



**MARY RIVER PROJECT  
ENVIRONMENTAL IMPACT STATEMENT**

**VOLUME 4  
HUMAN ENVIRONMENT — ECONOMIC SUPPLEMENT  
CONSOLIDATED EFFECTS ON ECONOMY**

**TABLE OF CONTENTS**

1.1	PURPOSE .....	1
1.2	PROJECT EFFECTS ON THE FOUNDATIONS OF NUNAVUT'S ECONOMY .....	1
1.2.1	Employment and wages .....	2
1.2.2	Purchase of goods and services.....	2
1.2.3	Payment of taxes .....	3
1.2.4	Payment of royalties and negotiated IIBA benefits to Inuit institutions .....	3
1.2.5	Biophysical "footprint" .....	3
1.3	PUTTING IT ALL TOGETHER .....	3
1.3.1	Effects on the territorial economy .....	3
1.3.2	Effects on community and regional economies .....	5
1.3.3	Effects on household economies .....	6
1.4	POTENTIAL ROLES FOR GOVERNMENT .....	9
1.5	RISK ANALYSIS .....	10
1.5.1	Risk 1 – Nunavummiut employment levels don't meet expectations.....	10
1.5.2	Risk 2 – Local business capacity fails to emerge .....	10
1.5.3	Risk 3 – Corporate taxes paid to Nunavut don't meet expectations .....	11

## ECONOMIC DEVELOPMENT SUPPLEMENT

---

### 1.1 PURPOSE

Reviewers from the Government of Nunavut (GN) have requested additional details about the economic effects that the Mary River Project is expected to have in the Nunavut economy. The DEIS addresses these effects under the treatment of the various VSECs and provides an overview of Project effects on four areas of strategic importance for the Nunavut economy in Section 5.0 (the “Economic Development and Self-Reliance” VSEC) of the Draft Environmental Impact Statement (DEIS). This supplement is intended to provide additional analysis related to the overall economic outcomes that may be expected to arise from the Project.

### 1.2 PROJECT EFFECTS ON THE FOUNDATIONS OF NUNAVUT'S ECONOMY

Consideration of potential Project effects on Nunavut's economy presented in the DEIS is implicitly based on a “four capital” model.<sup>1</sup> This model assumes that foundation for economic development involves four critical dimensions or forms of “capital.” These are:

- Human Capital: the ability of people to live healthy, secure, and productive lives;
- Natural Capital: land, resources, ecological functions, and the knowledge associated with these;
- Physical Capital: buildings, equipment, communications networks, transportation networks;
- Social & Organizational Capital: the structures in place to organize activity—families, kinship groups, community institutions, government, business, Inuit organizations, laws & regulations.

This model assumes that economic development requires capacity in each of these areas. Weaknesses or gaps in any area may become a barrier to the achievement of development objectives.<sup>2</sup>

---

<sup>1</sup> This model was used by the GN Department of Sustainable Development as early as 1999, and adopted in the development of the first “Nunavut Economic Outlook” prepared by Conference Board of Canada (2001) and in the Nunavut Economic Development Strategy (2003).

<sup>2</sup> For the purpose of this assessment, the fundamental development objective is an attainment of a “high and sustainable quality of life.” This definition was introduced in the first “Nunavut Economic Outlook” prepared by Conference Board of Canada (2001), and subsequently adopted in the Nunavut Economic Development Strategy (2003). Refinement and definition of what this means in the Nunavut context has evolved, such as in the *Tamapta* mandate of the Third Legislative Assembly, 2009 to 2013.

The Project is expected to affect formation of each of these foundations of Nunavut's local, regional, and territorial economy through the following interactions:

- employment and payment of wages;
- purchase of goods and services from local businesses;
- payments of taxes to government;
- payments of royalties, and negotiated IIBA benefits to Inuit institutions; and,
- biophysical "footprint" of the Project.

#### 1.2.1 Employment and wages

Local employment will serve both to increase Human Capital through increasing human capacity. Project effects include increased skills and experience and improved lifeskills arising directly from employment opportunities (DEIS Section 4.0) as well as effects on education and training (DEIS Section 3.0).

In addition, employment will lead to wealth creation by providing wages that will enter households as income (DEIS Section 6.0). This income will further support Human Capital development (through food security as just one example). Some of this increased income will enter into the local economy creating improved opportunities for business development (DEIS Section 8.0)—one aspect of Organizational Capital expansion. Increased household wealth will also improve Organizational Capital by reducing the economic dependency of households on government social welfare programs. This will reduce government entitlement program spending obligations and providing greater budget flexibility (DEIS Section 12.0). Increased household wealth also has the potential to support productive engagement in the land-based economy through harvesting and other related activities (DEIS Section 10 and Harvest Supplement).

The increased competition for skilled labour that arises from Project-related employment may also affect the ability of local employers to hire the labour they need. This relates to Organizational Capital (DEIS Section 7.0).

The fly-in/fly-out options provided by Project employment, combined with the multiple points-of-hire and increased household wealth means that mobility options will increase for some households. The possible effects this has on population demographics (a dimension of Organizational Capital) is considered (DEIS Section 2.0).

#### 1.2.2 Purchase of goods and services

The Project will purchase a substantial value of goods and services for on-going operations and, especially, for the construction of the Project. These expenditures will include fuel, heavy machinery, rail and rolling stock, professional engineering services, and a wide diversity of additional goods and services. By their nature, these products will be sourced from across Canada and globally. A portion will be sourced from Nunavut from existing, expanded, or newly-formed businesses, thereby increasing the Organizational Capital—business capacity—of the territory.

Projecting how much contract value will be assigned to Nunavut businesses is not possible, given the available baseline data. For this reason, the assessment considers how Project interactions are expected to affect Nunavut businesses on a qualitative basis (DEIS Section 8.0). The potential for purchase of fish

and other country foods by Baffinland for camp use is a specific instance of business procurement that is addressed in the DEIS.

### 1.2.3 Payment of taxes

The Project will generate tax revenues for the territorial government through several routes. These revenues will assist the Government of Nunavut in building its capacity to provide services to Nunavummiut (Organizational Capacity).

Under existing assumptions of Project profitability, a total of some \$100 million per year (on average) will be generated during the operations phase. This is a number estimated by Baffinland based on its internal financial model related to revenues, expenditures, and, ultimately profitability. This tax bill will largely be composed of the territorial component of tax on corporate profits. Taxes will also be derived from payroll taxes and fuel taxes.

In addition to these direct tax payments, Nunavummiut working at the Project will pay income taxes and Nunavut businesses earning profits by supplying goods and services to the Project will pay corporate taxes.

### 1.2.4 Payment of royalties and negotiated IIBA benefits to Inuit institutions

NTI stands to earn substantial revenues through mineral royalties. These are estimated in the DEIS to average some \$100 million per year over the course of the Project. Other payments to Inuit organizations will include land rents, gravel royalties, and substantial IIBA cash payments that are expected to be privately negotiated between Baffinland and the QIA.

### 1.2.5 Biophysical “footprint”

The potential that the Project’s physical “footprint” may have economic interactions is considered in the DEIS. For example, the impact of shipping and rail traffic on Inuit land use and harvesting is addressed in DEIS Volume 10 and in the “Harvesting Supplement” to be integrated into the FEIS. The potential for interactions with other economic sectors such as tourism is also addressed (DEIS Volume 5).

The potential for physical effects on fish to lead to interactions with commercial fisheries development will be addressed in the FEIS and is discussed in this supplement.

## 1.3 PUTTING IT ALL TOGETHER

### 1.3.1 Effects on the territorial economy

How will these various interactions combine to create “net outcomes” in the economy? Nunavut’s economy is a complex system that is influenced by a wide range of factors. These include decisions made by households, business, and government. They also include national and global factors that affect investment, prices, and markets. Project interactions will be just one of many things that will affect economic outcomes and achievement of development goals.

Notwithstanding this complexity, the potential ways by which the Project may affect Nunavut's economy "as a whole" can be considered. Two questions will help to focus this analysis:

- Will the Project affect the nature of territory-wide economic functions?
- Will the Project affect the magnitude of economic flows across the territory?

Some territory-wide effects are expected to arise from Project interactions. The following points can be made:

- Government: Increased government revenues are expected to be substantial. This will increase government capacity to invest in the foundations of the economy. Whether and how government expenditures do affect the functions of the economy will depend on the nature of these expenditures. These would be beneficial effects, but they are not assumed to occur for the purposes of assessing the Project.
- Inuit institutions: Increased revenues flowing to Inuit institutions—NTI and QIA—are expected to be substantial. Allocation of these funds may serve to strengthen some aspects of Nunavut's economic foundation. Whether and how these Inuit institutional expenditures do affect the functions of the economy will depend on the nature of these expenditures. These would be beneficial effects, but they are not assumed to occur for the purposes of assessing the Project.
- Labour market: A wide range of new fly-in/fly-out jobs will be created directly by the Project. These are expected mainly to be "effectively located" in the six point-of-hire communities. Indirect employment is expected to be created through increased government and Inuit institutional capacity arising from Project-derived revenues. Indirect jobs may also be created through expansion of the business sector. These indirect jobs may be created across the territory.
- Labour imports: Under current conditions, much of Nunavut's demand for skilled labour is met through "imports" of workers from the south. This may include individuals who work for weeks to months at a time on specific projects.<sup>3</sup> The Project will increase the amount of imported labour. However, unlike many of the southern workers currently engaged in the territory, these individuals are not expected to reside in Nunavut communities, since they will generally travel from the south to Project sites directly. Through its "human capacity" development effects, the Project is expected to improve local labour force capacity over time. This should serve to decrease labour imports over time.
- Business: The potential for a "qualitative expansion" of business capacity (i.e. "moving it to the next level") is recognized as a possibility. For example, if Nunavut's construction sector gained a capacity and the market to enable Nunavut construction to be carried out by local firms, this would be an important "territorial economy" advancement. This is not a predicted effect, however.
- Incremental increase in "economic flows" leading to critical mass effects: Increases in personal and government expenditures, including construction and other "capital formation" activities arising directly and indirectly from the Project is expected to permeate all corners of the territorial

---

<sup>3</sup> It might also be considered to include some or many of those who spend longer periods as residents of the territory.

economy. It is possible that some opportunities that formerly were not viable may achieve a critical mass—in terms of market expansion, human skills, government capacity, or critical infrastructure—and become viable. These positive effects would not necessarily be confined to communities or regions directly associated with the Project and are, therefore, considered to be “territorial effects.”

- Transportation: Improvements to scheduled passenger air service are not anticipated since transportation is expected to be provided between point-of-hire communities and the Project through charter service. Improvements to territorial marine transport services are also not anticipated. Project marine transport is expected to be dedicated to Project needs;
- Consumer spending: Increased consumer wealth arising from direct and indirect Project effects is expected to lead to increased consumer spending. This is due to a “pent-up demand” for a wide range of goods including food as well as durable items such as furniture and so forth;
- Consumer prices: Increased consumer spending is not expected to lead to increased prices for consumer goods. Most of these goods are imported into Nunavut from large southern markets. Nunavut demand will continue to be small relative to these markets and is expected to have no affect on prices of imported goods.

### 1.3.2 Effects on community and regional economies

The question of whether a major project like Mary River will lead to economic development is an important one. The Nanisivik Project in Arctic Bay is one example that suggests that large projects don’t necessarily guarantee meaningful or sustained regional economic development.<sup>4</sup>

The Mary River Project represents an opportunity to achieve community and regional economic development objectives. Accomplishing this will require that good results are achieved in the development of labour force capacity and business/entrepreneur capacity. The Project is expected to have positive effects on important determinants affecting labour force and business capacity, such as education, experience and skills, opportunities for career advancement and for business, and wealth available for investment.

Since part of the outcome will depend on community-specific attributes, the prospect for diverse regional outcomes is recognized. Some point-of-hire communities may gain more from the opportunities presented by the Project than others. Different access to jobs between point-of-hire and other communities is expected to lead to different levels of employment at the Project.

Will these lead to intra-regional differences in terms of local economies? This should be expected. As the economic base expands with the addition of Project opportunities, there will be increased opportunity for specialization and economic differentiation amongst the affected communities. Some communities will supply more labour than others. Some communities may host businesses that supply more services than others. Will this differentiation lead to economic disparity amongst these communities? That is a possible outcome. In particular, if some communities succeed in supporting a substantial number of residents in

---

<sup>4</sup> See, for example, Brubacher, 2002. “The Nanisivik Legacy in Arctic Bay.”

fly-in/fly-out employment at the project, local wealth will increase. This might serve to create the “critical mass” of opportunity for local consumer-oriented businesses to emerge.

However, different levels of economic engagement with the Project may be off-set somewhat by government investments and expenditures to create opportunities for those communities that, for whatever reason, do not enjoy the same degree of economic benefit from the Project.

The Project might interact with other sectors of the local and regional economies. These interactions have been addressed in the DEIS Volume 4 (2011). Additional analysis is, however, provided here in relation to the potential effects of the Project with local commercial fisheries.

#### *Interactions with commercial fisheries*

The project is not expected to affect existing commercial char fisheries supplying the existing plants in Pangnirtung, Iqaluit, Rankin Inlet, and Cambridge Bay. As described in DEIS Volume 7 (2011) potential for loss of some experimental char quota is acknowledged.

The availability of commercial and experimental char quota near the Project is presented in Section 4.1.5 of DEIS Appendix 4C (2011). It is noted there that, “In 1985 the Department of Fisheries and Oceans (DFO) assessed a number of rivers in the Foxe Basin for potential commercial fisheries. Refer to Figure 4.2 for the DFO arctic char commercial fishing quotas for North Baffin Rivers. The DFO established quotas for each river but no commercial fisheries developed.”

In a study of opportunities for inter-settlement trade in Nunavut, access to the resource was not considered to be a blocking factor. For example, only 27% of available commercial char quota in the Qikiqtani Region is recognized as harvested for commercial purposes:

“In general, quotas are not a limiting factor for those species considered to be of interest in commercial inter-settlement trade. In most areas, available commercial quotas are not fully utilized. It was suggested by some interviewees that the reason for this is that generally it is not economically feasible to do so without additional subsidies.”<sup>5</sup>

The potential for the Project to support commercial fisheries establishment in the North Baffin is acknowledged. This beneficial outcome may arise through expansion of the local market for commercial char—due to Project interest in purchasing suitable country foods for camp use—or through improved capacity of institutions to subsidize and/or invest in such endeavors. This result is not predicted, however, given the dependence on multiple factors that are contingent on negotiation, third-party decisions, and issues of economic feasibility that have not been assessed.

#### 1.3.3 Effects on household economies

Within communities, households are expected to be affected in various ways including: income, expenses, roles, time allocation, internal communications, and degree of income equality with other households.

---

<sup>5</sup> Aarluk, 2005, “Review Of Inter-settlement Trade Opportunities For Arctic Food Products In Nunavut.” For GN Environment.



*Household income and expenditures*

Households that include one or more previously under-employed members working at the Project will experience increased income. Based on previous mining experiences, it may be expected that some households will have fairly “casual” employment relationships with the Project, leading to modest levels of income. Others will maintain more regular, year-round employment, earning substantial annual incomes. During the final years of the Nanisivik mine it was found that a large number (58%) of all workers from Arctic Bay earned less than \$10,000 in a year, while only 16% earned more than \$55,000<sup>6</sup>. Both modest and substantial levels of earnings will have importance for households. As suggested in that report:

“The interviews indicate that income from Nanisivik work has clearly been an important component to the household economy of Nanisivik workers. Many comments were heard about how this income provided some financial breathing room so that, for example, groceries could be purchased without worrying about where the money would come from. Other comments referred to the shift toward a money economy and how the ability to earn money is now very important.”

It is also anticipated that households engaged in the Project will experience increased costs. Some of these costs will be “hard” costs arising from increased economic self-reliance — and reduced dependency on government transfers of income through social assistance and shelter through subsidized social housing. Other “hard” costs may arise as families seek to purchase services to replace those previously provided by the now-absent worker. Childcare/baby-sitting costs are an obvious area.

Other increased expenditures may arise from social expectations for sharing. For example, a former worker at the Jericho project described how personal savings objectives took a back seat to the needs of the extended family:<sup>7</sup>

“Another worker [Former Worker 9] spoke about how his earnings would get spent. When he was working at Jericho he was earning maybe \$15 to \$20 an hour. He’d come back from a rotation with about \$3,150. He’d try to put half of this away and give the other half to his parents. When asked if he had been able to make any major purchases, he said he’d hoped to be able to save for a machine...but he ended up having to help his extended family...aunts, uncles, siblings, as well as parents....not much left. Lots of the money went to food and other basics.”

Commenting on this pressure, an observer of the Jericho experience explained that:

“Family obligations take precedence over individual goals. Younger people may try to put funds aside toward a major purchase, but if a family member or elder needs money, the expectation is that the person will hand it over. A younger family member with good credit may also be expected to take out a loan when another family member is not eligible to access a loan.”

There is, of course a positive side to these sharing expenditures. The Nanisivik – Arctic Bay retrospective documented numerous comments related to how this sharing helped to support access to equipment and supplies for harvesting.

---

<sup>6</sup> Brubacher and Associates. 2002.

<sup>7</sup> Brubacher Development Strategies. 2009. “Jericho Diamond Mine—2007 Socio-Economic Monitoring Report,” prepared for the Kitikmeot Socio-Economic Monitoring Committee.

Expenditures of households that do not have a direct work or business relationship with the Project may be affected as well. For example, expansion of local consumer-focused businesses may improve the quality of life for these household members by offering access to services that were previously not locally available. This might, for example, include local restaurants or new recreational opportunities. Experience-to-date in Nunavut has not provided strong evidence that this sort of local business effect will emerge. Neither the Jericho mine or the Nanisivik mine, for example, led to identifiable expansion of local private sector services.<sup>8</sup>

#### *Roles and time allocation*

Roles and responsibilities within households are expected to evolve as a result of Project engagement. This will arise in response to the new economic contributions that Project workers will bring to the household structure, as well as to the evolving care-giving responsibilities and other roles that will emerge due to changes in time allocation associated with fly-in/fly-out work. The area of time-use and effects of fly-in/fly-out employment on time-use within households has not been well documented.

#### *Internal household communications*

New income and new earners within households should be expected to generate new subjects for serious discussion within households. Income allocation, budgeting, how spending decisions are negotiated—these may be new areas for discussion as the stakes increase with increased income. For example, a woman whose partner worked at Nanisivik describes her role in money decisions: “My partner gives me the money—I decide how it is spent.”<sup>9</sup> Not all communications are so easy, as illustrated in the following comment:<sup>10</sup>

“When I was at Lupin, I tried a budget thing with my spouse, but every time I went out (on rotation) she’d kind of lose interest...like she wanted this, before I came home, and she’d kind of say, ‘I bought this, without your permission.’ I didn’t keep the money separate from her.”

The potential for economic consequences of poor decisions may also increase due to the increased expenses associated with employment. This may further raise the stakes related to learning effective communication skills in these areas. The area of money management and household money decisions is a subject that can be addressed through pre-employment training and Project orientation.

#### *Household income equality/inequality*

Social relationships amongst households may be expected to be affected by new patterns of income earning that may be introduced by the Project. As some households increase their economic self-reliance and their purchasing power, other households that remain dependent on government for the bulk of their income may feel they are left behind. Income inequality is a concern as it can affect social integrity.

The focus here should not so much be on those households that gain increased incomes but on those that fail to successfully grasp the opportunities that are presented. It should also be emphasized that typical measurements of inequality look narrowly at income. It is recognized that money is not the only

---

<sup>8</sup> See Brubacher and Associates, 2002, and Brubacher Development Strategies, 2009.

<sup>9</sup> Brubacher and Associates. 2002.

<sup>10</sup> Brubacher Development Strategies. 2009.

factor to determine achievement of a “high and sustainable” lifestyle. A more traditional household may gain equal enjoyment from a lifestyle requiring low income levels as another household that burns through more money in order to engage in a high consumption lifestyle.

Baseline conditions suggest that community economies are quite polarized already (DEIS Appendix 4A). The expansion of economic opportunity that the Project represents is expected to create opportunities for households that have previously not been able to gain employment through, say, the local government sector. This would be expected to improve income equality.

Project effects on income inequality—and, more meaningfully—on the relative “well-being” of individuals, households, and communities will not be simple or deterministic. Nonetheless, efforts to remove barriers to participation in the economic opportunities presented by the Project will need to be considered.

#### 1.4 POTENTIAL ROLES FOR GOVERNMENT

In addition to the initiatives that Baffinland will carry out (DEIS Appendix 10F-3), government will have a role to play. This will involve existing programs such as education, training, public health, and business development for example.

The Government of Nunavut is well aware of the sorts of initiatives that may be needed to prepare for successful engagement with the mining sector in order to achieve development objectives.<sup>11</sup>

---

<sup>11</sup> For example, an internal discussion paper was developed by the GN Department of Sustainable Development and Department of Education as early as 2000. This was entitled, “Preparing for Mining Development in Nunavut.” More recently, government priorities for action in support of human and business capacity development have been identified in “Parnautit,” the Nunavut mineral exploration and mining strategy.

## 1.5 RISK ANALYSIS

### 1.5.1 Risk 1 – Nunavummiut employment levels don't meet expectations

Local employment is considered to be the area where the Project can generate the most important contributions to economic development in Nunavut. The Project is expected to actively provide opportunities for residents to acquire skills and capacity in many relevant areas. Measures to support success in this area are planned by Baffinland. Opportunities for collaborative efforts to support human capacity development will also be created.

However, there are three areas of risk that could affect achievement in this area. These include:

- Baffinland measures are not implemented consistently or effectively over time.
- Partnerships do not emerge or are not effective.
- Individuals are unable to engage in the opportunities presented by the Project.

Should any or all of these emerge, various outcomes can be expected. First, the nature of work with the Project is likely to be more heavily weighted toward short-term rather than longer-term employment relationships. This would lead to households earning modest levels of income rather than higher income levels. The possible economic development implications of these alternative household income patterns have been postulated in the context of the Nanisivik – Arctic Bay experience.<sup>12</sup>

Casual employment would also be expected to be less conducive than longer-term employment relationships to career advancement and development of higher-level skill sets. This has implications for the achievement of the kind of sustained development outcomes that would otherwise be expected. This would be a lost opportunity.

A further effect arising from reduced employment outcomes will be that the overall flow of income into community households will be lower than would otherwise be achieved. This has implications for local consumer-focused business development and would be experienced as a lost opportunity.

These risks are considered to be more risks of lost opportunity than they are risks of direct adverse impacts. They do, nonetheless, raise the potential for a serious indirect effect. If the Project is unsuccessful in this area it may contribute to a “culture of failure” which could have adverse effects on future development.

### 1.5.2 Risk 2 – Local business capacity fails to emerge

The potential for the Project to generate capacity amongst local entrepreneurs to expand their businesses serving both consumers and industry is an important opportunity. Project support for business development is described in DEIS Section 8.0 and includes measures to assist business access to Project contract opportunities as well as general support for business development.

The stakes related to business capacity are important. They include:

---

<sup>12</sup> Brubacher and Associates. 2002. The essence of those discussions were that lower income levels can be important in food security and maintenance of access to equipment and supplies associated with harvesting activities. Higher income levels are equally important in these areas, but are also likely to eventually lead households to face decisions related to savings and investment—presenting possibilities for new economic development initiatives.

- A general expansion and diversification of the local and regional economic base, leading to improved economic resilience and diversity.
- Creation of local jobs that do not necessitate regular fly-in/fly-out lifestyles.
- Improved capture of economic flows into the local and regional economy leading to accumulation capital and improved economic resilience.
- Diversification of consumer services leading to improved quality of life.

Substantial achievement of these outcomes could have transformative value for long-term and sustained economic development in those communities where this occurs. Failure to achieve positive business outcomes is, as with employment, a risk of “lost opportunity.” However, the entrepreneurial culture is not widely held in the communities and expectations for business outcomes are expected to be modest. Therefore the impact of such a failure is not expected to have as much resonance across the local population as would failure to achieve a positive employment outcome.

#### 1.5.3 Risk 3 – Corporate taxes paid to Nunavut don’t meet expectations

Substantial tax payments are expected to flow to the territorial government from the Project. These are mostly expected to arise from territorial taxes on corporate profits derived from Nunavut mining operations. Based on internal Baffinland financial models the magnitude of these territorial tax payments is expected to average in the \$100 million per year range over the life of the Project.

Should these tax revenues not materialize, this will have implications for the Project’s effect on government capacity. The expansion of government capacity is considered to be a benefit of the Project. Therefore, the risk associated with this scenario is that this benefit would not be realized to the extent anticipated. However, government capacity expansion has not been assumed as mitigation to potential adverse Project effects. Therefore, this risk does not extend to other areas of the socio-economic impact assessment.