The Northwest Territories Economy
A Look to the Year 2000

Prepared by:
Economic Development and Tourism
Policy, Planning and Human Resources

July 1995

The NWT Economy to the Year 2000

A Brief History of the Economy[1]

The 1990's signaled the end of four decades of rapid economic growth in the Northwest Territories. During the 1970's and 80's real GDP in the NWT increased by 157%. This growth was driven by an increase in investment of 96%, a rise of 88% in government spending on goods and services, an increase of 333% in transfers to persons, and an 82% increase in exports.

A major contributor to growth in the early and mid-80's was the minerals and petroleum sector. The oil and gas exploration boom in the Beaufort Sea and High Arctic Islands and the construction of an oil pipeline from Norman Wells to Alberta reflected much of the increased investment in the territorial economy. Some of this investment resulted from Petroleum Incentive Program (PIP) grants. In addition the Nanisivik and Polaris mines opened and flow-through share tax breaks encouraged increased mineral exploration in the north.

However, the primary engine of economic growth over the past forty years has been the public sector. Public spending occurred as investment in public infrastructure such as housing, education, recreation and health facilities, and transportation systems, as well as supporting the expansion of government itself. During the 1970's and 80's transfers to territorial residents rose by 333% compared to 187% nationally.

Between 1971 and 1991, total employment doubled from 10,600 to over 20,000 but the unemployment rate quadrupled from 4.2% in 1971 to 16% in 1989. This rapid rise in the official unemployment rate is largely due to increased labour force participation from 57.7% to 73% between 1971 and 1991 - representing an increase of 17,200 individuals over this period. The increased unemployment rate may also suggests that some jobs created during this time were unsuited to the skills of NWT residents.

The more recent economic history of the NWT shows little or declining growth in GDP between 1989 and 1992. With the recent recession ebbing, the economy showed a moderate increase in GDP between 1992 and 1993, although this increase was below the Canadian average. The decline in GDP is primarily a function of a drop in investment, both private and public, between 1990 and 1994. In 1993, a substantial increase in government spending compensated for a large decline in private investment (see table1).

[1] Much of the discussion in this section is drawn from the report "NWT Business Review and Outlook For the Year 1995" available from the Department of Economic Development and Tourism

Table 1 Recent History of Changes in Investment and GDP in the NWT Economy (millions of nominal dollars)

Year	Public Investment	Private Investment	Total Investment	GDP at Market Prices
1993	240.3	155.9	440.5	2,134
1992	188.4	227.2	415.6	2,106
1991	208.3	240.8	449.1	2,107
1990	235.3	365.0	600.3	2,117
1989	315.3	652.0	967.3	2,118

Source: NWT Bureau of Statistics

Future Economic Trends

To the year 2000, the rates of federal and territorial spending on goods and services and investment are certain to decline. The 1995 federal budget announced changes to the Canada Social Transfer payment program which will effectively reduce funds transferred to provinces and territories. In 1997/98, the revised program will cost $25.1 billion, approximately $4.5 billion less than would have been transferred under the current program. For the NWT, this new program will result in a net reduction of 6% from 1994/95 levels of $74 million to $68 million in 1996/97. In addition, federal government cuts to its own departments and programs will reduce public investment and spending in the NWT beyond territorial government cuts induced by reductions in transfer payments.

Expectations of increased private investment in the NWT centre on current diamond exploration activity and the potential development of an open-pit diamond mine north of Yellowknife. Although the mining sector has suffered recent declines in production and employment, mining continues to be the NWT's single largest employer and by far its largest exporter. Exploration aside, the mineral industry employs more than 2,000 people (around 10% of NWT employment) and annually generates more than $100 million in wages. The scenario of an open-pit diamond mine coming into operation by 1999 is the most likely expansion of the mining industry by the end of the century. The possibility of an additional mineral development opportunity - in particular a zinc/lead mine at Izok Lake - will not occur until restructuring of the Metall's parent company is complete and the price of zinc is more favourable.

Future government investment will be required to establish Nunavut as a separate territory. However, as negotiations between the federal and territorial governments regarding the level and nature of investment remain at a preliminary stage, the impact of future government investment has not been included in this analysis.

The Economic Forecast

The forecast for changes in the NWT economy was conducted using the NWT Economic Model, which is an econometric forecasting model developed several years ago for the Department of Economic Development and Tourism. In order to use the model, the department updated data included in the model and re-based this data to 1986 constant dollars to conform with information available from Statistics Canada. The premise of the model is that significant, predictable relationships exist between the NWT economy and the Canadian economy at large. Therefore, if changes can be accurately predicted for key indicators of the Canadian economy, then changes in the NWT economy can be also be predicted. Future economic changes in the Canadian economy are based on the Conference Board of Canada projections and GNWT Department of Finance estimates.

The forecast for the NWT economy compares two scenarios: the first scenario is a base case without any exogenous investment or development; and the second scenario takes into consideration the development of a single diamond mine. The base case forecast takes into account a tightened federal budget and diminishing transfer payments to the NWT. The second case is based on the same assumptions concerning federal spending, but also includes the economic impacts associated with the construction and first year operation of an open-pit diamond mine north of Yellowknife.

No additional scenarios were incorporated in the impact analysis as it appears unlikely that either the Izok lake project or any other mineral development project will be undertaken before the end of the century. Simply stated, the base case option - with no new industrial development - is the most realistic development option; the development of single diamond mine in the NWT is believed to be the single development option most likely to occur.

Option 1: Base Case

The base case assumes declining transfer payments from the federal government as well as decreasing federal government spending on investment, goods and services in the Northwest Territories. The unemployment rate is expected to rise, due largely to an increasing labour force and increasing participation rate. Exports are projected to remain steady for both renewable and non-renewable natural resources. Investment required to establish as separate Nunavut government has not been included[2]

Projected values for key economic indicators are presented in table 2

[2] The capital costs of establishing the Nunavut government are estimated at $275 million, roughly half of the capital costs associated with establishing a diamond mine. The impacts of the Nunavut capital expenditure would be between one third and one half of the diamond mine impacts, considering that there is more economic leakage from the Eastern Arctic economy.

Table 2 Economic Outlook: 1995 - 2000

Base Case

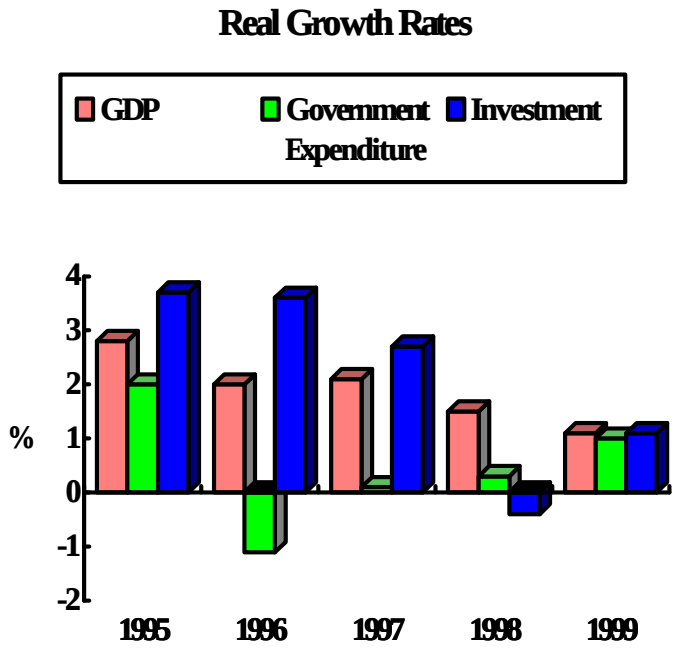
Nominal Dollars	1994	1995	1996	1997	1998	1999	2000
Gross Domestic Product	1959	2043	2121	2197	2285	2379	2474
(Millions of Dollars)		4.3	3.8	3.6	4.0	4.1	4.0
Final Domestic Demand	2429	2520	2587	2626	2659	2697	2753
(Millions of Dollars)		3.8	2.6	1.5	1.3	1.4	2.1
Personal Expenditures	846	876	912	928	949	969	991
(Millions of Dollars)		3.5	4.1	1.8	2.3	2.1	2.2
Government Expenditures	1142	1181	1187	1194	1205	1217	1235
(Millions of Dollars)		3.4	0.5	0.6	0.9	1.0	1.5
Fixed Capital Investment	441	464	489	504	505	511	528
(Millions of Dollars)		5.2	5.3	3.2	0.2	1.1	3.4
Constant 1986 Dollars	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Gross Domestic Product	1653	1699	1732	1768	1794	1813	1867
(Millions of 1986 Dollars)		2.8	2.0	2.1	1.5	1.1	3.0
Final Domestic Demand	2003	2051	2074	2096	2109	2138	2181
(Millions of 1986 Dollars)		2.4	1.1	1.1	0.6	1.4	2.0
Personal Expenditures	663	677	694	703	715	730	742
(Millions of 1986 Dollars)		2.1	2.5	1.3	1.7	2.1	1.7
Government Expenditures	912	930	920	921	924	933	946
(Millions of 1986 Dollars)		2.0	-1.1	0.1	0.3	1.0	1.4
Fixed Capital Investment	428	444	460	472	470	476	493
(Millions of 1986 Dollars)		3.7	3.6	2.7	-0.4	1.1	3.6
Other Indicators	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Employment (000's)	22.0	22.5	22.9	23.3	23.6	24.1	24.7
		2.2	2.0	1.5	1.5	2.0	2.5
Unemployment Rate (%)	17.0	17.6	18.2	18.9	19.6	20.2	20.9
		3.7	3.2	4.1	3.5	3.3	3.1
Consumer Price Index-NWT	128.9	131.9	135.2	138.7	142.0	145.6	149.2
		2.3	2.5	2.6	2.4	2.5	2.5
M.Y.W. Mid-Term Corporate (Average Bond Yield)	9.15%	9.52%	9.70%	10.00%	9.95%	9.85%	9.66%

Key points of interest from the projections over the forecast period:

- declining rate of real growth in GDP through to 1999
- a significant decrease in government spending on goods and services over the next two years
- declining real rate of investment in capital
- decreasing consumer confidence reflected in declining rates of consumer spending

Special note should be taken of the unemployment rate, which is projected to increase from 17% to almost 21% by year 2000. This rate is driven almost exclusively by an increase in the aboriginal unemployment rate which in turn reflects the growing number of young native people entering the workforce with limited job opportunities.

Overall, we anticipate a slowdown in economic growth in the NWT as the major driver of GDP, government spending and investment, declines.



Option 2: Diamond Mine

Description

This option specifies construction of an open-pit diamond mine in the Lac de Gras area north of Yellowknife. The mine would be serviced by a winter road. Pending regulatory and environmental approvals, construction is scheduled to begin in 1997 and completed in 1999, with first production in 1999[3]. Limited production is predicted for 1999, 2000 and 2001. In 2002, the mine will be producing at full capacity.

The three year construction phase will directly employ 448 people in the first two years and 273 people in the final year. In the first three years of start up production, the mine will provide direct employment for 230 people and this direct job complement will expand to 675 jobs at full production.

The direct, indirect and induced impacts of the mine development over the forecast period of this report are summarized in the table 3 below. These impacts were estimated by the GNWT Bureau of Statistics using the NWT Input/Output model. The impact of mine construction and operation on key economic indicators over the forecast period is presented in table 4.

[3] This schedule is based on information provided by the GNWT Department of Energy, Mines and Petroleum Resources and the GNWT Bureau of Statistics. Private developers indicate that construction could proceed earlier and over a compressed period; in this case, impacts would occur earlier than predicted in this analysis, but overall would remain the same.

Table 3 Impacts of A Single Diamond Mine over the Forecast Period ($ in millions)

Year	1997	1998	1999	2000
Capital ($)	230	230	140	
Output ($)			300	300
Person Years				
Direct				
Capital	447.9	447.9	272.6	
Output			230.3	230.3
Indirect				
Capital	191.4	191.4	116.5	
Output			146.1	146.1
Induced				
Capital	234.4	234.4	142.7	
Output			115.9	115.9
Total Person Years	873.7	873.7	1024.1	492.3
Labour Income				
Direct				
Capital	44.6	44.6	27.2	
Output			19.6	19.6
Indirect				
Capital	7.7	7.7	4.7	
Output			7.1	7.1
Induced				
Capital	6.3	6.3	3.8	
Output			3.1	3.1
Total Labour Income ($)	58.6	58.6	65.5	29.8
GDP				
Direct				
Capital	59	59	35.9	
Output			118.7	118.7
Indirect				
Capital	12	12	7.3	
Output			12.7	12.7
Induced				
Capital	11.8	11.8	7.2	
Output			5.9	5.9
Total GDP ($)	82.8	82.8	187.7	137.3

Source: GNWT Bureau of Statistics

Mine Case

Table 4 Economic Outlook: 1995 - 2000

Nominal Dollars	1994	1995	1996	1997	1998	1999	2000
Gross Domestic Product	1959	2043	2121	2280	2368	2567	2611
(Millions of Dollars)		4.3	3.8	7.5	3.9	8.4	1.7
Final Domestic Demand	2429	2520	2587	2967	3000	2958	2822
(Millions of Dollars)		3.8	2.6	14.7	1.1	-1.4	-4.6
Personal Expenditures	846	876	912	987	1008	1032	1032
(Millions of Dollars)		3.5	4.1	8.3	2.2	2.4	0.0
Gov't Expenditures	1142	1181	1187	1246	1257	1275	1261
(Millions of Dollars)		3.4	0.5	5.0	0.9	1.4	-1.1
Fixed Capital Investment	441	464	489	734	735	651	528
(Millions of Dollars)		5.2	5.3	50.3	0.1	-11.5	-18.8

Constant 1986 Dollars	1994	1995	1996	1997	1998	1999	2000
Gross Domestic Product	1653	1699	1732	1834	1859	1956	1971
(Millions of 1986 Dollars)		2.8	2.0	5.9	1.3	5.2	0.8
Final Domestic Demand	2003	2051	2074	2396	2408	2361	2231
(Millions of 1986 Dollars)		2.4	1.1	15.6	0.5	-1.9	-5.5
Personal Expenditures	663	677	694	748	759	777	774
(Millions of 1986 Dollars)		2.1	2.5	7.8	1.6	2.4	-0.5
Gov't Expenditures	912	930	920	961	964	978	969
(Millions of 1986 Dollars)		2.0	-1.1	4.5	0.3	1.4	-1.2
Fixed Capital Investment	428	444	460	688	684	606	491
(Millions of 1986 Dollars)		3.7	3.6	49.6	-0.5	-11.5	-19.0

Other Indicators	1994	1995	1996	1997	1998	1999	2000
Employment (000's)	22.0	22.5	22.9	24.2	24.5	25.1	25.2
		2.2	2.0	5.3	1.4	2.5	0.3
Unemployment Rate (%)	17.0	17.6	18.2	15.9	16.6	16.9	19.3
		3.7	3.2	-12.6	4.6	1.4	14.5
Consumer Price Index-NWT	128.9	131.9	135.2	138.7	142.0	145.6	149.2
		2.3	2.5	2.6	2.4	2.5	2.5
M.Y.W. Mid-Term Corporate (Average Bond Yield)	9.15%	9.52%	9.70%	10.00%	9.95%	9.85%	9.66%

Over the forecast period, construction of a new mine and its initial period of production would have a considerable impact on territorial GDP. The construction period, without any production, will increase GDP annually by 4% over the base case. In the first year of production after construction is completed, mine operations will increase GDP by 6% over the base case forecast.[4]

The changes in GDP resulting from the mine derive mostly from capital investment, new employment (labour income) and increases in personal expenditures resulting from the induced impacts of spending associated with the mine. Additionally, a rise in government spending over the base case is anticipated due to increased demand for government services created by the mine. Changes in fixed capital investment for the mine option over the base case option are attributable to the capital construction phase of mine development.

The other significant impact of the mine option is a drop in the overall NWT employment rate. Considering that the rate reported is a territorial average, the local impact on employment will be even more significant. If northern employment is maximized, up to 40% of the construction workforce could be hired within the NWT, and 60% of the operations workforce could be drawn from NWT residents[5].

Overall, the construction and operation of a single diamond mine of the type and scale proposed would have a significant effect on the NWT economy.

[4] The impact of the mine on GDP assumes that no capacity constraints exist on capital and labour, that is mine construction and operation will not draw capital and labour already employed in other areas of the NWT economy

[5] These estimates are based on the report "A Strategy to Maximize Northern Employment in Mining in the Slave Geological Province" , June 1995, Lutra Associates

Appendix A
Definitions of Terms in the Analysis

To measure the economic impacts of changes to the economy, the NWT Bureau of Statistics has developed a model of the territorial economy using input/output analysis. This Input/Output model (IO) estimates the demand for goods between various industries in the Northwest Territories. The IO model estimates changes in gross production, gross domestic product, labour income and employment for impacts on direct, indirect and induced spending in the economy.

Direct spending effects are attributed to the first round of spending, for instance the payments made by the government directly to contractors or employees. The indirect effects are the spending by these contractors on purchases from other suppliers in order to fulfill their contracts. In turn, these suppliers make purchase from other firms in order to supply the contractors. Induced effects are the expenditures in the economy for consumer goods from labour income generated by the direct and indirect effects.

Ratios called multipliers are measures of the relationship of direct spending to indirect and induced effects. A large multiplier means that money is circulated more times through the economy than a small multiplier. This is important because more rounds of spending generate more employment and more taxes. In the case of the Northwest Territories, projects with a high labour component have higher multiplier ratios than projects with low labour components. This is because our manufacturing base is almost non-existent, therefore material and supply purchases represent leakages outside our economy. That is, money spent on manufactured goods does not get re-circulated in our economy except for profits to local firms generated from sales of these goods.

Gross domestic production of an economy is the net income earned by the economy, similar to the net income of a business. Net income is the revenue left over after costs. Gross domestic product (GDP) is the value of the final output of goods and services or final production, resulting from the direct expenditure. The GDP is a measure of the productivity of the economy.

Employment in this report is presented both in terms of total income earned as wages, and in the equivalent person-years of employment generated by these wages.

Labour income is the wages and salaries which result from all the transactions which contribute to gross domestic production. Labour income is a part of gross domestic production.

Employment expresses labour income in person years. The impact analysis measures the employment opportunities created in the NWT by all the transactions resulting from cycling spending through the economy.