

Giant Mine Remediation Project: Economic

Results of an Economic Effects Assessment conducted by the Giant Mine Oversight Board (GMOB)

Background

Between 1948 and 2004, Giant Mine was a major economic driver for the Yellowknife area and the Northwest Territories. When the mine stopped operating and Canada became the site custodian, attention focussed on the environmental issues left behind. The latest estimate released by Canada suggests that remediation of the site to environmental standards of today will cost the government \$4.38 billion, and ongoing work will span 30 years or more. With this budget, the Giant Mine Remediation Project (GMRP) will be one of the largest, if not the largest economic projects in the history of the region. It has the potential to become a watershed for the territory's future prosperity and is linked to other remediation activities expected over the next ten to twenty years. Learning more about these planned expenditures and the how they will cause an increase in the demand for goods and services in the NWT economy offers the territory an opportunity to consider how and to what extent this money can be spent here.

Through the expertise of Mr. Graham Clinton, member of the Giant Mine Oversight Board, GMOB has completed this work to measure the economic performance of the Project and to attract more attention to the size and scope of its potential economic benefits.

Methodology

The economic effects assessment was completed using mathematical tools including a purpose-built Input-Output model of the GMRP. This model traces the flow of money through the NWT economy, capturing the effects on gross output, gross domestic product, labour income, and employment resulting from each transaction. The model also captures the extent to which certain goods and services are imported into the NWT economy, either from other Canadian locations or from international suppliers. The sum of these effects represents the direct and indirect effects of the GMRP. Induced effects occur when labour income earned through the direct and indirect effects is spent on consumer goods and services. It is an important aspect of economic growth that is generated through major projects because it can mean a boost in retail activity, which help local store owners. The extent to which the NWT benefits from this effect is dependent on the participation of NWT labour in the Project. An estimate of domestic labour supply is exogenous to the Input- Output model, and, in this case, was determined using models of the NWT labour market and its population.

Economic Benefits

The Project has identified “maximizing benefits” as one of its main objectives. It is not a well-defined term to the point where numerous definitions are currently in use. GMOB encourages all involved to give the term a clear and specific definition to improve the discourse regarding the economics of Project.

From its perspective, GMOB defines an economic benefit as, “something that is made possible when money is spent”. The Project Implementation Plan describes when and where money will be spent over the next fifteen years to remediate Giant Mine. The planned expenditures cover a vast array of goods and services. Every one of these purchases create demand within the NWT and Canadian and sometimes international economies. The suppliers of labour and business goods and services, regardless of where they are located, are “benefiting” directly from the Project’s economic activities.

There are other economic benefits, namely indirect and induced benefits. An indirect benefit occurs when a contractor that is supplying a good or service to the project spends its own money as part of its business operations. Those businesses are creating demand of their own, and again, the supplier of that demand could be an NWT resident, or they could be from elsewhere in Canada or the world.

An induced benefit occurs when individuals working either directly or indirectly on the Project spend their wages or salaries. Whether that consumer spending takes place within the NWT economy or elsewhere depends largely on the residency of that individual labourer.

GMOB makes a distinction between economic benefits and other financial transfers. An economic benefit is not a transfer from the federal government to other levels of government, persons, or businesses. It is not compensation, a government grant, or a government program.

Model Inputs

There are two sources of information that were used to estimate the economic effects of GMRP.

1. The Project Implementation Plan [Table 1](#)
2. The expenditure profile for the \$4.38 billion estimated project cost was allocated, depending on the level of expected work, between the major project activities.

Further separation of the data was then necessary to improve the accuracy of the model results. This was supported by discussions with the GMRP, and information researched regarding the historical cost of goods and services.

A list of the Primary Industries affected by the planned expenditure is provided in [Table 2](#).

Table 1: Project Implementation Plan Activities

<ol style="list-style-type: none"> 1. Contaminated Surficial Materials 2. Tailings 3. Water Treatment Plant 4. Baker Creek Realignment 5. Surface Water Management 6. Stabilisation and Remediation of Underground Works 7. Demolition and Debris Removal 8. Open Pit Closures 9. Ground Freeze 10. Openings to Surface 11. Landfill 12. Borrow 	<p>14. Common Support Services</p> <ul style="list-style-type: none"> • Surface Care and Maintenance • Underground Care and Maintenance • Site Surveyor • Medical Monitoring • Effluent Treatment Plant Operator • Domestic Waste Disposal • Decontamination Facility Operator • Ambient Air Quality Monitoring Laboratory • Surface Water and Groundwater Monitoring • Biological Support Services • Bear Monitoring • Site Security • Emergency Medical Services • Off-Site Borrow
<p>13. Common Site Services</p> <ul style="list-style-type: none"> • Road construction • Bridge construction • Power supply lines and substations construction • Communication Lines and Cell Towers construction • Fencing and signage construction • Maintenance garage construction 	<p>15. Site Services (2035+)</p> <ul style="list-style-type: none"> • Constructing permanent road • Demolition and removal of bridges <p>16. Off-Site Support Services</p> <ul style="list-style-type: none"> • Contractors • Engagement

Table 2: Industries Affected by planned GMRP Spending

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|---|---|
| <ol style="list-style-type: none">1. Waste management and remediation services2. Other activities of the construction industry3. Other engineering construction4. Non-residential building construction5. Support activities for mining6. Sand, gravel, clay, and ceramic and refractory minerals mining and quarrying7. Architectural, engineering and related services8. Other federal government services (except defence)9. Management, scientific and technical consulting services10. Transportation engineering construction11. Other provincial and territorial government services12. Other aboriginal government services13. Repair and maintenance (except automotive)14. Other professional, scientific and technical services15. Transportation engineering construction | <ol style="list-style-type: none">16. Other provincial and territorial government services17. Repair and maintenance (except automotive)18. Other professional, scientific, and technical services19. Water, sewage and other systems20. Investigation and security services21. Miscellaneous ambulatory health care services22. Services to buildings and dwellings23. Electric power engineering construction24. Communication engineering construction25. Other municipal government services26. Other miscellaneous manufacturing |
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Results

From the \$4.38 billion budget, approximately \$700 million was spent prior to the start of active remediation. That leaves a budget of \$3.6 billion to be spent between 2023 and 2038. Inserting the final expenditure estimates into the economic model generated the results presented in [Table 3](#).

The preliminary estimated effect on NWT’s GDP from the GMRP will be \$1.7 billion over the 15-year project lifespan. This estimate includes all direct, indirect, and induced effects. The average annual labour income is estimated at \$62.6 million, which translates into approximately 500 jobs per year on average, or 7,500 person-years of employment for the whole project.

Table 3: Preliminary Estimates of the Economic Effects of the GMRP, 2023 to 2038

	Direct	Indirect	Induced	Total	Annual Average
Gross Output	3,031,500,000	651,300,000	173,000,000	3,855,900,000	257,100,000
Labour Income	713,000,000	193,900,000	32,600,000	939,600,000	62,600,000
Gross Domestic Product (BP)	1,281,400,000	349,500,000	101,700,000	1,732,500,000	115,500,000
GDP to Gross Output Ratio	42%	54%	59%	45%	
Jobs (total)	5,200	1,900	400	7,500	
Jobs (annual average)	350	130	30	500	

- 1 These are preliminary estimates developed from the Project’s budget. GMOB is working with the Project Team to improve the accuracy of results.
- 2) For reporting purposes, the results have been rounded; therefore, figures may not add up exactly.
- 3) The job count includes jobs associated with expenditures flowing through CIRNAC in addition to jobs associated with the Main Project Manager (Parsons).

While **Table 3** provides a summary of results, that will be interesting when viewed in comparison to the current economic conditions, an important outcome from this work will be a more detailed investigation into the economic effects of each major economic activity as they proceed, such as the Water Treatment Plant.

This information will give the public a better sense of the Project and how it is contributing to the local and territorial economy on a year-by-year basis.