development of new roads in the Northwest Territories is an acknowledged federal responsibility. It is therefore essential that federal assistance be obtained. Unfortunately the federal government has not been responsive to previous requests for funding, nor do they have any program for new road construction at the present time, despite the fact that the federal government receives the majority of royalty and tax benefits resulting from developments in the Northwest Territories. The federal government must be convinced of the need to invest in transportation infrastructure in support of these developments.

Another option to obtain funding is the concept of user-pay or public-private partnerships. In the case of the Lupin winter road, the road is currently operated on a cost-recovery basis, with the users of the road paying a proportionate share of the road construction costs. The Department is proposing that, under a new arrangement, the road continue to be operated on a cost-recovery basis. Carrying this model forward, tolls from mine developments could be used to payback the investment in a Slave Geologic Province Transportation Corridor. While additional work is required on this option and the need for an all-weather road must be clearly demonstrated, previous studies have indicated that under the present circumstances tolls would only cover a portion of the costs. Government involvement would be required to up-front some of the development costs and/or invest "seed" money. The federal government would need to be involved since they would derive the majority of benefits.

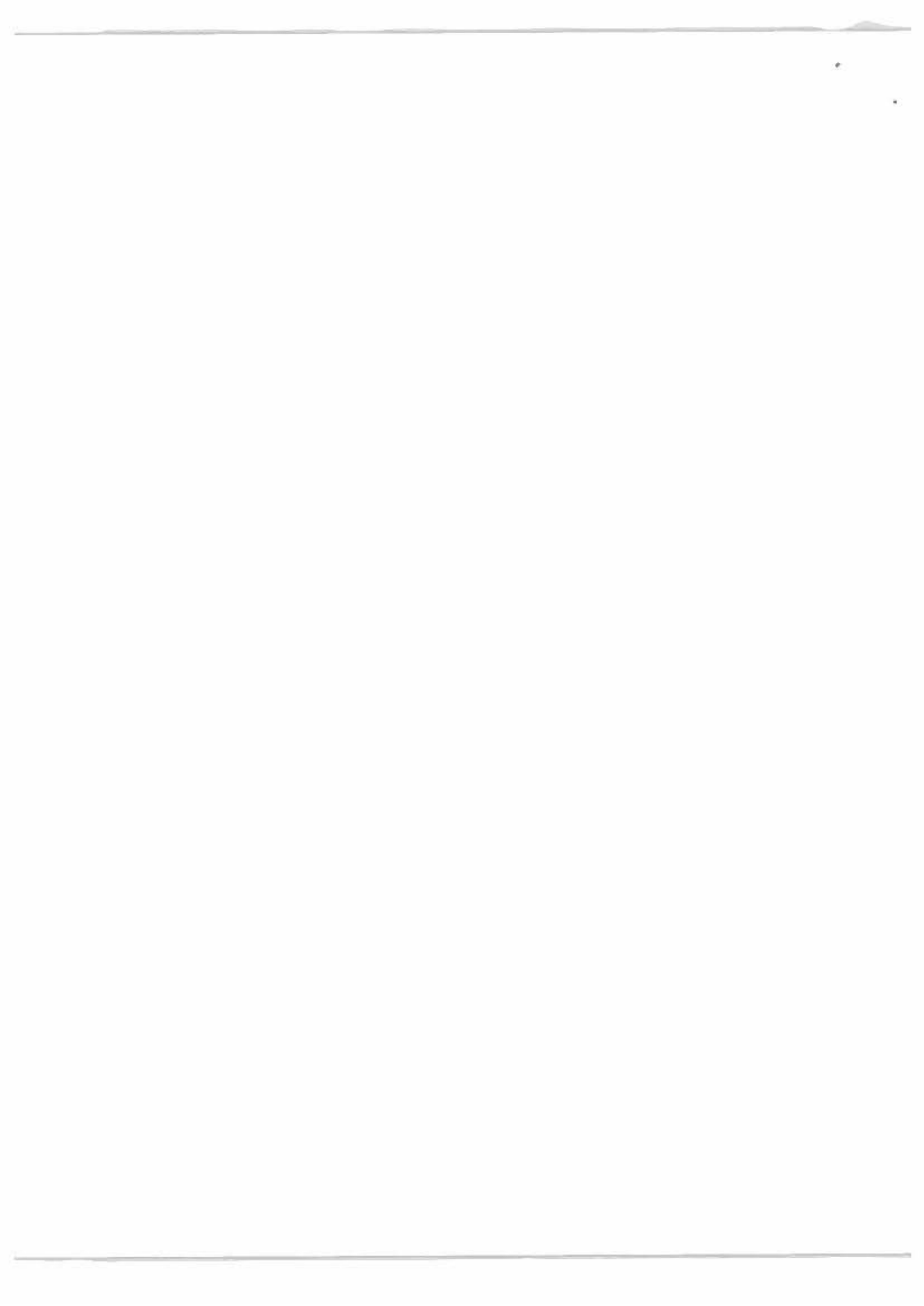
For the Mackenzie Valley Highway, the recent upturn in oil and gas exploration and the talk about a Mackenzie Valley pipeline offers another significant opportunity to partner in road



improvements. Concurrent development of roads and pipelines will offer significant economies of scale. The construction of an all-weather road down the Mackenzie Valley may be an important benefit for Mackenzie Valley communities associated with pipeline construction.

As noted in our action items for the Mackenzie Valley Highway, another option for construction is through the implementation of a long-term, community-based construction approach. GNWT seed funding could be used to kick-start this program. Once underway, existing programs such as training and employment initiatives, land claim funding, or industry partnerships could be tapped into to augment the initial GNWT investment.

In summary, financing is the major challenge in pursuing the upgrading of existing roads and the construction of new roads in the Northwest Territories. The Department will continue to cost-effectively allocate its existing resource allocations received from the GNWT to ensure the existing highway network is maintained to a safe and reliable standard. The Department will also pursue partnerships and innovative approaches with other stakeholders for new road construction. All stakeholders must participate in proportion to the benefits received.



CONCLUSION

Our Vision for surface transportation in the Northwest Territories is placed against a land rich in people and resources that is unrivalled in potential and opportunities. Our Vision sees road improvements as a means to secure a prosperous and healthy future for all Northerners.

While our Vision for roads is ambitious and bold, we have developed a plan-of-action that is realistic. We must be prepared to continue to identify the opportunities, and to pursue the required improvements with all stakeholders when it is mutually beneficial.

Investing in roads will require new dollars and a renewed commitment by all stakeholders to meet the challenges. We will have to be innovative and use partnerships to help us reach our objectives. The Federal Government must be cognizant of its uncompleted and unfulfilled commitment to invest in new roads in the Northwest Territories. Industry must be prepared to pay an equitable share of the costs where they are the beneficiaries of improved access. The GNWT must also be prepared to pay its own share, proportionate to the benefits that would be received.

Working together, we will be able to build new roads that ultimately will benefit all Northerners and Canadians.

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