



# TECHNICAL SUPPORTING DOCUMENT

Mary River Project | Phase 2 Proposal | FEIS Addendum | August 2018

TSD 25

Socio-Economic Assessment



## SOCIO-ECONOMIC ASSESSMENT TECHNICAL SUPPORTING DOCUMENT SUMMARY

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The Socio-Economic Assessment Technical Supporting Document provides an assessment of the Phase 2 Proposal's effects on the socio-economic environment. The Phase 2 Proposal builds on the extensive baseline studies and assessments carried out since 2011 for the larger Approved Project and is thus closely linked to the FEIS and previous addendums. Overall, only minor changes have been identified with the implementation of the Phase 2 Proposal compared to the previous socio-economic assessments completed for the Approved Project.

The Phase 2 Proposal will continue to provide North Baffin Inuit communities with positive benefits and opportunities. There is also potential for adverse social and cultural impacts and stresses on local communities, families and individuals. The Phase 2 Proposal is predicted to have positive effects on life skills amongst young adults, incentives related to school attendance and success, and opportunities to gain skills. Positive effects are also predicted for the creation of jobs, employment, and job progression and career advancement as well as an expanded market for business services, and creating an expanded market for consumer goods and services.

Adverse effects were predicted for the potential for in- or out-migration, community social stability due to absence from the community during work rotation, new incomes the Project brings, and challenges fly-in/fly-out employment can present. Baffinland looks to boost its efforts on the recruitment, retention, and training of its Inuit workforce through the implementation of provisions in the Inuit Impact Benefits Agreement (IIBA) such as the development of an Inuit Human Resource Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS), as well as the Q-STEP training program.

Activities associated with the Phase 2 Proposal have the potential to adversely interact with culture, resources and land use, including Inuit access to, and availability of, resources and land, however, the nature and magnitude of the effects are consistent with the Approved Project.

Based on the present assessment and planned mitigation, Project activities proposed as part of the Phase 2 Proposal are not predicted to result in significant adverse residual effects on the socio-economic environment. In fact, several positive effects are anticipated to occur as a result of the Phase 2 Proposal.

## RÉSUMÉ DE LA DOCUMENTATION TECHNIQUE COMPLÉMENTAIRE SUR L'ÉVALUATION SOCIO-ÉCONOMIQUE

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La documentation technique complémentaire sur l'évaluation socio-économique comporte une évaluation des impacts de la proposition de la phase 2 sur l'environnement socio-économique. La proposition de la phase 2 est fondée sur les études préliminaires et les évaluations complètes réalisées depuis 2011 pour l'ensemble du projet approuvé et est donc étroitement liée à l'énoncé des incidences environnementales (EIE) et aux addendas précédents. Dans l'ensemble, seuls des changements mineurs ont été identifiés dans le cadre de la mise en œuvre de la proposition de la phase 2, par rapport aux évaluations socio-économiques précédentes réalisées pour le projet approuvé.

La proposition de la phase 2 continuera de procurer aux collectivités inuites du nord de la baie de Baffin des avantages et des possibilités intéressants. Il existe également un potentiel d'impacts sociaux et culturels négatifs et de stress sur les communautés locales, les familles et les individus. La proposition de la phase 2 devrait avoir des impacts positifs sur les aptitudes à la vie quotidienne chez les jeunes adultes, des incitatifs liés à la fréquentation et à la réussite scolaires et des occasions d'acquérir des compétences. Des impacts positifs sont également prévus en lien avec la création d'emplois, l'emploi, la progression de l'emploi et l'avancement professionnel, l'apparition d'un marché élargi pour les services aux entreprises et la création d'un marché élargi pour les biens et les services à la consommation.

Des impacts négatifs ont été prévus pour le potentiel de migration entrante/sortante, la stabilité sociale de la communauté causée par l'absence de la communauté au cours des rotations de travail, les nouveaux revenus générés par le projet et les défis que peuvent représenter les emplois de type volant. Baffinland cherche à accroître ses efforts de recrutement, de maintien en poste et de formation de sa main-d'œuvre inuite en appliquant les dispositions de l'Entente sur les répercussions et les avantages pour les Inuit (ERAI), notamment l'élaboration d'une stratégie de ressources humaines inuites (SRHI) et d'une stratégie de procuration et de sous-traitance inuite (SPSI) et la mise en œuvre du programme de formation Q-STEP.

Les activités associées à la proposition de la phase 2 peuvent interagir défavorablement avec la culture, les ressources et l'utilisation des terres, y compris l'accès et la disponibilité des ressources et des terres inuites. La nature et l'ampleur des impacts sont cependant cohérentes avec le projet approuvé.

Selon la présente évaluation et les mesures d'atténuation prévues, les activités du projet proposées dans le cadre de la proposition de la phase 2 ne devraient pas entraîner d'effets résiduels négatifs importants sur l'environnement socio-économique. En réalité, plusieurs impacts positifs sont prévus à la suite de la proposition de la phase 2.







TSD 25: Socio-Economic Assessment  
Mary River Project Phase 2 Proposal

Baffinland Iron Mines Corporation  
Mary River Project  
NIRB File No. 08MN053

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## TABLE OF CONTENTS

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<b>Tables .....</b>	<b>v</b>
<b>Figures .....</b>	<b>vi</b>
<b>List Of Appendices .....</b>	<b>vii</b>
<b>Abbreviations .....</b>	<b>viii</b>
<b>1 Introduction .....</b>	<b>1</b>
1.1 Summary.....	1
1.2 Overview of the Phase 2 Proposal .....	2
1.3 Scope of this Report .....	4
<b>2 Population Demographics .....</b>	<b>6</b>
2.1 How Has the Population Demographics Assessment Changed?.....	6
2.2 What We’ve Heard .....	6
2.3 Background .....	6
2.4 Project Monitoring .....	7
2.5 Assessment Methodology .....	8
2.6 Effects Assessment.....	9
2.6.1 Project-induced Demographic Changes .....	10
2.6.2 Discussion of Other Population Demographics Topics.....	10
2.6.3 Significance of Residual Population Demographics Effects.....	12
2.7 Mitigation and Monitoring Updates.....	14
<b>3 Education and Training.....</b>	<b>15</b>
3.1 How Has the Education and Training Assessment Changed? .....	15
3.2 What We’ve Heard .....	15
3.3 Background .....	15
3.4 Project Monitoring .....	16
3.5 Assessment Methodology .....	17
3.6 Effects Assessment.....	18
3.6.1 Improved Life Skills Amongst LSA Residents .....	20
3.6.2 Incentives Related to School Attendance and Success .....	21
3.6.3 Opportunities to Gain Skills.....	23
3.6.4 Discussion of Other Education and Training Topics .....	25
3.6.5 Significance of Residual Education and Training Effects .....	28

3.7	Mitigation and Monitoring Updates.....	30
4	Livelihood and Employment.....	31
4.1	How Has the Livelihood and Employment Assessment Changed? .....	31
4.2	What We've Heard .....	31
4.3	Background .....	32
4.4	Project Monitoring.....	33
4.5	Assessment Methodology .....	37
4.6	Effects Assessment.....	38
4.6.1	Creation of Jobs in the LSA.....	42
4.6.2	Employment of LSA Residents.....	43
4.6.3	New Career Paths.....	47
4.6.4	Discussion of Other Livelihood and Employment Topics .....	49
4.6.5	Significance of Residual Livelihood and Employment Effects .....	52
4.7	Mitigation and Monitoring Updates.....	54
5	Economic Development and Self-Reliance.....	55
5.1	How Has the Economic Development and Self-Reliance Assessment Changed? .....	55
5.2	What We've Heard.....	55
5.3	Background .....	55
5.4	Project Monitoring.....	57
5.5	Assessment Methodology .....	57
5.6	Effects Assessment.....	57
5.6.1	Land.....	58
5.6.2	People.....	58
5.6.3	Community Economies.....	59
5.6.4	Territorial Economy.....	59
5.6.5	Discussion of Other Economic Development and Self-Reliance Topics .....	60
5.6.6	Significance of Residual Economic Development and Self-Reliance Effects .....	64
5.7	Mitigation and Monitoring Updates.....	64
6	Human Health and Well-Being .....	65
6.1	How Has the Human Health and Well-Being Assessment Changed?.....	65
6.2	What We've Heard.....	65
6.3	Background .....	66
6.4	Project Monitoring.....	67
6.5	Assessment Methodology .....	72
6.6	Effects Assessment.....	72

6.6.1	Changes in Parenting .....	73
6.6.2	Household Income and Food Security .....	74
6.6.3	Transport of Substances through Project Sites .....	75
6.6.4	Affordability of Substances and Attitudes Toward Substances and Addictions.....	76
6.6.5	Absence from the Community During Work Rotation .....	77
6.6.6	Discussion of Other Human Health and Well-Being Topics.....	78
6.6.7	Significance of Residual Human Health and Well-Being Effects.....	82
6.7	<b>Mitigation and Monitoring Updates .....</b>	<b>84</b>
7	<b>Community Infrastructure and Public Services .....</b>	<b>85</b>
7.1	<b>How Has the Community Infrastructure and Public Services Assessment Changed? .....</b>	<b>85</b>
7.2	<b>What We've Heard .....</b>	<b>85</b>
7.3	<b>Background .....</b>	<b>86</b>
7.4	<b>Project Monitoring .....</b>	<b>86</b>
7.5	<b>Assessment Methodology .....</b>	<b>87</b>
7.6	<b>Effects Assessment.....</b>	<b>87</b>
7.6.1	Competition for Skilled Workers .....	88
7.6.2	Labour Force Capacity .....	89
7.6.3	Discussion of Other Community Infrastructure and Public Services Topics.....	90
7.6.4	Significance of Residual Community Infrastructure and Public Services Effects.....	94
7.7	<b>Mitigation and Monitoring Updates.....</b>	<b>94</b>
8	<b>Contracting and Business Opportunities.....</b>	<b>96</b>
8.1	<b>How Has the Contracting and Business Opportunities Assessment Changed? .....</b>	<b>96</b>
8.2	<b>What We've Heard .....</b>	<b>96</b>
8.3	<b>Background .....</b>	<b>97</b>
8.4	<b>Project Monitoring .....</b>	<b>97</b>
8.5	<b>Assessment Methodology .....</b>	<b>98</b>
8.6	<b>Effects Assessment.....</b>	<b>99</b>
8.6.1	Expanded Market for Business Services to the Project .....	101
8.6.2	Expanded Market for Consumer Goods and Services .....	103
8.6.3	Discussion of Other Contracting and Business Opportunities Topics.....	103
8.6.4	Significance of Residual Contracting and Business Opportunities Effects .....	106
8.7	<b>Mitigation and Monitoring Updates.....</b>	<b>107</b>
9	<b>Culture, Resources and Land Use.....</b>	<b>109</b>
9.1	<b>How Has the Culture, Resources and Land Use Assessment Changed? .....</b>	<b>109</b>
9.2	<b>What We've Heard .....</b>	<b>109</b>
9.3	<b>Background .....</b>	<b>110</b>



9.3.1	Cultural Heritage .....	110
9.3.2	Resources and Land Use .....	111
<b>9.4</b>	<b>Project Monitoring .....</b>	<b>117</b>
<b>9.5</b>	<b>Assessment Methodology .....</b>	<b>117</b>
<b>9.6</b>	<b>Climate Change Considerations .....</b>	<b>118</b>
<b>9.7</b>	<b>Effects Assessment .....</b>	<b>118</b>
9.7.1	Cultural Resources .....	120
9.7.2	Harvesting .....	123
9.7.3	Travel and Camps .....	133
9.7.4	Significance of Residual Resources and Land Use Effects .....	135
<b>9.8</b>	<b>Mitigation and Monitoring Plan Updates .....</b>	<b>137</b>
<b>10</b>	<b>Benefits, Royalty And Taxation .....</b>	<b>138</b>
10.1	How Has the Benefits, Royalty and Taxation Assessment Changed? .....	138
10.2	What We've Heard .....	138
10.3	Background .....	139
10.4	Project Monitoring .....	139
10.5	Assessment Methods .....	139
10.6	Effects Assessment .....	139
10.6.1	Status of the IIBA .....	140
10.6.2	Revenues to the QIA .....	140
10.6.3	Revenues Payable to NTI .....	144
10.6.4	Breakdown of Revenues Payable to the QIA and NTI from the Phase 2 Proposal .....	144
10.6.5	Additional Revenues to Government from the Phase 2 Proposal .....	145
10.7	Mitigation and Monitoring Plan Updates .....	145
<b>11</b>	<b>Governance and Leadership .....</b>	<b>146</b>
11.1	How Has the Governance and Leadership Assessment Changed? .....	146
11.2	What We've Heard .....	146
11.3	Background .....	146
11.4	Assessment Methods .....	147
11.5	Strategic Value of the Project .....	147
11.6	Governance Regimes .....	149
11.6.1	IIBA .....	150
11.6.2	DPA's .....	152
11.6.3	Potential Interest Conflicts .....	152
11.7	Contributions to Socio-Economic Monitoring .....	152

<b>12</b>	<b>Socio-Economic Monitoring.....</b>	<b>153</b>
12.1	Introduction .....	153
12.2	Socio-Economic Monitoring Requirements .....	153
12.3	Socio-Economic Monitoring Objectives .....	154
12.4	Socio-Economic Monitoring Plan .....	155
<b>13</b>	<b>REFERENCES .....</b>	<b>157</b>

## TABLES

Table 2.1	Known In-migrations of Project Workers to the North Baffin LSA (2015 to 2017) .....	8
Table 2.2	Known out-migrations of Project Workers from the North Baffin LSA (2015 to 2017) .....	8
Table 2.3	Phase 2 Proposal Interactions with Key Indicators for Population Demographics.....	9
Table 2.4	EIS Guideline Summaries - Population Demographics.....	11
Table 2.5	Significance of Residual Effects to Population Demographics .....	13
Table 3.1	Hours of Training Completed (2013 to 2017) .....	17
Table 3.2	Phase 2 Proposal Interactions with Key Indicators for Education and Training .....	19
Table 3.3	EIS Guideline Summaries - Education and Training .....	25
Table 3.4	Significance of Residual Effects to Education and Training .....	29
Table 4.1	Total hours of Project labour performed (2013 to 2017) .....	33
Table 4.2	Hours worked by Project Employees and Contractors, by Ethnicity and Gender (2013 to 2017).....	34
Table 4.3	Mary River Project Employees and Contractors by Origin and Ethnicity in 2017.....	35
Table 4.4	Hours of Project labour performed, by employee ethnicity and origin (2013 to 2017) .....	36
Table 4.5	Baffinland Inuit Employee Promotions (2014 to 2017) .....	37
Table 4.6	Number of Baffinland Inuit Employee Departures (2013 to 2017).....	37
Table 4.7	Phase 2 Proposal Interactions with Key Indicators for Livelihood and Employment .....	41
Table 4.8	EIS Guideline / Other Topic Summaries - Livelihood and Employment .....	49
Table 4.9	Significance of Residual Effects to Livelihood and Employment .....	53
Table 5.1	Phase 2 Proposal Interactions with Key Indicators for Economic Development and Self-Reliance .....	58
Table 5.2	EIS Guideline Summaries - Economic Development and Self-Reliance .....	61
Table 6.1	Summary of Monitoring Results Related to Potential Effects on Human Health and Well-Being.....	70
Table 6.2	Phase 2 Proposal Interactions with Key Indicators for Human Health and Well-Being.....	73
Table 6.3	EIS Guideline Summaries - Human Health and Well-Being .....	78
Table 6.4	Significance of Residual Effects to Human Health and Well-Being.....	83
Table 7.1	Phase 2 Proposal Interactions with Key Indicators for Community Infrastructure and Public Services.....	88
Table 7.2	EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services .....	90
Table 7.3	Significance of Residual Effects to Community Infrastructure and Public Services.....	95
Table 8.1	Procurement with Inuit-Owned Businesses and Joint Ventures (2013 to 2017).....	98
Table 8.2	New Contract Opportunities Associated with the Phase 2 Proposal.....	100
Table 8.3	Phase 2 Proposal Interactions with Key Indicators for Contracting and Business Opportunities .....	100

Table 8.4	EIS Guideline Summaries - Contracting and Business Opportunities .....	104
Table 8.5	Significance of Residual Effects to Contracting and Business Opportunities.....	108
Table 9.1	Number of Recorded Land Use Visitor Person-Days at Project Sites .....	117
Table 9.2	Phase 2 Proposal Interactions with Culture, Resources and Land Use.....	118
Table 9.3	Proposed Mitigation of Archaeological Sites for the Phase 2 Proposal.....	121
Table 9.4	Project Related Vessel Traffic .....	125
Table 9.5	Significance of Residual Effects on Resources and Land Use.....	136
Table 10.1	Baffinland's Contributions to IIBA and Other Funds.....	141
Table 10.2	IIBA Administration Costs Paid by Baffinland .....	141
Table 10.3	Comparison of Revenues for Inuit Associations (M\$) Over Life of Project.....	145
Table 10.4	Comparison of Revenues for Government (M\$) Over Life of Project.....	145

## FIGURES

Figure 1.1	Project Location Map.....	3
Figure 3.1	Skill Level Requirements for the Different Operational Phases of the Mary River Project .....	19
Figure 4.1	Overall workforce requirements of the Phase 2 Proposal compared to the Approved Project (Construction and Operation Phases).....	39
Figure 4.2	Workforce Comparison Between the Phase 2 Proposal and the Approved Project (Construction and Operation Phases) .....	40
Figure 4.3	Comparison of Peak Onsite Workforce Requirements Between the Phase 2 Proposal and Approved Project (Construction and Operation Phases).....	41
Figure 4.4	Understanding the Project's Labour Market .....	46
Figure 8.1	Comment Summary on Contracting and Business Opportunities .....	<b>Error! Bookmark not defined.</b>
Figure 9.1	Marine Mammal Harvesting .....	113
Figure 9.2	Travel Routes .....	115
Figure 9.3	Camping Locations.....	116
Figure 9.4	Known Archaeological Sites.....	122
Figure 9.5	Marine Mammal Harvesting Calendar.....	126
Figure 9.6	Contemporary Land Use (October to mid-November) .....	127
Figure 9.7	Contemporary Land Use (mid-November to February).....	128
Figure 9.8	Contemporary Land Use (March to May) .....	129
Figure 9.9	Contemporary Land Use (Late May to July).....	130
Figure 9.10	Contemporary Land Use (End of July to September) .....	131
Figure 9.11	Narwhal Harvests 1998 - 2015.....	132
Figure 10.1	QIA Revenue Policy.....	143
Figure 10.2	NTI Resource Revenue Policy.....	144
Figure 11.1	Strategic Value of the Project with Respect to Nunavut Strategic Plans.....	148

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## LIST OF APPENDICES

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Appendix A	Economic Impact Model
Appendix B	2017 Socio-Economic Monitoring Report for the Mary River Project
Appendix C	Updated Socio-Economic Baseline Information
Appendix D	Phase 2 Proposal Workforce Projections
Appendix E	Inuit Worker Experience Report



## ABBREVIATIONS

Project .....	Mary River Project
ATV .....	All-terrain Vehicle
Baffinland .....	Baffinland Iron Mines Corporation
BCLO .....	Baffinland Community Liaison Officer
BCSF .....	Business Capacity and Start-Up Fund
BDSI .....	Brubacher Development Strategies Inc.
DFO .....	Department of Fisheries and Oceans Canada
EFAP .....	Employee and Family Assistance Program
EI .....	Employment Insurance
ERP .....	Early Revenue Phase
ESDC .....	Employment and Social Development Canada
FEIS .....	Final Environmental Impact Statement
FHW .....	FHW Consulting
FTE .....	Full Time Equivalent
GDP .....	Gross Domestic Product
GED .....	General Educational Development
HRMP .....	Human Resources Management Plan
HSECS .....	Health, Safety, Environment, Community, and Security
HSMP .....	Health and Safety Management Plan
IHRs .....	Inuit Human Resources Strategy
IIBA .....	Inuit Impact and Benefit Agreement
INPK .....	Ilagiktunut Nunalinnullu Pivalliajutisait Kiinaujat
IOL .....	Inuit Owned Land
IPCS .....	Inuit Procurement and Contracting Strategy
JEC .....	Joint Executive Committee
JPCSL .....	Jason Prno Consulting Services Ltd.
KP .....	Knight Piésold Ltd.
KPIs .....	Key Performance Indicators
LSA .....	Local Study Area
MIEG .....	Minimum Inuit Employment Goal
MOU .....	Memorandum of Understanding
NDC .....	Nunavut Development Corporation
NHC .....	Nunavut Housing Corporation
NIRB .....	Nunavut Impact Review Board
NTI .....	Nunavut Tunngavik Inc.
NWMB .....	Nunavut Wildlife Management Board
PLAR .....	Prior Learning Assessment and Recognition
QIA .....	Qikiqtani Inuit Association
QSEMC .....	Qikiqtaaluk Socio-Economic Monitoring Committee
Q-STEP .....	Qikiqtani Skills and Training for Employment Partnership

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RSA .....	Regional Study Area
SEMWG .....	Socio-Economic Monitoring Working Group
TAH .....	Total Allowable Harvest
TSD .....	Technical Support Document
VSEC .....	Valued Socio-Economic Component
WCF .....	Wildlife Compensation Fund

# 1 INTRODUCTION

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## 1.1 Summary

This socio-economic assessment technical supporting document (TSD) has been prepared jointly by Jason Prno Consulting Services Ltd. (JPCSL) and Knight Piésold Ltd. (KP) in support of the Phase 2 Proposal. This assessment supports an addendum to the Final Environmental Impact Statement (FEIS) prepared for the Phase 2 Proposal. While there is considerable new material presented in this TSD, sections of this document also include relevant text and conclusions directly from the socio-economic assessment sections of the Approved Project's FEIS and FEIS ERP Addendum (i.e. Baffinland 2012 and 2013), which may not have been originally prepared by the above authors.

The Phase 2 Proposal has been developed for the viability of both current operations and future growth as a multi-generational mine development. The Phase 2 Proposal will continue to provide North Baffin Inuit communities with positive benefits and opportunities, which will evolve over time, given a relatively long Project life (20+ years). There is also potential for adverse, social and cultural impacts and stresses on local communities, families and individuals. Overall, only minor changes have been identified with the implementation of the Phase 2 Proposal compared to the previous socio-economic assessments completed for the Approved Project. Only a limited number of new interactions will occur between the Phase 2 Proposal and the Valued Socio-Economic Components (VSECs) established for the Project, and these are expected to be minor and manageable through mitigation.

An updated Economic Impact Model (Appendix A) provides details on the significant economic benefits anticipated from the Phase 2 Proposal. The Phase 2 Proposal could generate a total (including direct, indirect, and induced effects) 16,221 Full-Time Equivalent (FTE) positions in Nunavut and 136,745 FTEs in Canada. The total Gross Domestic Product (GDP) that could be generated in the Nunavut economy is estimated at \$19.3 billion, while the total GDP that could be generated in the Canadian economy is estimated at \$30.7 billion. Total revenues that will be generated for Inuit organizations in Nunavut, the Government of Nunavut, and Federal Government from the Phase 2 Proposal are also significant. For example, Nunavut Inuit organization revenues could total \$2.0 billion and revenues generated for the Government of Nunavut by the Project could total \$680 million. Revenues generated for the Federal Government by the Project could total \$1.7 billion. While it is expected that some of these revenues will support ongoing operations and administrative costs for these organizations, other revenues are expected to be made available for new and/or existing programs and initiatives that benefit local communities.

Baffinland continues to make various contributions to the public, communities, and Inuit. The full scope of these contributions has been outlined in the IIBA and elsewhere (e.g. in annual reports to NIRB and the QIA). Inuit have performed a total of 1,483,359 hours of Project labour and have received 15,867 training hours to the end of 2017 (Appendix B). Also by the end of 2017, Baffinland had provided approximately \$33.3 million in payroll to its Inuit employees and a total of \$819.1 million was awarded to Inuit-owned businesses and joint ventures. Baffinland also successfully carried out a 'Work Ready' pre-employment training program with North Baffin LSA residents in 2012 and 2013. There were 277 graduates of the program and 150 of those graduates went on to be employed at the Project in 2013. A new Work Ready Program is targeted to be delivered in local communities beginning in 2018. The IIBA also guides the majority of Baffinland's contributions in this area and established the following community-oriented funds:

- Education and Training Fund

- Baffinland has provided \$2 million to this Fund established by the IIBA
  - Fund supports education and training initiatives associated with the Project
- Business Capacity and Start-Up Fund (BCSF)
  - Fund provides \$250,000.00 annually to Designated Baffin Inuit Firms (in accordance with the provisions of the IIBA).
  - Fund helps with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.
- Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat (INPK) Fund
  - Fund provides up to \$750,000.00/year for projects in the Qikiqtaaluk Region which enhance community wellness (equal annual contributions by Baffinland and QIA).
  - Fund objectives include creation of opportunities for community capacity building, the fair distribution of impacts and benefits between communities and across generations, maintenance of consistency with community development objectives, and promotion of mutual understanding and learning.

Recently, Baffinland also finalized a new Inuit Human Resources Strategy (IHRS; Baffinland 2017a) and Inuit Procurement and Contracting Strategy (IPCS; Baffinland 2017b) jointly with the QIA. These strategies are expected to enhance the continued provision of employment and contracting opportunities to Inuit. Although not developed specifically for the Phase 2 Proposal, the new Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program developed jointly and led by the QIA is also expected to create several new training and employment opportunities for Inuit.

Baffinland also continues to maintain a donations program, which makes additional contributions to communities and Inuit in the LSA. For example, Baffinland has donated laptops to secondary school graduates in the North Baffin LSA communities since 2007 to motivate youth to complete their high school educations. Baffinland provided 63 laptops to new grade 12 graduates in 2017 and 46 laptops in 2016. Baffinland also contributes to an annual scholarship fund for Nunavut Inuit (with priority given to applications from the North Baffin LSA communities) under the IIBA. Seven scholarships valued at \$5,000 each were provided in 2016, while five scholarships valued at \$5,000 were awarded to 2017 graduates (totalling \$60,000 for both years). Taken together, these are substantial contributions to the public, the Inuit of Nunavut, and LSA communities that will be realized and/or sustained as a result of the Phase 2 Proposal.

## 1.2 Overview of the Phase 2 Proposal

The Mary River Project is an operating iron ore mine located in the Qikiqtani Region of Nunavut (Figure 1.1). Baffinland Iron Mines Corporation (Baffinland; the Proponent) is the owner and operator of the Project. As part of the regulatory approval process, Baffinland submitted a Final Environmental Impact Statement (FEIS) to the Nunavut Impact Review Board (NIRB), which presented in-depth analyses and evaluation of potential environmental and socio-economic effects associated with the Project.

In 2012, NIRB issued Project Certificate No. 005 which provided approval for Baffinland to mine 18 million tonnes per annum (Mtpa) of iron ore, construct a railway to transport the ore south to a port at Steensby Inlet which operates year-round, and to ship the ore to market. The Project Certificate was subsequently amended to include the mining of an additional 4.2 Mtpa of ore, trucking this amount of ore by an existing road (the Tote Road) north to an existing port at Milne Inlet, and shipping the ore to market during the open water season. The total approved iron ore production was increased to 22.2 Mtpa (4.2 Mtpa transported by road to Milne Port, and 18 Mtpa transported by rail to Steensby Port). This is now considered the



Approved Project. The 18 Mtpa Steensby rail project has not yet been constructed, however 4.2 Mtpa of iron ore is being transported north by road to Milne Port currently.

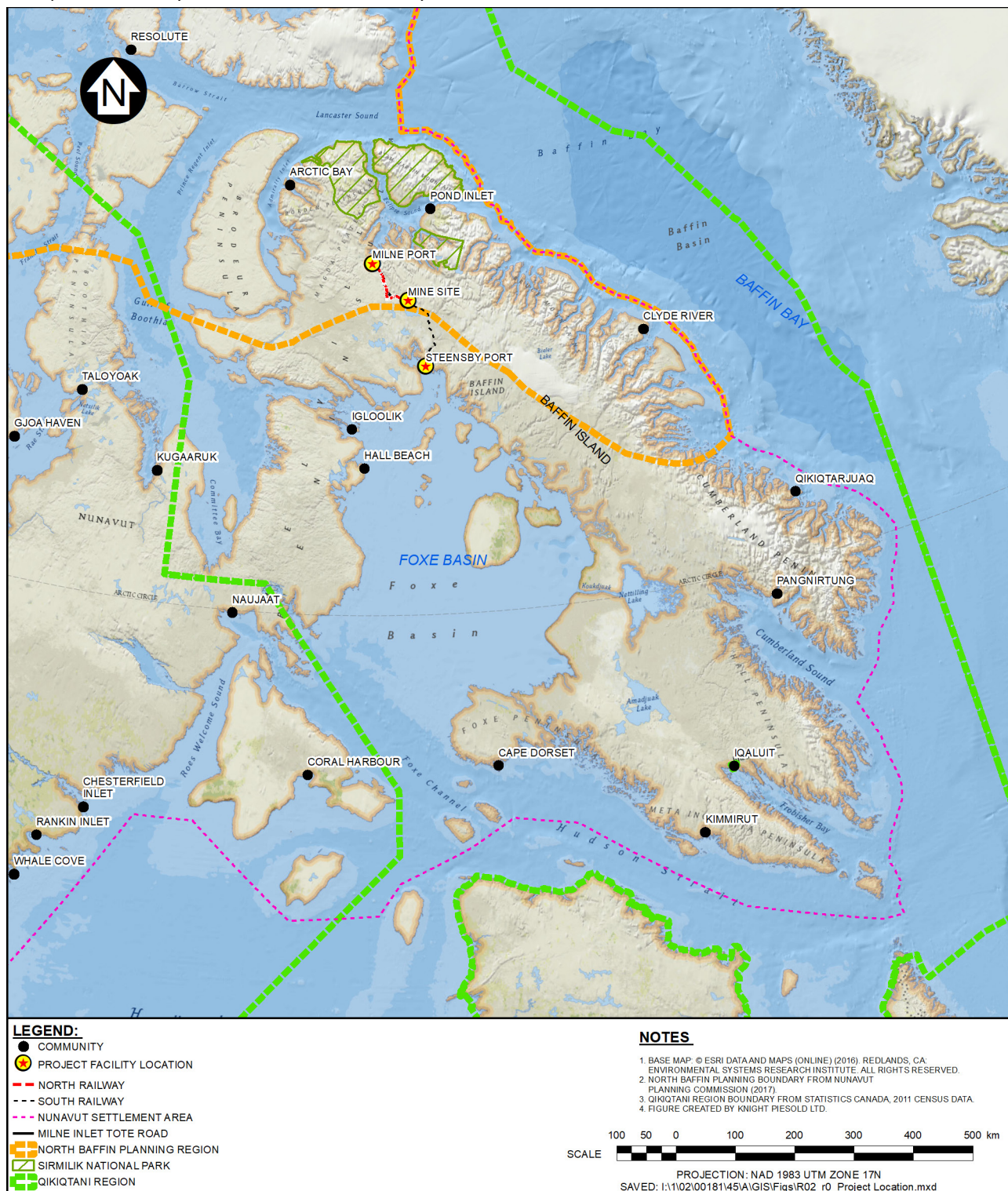


Figure 1.1 Project Location Map

Baffinland recently submitted a request for a second amendment to Project Certificate No.005 to allow for a short-term increase in production and transport of ore via road through Milne Port from the current 4.2 Mtpa to 6.0 Mtpa.

The Phase 2 Proposal (the third project certificate amendment request) involves increasing the quantity of ore shipped through Milne Port to 12 Mtpa, via the construction of a new railway running parallel to the existing Tote Road (called the North Railway). The total mine production will increase to 30 Mtpa with 12 Mtpa being transported via the North Railway to Milne Port and 18 Mtpa transported via the South Railway to Steensby Port. Construction on the North Railway is planned to begin in late 2019. Completion of construction of the North Railway is expected by 2020 with transportation of ore to Milne Port by trucks and railway ramping up as mine production increases to 12 Mtpa by 2020. Shipping from Milne Port will also increase to 12 Mtpa by 2020. Construction of the South Railway and Steensby Port will commence in 2021 with commissioning and a gradual increase in mine production to 30 Mtpa by 2024. Shipping of 18 Mtpa from Steensby Port will begin in 2025.

Phase 2 also involves the development of additional infrastructure at Milne Port, including a second ore dock. Shipping at Milne Port will continue to occur during the open water season, and may extend into the shoulder periods when the landfast ice is not being used to support travel and harvesting by Inuit. Various upgrades and additional infrastructure will also be required at the Mine Site and along both the north and south transportation corridors to support the increase in production and construction of the two rail lines.

### 1.3 Scope of this Report

This document builds on, and is complementary to, the previous socio-economic assessments completed for the Approved Project. While there are relatively minor changes for the Phase 2 Proposal compared to the previous socio-economic assessments completed for the Approved Project, detailed discussions have been provided in this updated assessment for most VSECs for the following reasons:

- The new interactions, while minor, may have complex relationships with some VSECs/VECs that warrant further discussion and analysis. Baffinland understands that reviewers, the Inuit community, and stakeholders expect consideration be given to these new interactions in the EIS.
- The Phase 2 Proposal is a continuation of, and does not exist in isolation from, the Approved Project. The Approved Project has now been operating for several years and there are relevant monitoring data as well as current statistics available to assess the accuracy of previously predicted effects. These data are also useful for validating the effects predicted for the Approved Project and by extension the Phase 2 Proposal and are therefore worthy of further discussion.
- Several new commitments and mitigation measures have been proposed by Baffinland. Even though many of these have been proposed independent of the Phase 2 Proposal, they also warrant consideration when revisiting some of the socio-economic assessments in the context of the Phase 2 Proposal. New commitments related to increased Inuit employment at the Project warrant particular attention in these assessments, as they have the potential to amplify effects in several areas.

Sections 2 to 11 of this report present revised effects assessments for the following VSECs:

- Population demographics
- Education and training
- Livelihood and employment

- Economic development and self-reliance
- Human health and well-being
- Community infrastructure and public services
- Contracting and business opportunities
- Culture, resources and land use
- Benefits, royalty and taxation
- Governance and leadership

Each of these sections include a summary of how the effects assessment has changed, a review of feedback related to each VSEC, a background to previous assessments that were completed and a summary of Project monitoring results. Phase 2 Proposal interactions with key indicators/residual effects for each VSEC are then discussed, in addition to other topics identified by the NIRB in the Amended EIS Guidelines. Emphasis has been placed on these interactions to help streamline the assessment of the Phase 2 Proposal and to focus only on key issues of concern. Discussions on other relevant topics have already been provided in the assessments of the Approved Project. Significance conclusions for each VSEC's residual effects are also provided in each section, followed by mitigation and monitoring updates.

Section 12 describes the Project's socio-economic monitoring program and changes that have occurred to it since the assessment of the Approved Project. The Project's most recent (2017) socio-economic monitoring report is presented in Appendix B, while updated socio-economic baseline information is provided in Appendix C. Appendix D includes workforce projections for the Phase 2 Proposal and Appendix E includes a report on the experience of Inuit workers during the first three years of Project development (Brubacher Development Strategies Inc. [BDSI] 2016).

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## 2 POPULATION DEMOGRAPHICS

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### 2.1 How Has the Population Demographics Assessment Changed?

The Approved Project was assessed to have non-significant adverse effects on Local Study Area (LSA) communities with respect to the key indicator 'demographic stability', specifically, on the in-migration of non-Inuit Project employees into, and out-migration of Inuit residents from, the North Baffin LSA. Project monitoring has confirmed in-migration of non-Inuit into North Baffin LSA communities is not occurring to any measurable extent as a result of the Project (Section 2.4). Out-migration of Inuit workers also appears to be occurring to the extent predicted for the Approved Project.

The Phase 2 Proposal will not introduce substantial changes to the workforce (see Section 4), which would be the potential interaction that could cause additional in- or out-migration. A small decrease in total person-years of employment will occur (-12.9%), and the workforce requirements for the 12 Mtpa North Railway operation are similar to the current workforce. A short-term increase in employment will be associated with construction of the 12 Mtpa North Railway, but short-term employment is unlikely to induce additional demographic changes beyond what the current operation phase may induce. The primary mitigation measure of direct hire from within and outside the LSA will continue to discourage in- or out-migration as a result of Project employment. Other minor changes to what was previously assessed for the Approved Project are described elsewhere in this section.

### 2.2 What We've Heard

Over the past two years of engagement on the Phase 2 Proposal, specific concerns related to the population demographics VSEC have not been raised. The Inuit community and stakeholders had previously emphasized that culturally vibrant, healthy, and economically stable communities are desired in the LSA. Individuals also talked about the demographic changes underway within their communities, and how youth today desire the wage employment opportunities the Project can provide. Concerns about Project-induced in- and out-migration were expressed by residents of the North Baffin LSA communities (i.e. Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet), as well as the GN prior to and during the FEIS Final Hearing (NIRB 2012). These parties expressed concern that employment and economic development arising from the Project may induce in-migration of non-Inuit into their communities, as well as out-migration as Inuit workers with increased income may choose to move to a larger centre with more services, such as Iqaluit or southern Canada. The potential for demographic changes to impact public housing demand was of particular concern to the GN, a point reiterated during the reconsideration process for the ERP (NIRB 2014b).

### 2.3 Background

Compared to the rest of Canada, Nunavut's population is growing rapidly, is relatively young, and typically consists of a high proportion of Inuit to non-Inuit residents. The current operating Project has been shown to have limited-to-negligible effects on population demographics across the North Baffin LSA (Appendix C). Previously assessed Project residual effects on population demographics are summarized below.

- **In-migration of non-Inuit Project employees into the North Baffin LSA** - Baffinland predicted some in-migration of non-Inuit employees hired to work at the Project could occur in the North Baffin LSA, but would be of low magnitude. More specifically, the FEIS predicted a <5% change in the non-Inuit baseline population could occur in the North Baffin LSA because of Project activities. Mitigation measures include the establishment of multiple 'points of hire', with free transportation provided to employees from these points of hire to the Project site. By establishing



Iqaluit and a southern Canada location all as points of hire, there is little incentive for non-Inuit to move into the North Baffin LSA communities to obtain employment with the Project.

- **Out-migration of Inuit residents from the North Baffin LSA** - Baffinland predicted some out-migration of Inuit residents from the North Baffin LSA could occur, but would be of moderate magnitude. More specifically, the FEIS predicted 1% to <5% of the primarily Inuit North Baffin LSA population could migrate out of the North Baffin LSA because of the Project. The establishment of points of hire in the five North Baffin communities was the primary mitigation measure to reduce this effect from occurring.

The effects to population demographics were assessed in the Approved Project to be not significant (Baffinland 2012 and 2013). Monitoring results and observations since Project development are consistent with these predictions, as described in Section 2.4.

## 2.4 Project Monitoring

Population demographics information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included as Appendix C. Related to population demographics, Baffinland monitors the following socio-economic indicators:

- LSA and RSA population estimates
- Nunavut annual net migration
- Known in-migrations of Inuit/non-Inuit Project employees and contractors in the North Baffin LSA
- Known out-migrations of Inuit/non-Inuit Project employees and contractors in the North Baffin LSA
- Percentage of Inuit versus non-Inuit residents in the North Baffin LSA
- Employee changes of address, housing status, and migration intentions
- Employee origin

Data are obtained from government statistics (e.g. Nunavut Bureau of Statistics), Company employment records, and by active Company monitoring. Baffinland Community Liaison Officers (BCLOs) from each North Baffin LSA community report on employee migration, while the results of the voluntary Inuit Employee Survey provide additional information. Annual socio-economic monitoring also reports on trends since Project development. A report on the experience of Inuit employed at the Project over the first three years of mine development was also prepared to support the assessment of the Phase 2 Proposal (BDSI 2016; Appendix E). Monitoring to-date supports Approved Project predictions for population demographics, that no significant in-migration of non-Inuit or out-migration of Inuit in North Baffin LSA communities has been noted (Appendix C).

Only limited-to-negligible migration effects have been identified by Baffinland to date. Cumulative Baffinland data available from BCLOs since 2015<sup>1</sup> indicates a net of zero known non-Inuit employees/contractors have in-migrated to the North Baffin LSA, while a net of five known Inuit employees/contractors have out-migrated from the North Baffin LSA (Tables 2.1 and 2.2).

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<sup>1</sup> Although some migration monitoring was conducted by Baffinland prior to 2015, it was done using methods that produced non-comparable year-to-year results. Likewise, these data did not differentiate whether those migrating were Inuit/non-Inuit or employees/contractors (see Appendix A for additional details).

**Table 2.1 Known In-migrations of Project Workers to the North Baffin LSA (2015 to 2017)**

Year	Inuit	Non-Inuit
2015	3	0
2016	1	0
2017	1	0
<b>Total</b>	<b>5</b>	<b>0</b>

**Table 2.2 Known out-migrations of Project Workers from the North Baffin LSA (2015 to 2017)**

Year	Inuit	Non-Inuit
2015	4	0
2016	3	0
2017	3	0
<b>Total</b>	<b>10</b>	<b>0</b>

Data on changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities have not indicated a Project-induced trend. For example, if substantial non-Inuit in-migration and Inuit out-migration were occurring because of the Project, the ratio of Inuit to non-Inuit residents in the North Baffin LSA communities would be expected to noticeably decrease. However, the percentage of Inuit residents in the North Baffin LSA communities has remained relatively constant. In fact, there has been no change in the average percentage of Inuit residents between the pre- and post-development periods (94.5%) (Nunavut Bureau of Statistics 2016a).

Baffinland has developed a voluntary Inuit Employee Survey to address Project Certificate Condition 133. The latest version of this survey was administered by Baffinland representatives at Project sites in January 2018, with a total of 71 surveys completed by Inuit employees and contractors. The survey indicated some employees and contractors changed their housing situation in the past 12 months or have migration intentions. More specifically, 22.8% of respondents housing situation changed in the past 12 months and 9.9% moved to a different community in the past 12 months, but no one moved into or out of the North Baffin LSA. There were 17.7% of respondents who intend to move to a different community in the next 12 months and 8.8% who intend to move away from the North Baffin LSA. No individuals intend to move into the North Baffin LSA.<sup>2</sup>

Some out-migration of Inuit was also noted in the Inuit worker experience study (Appendix E). This out-migration appears to be occurring as a result of, as well as unrelated to, the Project. However, this report did not attempt to quantify the migration patterns that are occurring.

## 2.5 Assessment Methodology

The methods used to assess effects to population demographics are consistent with the FEIS (Volume 4, Section 2). Comprehensive baseline information on population demographics was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014

<sup>2</sup> Only results for 'known' survey responses are presented (i.e. unknown/unclear responses have been removed from the results calculations). See Appendix A for additional information.

and 2015; JPCSL 2016, 2017a and 2018) and updated baseline information provided in Appendix D. An updated Labour Market Analysis (TSD 26) was also prepared to support the assessment of the Phase 2 Proposal, in addition to a report on the experience of Inuit employed at the Project over the first three years of mine development (Appendix E).

## 2.6 Effects Assessment

Baffinland predicted two non-significant adverse residual effects associated with the population demographics VSEC would occur due to the Approved Project, including 'in-migration of non-Inuit Project employees into the North Baffin LSA' and 'out-migration of Inuit residents from the North Baffin LSA' (both of which fall under the key indicator 'demographic stability'). No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for population demographics will be created.

The estimated workforce for the Phase 2 Proposal, presented in Section 4 (Livelihood and Employment), is expected to be similar to the Approved Project workforce, although a small decrease in total person-years of employment (-12.9%) and some shifting of positions between skill categories will occur. The most distinguishing change in the workforce profile will be the introduction of a short-term construction phase for the 12 Mtpa North Railway component (which will occur immediately prior to construction of the South Railway component), where additional employment opportunities will be created. The operation phase of the Project remains unchanged at 21 years. While Baffinland acknowledges major employment and operational changes have the potential to affect demographic stability, the changes being proposed are not considered substantial. Because the new construction employment opportunities will be short-term, they are not expected to contribute to migration decision-making. Potential future changes to levels of Inuit Project employment are also a potential driver of outcomes related to population demographics (through out-migration), and will be assessed further in the context of the Phase 2 Proposal.

The Amended EIS Guidelines (NIRB 2015) reference several additional information requirements for the population demographics VSEC, many of which have been previously addressed in the FEIS and/or ERP Addendum, although updates related to the Phase 2 Proposal are appropriate in some instances. Population demographics baseline information requirements are addressed more fully in Appendix D. Phase 2 Proposal interactions with key indicators for the population demographics VSEC are summarized in Table 2.3, and residual effects are assessed more fully in Section 2.6.1. Section 2.6.2 provides discussions on other aspects of population demographics identified by the NIRB in the Amended EIS Guidelines, while Section 2.6.3 reviews the significance conclusions for population demographics residual effects.

**Table 2.3 Phase 2 Proposal Interactions with Key Indicators for Population Demographics**

Project Infrastructure or Activity	Demographic Stability
<b>Project-Wide Changes</b>	
Additional employment opportunities (additional capex phase)	1

### NOTES:

- Interactions are rated as follows:
  - No interaction.
  - Minor interaction post-mitigation, discussion assessment.
  - Major interaction subject to detailed assessment.

## 2.6.1 Project-induced Demographic Changes

Phase 2 Proposal employment will continue contributing to migration-related decision-making in the North Baffin LSA; however, implementation of the Phase 2 Proposal does not noticeably change the Project's effects in this area. As discussed in Section 2.4, Project monitoring suggests in-migration of non-Inuit into North Baffin LSA communities is not occurring to any measurable extent from the Project. Out-migration of Inuit workers also appears to be occurring to the extent predicted during the assessments of the Approved Project.

Given that only modest changes to the overall workforce profile are expected, and that the primary mitigation measure (i.e. direct hire from within and outside the LSA) will continue, the Phase 2 Proposal will not be introducing changes that would require additional migration. Non-Inuit Project employees will continue to be able to live outside the North Baffin LSA because of Baffinland's Iqaluit and southern points-of-hire. Distance from family and personal contacts, and cultural and geographic differences will also likely continue to limit the amount of non-Inuit in-migration to the North Baffin LSA. The North Baffin LSA communities will also continue to be points-of-hire so local Inuit are not required to move (i.e. 'out-migrate') to obtain Project employment. New construction employment opportunities will be short-term and are not expected to contribute to migration decision-making.

As such, Baffinland's original predictions remain valid for the Phase 2 Proposal, where some non-Inuit in-migration effects could arise, but they will be low in magnitude and reversible once the Project is complete. Likewise, some Inuit out-migration effects may continue under the Phase 2 Proposal but will remain moderate in magnitude and reversible once the Project is complete.<sup>3</sup> In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; TSD 26), some Inuit out-migration effects could be amplified. However, the overall nature and magnitude of these effects are not expected to change, as current Inuit out-migration appears to be well below the threshold predicted for the Approved Project and existing mitigation measures will remain in place. The Project's labour demand will also continue to exceed the North Baffin LSA Inuit labour supply, which further limits the amount of Inuit out-migration that can occur.

The factors involved in deciding to migrate can be complex, specific to an individual, and not necessarily Project-related. While the significance conclusions presented for the Approved Project remain the same, Baffinland will also continue monitoring demographic trends through its annual socio-economic monitoring program.

## 2.6.2 Discussion of Other Population Demographics Topics

Several EIS Guidelines specific to the population demographics VSEC were identified by NIRB in the Amended EIS Guidelines. A summary of how the Phase 2 Proposal interacts with each of these guidelines is provided in Table 2.4.

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<sup>3</sup> The following parameters were used to assess the magnitude of in-migration of non-Inuit workers: Low (<5 % change in the non-Inuit baseline), Medium (5 % to <15 % of the non-Inuit baseline), and High (15 %+ change in the non-Inuit baseline). Parameters for Inuit out-migration from the North Baffin LSA were established based on the total, primarily Inuit, population: Low (<1 % of population migrates away from community), Medium (1 % to <5 % of population migrates away), and High (5 %+ of population migrates away). In 2012 (the year before Project construction commenced), 5% of the North Baffin LSA non-Inuit population would have equaled approximately 28 individuals while 5% of the total North Baffin LSA population would have equaled approximately 306 individuals.

**Table 2.4 EIS Guideline Summaries - Population Demographics**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
<p>Potential for Project-induced demographic changes in population, migration, re-distribution and the effects of those changes, including interactions between local residents and non-residents</p>	<p>Phase 2 Proposal employment opportunities will continue contributing to migration decision-making, as discussed in Section 2.6.1. Similar to what was previously assessed for the Approved Project, other potential Project-induced demographic changes include:</p> <ul style="list-style-type: none"> <li>• In-migration of individuals to the RSA and LSA may arise through the indirect effects of the Project on the economy, depending on the kinds of jobs created by the expenditure of tax revenues and royalty revenues paid by the Project, and the developmental effects of Project-derived income earned by Nunavummiut working at the Project or local businesses supplying the Project. Potential effects are expected to be limited to small numbers of individuals in the RSA, although Iqaluit could see higher numbers (see point below). However, the extent of this in-migration is difficult to quantify and is outside of the Company's ability to manage.</li> <li>• Greater opportunities provided to residents of the LSA to move around within the region and between the LSA and the south due to increased employee wealth providing an ability to pay for travel, and the potential to choose alternative fly-out destinations amongst the various available points-of-hire. In addition, the Project will bring people together from different communities, leading to new opportunities for social interaction amongst Nunavummiut. This will be experienced as a positive effect by those directly involved.</li> <li>• Potential that increasingly mobile Inuit may move into North Baffin LSA communities from other non-point of hire communities to work at the Project. However, such movements into the small North Baffin LSA communities are expected to be infrequent, limited to individuals developing 'couple relationships' and perhaps including some who have family ties to the particular community they choose to move (or return) to. It is expected that housing scarcity in the North Baffin LSA will serve as a general constraint to this form of labour force mobility. Further, Baffinland's commitment to pay for transportation costs for employees from non-point-of-hire Qikiqtaaluk communities, reduces the probability of this mobility becoming substantial.</li> <li>• The Project is expected to have some effects on the demographics of Iqaluit. The direct effect through Iqaluit-based Project job creation is expected to be small. Some in-migration from other communities (including those outside of Nunavut) is also expected as individuals come to Iqaluit to benefit from its status as a transportation node to the Project, the amenities of a larger urban centre, and to take on jobs that are indirectly created and/or induced by the Project. While the magnitude of these occurrences is difficult to predict, they will occur within a baseline where significant growth has been constant for well over a decade. Any additional in-migration that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project.</li> </ul> <p>Other demographic changes are underway in the LSA and are unrelated to the Project (e.g. a rapidly growing and increasingly young Inuit population, ongoing transitions to a wage-based and/or mixed economy).</p>
<p>Potential effects on community and family stabilities, and culture integrity due to the demographic changes</p>	<p>As no notable new demographic changes are expected to result from the Phase 2 Proposal, additional effects on community and family stability will be limited. However, the Project will continue to have some related positive and negative effects on human health and well-being (Section 6) and community infrastructure and public services (Section 7). Any additional in-migration to Iqaluit that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project. However, Iqaluit also continues to experience growth and demographic changes for reasons unrelated to the Project. The Phase 2 Proposal will also contribute to family stability and cultural integrity throughout the LSA in a positive manner. This will occur through new incomes generated by Project employment, which contribute to the development of economically stable families and communities, and support participation in traditional activities.</p>

**Table 2.4 EIS Guideline Summaries - Population Demographics**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
Potential effects from various Project phases and changes, including unemployment as a result of temporary suspension of operations or mine closure	Potential effects resulting from unemployment due to mine closure were previously assessed for the Approved Project, and in response to Project Certificate Condition No. 149, a further evaluation of this topic was completed by Baffinland (FHW Consulting 2014). Mine closure may have an adverse effect on some local populations (e.g. by removing employment and business opportunities associated with the Project), similar to the Approved Project. However, IIBA Article 7 notes Inuit will be the last to be laid off, provided their skill levels meet or exceed job requirements. Individual employment skills and experience that are gained, and business capacity that is developed may also ease the transition associated with mine closure. Furthermore, the Phase 2 Proposal has been developed so the Project continues to operate in an economically viable manner with benefits provided to local communities.
Potential effects on lifestyle, including the effects of a major employment base away from the communities	<p>Potential effects on lifestyle, including the effects of a major employment base away from the communities, was a topic previously assessed for the Approved Project and more recently tracked through the Inuit worker experience study (Appendix E). Baffinland acknowledges the Phase 2 Proposal may continue to have some adverse effects in this area, but they will be of a similar nature to those identified for the Approved Project. Phase 2 Proposal employment will continue to have both adverse effects (e.g. creating family, relationship, and parenting challenges for some workers; feelings of homesickness; and being away from community obligations and personal activities for extended periods of time) and positive effects in this area (e.g. through new incomes generated by Project employment, through various community contributions made by Baffinland), similar to the Approved Project.</p> <p>Baffinland has implemented an Employee and Family Assistance Program (EFAP) for permanent employees and their dependents who may require family-related, parenting, or other forms of personal counselling and assistance. Baffinland will also continue to deliver a Work Ready Program in the LSA to familiarize new employees with the demands of rotational mine work. Likewise, Baffinland continues to provide access to telephones and internet to all its on-site employees so they can easily communicate with individuals back home.</p>

### 2.6.3 Significance of Residual Population Demographics Effects

As noted above, two residual effects have been carried forward for the Phase 2 Proposal. The additional short-term employment opportunities from construction of the 12 Mtpa North Railway Component and small decrease in overall employment associated with the Phase 2 Proposal are not considered substantial changes. Likewise, the operation phase of the Project is unchanged at 21 years. While Inuit employment levels have the potential to increase over time, the overall magnitude of Inuit out-migration is not expected to change. Assessment outcomes for population demographics remain the same as the Approved Project. The ratings assigned to the residual effects evaluated above are presented in Table 2.5. Baffinland has used the same significance criteria determinations and conclusions as presented in the assessment of the Approved Project. As such, Table 2.5 is presented here for completeness, even though Baffinland acknowledges the significance ratings for the Phase 2 Proposal have not changed.

The overall assessment of the key indicator 'demographic stability' also remains the same. That is, residual effects arising from in-migration and out-migration are expected to arise due to the Project. At the anticipated levels, however, these effects are not expected to be sufficient to cause adverse effects on demographic stability of the affected communities. Therefore, these residual effects are assessed to be not significant.

**Table 2.5 Significance of Residual Effects to Population Demographics**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
In-migration of non-Inuit Project employees into the North Baffin LSA	Negative	Low	Point-of-hire communities	Community	Intermittent	Bystanders	Long-term	Reversible	Not significant	High	High
Out-migration of Inuit residents from the North Baffin LSA	Negative	Moderate	Point-of-hire communities	Community	Intermittent	Bystanders	Long-term	Reversible	Not significant	High	Moderate

## 2.7 Mitigation and Monitoring Updates

Baffinland will continue to track potential changes to population demographics in the LSA and RSA (e.g. population numbers, Nunavut annual net migration, percentage of Inuit versus non-Inuit residents in the North Baffin LSA), present employee-specific information (e.g. origin, migration, changes of address, housing status, migration intentions), and other relevant information pertaining to population demographics through its annual socio-economic monitoring program. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal.<sup>4</sup> Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and apply adaptive management to improve the Project's overall socio-economic performance in the future.

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<sup>4</sup> Annual in- and out-migration data for non-Inuit and Inuit North Baffin LSA residents are currently unavailable from the Nunavut Bureau of Statistics. Baffinland will endeavour to include this data in its annual socio-economic monitoring reports should it become available in the future.



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## 3 EDUCATION AND TRAINING

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### 3.1 How Has the Education and Training Assessment Changed?

The Approved Project was predicted to have a positive residual effect on life skills amongst young adults, which are anticipated to arise from the Project through access to industrial work supported by pre-employment preparation and on-the-job training. The Project was also predicted to have positive residual effects on incentives related to school attendance and success, and opportunities to gain skills across the LSA. No significant adverse residual effects were predicted with respect to education and training. The positive effects are being realized by individuals employed by the Project and their families (Appendix C).

The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue, and possibly be enhanced as Baffinland looks to increase its efforts to train, recruit and advance its Inuit workforce through the implementation of the education and training provisions of the IIBA and related initiatives (e.g. IHRS and Q-STEP). There will be a small shift in employee skill level requirements associated with the Phase 2 Proposal, as described in Section 3.6, which may create some additional opportunities for education and training.

Overall, the Phase 2 Proposal assessment for the education and training VSEC has not substantially changed from the Approved Project assessment. More specifically:

The nature and magnitude of effects are largely consistent with the FEIS and ERP Addendum

- No new residual effects have been identified
- Positive effects are predicted. No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 3.2 What We've Heard

Over the past two years of engagement on the Phase 2 Proposal, there were comments recorded were related to the education and training VSEC. Comments raised by the Inuit community and stakeholders were focused on education and skills and work related training. Several comments were related to the benefits of existing education and training programs, or new programs that were desired. Suggested areas for improvement in existing training programs were also identified.

Baffinland's previous community engagement documented the importance of education and training to Inuit. For example, community residents told us the creation of education and training opportunities in the LSA (especially for youth) is a desired benefit of the Project, and an important pathway through which local and regional economic development can occur. The Inuit worker experience study undertaken by Baffinland also documents positive feedback from current and former employees, employee family members, and key community representatives. The benefits of Project employment and training opportunities are discussed, and it's noted how employment at Mary River has provided opportunities to establish and achieve personal goals in a supported environment (Appendix E).

### 3.3 Background

When compared to the rest of Canada, residents of the LSA communities typically experience much lower levels of educational attainment. There is also a notable mining skills 'gap' that currently exists in Nunavut (e.g. Gregoire 2014, MacDonald 2014, MIHR 2014, Conference Board of Canada 2016). The LSA communities also typically experience much

higher rates of social assistance and unemployment, while facing various other socio-economic challenges. While these conditions existed prior to the Project's development, they nevertheless create substantial challenges for the development of a robust, trained Inuit workforce at the Project. Conversely, because of the degree of need with respect to education and training, the Project has notable potential to provide education and training opportunities to its Inuit workforce, and to inspire youth to complete high school and pursue higher education or training.

The current operating Project positively affects education and training across the LSA. Previously assessed Project residual effects on education and training are described below.

- **Improved life skills amongst young adults** - Baffinland predicted positive effects on life skills development amongst young adults in the LSA would arise from the Project, through access to industrial work supported by pre-employment preparation and on-the-job training. Associated mitigation measures include the provision of job readiness training, creation of a supportive work environment, a 'second chance' hiring policy, and development of a no drugs/no alcohol policy on site.
- **Incentives related to school attendance and success** - Baffinland predicted the Project would have a positive effect on education and skills development across the LSA by providing incentives related to school attendance and success. While there is some potential that individuals may drop out of school or forego further education to work at the Project, the overall effect of the Project will be to increase the value of education and thereby the 'opportunity cost' of dropping out of school. Associated policies or mitigation measures include the application of the legislated minimum age (i.e. 18 years of age) for Project employment, provision of career planning services, and priority hiring for Inuit. Furthermore, Baffinland continues to support a number educational and training initiatives through its donations program and the IIBA it negotiated with the QIA. For example, Baffinland has donated laptops to secondary school graduates in the North Baffin LSA communities to motivate youth to complete their high school educations. Baffinland also maintains an annual scholarship fund for Nunavut Inuit (with priority given to applicants from the North Baffin LSA communities) under the IIBA.
- **Opportunities to gain skills** - Baffinland predicted the Project would have a positive effect on education and skills development, by providing opportunities for training and skills acquisition amongst LSA residents. Associated mitigation measures include the provision of training programs, upgrading opportunities, and career counselling to employees, summer experience to community members, and the continued support for several educational and training initiatives through Baffinland's donations program and through compliance with IIBA provisions on training and education.

The potential positive effects to education and training were assessed for the Approved Project to be significant. Monitoring results and observations since Project development are consistent with these predictions. Baffinland also continues to investigate ways in which Inuit training and employment can be enhanced. However, it will likely take many years to fully realize the Project's Inuit employment potential (mine production only began in late 2014). Relevant skills, education, and familiarity with industrial rotational work can take time to develop.

### 3.4 Project Monitoring

Recent education and training information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included in Appendix B. Related to education and training, Baffinland monitors the following socio-economic indicators:

- Local participation in pre-employment training;

- LSA employment and on-the-job training;
- Secondary school graduation rates and number of secondary school graduates in the LSA and RSA;
- Investments in school-based initiatives;
- Hours of training completed by Inuit employees;
- Types of training provided to Inuit employees;
- Apprenticeships and other opportunities at the Project; and
- Employee education and employment status prior to Project employment.

Data are obtained from Company employment records, active Company monitoring (e.g. results of a voluntary Inuit Employee Survey), and government statistics (e.g. Nunavut Bureau of Statistics). Annual socio-economic monitoring also reports on trends since Project development. Monitoring to date supports Approved Project predictions of positive effects of the Project on education and training (Appendix B). Formal hours of training completed on site from 2013 to 2017 for Inuit and non-Inuit employees (not including contractors) are presented in Table 3.1. A total of 122,950 hours of training have been provided since Project development, of which 15,867 hours (or 12.9%) were provided to Inuit. In addition, there have been considerable work-related experience and informal on-the-job training opportunities generated by the Project.

**Table 3.1 Hours of Training Completed (2013 to 2017)**

Employee Ethnicity	2013	2014	2015	2016	2017
Inuit	1,283	3,596	4,530	2,434	4,024
Non-Inuit	4,555	20,271	17,352	25,532	39,373
<b>Total</b>	<b>5,838</b>	<b>23,867</b>	<b>21,882</b>	<b>27,966</b>	<b>43,397</b>

The types of training provided by Baffinland continue to evolve based on operational needs and schedules. Training programs with the highest levels of Inuit participation in 2017 included heavy equipment operator (1,803 hours), site orientation (923 hours), mobile support equipment (445 hours), and ore haul truck (121 hours). Baffinland also maintains an apprenticeship program and is currently recruiting 26 new candidates, spread across eight positions: carpenter, electrician, heavy duty mechanic, heavy equipment technician, housing maintainer, millwright, plumber, and welder.

Baffinland also monitors government educational attainment statistics relevant to LSA communities. There have been decreasing trends in the number of graduates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. There has also been a decreasing trend in graduation rates in the Qikiqtaaluk Region in the post-development period which was not evident in the pre-development period (it was previously increasing). Conversely, the Kivalliq and Kitikmeot Regions have continued to experience increasing trends during the post-development period. Reasons for the lack of a similar trend in the Qikiqtaaluk Region are currently unknown. (Appendix C; Nunavut Bureau of Statistics 2017a,b).

### 3.5 Assessment Methodology

The methods used to assess effects to education and training are consistent with the FEIS (Volume 4, Section 3). Comprehensive baseline information on education and training was previously presented in the FEIS. This updated effects

assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018), and updated baseline information provided in Appendix C. An updated Labour Market Analysis (TSD 26) was also prepared to support the assessment of the Phase 2 Proposal, in addition to a report on the experience of Inuit employed at the Project over the first three years of mine development (Appendix E).

### 3.6 Effects Assessment

Three residual effects associated with the education and training VSEC were predicted to occur due to the Approved Project, including 'improved life skills amongst young adults' (which falls under the key indicator 'life skills'), and 'incentives related to school attendance and success' and 'opportunities to gain skills' (which fall under the key indicator 'education and skills'). These effects were anticipated to arise from new employment opportunities created by the Project and associated opportunities to gain skills training and work-related experience. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue, and possibly be enhanced as new training opportunities are created and Baffinland looks to enhance its Inuit employment and training efforts through the implementation of the education and training provisions of the IIBA and related initiatives such as its Inuit Human Resources Strategy (IHRS) and Q-STEP program. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for education and training will be created.

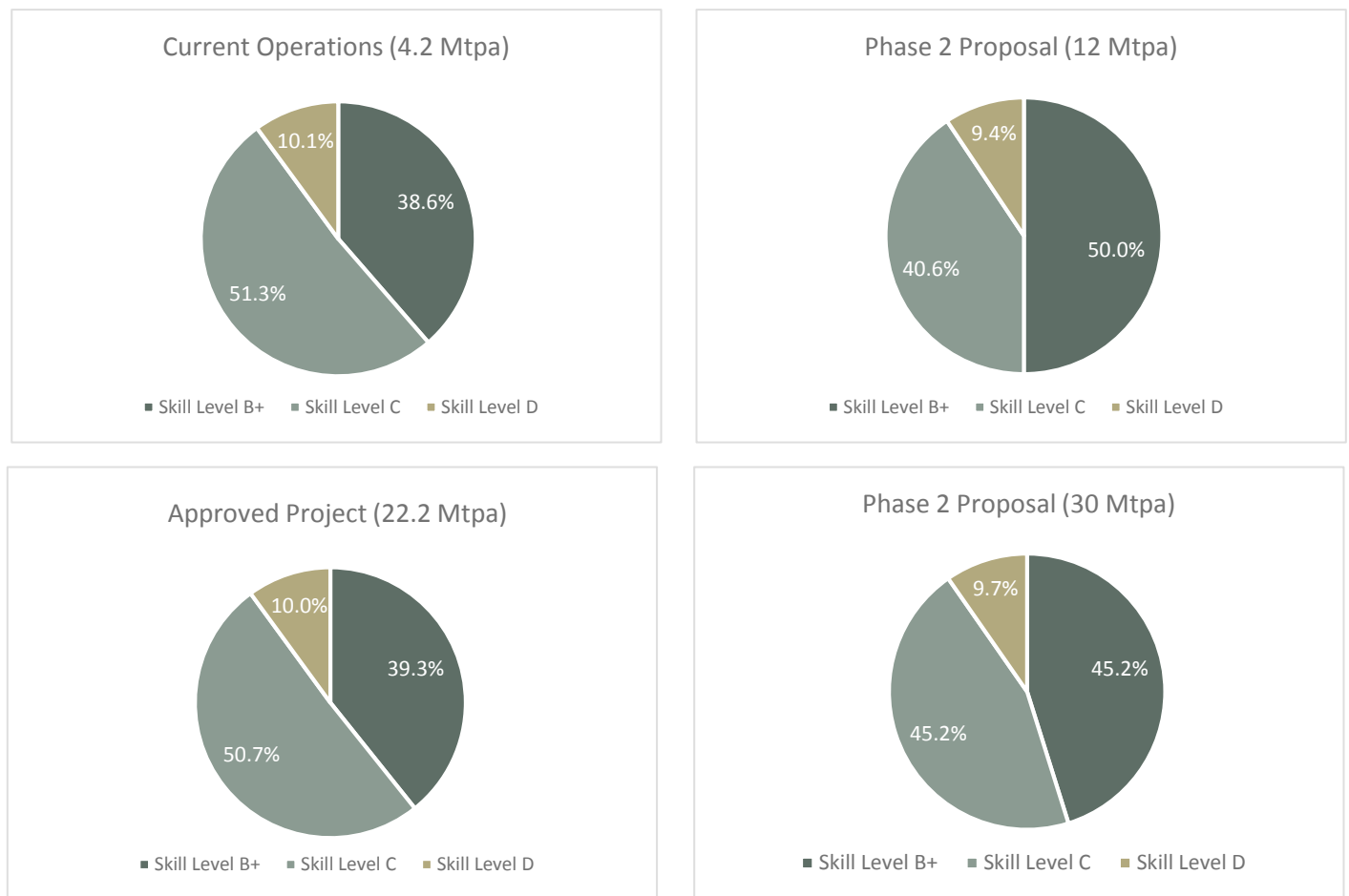
The estimated workforce for the Phase 2 Proposal, presented in Section 4 (Livelihood and Employment), is expected to be similar to the Approved Project, with some shifting of positions between skill categories (Figure 3.1)<sup>5</sup>. To summarize, for operational phases:

- Compared to the Approved Project (i.e. ERP and 18 Mtpa) there will be a decrease in Skill Level C positions and an increase in Skill Level B+ positions with the Phase 2 Proposal. The number of Skill Level D positions will remain similar.
- Compared to current operations (i.e. ERP), there will be an increase in Skill Level B+, a decrease in Skill Level C positions and Skill Level D positions will remain similar during the Phase 2 Proposal.

Beyond the shift in employment skill requirements, the most distinguishing change in the workforce profile will be the introduction of an additional short-term construction phase for the 12 Mtpa North Railway component, where additional employment opportunities will be created. This will occur immediately prior to construction of the South Railway component and may create some additional opportunities for education and training, although they will be of a minor nature (e.g. an additional construction period for LSA residents to gain skills, some new employment and training opportunities related to construction). However, the operation phase of the Project remains unchanged at 21 years. The education and training provisions in the IIBA, the IHRS and the Q-STEP training program describe several measures the Company will take to improve Inuit training moving forward. Changes to future levels of Inuit employment are also a potential driver of outcomes related to education and training, and will be assessed further in the context of the Phase 2 Proposal.

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<sup>5</sup> The National Occupational Classification (NOC) Matrix 2006 (ESDC, 2017) has been used to assign Project job categories to skill levels, similar to the ERP Addendum. The five NOC levels have been condensed into three levels for the purpose of this assessment: Skill Level B or higher (designated as B+), Skill Level C, and Skill Level D. Skill Level B and higher occupations are jobs that usually require apprenticeship training or college/university education. This level includes jobs such as industrial trades, train crew operating, drillers, blasters, supervisors, administrative occupations, technical occupations, managers and professional occupations. Skill Level C occupations usually require secondary school and/or occupation-specific training. This level includes jobs such as heavy equipment operators, administrative support, scheduling jobs, and occupations in food and beverage services. Skill Level D jobs are those where on-the-job training is usually provided. These may include kitchen helpers, cleaners, security guards, trades helpers and labourers.



**Figure 3.1 Skill Level Requirements for the Different Operational Phases of the Mary River Project**

The Amended EIS Guidelines (NIRB 2015) reference several additional information requirements for the education and training VSEC, which have been previously addressed in the FEIS and/or FEIS Addendum, although updates related to the Phase 2 Proposal are appropriate in some instances. Education and training baseline information requirements are addressed more fully in Appendix C. Phase 2 Proposal interactions with key indicators for the education and training VSEC are summarized in Table 3.2 and residual effects are assessed more fully in Sections 3.6.1 to 3.6.3. Section 3.6.4 provides discussions on other aspects of education and training identified by the NIRB in the Amended EIS Guidelines, while Section 3.6.5 reviews the significance conclusions for education and training residual effects.

**Table 3.2 Phase 2 Proposal Interactions with Key Indicators for Education and Training**

Project Infrastructure or Activity	Life Skills	Education and Skills
<b>Project-Wide Changes</b>		
Additional employment opportunities (additional capex phase)	1	1

**NOTES:**

- Interactions are rated as follows:
  - 0 - No interaction.
  - 1 - Minor interaction post-mitigation, discussion assessment.
  - 2 - Major interaction subject to detailed assessment.

### 3.6.1 Improved Life Skills Amongst LSA Residents

The Phase 2 Proposal will continue to provide life skills development opportunities for LSA residents<sup>6</sup> through access to industrial work, where there has been ongoing positive effects since Project development. For example, Baffinland successfully carried out a 'Work Ready' pre-employment training program with North Baffin LSA residents in 2012 and 2013. There were 277 graduates of the program and 150 of those graduates went on to be employed at the Project in 2013. Feedback on the program has been positive (see Appendix E). A new Work Ready Program is targeted to be delivered in local communities beginning in 2018 (Appendix B).

Furthermore, approximately 15,867 hours of on-the-job training have been delivered to Inuit employees since Project development and apprenticeships for Inuit have been provided since 2015. More generally, 1.48 million hours of labour have been performed by Inuit employees and contractors since Project development, which have provided considerable opportunities for on-the-job learning and gaining work-related experience (Appendix B). Baffinland further maintains a healthy and supportive work environment. For example, Baffinland has a no drugs and alcohol policy on site, and provides permanent employees and their dependents with ongoing access to an Employee and Family Assistance Program (EFAP). On-site Elder positions have also been established to provide counsel and support to Inuit employees.

Baffinland acknowledges the life skills needs of each person will differ; some individuals may benefit from developing financial, interpersonal, and/or conflict management skills, while others may benefit from developing technical or job-specific skills. The opportunities the Phase 2 Proposal will present in these areas are notable, especially when considering the lack of employment and mining-related training opportunities that have historically existed in the North Baffin LSA. The high turn-over currently experienced by the Project may in part be influenced by a lack of life skills needed to cope with fly-in/fly-out employment, including the ability of some workers to cope with workplace demands and family separation, and their family's ability to cope with the absence of the family member away working for nearly half the year. The Project remains in its early years and the development of life skills amongst workers and their families takes time and persistent effort. Baffinland continues to address this issue through doing what is reasonably possible as a good corporate citizen and major employer in the region. Nevertheless, there are indications that positive effects on life skills development amongst LSA residents continue to result from the Project.

Positive effects will be sustained (and may be enhanced) under the Phase 2 Proposal, since the Phase 2 Proposal is a key next step to ensuring the Project continues to operate and deliver these benefits. Additional positive effects may result from the new types of employment opportunities created by the Phase 2 Proposal (e.g. additional construction, port, shipping, and rail-related employment), and the opportunities for individuals to pursue career options and training in these and other areas. The small decrease in overall person years of employment projected for the Phase 2 Proposal is not considered a substantial influence on this effect. The IHRS, a key strategic document required under the IIBA (Article 7.11), also describes several measures Baffinland will take to improve Inuit training moving forward, including:

- Regularly deliver a revised Work Ready Program to help Inuit workers adapt to life on site and cope with a fly-in/fly-out schedule;
- Establish on-site General Educational Development (GED), literacy, and numeracy programs for employees;
- Develop individual employee plans for training and development;

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<sup>6</sup> The assessment of the Approved Project previously focused only on improved life skills amongst *youth*. For the assessment of the Phase 2 Proposal, this has been broadened to *LSA residents* so the full scope of life skills opportunities are captured in the analysis.

- Develop various mining-based educational/experience programs targeted at students and youth in local communities; and
- Monitor and report on the results of IHRS initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report.

Baffinland acknowledges the desire by some Inuit community members and stakeholders for Inuit employment and training levels to be improved at the Project, and has continued to take positive steps in this regard, including implementing education and training provisions in the IIBA such as the IHRS, a new apprenticeship program and heavy equipment operator training through the Operating Engineers Training Institute of Ontario as well as site-based training initiatives. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional LSA residents can be expected to benefit from the life skills development opportunities provided by the Project and some positive effects could be enhanced. However, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. A moderate magnitude positive effect is still predicted; however, magnitude parameters<sup>7</sup> have been updated to better reflect the scope of life skills development opportunities presented by the Project to LSA residents. The 'social extent' criterion has also been changed from 'young adults' to 'community', to better reflect the scope of these opportunities, as noted in Section 3.6.5.

### 3.6.2 Incentives Related to School Attendance and Success

The Phase 2 Proposal will continue to provide incentives related to school attendance and success in the LSA through access to industrial work and other local programs, and most importantly, the ongoing operation of the Project has provided a source of visible employment opportunities in the LSA, which plays a role in motivating youth to finish high school and/or pursue training. Since 2007, Baffinland has donated laptops to secondary school graduates in the North Baffin LSA communities to motivate youth to complete their high school educations. Baffinland provided 63 laptops to new grade 12 graduates in 2017 and 46 laptops in 2016. In 2015, Baffinland also partnered with Mining Matters<sup>8</sup> to deliver a two-day *Mining Rocks Earth Science Program* to high school students and a *Teacher Training Workshop* in four communities (i.e. Iqaluit, Hall Beach, Igloolik, and Arctic Bay). A total of 411 students, educators, and community members participated. The intention of this program was to increase the awareness of earth science and the diverse careers available in the mining industry. Baffinland also maintains an annual scholarship fund for Nunavut Inuit (with priority given to applicants from the North Baffin LSA communities) under the IIBA. Seven scholarships valued at \$5,000 each were provided in 2016 (totalling \$35,000) (JPCSL 2017a), while five scholarships valued at \$5,000 each were awarded to 2017 graduates. Baffinland has also recently began recruiting candidates for a new apprenticeship program for individuals interested in pursuing a career in the skilled trades.

Analysis of government educational attainment statistics has revealed varied trends. As noted previously, there have been decreasing trends in the number of graduates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. There has also been a decreasing trend

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<sup>7</sup> The following parameters have been used to assess the magnitude of Project effects on life skills: Low (i.e. life skills change may be perceived in some individuals, but this is isolated and does not change the overall dynamic of LSA communities or of particular community populations), Moderate (i.e. life skills change amongst LSA residents is noticeable by front-line workers such as employers/supervisors, or those who work with particular segments of the LSA communities (e.g. Arctic College instructors and others who work with youth), and High (i.e. life skills change amongst LSA residents is noticeable by front-line workers and are considered to be substantial).

<sup>8</sup> *Mining Matters* is a charitable organization dedicated to bringing knowledge and awareness about Canada's geology and mineral resources to students, educators, and the public. See <http://www.pdac.ca/mining-matters/about-us> for more information.



in graduation rates in the Qikiqtaaluk Region in the post-development period which was not evident in the pre-development period (it was previously increasing). Conversely, the Kivalliq and Kitikmeot Regions have continued to experience increasing trends during the post-development period. Reasons for the lack of a similar trend in the Qikiqtaaluk Region are currently unknown. As Project construction only began in 2013, there is minimal post-development data currently available. School attendance and success can also be influenced by many socio-economic factors. Correlations between the Project and school attendance and success, if any, may only come to light with the analysis of additional yearly data.

However, there are positive indications the Project continues to provide incentives for youth to stay in school, as was originally predicted. Baffinland anticipates these positive effects will be sustained and may be enhanced under the Phase 2 Proposal. Additional positive effects could result from the new types of employment opportunities created (e.g. additional construction, port, shipping, and rail-related employment), which may encourage youth to continue their educations to pursue careers in these areas (some of these careers will have minimum educational/skill requirements). The small decrease in overall person years of employment projected for the Phase 2 Proposal is not considered a substantial influence on this effect. The IHRS is a key strategic document, required through provisions under the IIBA (Article 7.11), that describes the goals and initiatives that will be used by Baffinland to improve its Inuit employment record at the Project, including providing ongoing incentives for youth to complete high school. Some of the commitments contained in the IHRS include:

- Maintain the existing Baffinland scholarship and laptop donation programs, and review scholarship award criteria to encourage student participation in programs with high employment opportunities in the mining sector;
- Work with secondary and post-secondary educational institutions through participation in school fairs and similar events, and conduct site field trips and visits to encourage consideration of careers in mining;
- Provide career information to guidance counsellors in the secondary school system;
- Review/develop policies and procedures for summer internship, mentoring, and co-operative education work and study programs;
- Work with educational institutions to understand and address barriers to greater youth involvement; and
- Monitor and report on the results of IHRS initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report.

Baffinland acknowledges the potential for some individuals to drop out of school or forego further education in order to work at the Project. However, it should be noted that Workers' Safety and Compensation Commission regulations preclude Baffinland from hiring anyone under the age of 18 and the Company has an internal policy to not hire any Inuit who are still in secondary school. For these reasons, the overall effect of the Project will continue to be to increase the value of education and thereby the 'opportunity cost' of dropping out of school. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional Inuit role models could be created in the LSA communities that further incentivize youth to complete high school and/or pursue post-secondary education and training. However, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. A high magnitude<sup>9</sup> positive effect is still predicted with high confidence.

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<sup>9</sup> While descriptive thresholds between magnitude ratings were not developed, 'Low', 'Moderate', and 'High' parameters were used to assess the general magnitude of Project effects on education and skills, relative to the baseline.



### 3.6.3 Opportunities to Gain Skills

The Phase 2 Proposal will allow the Project to sustain its opportunities for LSA residents to gain skills through access to industrial work. Baffinland has demonstrated the ongoing positive effects it has had in this area. For example, Baffinland has provided various training and skills development opportunities to its Inuit employees since Project development. From 2013 to 2017 a total of 122,950 hours of training have been provided, of which 15,867 hours (or 12.9%) were provided to Inuit. Training programs have been offered to Inuit in many different areas (e.g. equipment operation, first aid/CPR, site orientation, emergency response, and other areas) and are expected to continue to evolve at the Project as operations advance, employment increases, and feedback from Inuit employees is considered (Appendix B).

In addition to the benefits of formal skill development and training, Baffinland employees are also regularly exposed to various informal training and skills development opportunities through contact with more experienced coworkers and the process of everyday work. Appendix E notes a common theme heard during conversations with Inuit residents of LSA communities employed at the Project was the high level of enthusiasm to learn new things and acquire new skills. Several other Baffinland programs and IIBA initiatives have contributed to the development of a more experienced Inuit workforce and contribute to delivering opportunities for LSA residents to gain workplace skills. For example, Baffinland delivered a 'Work Ready' pre-employment training program to local residents in 2012 and 2013, and is delivering a revised version of this training beginning in the first quarter of 2018.

Baffinland has recently began recruiting candidates for a new apprenticeship program for individuals interested in pursuing a career in the skilled trades. Baffinland is currently recruiting 26 candidates, spread across eight positions: carpenter, electrician, heavy duty mechanic, heavy equipment technician, housing maintainer, millwright, plumber, and welder. Recruits will join Baffinland as trades assistants for six months, job shadowing and learning about their prospective trade. Upon successful completion of the six-month term, candidates will write their Trades Entrance exam. Pending a pass mark being received on the exam, candidates will become full-time, permanent apprentices at Baffinland (Baffinland 2017c). Baffinland is also partnering with the Operating Engineers Training Institute of Ontario to deliver training in heavy equipment for prospective employees. These and other initiatives conducted in collaboration with the QIA under the auspices of the Q-STEP Program (see below) are intended to enhance skill development among Inuit in the LSA.

The Project has had a positive effect on education and skills development amongst LSA residents, and it is anticipated these positive effects will continue (and may be enhanced) under the Phase 2 Proposal. Additional positive effects could result from the new types of employment opportunities created (e.g. additional construction, port, shipping, and rail-related employment) and the new skills training programs that would be required to support these and other jobs. The small decrease in overall person years of employment projected for the Phase 2 Proposal is not considered a substantial influence on this effect. Baffinland continues to support a number of additional educational and training initiatives through its donations program and the IIBA. Baffinland looks to supplement its Inuit employment and training efforts through provisions in the IIBA such as its IHRS. Although not developed specific to the Phase 2 Proposal, implementation of the IHRS is expected to enhance training and skills development outcomes. Specific to gaining workplace skills, the IHRS notes Baffinland will:

- Annually forecast changes in workforce composition, analyze gaps, and prepare a Workforce Plan;
- Develop individual employee plans for training and development;
- Promote a workplace culture that prioritizes the development and growth of Inuit through collaboration with the QIA to identify training programs which can be supported by the Education and Training Fund.;
- Develop and implement apprenticeship opportunities in the skilled trades;

- Institute on-site job-shadowing and mentorship programs;
- Explore opportunities for 'under-filling' to enable on-the-job training (i.e. fill a vacant position at a reduced salary by a minimally qualified Inuk who will gain on-the-job training);
- Work in partnership with QIA to participate in governmental initiatives such as the Skills and Partnership Fund to deliver targeted training;
- Develop training programs that are responsive to the identified barriers and special circumstances of Inuit women.;
- Revise and provide regular delivery of a Work Ready Program to help Inuit workers adapt to life on site and cope with a fly-in/fly-out schedule;
- Establish on-site GED, literacy, and numeracy programs for employees; and
- Monitor and report on the results of IHRS initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report.

Furthermore, Baffinland and the QIA were recently successful in securing funds through Employment and Social Development Canada's (ESDC) Skills and Partnership Fund for their Q-STEP training program. Q-STEP is a four-year initiative that will be undertaken by QIA in close partnership with Baffinland to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The program will consist of both work readiness measures as well as targeted training programs directed at apprenticeships, skills development, supervisor training, and formal certification in heavy equipment operation. The Q-STEP program has four broad objectives:

- Increase Inuit participation in the Mary River Project across the full employment spectrum and over the life of the mine;
- Develop and deliver technical training programs that target unemployed Inuit, and Inuit women and youth in particular;
- Provide Inuit with certified and transferable skills and qualifications to enable them to take advantage of employment opportunities across the entire Qikiqtaaluk Region; and
- Create an Inuit Labour Pool that can help employers to identify qualified Inuit employment candidates as well as training and skill development opportunities.

The Q-STEP program will employ five main stages to provide Inuit with skills and qualifications to help meet the employment needs of the Project:

- Inuit labour pool creation and Q-STEP recruitment;
- Work readiness training;
- Targeted training;
- Project employment opportunities; and
- Ongoing employee skills development.

Baffinland acknowledges a small shift in employee skill level requirements will occur with the Phase 2 Proposal. This shift in skill levels will require Baffinland's training programs to be adapted accordingly and will affect the types of training to be provided. Should Inuit employment levels at the Project increase in the future (an increase is identified as a possibility in the

Labour Market Analysis; TSD 26), additional LSA residents can be expected to benefit from the skills development opportunities provided by the Project and some positive effects could be enhanced. However, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. A moderate magnitude positive effect is still predicted to arise in the LSA, with high confidence.

### 3.6.4 Discussion of Other Education and Training Topics

Several EIS Guidelines specific to the education and training VSEC were identified by NIRB in the Amended EIS Guidelines. A summary of how the Phase 2 Proposal interacts with each of these guidelines is provided in Table 3.3.

**Table 3.3 EIS Guideline Summaries - Education and Training**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
Assessment of local labour force sources to satisfy the needs of the Project development, and identified gap between availability and Project needs	A gap between local labour force availability and Project needs will continue to exist under the Phase 2 Proposal, as confirmed in the Labour Market Analysis (TSD 26). Reasons for the gap between local labour availability and Project needs relate primarily to the small population size of the LSA and the relatively large number of jobs required by the Project. Furthermore, the education and skill levels of some LSA residents are not aligned with the requirements for some Project jobs (especially for positions where a high degree of formal training and/or mining-related experience are required). Although non-local labour will continue to be required to meet overall Project employment needs, employment and training initiatives (e.g. IHRS, Q-STEP) developed through provisions in the IIBA or separately may help reduce this gap.
Discussion of potential need of local labour force training to meet the needs of the Project. Those training can be specifically required by the Project, or for universally applicable skills that improve workers' opportunities in other sectors of the economy, this assessment shall include predicted training resources to meet the designed training programs if applicable.	Local labour force training will continue to be required for the Phase 2 Proposal, although some labour force availability gaps will continue to exist. Furthermore, some shifts in employee skill level requirements will occur and need to be addressed by Baffinland training programs. Baffinland's existing training programs have produced positive results, and include on-the-job training programs, pre-employment training in local communities, opportunities for employee skills upgrading, and support for youth (e.g. through scholarships and laptop donations). While these training programs will continue under the Phase 2 Proposal, several enhancements are also being pursued through provisions in the IIBA (such as the IHRS) and Q-STEP program.
Evaluation of training programs, if necessary and planned by the Proponent, associated challenges and likelihood of success to satisfy the Project needs and regional economy development with consideration of cultural and language barrier	Comprehensive training programs will continue to be provided to employees during the Phase 2 Proposal and will consider cultural and language barriers where appropriate (e.g. cultural awareness training has been provided, Inuktitut speaking Elders are available on-site). While the development of an adequately trained and skilled Inuit workforce will take time to achieve, Baffinland expects its training programs will eventually contribute to the development of a stronger local workforce and economy. Training initiatives have requirements for monitoring which Baffinland will use to inform potential training program improvements and changes moving forward.

**Table 3.3 EIS Guideline Summaries - Education and Training**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
<p>Discussion of the potential for longer term community capacity building programs, if any of those programs have been planned or will be planned and anticipated to be implemented by the Project, regarding how mine training plans can enhance the transferability of skills after the mine closure (e.g. management and HR skills, computer skills, heavy equipment experience, finance skills)</p>	<p>Baffinland's training programs are ongoing and encompass pre-employment training, various forms of on-the-job training, opportunities for skills upgrading, and support for youth (e.g. through scholarships). Baffinland will also continue to support the development of community capacity under the terms of its IIBA. The IIBA mandates contributions to community-oriented funds, such as the Education and Training Fund, Business Capacity and Start-up (BCSF) Fund, and Ilagiiktunut Nunalinnullu Pivalliajutisat Kiinaujat (INPK) Fund. Baffinland anticipates its training programs and commitments associated with the Phase 2 Proposal will continue contributing to long-term community capacity building in the LSA. Individual employment skills and experience that are gained, and business capacity that is developed as a result of the Project, are also expected to ease the transition associated with mine closure. These enhanced capacities should make it easier for individuals and businesses to take on other opportunities once the Project is complete. Ongoing administration of the IIBA funds mentioned above, should also assist in this regard.</p>
<p>Discussion of other possible solutions to fill up the gap between requirements of Project needs, and education level and qualifications of the local labour force, in conjunction with the minimum Inuit employment percentage in the entire labour force which will be determined by the IIBA</p>	<p>Since the assessments of the Approved Project were completed, Baffinland has undertaken several new training initiatives to help address gaps between the Project's labour needs and existing skill/education levels in the local labour force. Baffinland will use monitoring information on its training programs to inform potential training program improvements and changes moving forward. Baffinland will also continue investigating opportunities for new training-oriented partnerships to be developed at local, regional, and territorial scales.</p>
<p>Discussion of potential impacts of Project components on local education and training opportunities, taking into account any associated changes or fluctuations in labour demand and required skills to support the port operation and road services</p>	<p>Baffinland will continue to provide beneficial education and training opportunities to LSA residents throughout the Phase 2 Proposal. This will occur through various on-the-job training opportunities (including those related to port, rail, and road operation), access to pre-employment training for new employees, and through other community-level education and training commitments supported directly by Baffinland or through the IIBA. More recently, Baffinland has participated in community Career and Training Information Tours in conjunction with the GN and QIA. Additionally, the IIBA requires that a Minimum Inuit Employment Goal (MIEG) be established for each contract and in the case of contracts in excess of \$500,000, an Inuit Content Plan containing stipulations regarding employment, training and achieving Inuit content through supplies and subcontracts must be developed.</p> <p>Baffinland's training programs are expected to evolve at the Project as operations advance, employment increases, and feedback from Inuit employees is considered. Training opportunities will be tailored to specific Project phases where necessary. The IHRS also notes the Company will forecast changes in workforce composition, map skill sets required by</p>

**Table 3.3 EIS Guideline Summaries - Education and Training**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	<p>roles in order to safely and effectively meet operational needs, determine if existing current skill sets match available positions, and work with educational institutions and training agencies to bridge gaps. The Q-STEP program further outlines local education and training initiatives that will be taken to help provide Inuit with skills and qualifications to meet the employment needs of the Project. While many of these training programs will occur on-site, some are anticipated to occur directly in LSA communities, such as work readiness training. Baffinland and QIA will also look to develop partnerships with appropriate organizations, including Kakivak Association, Nunavut Arctic College, and the Government of Nunavut to facilitate the delivery of training programs. Opportunities for additional community-based training will be assessed following discussions with these organizations.</p>
<p>Identify the precise training programs that will upgrade employees' skill levels from D to C to B positions. Recognizing the reduced overall employment level of Phase 2 compared to the fully approved Project (i.e. original, ERP and Phase 2), discuss how the training programs will address the potential oversupply of local labour by skill level for available positions.</p>	<p>Phase 2 Proposal employment will be similar to the Approved Project. Precise skill upgrading/training programs will vary depending on employee and position. However, initiatives contained in the IHRS and Q-STEP program will help address the potential oversupply of local labour by skill level for available positions. This is particularly true for Skill Level D positions where the potential for upward mobility is the greatest. For example, employee succession and skills upgrading will create opportunities for lesser skilled individuals to enter the workforce once an existing employee advances to a higher-skilled job. Normal turnover amongst the entire workforce will also provide on-going openings for employment at all skill levels, allowing for individuals acquiring new skills to gain promotion.</p> <p>The IHRS also includes several actions related to employee retention and advancement, including mapping a performance-based succession path for employees, and providing programs to employees to develop their skill sets and capabilities to access succession opportunities. These initiatives are in addition to several other training/educational programs already underway or proposed at the Project. The Q-STEP program also includes training programs intended to upgrade existing employee skill levels. Interested candidates will be given essential skills assessments and will work with career counsellors and supervisors to develop training plans which will build skills in alignment with career path aspirations and/or personal interest. Baffinland will also offer an Inuit-focused supervisor training stream which will provide Inuit employees who have been identified through their participation in Q-STEP or by their supervisors as strong candidates for progressing toward leadership positions at the Project.</p>

### 3.6.5 Significance of Residual Education and Training Effects

As noted above, three residual effects have been carried forward for the Phase 2 Proposal. The Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to education and training, although positive effects in some areas may be enhanced. The additional short-term construction phase for the 12 Mtpa North Railway component and small reduction in overall employment levels are not considered substantial changes. Likewise, the operation phase of the Project is unchanged at 21 years. Assessment outcomes for education and training remain the same.

The ratings assigned to the residual effects evaluated above are presented in Table 3.4; these effects were previously assessed to be positive overall and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project, with two notable exceptions. As noted in Section 3.6.1, magnitude parameters for the residual effect 'improved life skills amongst LSA residents' have been updated to better reflect the full scope of life skills development opportunities presented by the Project (i.e. the focus of the residual effect was changed from 'youth' to 'LSA residents'). The 'social extent' criterion has also been changed from 'young adults' to 'community', to better reflect the scope of these opportunities. Table 3.4 is otherwise presented here for completeness, even though Baffinland acknowledges the significance ratings for other criteria have not changed.

Overall assessments of the key indicators 'life skills' and 'education and skills' also remain the same. That is, positive residual effects on life skills amongst LSA residents are anticipated to arise from the Project through access to industrial work supported by pre-employment preparation and on-the-job training. The Project will also have significant beneficial residual effects on education and skills across the LSA. Some potential that individuals may drop out of school or forego further education in order to work at the Project is recognized. However, the overall effect of the Project will be to increase the value of education and thereby the 'opportunity cost' of dropping out of school.

**Table 3.4 Significance of Residual Effects to Education and Training**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
Improved Life Skills Amongst LSA Residents	Positive	Moderate	Point-of-hire communities	Community	Continuous	Engaged individuals	Long-term	Non-reversible	Significant positive effect (no adverse effect)	High	Moderate
Incentives Related to School Attendance and Success	Variable, mostly positive	High	Point-of-hire communities	Community	Continuous	Bystanders	Long-term	Non-reversible	Significant positive effect (non-significant adverse effect)	High	High
Opportunities to Gain Skills	Positive	Moderate	Point-of-hire communities	Community	Continuous then intermittent	Bystanders	Project life	Spontaneous	Significant positive effect (no adverse effect)	High	High

### 3.7 Mitigation and Monitoring Updates

Baffinland continues to take positive steps to increase Inuit training and employment at the Project and has developed new training-related initiatives to this end. The IHRS is a key strategic document for Baffinland in this area and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project. Baffinland will report on the results of IHRS training and skills development initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report. Q-STEP results measurement indicators have also been developed. Data generated from Q-STEP evaluation efforts will be presented in relevant monitoring reports.

Furthermore, Baffinland will continue to track rates of Project pre-employment and on-the-job training, government educational statistics, employee survey results, and other relevant information pertaining to education and training through its annual socio-economic monitoring program. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.



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## 4 LIVELIHOOD AND EMPLOYMENT

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### 4.1 How Has the Livelihood and Employment Assessment Changed?

The Approved Project was predicted to deliver significant positive effects to LSA communities with respect to two key indicators. More specifically, positive effects were predicted for the key indicators 'wage employment' (which includes the residual effects 'creation of jobs in the LSA' and 'employment of LSA residents') and 'job progression and career advancement' (which includes the residual effect 'new career paths') (Baffinland 2012 and 2013). These positive effects were anticipated to arise from new employment opportunities, local hiring commitments, and career progression opportunities provided by the Project. These positive effects are currently being monitored and are largely consistent with original predictions, although LSA employment is one area where Project activities have not fully met Approved Project predictions to date (Appendix B).

The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue to be realized, and possibly enhanced as Baffinland looks to boost its efforts on the recruitment, retention, and training of its Inuit workforce through the implementation of provisions in the IIBA such as the development of an IHRS, and through the Inuit Procurement and Contracting Strategy (IPCS) and the Q-STEP training program

Overall, the Phase 2 Proposal assessment for the livelihood and employment VSEC has not changed from what was assessed for the Approved Project. More specifically:

- The nature and magnitude of effects are consistent with the FEIS and ERP Addendum;
- No new residual effects were identified; and
- Positive effects are predicted. No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 4.2 What We've Heard

Comments recorded over the past two years of engagement on the Phase 2 Proposal have related to the livelihood and employment VSEC. Comments raised during the engagement activities mainly pertained to Inuit employment opportunities, specifically how Inuit can obtain work with the Project, work training programs available to potential candidates, perceived discrimination against Inuit at the site, and Inuit retention.

Baffinland's previous community engagement process also documented the importance of new job creation to local Inuit. Community members told us the creation of employment opportunities in the LSA are a desired benefit of the Project, and important pathway through which local and regional economic development can occur. Employment and training opportunities for North Baffin *youth* were noted to be particularly important to pursue. Appreciation for the employment opportunities created by the Project has also been regularly expressed by LSA residents through community engagement and elsewhere (e.g. Government of Nunavut 2015 and 2016; BDSI 2016).

Some concerns have been raised over lower than expected Inuit employment levels and high turnover rates at the Project. Several individuals also continue to inquire about employment opportunities available at the Project or have provided suggestions to help increase Inuit employment levels. Several comments were received on the need for Baffinland to ensure its Inuit employees benefit from career progression opportunities at the Project. Likewise, various workplace and

employment-related challenges have been discussed during Baffinland's community engagement program. Employment-related issues continue to be a major topic of discussion during Baffinland's community engagement activities. The Company has taken significant steps to improve its Inuit employment record and address this feedback, as discussed in the sections below. Baffinland's response to other workplace and employment-related challenges (e.g. workplace discipline and cultural conflicts) are discussed further in Section 6 (Human Health and Well-Being).

### 4.3 Background

Compared to the rest of Canada, LSA communities typically experience higher levels of unemployment and lower educational attainment levels. While these conditions existed prior to the Project's development, they nevertheless create substantial challenges for the recruitment and development of a robust Inuit workforce at the Project. Conversely, because of the Project's substantial employment opportunities, it has notable potential to help address the region's high unemployment rate and provide training to Inuit. The current operating Project positively affects livelihoods and employment across the LSA. Previously assessed Project residual effects on livelihood and employment are described below.

- **Creation of jobs in the LSA** - Baffinland predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. More specifically, Baffinland predicted the Project would have a high magnitude effect (i.e. 5%+ change in baseline labour) on job creation. During ERP operations, the Project was predicted to generate a total labour demand of approximately 0.9 million hours per year. With the addition of the 18 Mt/a phase, annual labour demand would increase to 2.9 million hours. Labour demand during the Construction Phase would average roughly 4.1 million hours per year over a six-year period, but would reach a peak of approximately 7.3 million hours per year. Closure phase labour demand estimates were to be developed by Baffinland in the future. Associated mitigation measures include the designation of all LSA communities as points-of-hire.
- **Employment of LSA residents** - Baffinland predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. More specifically, Baffinland predicted the Project would have a high magnitude effect (i.e. 5%+ change in baseline labour) on local employment. The Project was predicted to result in the employment of an estimated 300 LSA residents each year. These residents would supply approximately 342,000 hours of labour to the Project, of which 230,000 hours would be provided by North Baffin LSA residents. Associated mitigation measures include management commitments and Company policies related to Inuit hiring, the designation of all LSA communities as points-of-hire, and the development of an Inuit employee recruitment and retention strategy.
- **New career paths** - Baffinland predicted the Project would have a positive effect on the ability of LSA residents to progress in their jobs and careers. This effect would occur because of new career paths introduced to the region, from entry-level through step-by-step advancement to higher level jobs. Associated mitigation measures include management commitments and Company policies related to Inuit hiring and promotions, the provision of individual career support programs, and the creation of a 'second chance' hiring policy.

The positive effects on livelihood and employment were assessed for the Approved Project to be significant (Baffinland 2012 and 2013). Monitoring results and observations since Project development are largely consistent with these predictions, although LSA employment is one area where Project activities have not fully met Approved Project predictions to-date. Baffinland continues to investigate ways in which Inuit employment can be enhanced and has taken proactive steps towards addressing this issue, as noted in the sections below. However, it will likely take many years to fully realize the Project's Inuit

employment potential (mine production only began in late 2014). Relevant skills, education, and familiarity with industrial rotational work can take time to develop.

#### 4.4 Project Monitoring

Recent livelihood and employment information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included in Appendix B as well as the annual and quarterly IIBA reports. Related to livelihood and employment, Baffinland monitors the following socio-economic indicators (subject to data availability):

- Employee origin;
- Total hours of Project labour performed in Nunavut;
- Project hours worked by LSA employees and contractors;
- Inuit employee promotions;
- Inuit employee turnover;
- Hours worked by female employees and contractors;
- Childcare availability and costs;
- LSA employee payroll amounts;

Data are obtained primarily from employment and human resources records, although some qualitative information is obtained through the QSEMC process and Baffinland's community engagement program. Annual socio-economic monitoring also reports on trends since Project development. Monitoring to-date largely supports Approved Project predictions of positive effects of the Project on livelihood and employment (Appendix B).

Tables 4.1 to 4.4 present Project employment information.<sup>10</sup> Table 4.1 presents the total hours of Project labour performed from 2013 through 2017, and is inclusive of both Baffinland employees and contractors. A total of 8,837,636 hours of labour have been performed since Project development. Table 4.2 displays the hours (and percentage of hours) worked by women and men on the Project from 2013 to 2017.

**Table 4.1 Total hours of Project labour performed (2013 to 2017)**

2013	2014	2015	2016	2017
863,177	1,867,882	1,844,081	1,881,506	2,380,990

<sup>10</sup> These tables include employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). These tables do not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors, but do include Baffinland positions identified in the IIBA.

**Table 4.2 Hours worked by Project Employees and Contractors, by Ethnicity and Gender (2013 to 2017)**

Employee Ethnicity & Gender		2013		2014		Q4 2015 <sup>11</sup>		2016		2017	
		Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (430,244)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit	Male	124,754	14.5%	267,169	14.3%	54,794	12.7%	208,592	11.1%	235,038	9.9%
	Female	49,611	5.8%	112,437	6.0%	20,732	4.8%	68,862	3.7%	85,988	3.6%
Non- Inuit	Male	639,468	74.1%	1,394,204	74.6%	336,124	78.1%	1,521,786	80.9%	1,983,402	83.3%
	Female	49,200	5.7%	94,072	5.0%	18,594	4.3%	82,266	4.4%	76,562	3.2%
TOTAL		863,177	—	1,867,882	—	430,244	—	1,881,506	—	2,380,990	—

Data on the origin, number, and ethnicity of Project employees and contractors who worked on the Project in 2017 are presented in Table 4.3. An average of 1,572 individuals worked on the Project in 2017, of which 219 (13.9%) were Inuit. In 2017, most of the Project's Inuit employees and contractors were based in LSA communities with smaller numbers residing outside of Nunavut. Most of the Project's non-Inuit employees and contractors were based in Canadian locations outside of Nunavut, with Ontario having the greatest number. Small numbers of non-Inuit employees and contractors were based in Nunavut. There were also a small number of non-Inuit international contractors, and various employees and contractors whose origin was unknown. Within the North Baffin LSA, Pond Inlet had the greatest average number of employees and contractors (41), while Igloodik had the fewest (19). Several employees and contractors also resided in Iqaluit (55).

Data on the number of hours worked on the Project provides further insight into the varying labour contributions of LSA and non-LSA employees and contractors. Table 4.4 summarizes the number and percentage of hours worked by individuals on the Project from 2013 to 2017. Table 4.4 also includes information on the origin and ethnicity of these individuals, where applicable. This information is inclusive of Baffinland employees and contractors. In 2017, 313,068 hours were worked by LSA residents (both Inuit and non-Inuit), representing 13.1% of total hours worked on the Project (i.e. 2,380,990) or approximately 155 full time equivalents (FTEs). Of this, 229,658 hours were worked by North Baffin LSA residents (representing 9.6% of the total) and 83,410 hours were worked by Iqaluit residents (representing 3.5% of the total). Inuit individuals worked 321,026 hours in 2017, representing 13.5% of total hours worked on the Project or approximately 159 FTEs.

<sup>11</sup> As Baffinland's human resources data management system was in the process of being developed, some information gaps were unable to be reconciled in 2015. In 2015, gender data related to hours worked was only available for Q4.

**Table 4.3 Mary River Project Employees and Contractors by Origin and Ethnicity in 2017**

Origin		Baffinland								Contractors								Yearly Average
		Inuit				Non-Inuit				Inuit				Non-Inuit				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Nunavut	Arctic Bay	16	16	18	21	1	2	0	0	5	15	16	15	6	0	0	0	33
	Clyde River	11	11	13	19	4	0	0	0	5	24	29	19	5	0	0	0	35
	Hall Beach	7	12	11	8	1	0	0	0	14	28	26	27	15	1	0	0	38
	Igloolik	4	8	9	6	2	0	0	0	6	10	10	16	6	0	0	0	19
	Pond Inlet	19	18	21	19	1	1	0	0	10	17	36	20	3	0	0	0	41
	Iqaluit	9	12	12	14	2	0	0	1	21	28	31	39	20	17	7	5	55
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Canadian Provinces and Territories	Alberta	0	1	0	0	30	33	34	49	0	0	0	0	50	60	67	63	97
	British Columbia	0	1	1	1	24	30	31	33	1	0	0	0	27	34	59	40	71
	Manitoba	0	0	0	0	10	11	10	13	0	0	0	0	5	5	8	4	17
	New Brunswick	0	0	0	0	23	25	27	37	1	0	1	1	8	21	30	20	49
	Nfld. and Labrador	1	0	1	2	40	56	48	81	0	0	1	1	15	34	48	37	91
	Northwest Territories	0	0	0	0	1	1	1	0	0	0	0	0	3	7	12	9	9
	Nova Scotia	0	0	0	0	45	55	54	78	0	0	0	0	12	20	30	22	79
	Ontario	9	10	12	12	264	280	277	351	3	3	4	2	97	127	224	151	457
	Prince Edward Island	0	0	0	0	4	4	5	11	0	0	0	0	2	2	3	2	8
	Quebec	0	1	0	0	27	32	32	58	0	1	0	0	28	34	51	36	75
	Saskatchewan	0	0	0	0	5	3	4	3	0	0	0	0	5	3	7	4	9
	Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
International	Other	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	4	4
Unknown	Unknown	1	4	2	0	139	153	161	9	1	9	5	2	122	241	337	366	388
Quarterly Totals		77	94	100	102	623	686	684	724	67	135	159	142	433	612	887	763	
Average		93				679				126				674				
AVERAGE TOTAL		1,572																

**Table 4.4 Hours of Project labour performed, by employee ethnicity and origin (2013 to 2017)**

Employee Ethnicity & Origin (if applicable)	2013		2014		2015		2016		2017	
	Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (1,844,081)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit – North Baffin LSA	125,870	14.6%	281,679	15.1%	208,278	11.3%	198,618	10.6%	217,314	9.1%
Inuit – Iqaluit	38,799	4.5%	80,796	4.3%	85,088	4.6%	51,216	2.7%	65,064	2.7%
Inuit – Other	9,696	1.1%	17,131	0.9%	37,542	2.0%	27,620	1.5%	38,648	1.6%
Inuit (Total)	174,365	20.2%	379,606	20.3%	330,908	17.9%	277,454	14.7%	321,026	13.5%
Non-Inuit – North Baffin LSA	—	—	—	—	5,114	0.3%	32,114	1.7%	12,344	0.5%
Non-Inuit – Iqaluit	—	—	—	—	9,090	0.5%	23,888	1.3%	18,346	0.8%
Non-Inuit – Other	—	—	—	—	1,498,969	81.3%	1,548,050	82.3%	2,032,496	85.4%
Non-Inuit (Total)	688,812	79.8%	1,488,276	79.7%	1,513,173	82.1%	1,604,052	85.3%	2,059,964	86.5%
Number of Hours (Total)	863,177	—	1,867,882	—	1,844,081	—	1,881,506	—	2,380,990	—

**NOTES:**

1. Data for non-Inuit LSA residents were not available for 2013 and 2014 and are included in the non-Inuit total instead.



The number of annual Inuit employee promotions is an important indicator of career progression at the Project. Data on Baffinland Inuit employee promotions (not including contractors) from 2014 to 2017 are presented in Table 4.5.

**Table 4.5 Baffinland Inuit Employee Promotions (2014 to 2017)**

2014	2015	2016	2017
9	14	14	3

**NOTES:**

1. Includes temporary promotions. Inuit promotion data were not available for 2013.

Annual Inuit employee turnover provides additional insight into Inuit career progression. The term ‘turnover’ is inclusive of many different components including resignation, layoff, termination, end of contract, and retirement. High turnover would indicate that fewer individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Low turnover, conversely, would indicate a greater number of individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Table 4.6 displays information on Baffinland Inuit employee departures from 2013 to 2017 (not including contractors).

**Table 4.6 Number of Baffinland Inuit Employee Departures (2013 to 2017)**

2013	2014	2015	2016	2017
9	45	41	44	42

**NOTES:**

1. 2013 and 2014 numbers are for indeterminate employees only and do not include fixed-term employees.

In 2017, there were 42 Inuit employees whose employment with Baffinland ended for various reasons (e.g. resignation, layoff, termination, end of contract, retirement). This equates to a 45% Inuit employee turnover rate. This is higher than the 31% non-Inuit employee turnover rate documented for 2017.<sup>12</sup> Some commonly cited reasons Inuit employees had for resigning in 2017 included family/personal issues, obtaining a job in their home community, finding rotational work difficult (particularly on family life), and the work/camp environment. Some of these reasons were similar to those provided in 2016 (i.e. family-related reasons, obtaining a job in their home community, not being happy with working at site, finding rotational work difficult, and dissatisfaction with position responsibilities). For turnover due to dismissal by Baffinland or for involuntary terminations, commonly cited reasons in 2017 included absenteeism, safety-related occurrences, being unfit for duty/performance, and not passing probation. Some of these reasons were similar to those provided in 2016 (i.e. absenteeism and not passing probation including not passing equipment training).

## 4.5 Assessment Methodology

The methods used to assess effects to livelihood and employment are consistent with the FEIS (Volume 4, Section 4). Comprehensive baseline information on livelihood and employment was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018), and updated baseline information provided in Appendix C. An updated Labour

<sup>12</sup> The employee turnover rate has been calculated using guidance provided by Taylor (2002). For example, the 2017 Inuit employee turnover rate was calculated by dividing the total number of Inuit employee departures in the calendar year (42) by the average number of Inuit employees employed in the same calendar year (93 – see Table 4.3), multiplied by 100.

Market Analysis (TSD 26) was also prepared to support the assessment of the Phase 2 Proposal, in addition to a report on the experience of Inuit employed at the Project over the first three years of mine development (Appendix E).

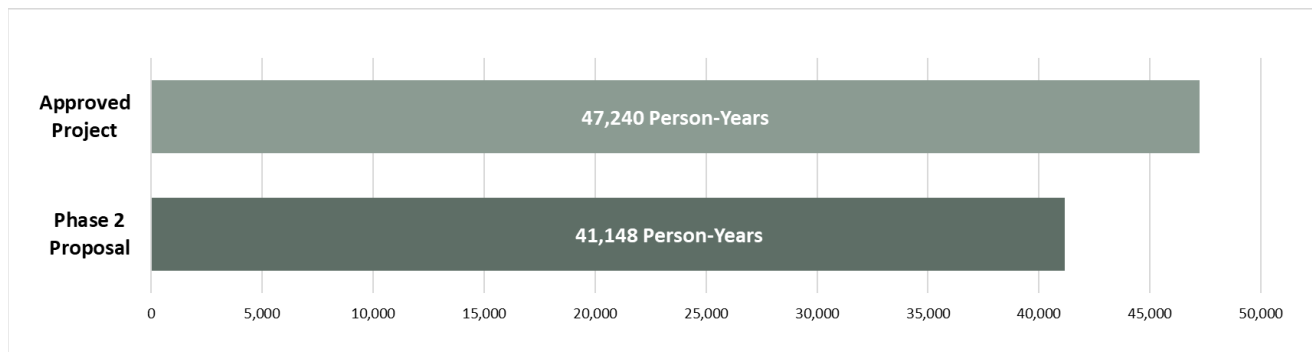
#### 4.6 Effects Assessment

Three residual effects associated with the livelihood and employment VSEC were predicted to occur due to the Approved Project, including 'creation of jobs in the LSA' and 'employment of LSA residents' (which fall under the key indicator 'wage employment'), and 'new career paths' (which falls under the key indicator 'job progression and career advancement'). These effects were anticipated to arise from new Project employment opportunities, commitments to local hiring, and career progression opportunities provided by Baffinland. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will be sustained, and possibly enhanced as Baffinland looks to augment its Inuit employment and training efforts through the implementation of its IHRS, IPCS, and Q-STEP training program, all developed jointly with the QIA. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for livelihood and employment will be created.

A projected Phase 2 Proposal workforce is shown in Figure 4.1 and 4.2 and presented in Appendix D. A small, -12.9% decrease in total person-years of employment is projected for the Phase 2 Proposal when compared to the Approved Project.<sup>13</sup> The expected reduction is mainly due to the removal of truck driving positions and shift to moving ore by rail, and switch to mine haul trucks with higher volume capacities. When calculating the -12.9% decrease, actual 2017 employment numbers (i.e. 1,181 FTEs, which includes some on-site construction activity) have been projected out for the remaining years of the ERP operations component, rather than using the previously predicted values from the FEIS ERP Addendum (i.e. 420 FTEs) which underestimated total employment. Employment effects discussed in this TSD are often compared against projections based on current operational realities, rather than previously predicted values. This represents a more realistic scenario that is based on monitoring data. Baffinland recognizes the overall workforce required to implement the Phase 2 Proposal is somewhat larger than what was originally predicted in the FEIS ERP Addendum; this is commented on further in this TSD where appropriate. Baffinland also notes the projected Phase 2 Proposal workforce is based on best estimates and may be subject to change based on operational and market realities.

The Phase 2 Proposal is anticipated to generate 41,148 person-years of employment, compared to the Approved Project's 47,240 person-years of employment (which includes all construction and operation, but not closure phases) over the life of mine (Figure 4.1). This overall change is not considered a substantial departure from the Approved Project and is at most an incremental reduction in what remains a substantial workforce. Furthermore, the Phase 2 Proposal has been designed for the long-term financial viability of Project (see Part 1, Section 6 of the Addendum to the FEIS for the Phase 2 Proposal - Analysis of Need and Purpose), which will allow for Project employment benefits to be sustained. Negative effects on Inuit employment levels are not anticipated to result from this change. In fact, Baffinland anticipates higher levels of Inuit employment at the Project will be achieved over time through the implementation of employment, education, and training provisions in the IIBA and other related programs.

<sup>13</sup> 'Person-years' is the term used by Baffinland to describe the Project's overall employment requirements and is based on the number of full-time positions created. That is, one full-time position created for one year equals one person-year of employment. The person-years calculation encompasses the Project's existing and projected workforce for its construction and operation phases. A 'full-time position' does not connote a particular number of hours being worked by each position, as it is acknowledged these can differ for construction and operation phase employees. For planning purposes, however, it can be assumed that one full-time position equals one full-time equivalent (FTE).



**Figure 4.1 Overall workforce requirements of the Phase 2 Proposal compared to the Approved Project (Construction and Operation Phases)**

In addition to the small reduction in overall employment, the size of the workforce will vary during the Phase 2 Proposal. Figure 4.2 portrays these changes graphically for the construction and operation phases of the Project. For the Approved Project, maximum employment levels would have been reached during the consecutive occurrence of the 4.2 Mtpa ERP operation phase and four-year construction phase of the 18 Mtpa South Railway component. During this period, employment would have reached a maximum of 2,645 full time positions per year but would have subsided once construction was complete. A period of stable employment would have followed, averaging 2,131 full time positions per year during the 17+ years where consecutive operation of the 4.2 Mtpa ERP operation phase and 18 Mtpa South Railway operation phase occurred. A smaller number of employees would have been required during the three-year closure phase of the Approved Project, although workforce estimates for the closure period were not presented in the FEIS and were deferred until a later date.

Conversely, the Phase 2 Proposal is projected to have a longer construction period where workforce requirements gradually increase over six years. This will consist of two separate (but consecutive) construction phases (i.e. the North Railway construction phase and South Railway construction phase). The North Railway construction phase will occur first and last three years, to be followed by the South Railway construction which will last four years. At times, the South Railway construction phase will overlap the North Railway construction phase (one year), the 12 Mtpa North Railway operations phase (four years), and the 18 Mtpa South Railway operation phase (one year). Total workforce requirements during the six year construction period will range between 1,786 - 2,986 full time positions per year. A period of stable employment (approximately 11 years) will follow this construction period while concurrent operation of the 12 Mtpa North Railway and 18 Mtpa South Railway components occurs. 1,960 full time positions per year will be required during this time. A smaller number of employees will be required during the Phase 2 Proposal's three-year closure phase, at 300 full time positions per year.



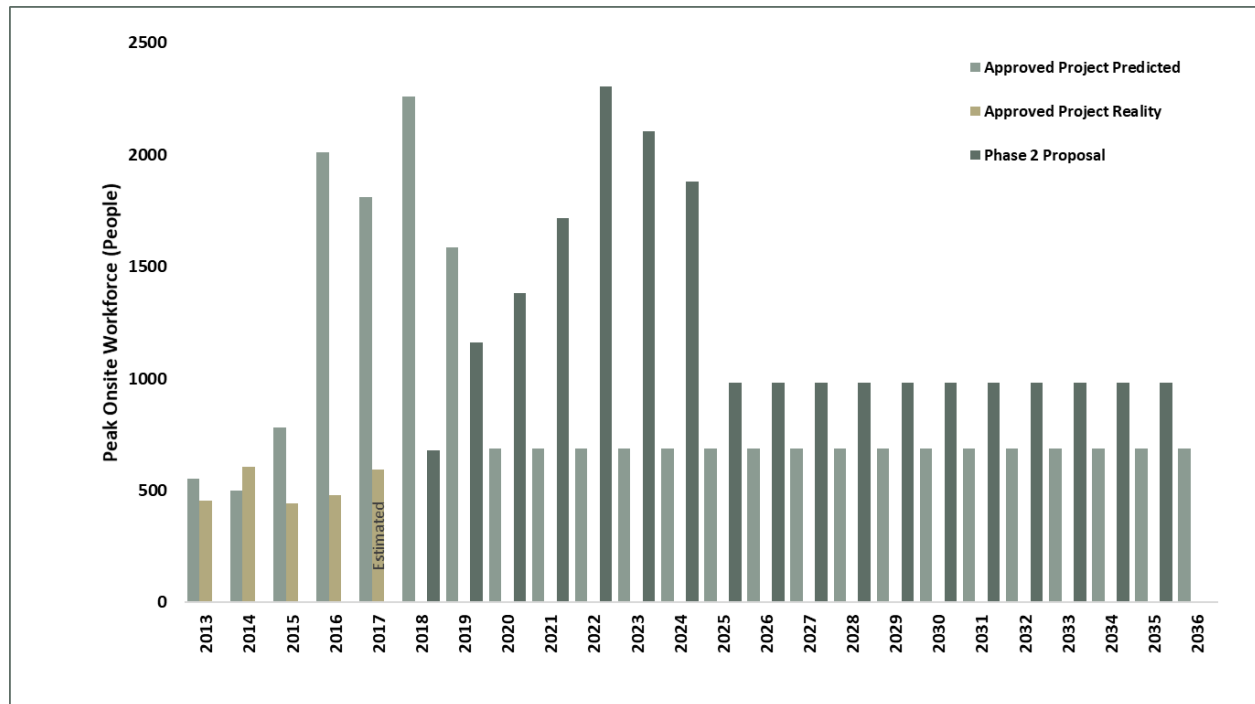
**Figure 4.2 Workforce Comparison Between the Phase 2 Proposal and the Approved Project (Construction and Operation Phases)**

Thus, the most distinguishing change in the workforce profile for the Phase 2 Proposal will be the introduction of an additional short-term construction phase for the 12 Mtpa North Railway component. Some shifting of the timing of construction/operation activities will also occur. Baffinland acknowledges the delayed timing of construction activities compared to those originally proposed for the Approved Project. As noted previously by Baffinland, the Project has faced operational challenges which have affected scheduling and further necessitated the design of the Phase 2 Proposal for the long-term financial viability of Project. It's also acknowledged that Figure 4.3 and Appendix D show the concurrent execution of North Railway construction, Phase 2 operations, and South Railway construction in 2021. However, ultimate sequencing of Project development activities will depend on operational and market realities. The current overlap of construction and operational periods considers the most aggressive timeline and presents the most staffing challenges, and thus represents the most conservative scenario. The comparative profile presented in Figure 4.3 also shows a gradual ramp-up to full employment levels occurring over time, in contrast to the Approved Project's relatively rapid growth in construction employment immediately followed by reduced, but stable operations employment.

The projected 'peak' onsite workforce levels are also somewhat different under the Phase 2 Proposal. Peak onsite workforce projections capture the maximum number of bed spaces that will be occupied during Project phases and reflect the rotational nature of the Project workforce (i.e. not everyone who is employed by the Project will be on-site at the same time, as some will always be off-rotation). They also help reveal the employment demands associated with specific Project phases. Construction periods, for example, typically require high numbers of temporary, short-term workers.

Figure 4.3 portrays the peak onsite workforce requirements of the Phase 2 Proposal compared to the Approved Project. Similar to Figure 4.2, there is one pronounced 'spike' in the peak onsite workforce for the Phase 2 Proposal, linked to the North Railway and South Railway construction phases. These construction phases are then followed by a period of reduced,

but stable operations employment. Figure 4.3 also shows the predicted peak workforce for the Approved Project (which uses originally predicted values, rather than projections based on monitoring data) compared to the current documented reality. The lower-than-predicted values are due in part to the delayed construction of the 18 Mtpa South Railway component.



**Figure 4.3 Comparison of Peak Onsite Workforce Requirements Between the Phase 2 Proposal and Approved Project (Construction and Operation Phases)**

The operation phase of the Project remains unchanged at 21 years. However, potential changes to future levels of Inuit employment are also a potential driver of outcomes related to the livelihood and employment VSEC, and will be assessed further in the context of the Phase 2 Proposal in the sections that follow.

Phase 2 Proposal interactions with key indicators for the livelihood and employment VSEC are summarized in Table 4.7, while residual effects are assessed more fully in Sections 4.6.1 to 4.6.3. Section 4.6.4 provides discussions on other aspects of livelihood and employment identified by the NIRB in the Amended EIS Guidelines, or by Baffinland itself. Section 4.6.5 reviews the significance conclusions for livelihood and employment residual effects.

**Table 4.7 Phase 2 Proposal Interactions with Key Indicators for Livelihood and Employment**

Project Infrastructure or Activity	Wage Employment	Job Progression and Career Advancement
<b>Project-Wide Changes</b>		
Additional employment opportunities (additional capex phase)	1	1

**NOTES:**

- Interactions are rated as follows:
  - 0 - No interaction.
  - 1 - Minor interaction post-mitigation, discussion assessment.
  - 2 - Major interaction subject to detailed assessment.

#### 4.6.1 Creation of Jobs in the LSA

Implementation of the Phase 2 Proposal does not change the Project's existing positive effects on LSA job creation, as it will sustain high levels of job creation similar to the Approved Project. Furthermore, Baffinland continues to demonstrate the positive effects it has had in this area since Project development. Notably, a total of 8.8 million hours of labour have been performed since Project development (2013 onwards). Employment levels of LSA residents, specifically, are covered in Section 4.6.2.

Positive effects will be sustained under the Phase 2 Proposal, since the Phase 2 Proposal is a key next step for the continuation of Project operations and to deliver these benefits (see Part 1, Section 6 of the Addendum to the FEIS for the Phase 2 Proposal - Analysis of Need and Purpose). While overall employment levels will be reduced, they remain similar to those projected for the Approved Project. Furthermore, several new opportunities may be created because of the Phase 2 Proposal, from the new types of employment opportunities created (e.g. additional construction, port, shipping, and rail-related employment), and the opportunities for individuals to pursue career options in these and other areas. A summary of labour demand by the Phase 2 Proposal's development stages is provided below.<sup>14</sup> Additional details can be found in Appendix D.

##### **Construction Phase(s) Labour Demand**

As noted previously, the Phase 2 Proposal is projected to have one longer construction period where workforce requirements gradually increase over six years. This will consist of two separate (but consecutive) construction phases (i.e. the North Railway construction phase and South Railway construction phase). The minimum workforce required during these six years will be 1,786 full time positions per year, while the maximum workforce will be 2,986 full time positions per year. This equates to a labour demand that ranges from 3.6 million hours per year to 6.0 million hours per year. However, this range is also inclusive of the overlap between the North Railway construction phase, 12 Mtpa North Railway operations phase, South Railway construction phase, and/or 18 Mtpa South Railway operation phase that may occur at times throughout this six year period.

##### **Full Project Operation Labour Demand**

The 18 Mtpa South Railway operation phase will run concurrent with 12 Mtpa North Railway operation phase for a period of 11 years. Employment levels will remain stable throughout this period. The workforce required during these 11 years will be 1,960 full time positions per year, which equates to a demand of 4.0 million hours of labour per year.

##### **Closure Phase Labour Demand**

The closure phase is expected to last three years. Employment levels will be reduced, but remain stable throughout this period. The workforce required during these three years will be 300 full time positions per year, which equates to a demand of 0.6 million hours of labour per year.

In all development stages of the Phase 2 Proposal, Project labour demand is expected to remain greater than the 5%+ change in baseline labour originally predicted for the Approved Project (5% of the Approved Project baseline would equal 335,000 hours per year), and result in a significant positive effect. The small reduction in overall person years of employment

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<sup>14</sup> Phase 2 Proposal labour demand has been estimated by multiplying the number of full time positions required in each of the Project's phases (Appendix D) by 2,016 hours/year. These estimates are likely conservative, as they do not account for the longer rotations typically used for construction workers (i.e. 4 weeks on/2 weeks off).

projected for the Phase 2 Proposal will not affect overall significance conclusions for this residual effect. A high magnitude positive effect is still predicted with high confidence.<sup>15</sup>

#### 4.6.2 Employment of LSA Residents

The Phase 2 Proposal will continue generating substantial employment opportunities for LSA residents given existing Inuit employment commitments will be maintained during the Phase 2 Proposal (e.g. preferential Inuit hiring and LSA points-of-hire) and several new opportunities for Inuit will be created. Increasing the level of Inuit employment at the Project is a key objective of the IHRS, IPCS, and Q-STEP training program all developed with the QIA. The measures Baffinland will take to increase Inuit employment are described more fully in this and other sections. As such, implementation of the Phase 2 Proposal does not change the previous assessment conclusions presented for the Approved Project; a high magnitude positive effect is still predicted.

As described in Section 4.4, Baffinland has successfully demonstrated the employment benefits it has provided to LSA residents since Project development. The magnitude of LSA employment creation under the Approved Project was previously estimated to be a 5%+ change in baseline labour. Baffinland predicted the Project would create 342,000 total hours of new employment for LSA residents, which is equivalent to a 5.1% increase over the baseline (i.e. 6.7 million hours of labour per year), or a high magnitude effect. The magnitude of North Baffin LSA employment creation, specifically, was estimated at 230,000 hours of new employment, in a baseline environment that creates an estimated 2.0 million hours of labour per year. This is equivalent to an 11.5% increase over the baseline, again a high magnitude effect. The anticipated effect on the Iqaluit labour market was 112,000 hours of new labour in a baseline environment where 4.7 million hours of labour are delivered. This is equivalent to a 2.4% increase over the baseline, on the threshold between a low and moderate magnitude effect.

While Baffinland's 2017 employment record does not fully match these predictions (i.e. 313,068 hours were worked by LSA residents, 229,658 of which were worked by North Baffin LSA residents), this situation is expected to be temporary. For example, substantial progress has been made towards developing new Inuit employment initiatives. Although there have been positive effects from the Project on the employment of LSA residents, it will likely take many years to fully realize the Project's Inuit employment potential (mine production only began in late 2014). While not developed specifically for the Phase 2 Proposal, recent steps Baffinland has taken to increase Inuit employment at the Project have included implementing provisions of the IIBA through the development of its IHRS, IPCS, and Q-STEP training program with the QIA. Baffinland also establishes an annual Minimum Inuit Employment Goal (MIEG) with the QIA (which remains at 25% in 2018).

The IHRS is a key strategic document required under the IIBA (Article 7.11) that describes the goals and initiatives that will be used by Baffinland to improve its Inuit employment record at the Project. Baffinland acknowledges the desire for Inuit employment levels in the LSA to be improved at the Project and the Company has continued to take positive steps in this regard. Implementation of provisions in the IIBA, particularly the IHRS, will be key to Baffinland's success and will guide the Company's strategic direction moving forward and will be actively tracked through Baffinland's socio-economic monitoring program and IIBA implementation reports to QIA. The IPCS and Q-STEP training program also contain relevant Inuit

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<sup>15</sup> The following parameters have been used to assess the magnitude of Project effects on job creation and local employment: Low (i.e. <2.5% change in baseline labour), Medium (i.e. 2.5% to 5% change in baseline labour), and High (i.e. 5%+ change in baseline labour). Under baseline conditions described in the FEIS, the labour market of the North Baffin LSA was estimated for the Approved Project to generate a labour demand of 2.0 million hours per year, while the Iqaluit labour market would generate an estimated demand of 4.7 million hours of labour per year. Together, 5% of these values would equal 335,000 hours per year (i.e. 100,000 hours per year in the North Baffin LSA and 235,000 hours per year in Iqaluit). The 2.4 million hours of Project labour performed in 2017, for example, well exceeds this value and confirms the previous predictions.



employment or training-to-employment components, but are reviewed more fully in Section 3 (Education and Training) and Section 8 (Contracting and Business Opportunities).

The IHRS has four overriding objectives:

- To maximize and enhance Inuit participation in the Project workforce by identifying possible barriers to Inuit participation at the Project and making efforts to resolve those barriers through education and training.
- To facilitate the training, hiring, retention and advancement of Inuit at the Project in order to engage Inuit employees.
- To develop an evaluation framework for employment and training that defines criteria for success and establishes indicators by which success is measured.
- To define how Inuit content requirements related to employment and training are monitored and enforced.

The IHRS contains eight strategic actions that will assist Baffinland with meeting the above objectives. Furthermore, each of these strategic actions contains a list of specific priorities that will be addressed by Baffinland. The eight strategic actions include:

- Strengthen collaboration with Inuit communities and stakeholders;
- Engage and develop Inuit employees (current and potential);
- Workforce readiness;
- Inuit recruitment and hiring;
- Gender balance;
- Students and youth;
- Inuit employee retention and advancement; and
- Continuing improvement.

Baffinland further acknowledges the LSA's young and rapidly growing population may contribute to increased labour availability in the future. Should Inuit employment at the Project increase in the future, LSA employment benefits will be enhanced. Baffinland's revised Labour Market Analysis (TSD 26) confirms the Inuit LSA labour market is capable of supplying some additional labour to the Project beyond current levels. However, it also qualifies this assessment by noting several constraints will continue to limit the participation of Inuit in the Project who are otherwise available for work. Some of these constraints include:

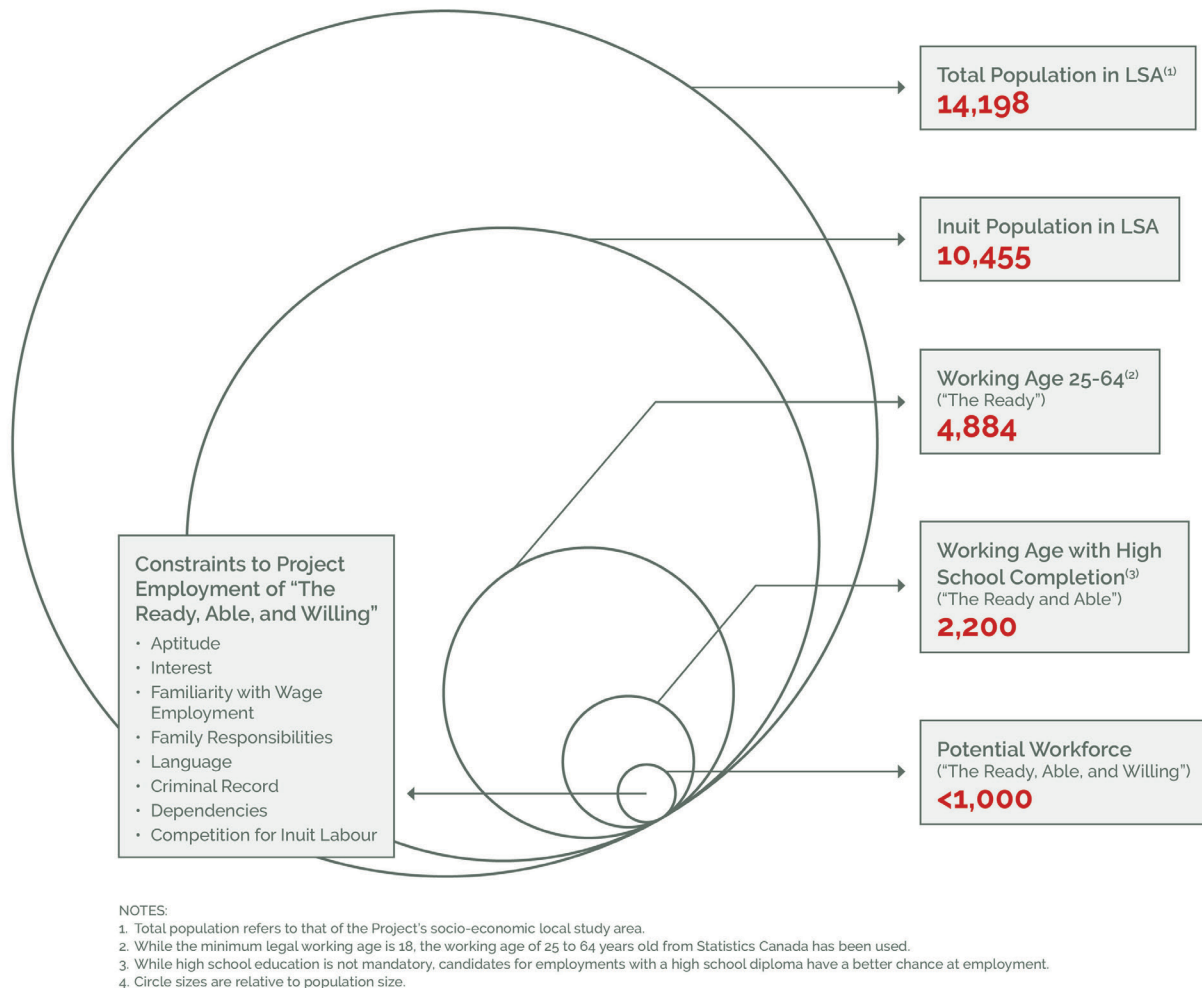
- **Employment status** - Being employed does not exclude anyone from applying for work at the Project, but it does mean that the employee doesn't need the job. Changing jobs would likely be based on a comparison of benefits (intrinsic and extrinsic) and be conditional on the other constraints listed.
- **Aptitudes** - Not everyone possesses the mental and physical abilities to do the required work.
- **Interest** - Working at a fly-in/fly-out mining project is not for everyone, some are simply not interested and would prefer other types of employment.

- **Familiarity with wage employment** - For some Inuit, work at the Project will be their first job and it can take some time before becoming accustomed to the requirements of employment.
- **Family responsibilities** - For some Inuit, taking a job that would have them leave their families for two weeks is simply not possible. This is particularly true for single-parent families or if a partner is already working at a job that has them away from home for extended periods.
- **Language** - English can be a barrier (perceived or otherwise) for some Inuit who would otherwise choose to work. Although the IIBA clearly states that lack of fluency in English will not necessarily be a barrier to employment, linguistic issues may affect participation in the training necessary to take up a position in the Project workforce.
- **Criminal record** - A criminal record may disqualify someone from employment with the Project depending on the frequency and severity of their criminal activities.
- **Dependencies** - There is a wide range of dependencies that deter some Inuit from seeking employment at the Project. One example is addictions that prevent some Inuit from working in a camp setting, while another is public housing, where residents who are dependent on public housing are concerned the cost of their public housing unit will rise as a result of their higher income and do not believe the increased cost is affordable.

Baffinland has made efforts to address constraints to Inuit employment where practical. This has included offering 'Work Ready' pre-employment training programs to LSA residents, ensuring criminal records and/or lack of fluency in English are not necessarily barriers to employment, and providing support to youth education and community wellness initiatives. Even still, the realistically available workforce for the Project in the LSA is still limited by demographic and socio-economic factors outside of Baffinland's control. TSD 26 (Labour Market Analysis) estimates less than 1,000 Inuit individuals in the LSA are realistically 'ready, willing, and able' to work at the Project (Figure 4.4). As such, some additional Inuit LSA labour is considered available for the Project to access.

TSD 26 also notes that experience from existing mines in the Northwest Territories and the Kivalliq Region has demonstrated that northern residents (including non-Indigenous residents) prefer operations jobs to construction jobs that are temporary, tend to require higher levels of skill, and have longer work rotation schedules. While this does not preclude Inuit residents from working on a construction stage associated with the Phase 2 Proposal, it simply highlights that Inuit employment strategies and expectations should be different for them.

Likewise, the Phase 2 Proposal's construction stages will provide some diversity of opportunity for unskilled and semi-skilled work and will afford opportunities for learning skills on the job. Combined with the sheer size of the construction labour force required, the creation of these jobs could entice otherwise inactive Inuit into joining the labour force. From there, opportunities to transition from a construction stage job to an operations stage job will be made available. Baffinland views the construction stages as a means to bring more Inuit into the labour force and will then focus education and training dollars and other recruitment/retention efforts on those workers that show the most promise. Meanwhile, Inuit who are employees of contractors working on the construction stages might be tempted to transition to full-time operations positions after these construction stages are finished.



**Figure 4.4 Understanding the Project's Labour Market**

Baffinland's prediction that LSA residents will supply a 5%+ change in baseline labour to the Project (or, at least 335,000 hours of new employment) thus remains valid; however, Baffinland considers this a minimum target and will strive to achieve increased Inuit employment through the strategies and initiatives mentioned above. The incremental development approach of the Phase 2 Proposal also provides a number of advantages to Baffinland and to the Inuit community and Baffinland's stakeholders. Namely, it is an opportunity for Baffinland to gain more operational experience and learnings while gradually scaling up the Project to full operations. The Project's labour requirement will also grow incrementally, which allows for local communities to develop the capacity for a greater involvement in the Project's workforce over time.

Additional positive effects in the LSA may result from the new types of employment opportunities created by the Phase 2 Proposal (e.g. additional construction, port, shipping, and rail-related employment), and the opportunities for individuals to pursue career options in these and other new areas. The small decrease in overall person years of employment projected does not affect overall significance conclusions for this residual effect during the Phase 2 Proposal. A high magnitude, significant positive effect on LSA employment is still predicted.

### 4.6.3 New Career Paths

The Phase 2 Proposal will continue providing LSA residents with opportunities to progress in their jobs and careers. Through provisions in the IIBA, career development initiatives being undertaken by Baffinland, such as those contained in the IHRS and separately through the Q-STEP training program, should also enhance outcomes moving forward. Baffinland has successfully demonstrated the positive effects it has had in this area. For example, many LSA residents continue to be employed at the Project (155 FTEs in 2017) and several have been promoted to new positions (40 since 2014). A substantial number of training hours have also been provided to Inuit since Project development (15,867), which contributes to on-the-job skills development and creates opportunities for career progression. The career opportunities introduced to the region are a significant positive effect of the Project and are a result of Baffinland's commitments to preferential local employment and training.

Baffinland acknowledges Inuit employee turnover is currently higher than desired. High rates of employee turnover have been an issue for other Nunavut organizations in the past, including the Government of Nunavut and Agnico Eagle Mines Limited (e.g. Bell 2012, Government of Nunavut 2014). Baffinland continues to monitor employee turnover causes and outcomes, and is committed to reducing turnover and increasing Inuit employment as the Project advances. Baffinland has developed initiatives within the IHRS to provide Inuit employees with the necessary support to acclimate to life at site. For example, Baffinland has committed to reviewing onboarding procedures so that expectations are clearly communicated and that Inuit employees, like all other employees, are made fully aware of workplace conditions and support resources, such as the Inuit Elders on site. Consistent with the IIBA, Baffinland will also employ efforts so that Inuit culture and values are respected and that use of Inuktitut at site will be supported, subject to considerations of employee safety. Consideration will be given to modification of work rotation cycles to enable Inuit to participate in traditional activities. To reduce the stress of familial separation, Baffinland will expand existing tools of family communication (phone and internet), including the introduction of Skype.

In order to achieve a safe, stable and supportive work culture which will provide an environment encouraging knowledge transfer and skills acquisition, a wide range of inter-related and complementary actions will be implemented through the IHRS over time. These actions include:

- Setting and communicating employee expectations;
- Instituting a mid-probationary review program to evaluate new employee performance and identify and address any issues prior to the expiration of the probationary period;
- Consideration of alternative rotation schedules better aligned with familial and community activities;
- Systematic Inuit employee recognition and feedback;
- Identification of and response to underlying causes of Inuit employee turnover;
- Greater emphasis upon cultural awareness training and cultural activities;
- Formalized support systems for Inuit employees, including mentorship and job-shadowing programs;
- Implementation of an effective employee concern process; and
- Annual comprehensive workplace conditions review incorporated into a regular employee survey to identify and address issues related to employee retention at the earliest opportunities and to enable trend analysis over time.

Enhancing Inuit employee retention rates also requires the institution of positive incentives and the identification and response to reasons for employee departure. In order to address the latter:

- All employees (both of Baffinland and its contractors) will be encouraged to participate in an exit interview. Feedback collected from exit interviews will be analysed and systemic concerns will be addressed.
- Baffinland's policy on rehires will be reconsidered and active efforts to re-engage departing employees, subject to concerns of employee safety, will be undertaken. The fact that an employee has been terminated for cause will not be a bar to future employment at Baffinland.

Taken together, Baffinland anticipates these initiatives will contribute to reduced Inuit turnover and create a more stable Inuit workforce. As turnover is addressed over time, a greater number of Inuit will become available to pursue career advancement opportunities. The institution of clear and effective succession planning will encourage Inuit employee retention and thus function as a key influencer in maximizing Inuit participation in the Project workforce. Succession planning can include both progression within various occupational categories and from employee to supervisory status. In order to encourage the advancement of Inuit employees, both within occupational categories and from employee to supervisory/management positions, Baffinland commits within the IHRS to undertaking the following actions:

- Effective communication of succession mapping to enable Inuit employees to understand the path to promotion, the required skills and competencies associated with each position ranking and the type and degree of training required to enable progression;
- Establishment of mentoring and job shadowing programs;
- Regular evaluation of Inuit employees to identify candidates for supervisory/management training;
- Establishment of literacy and numeracy upgrade programs on site;
- Establishment of targeted skilled trades apprenticeship programs; and
- Development of individual employee plans for training and development: to improve basic/rudimentary skills that are a barrier to advancement; technical education and/or training that allow an employee to advance within a specific employment stream; and training and education that allow an employee to shift or segue into a new career path.

While the IHRS is an important strategic document, the Q-STEP training program developed with the QIA describes specific initiatives Baffinland will undertake to help Inuit employees progress in their jobs and careers. Q-STEP has been designed to provide Inuit with the skills and experience not only to obtain work at the Mary River Project, but also to help Inuit employees to have the tools and the motivation to advance within their careers. The program is valued at \$19 million and is anticipated to proceed for four years. Additional details on the Q-STEP program and Baffinland's employee training programs are reviewed in Section 3 (Education and Training).

Opportunities for Inuit employees to progress in their jobs and careers will be sustained under the Phase 2 Proposal, and implementation of the IHRS and Q-STEP training program is expected to enhance outcomes. Furthermore, additional positive effects could result from the new types of employment opportunities created under the Phase 2 Proposal (e.g. additional construction, port, shipping, and rail-related employment), and the new career development paths for LSA residents associated with these opportunities. Should Inuit employment increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional Inuit will be provided opportunities to progress in their jobs and careers. The small decrease in overall person years of employment projected for the Phase 2 Proposal does not change the previous significance conclusions presented for this residual effect.

The magnitude of career advancement is still assessed to be moderate during the early years of the Phase 2 Proposal, due to higher worker turnover, but should become high after the workforce stabilizes. Ongoing turnover amongst the southern workforce will lead to ongoing job openings at all skill levels for Inuit. Therefore, the frequency of access to progressively higher-level jobs will be continuous. An overall moderate magnitude positive effect is still predicted, with moderate certainty.<sup>16</sup>

#### 4.6.4 Discussion of Other Livelihood and Employment Topics

Several EIS Guidelines specific to the livelihood and employment VSEC were identified by NIRB in the Amended EIS Guidelines. One additional topic of discussion has also been identified by Baffinland. A summary of how the Phase 2 Proposal interacts with each of these topics is provided in Table 4.8.

**Table 4.8 EIS Guideline / Other Topic Summaries - Livelihood and Employment**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
Assessment of the potential for development of local labour force	There remains additional potential to develop the local labour force. Baffinland has taken steps to reduce the skills gap between Project needs and what is currently available in the local labour force, including developing the IHRS and Q-STEP training program with the QIA. Baffinland anticipates the capacity of the LSA labour force will grow because of the opportunities afforded by the Project. As noted previously, Baffinland has also identified a series of initiatives that will be pursued to increase Inuit employment at the Project and further develop the LSA labour force (Section 4.6.2). However, the updated Labour Market Analysis acknowledges gaps between Project needs and labour availability in the LSA will continue to exist for the Phase 2 Proposal and some non-local labour will continue to be required to meet Project employment needs.
Estimation of the number of jobs to be created directly and indirectly by the Project, with consideration of local business and supplying contracting	The projected workforce for the Phase 2 Proposal is presented in Appendix D and has been reviewed in Sections 4.6 and 4.6.1. Notably, some 41,148 person-years of employment are expected to be created directly by the Phase 2 Proposal throughout all construction and operation stages of development. As noted in the Economic Impact Model (Appendix A), total employment (which includes direct, indirect, and induced Project effects) will be 16,221 Full-Time Equivalents (FTEs) in Nunavut and 136,745 FTEs in Canada. Indirect effects essentially encompass the suppliers of the Project, but also encompass the suppliers of the mine's suppliers and the suppliers of those suppliers, etc. Indirect benefits thus represent the total economic benefits of business-to-business purchases. Induced effects, on the other hand, are generated by the consumer expenditures of employees of all the firms that benefited from the direct and induced effects.
Discussion of the requirements for employment (e.g. education levels, criminal records, drug and alcohol policies, language abilities), and the potential of needs to be met by local recruitment, as well as the extent to which the skills of the available workers match job requirements	Basic requirements for employment are the same as those for the Approved Project while the IIBA provides additional guidance on hiring (e.g. skill equivalencies, language abilities). As per Article 7.4.1 of the IIBA, Inuit who lack fluency in the English language may qualify for positions where fluency does not compromise safety. If required for safety reasons, as determined by Baffinland, Inuit without fluency in English may be transferred to another position. Furthermore, Baffinland maintains a no drugs/no alcohol policy on site, conducts baggage searches for all employees and contractors arriving at site, and has a zero-tolerance harassment policy, which includes any form of racism or discrimination.  While the education and skill requirements for each position at the Project vary, all positions will be open to Inuit with the work habits and skills, experience and qualifications required by the positions. Baffinland's updated Labour Market Analysis confirms gaps between Project needs and labour availability in the LSA will continue to exist for the Phase 2 Proposal. Baffinland has taken steps to reduce the skills gap between Project needs and

<sup>16</sup> While descriptive thresholds between magnitude ratings were not developed, 'Low', 'Moderate', and 'High' parameters were used to assess the general magnitude of Project effects on new career paths, relative to the baseline.

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
	what is currently available in the local labour force, including development of the IHRS and Q-STEP training program with the QIA. These each contain several new programs and commitments related to Inuit training and skills development.
Assessment of opportunities afforded to women	Baffinland continues to encourage the employment of women at the Project; however, it is apparent that women continue to face barriers to employment in the Canadian mining industry as a whole (e.g. MIHR 2016). To-date, women have consistently worked fewer hours on the Project than their male counterparts. Baffinland acknowledges securing access to adequate child care remains an issue in some parts of Nunavut and can act as a barrier to employment for women (e.g. Pauktuutit et al. 2014; Sponagle 2016). Article 7.15 of the IIBA obligates Baffinland to implement its human resources policies for equal access to employment for both genders. The IHRS also establishes several new priorities for Baffinland to address, focused on providing ongoing opportunities to women. The existing employment opportunities being created for women in the LSA because of the Project should also be acknowledged.
Discussion of the commuting arrangements for local hired workers, especially those who live in the communities without proposed direct air transport to mine sites	Commuting arrangements for local workers have not changed from the Approved Project. Points of hire for the Project include all North Baffin LSA communities and Iqaluit. If commercial shipping of iron ore occurs in the Hudson Strait, then Kimmirut and Cape Dorset will be designated as additional points of hire. As per the IIBA, Baffinland provides air transportation for Inuit employees from the Baffin Region to and from the mine or Project at no cost to the employee. Baffinland may also consider other communities as points of hire if it deems there are sufficient individuals from such a community available to work on the Project. Workers hired from outside of Nunavut will continue to be provided with transportation to and from Project sites from one or more southern points of origin.
Evaluation of the possible effect of changes in income earnings on patterns of savings, expenditure and consumption values.	Positive changes in income earnings amongst LSA residents will be sustained under the Phase 2 Proposal, as Baffinland will continue providing LSA residents with opportunities to obtain employment and earn meaningful incomes. These opportunities are expected to increase household financial independence and assist with the purchase of store-bought and/or country food and the participation in local food harvesting activities; expand the market for consumer goods and services across the LSA; decrease the number of individuals receiving income support; and may assist with finding access to adequate housing. Possible adverse effects from changes in income earnings include the increased ability of LSA residents to afford substances such as alcohol and illegal drugs, or to make other unwise financial decisions. Similar to the Approved Project, new financial decision-making responsibilities will arise for some individuals unfamiliar with wage employment. It is expected that an adjustment period will continue to be required for these individuals, as they identify the balance of savings, expenditure, and consumption appropriate for their lifestyle. Baffinland will continue to review healthy financial management practices in its Work Ready training program and offer additional supports through its Employee and Family Assistance Program (EFAP).
Assessment of the barriers and incentives to healthy financial management	Potential barriers to healthy financial management include a lack of familiarity with wage employment, managing a regular paycheque, and financial planning. Dependency issues (e.g. substance abuse) and a lack of basic numeracy skills may also lead some individuals to spend their employment incomes unwisely. Baffinland will provide incentives to its employees regarding healthy financial management. These include delivery of a Work Ready Program to prospective Inuit employees; access to the Company's EFAP; and voluntary employee GED, literacy, and numeracy programs.
Evaluation of the effects of competition for labour between the Project and existing businesses, institutions, and traditional activities	Sections 7.6.1 and 7.6.2 assess the Phase 2 Proposal's potential effects on hamlet staff recruitment and retention. Some competition for labour will continue during the Phase 2 Proposal but will not be unmanageable for organizations and individuals in the LSA. The Project may have effects on the ability of hamlets to recruit and retain workers, but these will be short-term and offset over time as the Project contributes to improved levels of overall skill and experience in the LSA labour force. Some competition with local businesses may occur (Section 8.6.3), but will be alleviated through an expanded market for consumer



EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
	<p>goods and services, and improved labour force created by the Project, in addition to more robust and capable business models that result from Project opportunities. The IIBA's Business Capacity and Start-Up Fund (BCSF) will also help address business capacity limitations in the LSA. Section 6.6.5 discusses potential effects on LSA community processes (e.g. local coaching, politics, and social organizations) related to worker absence during their fly-in/fly-out site rotations. It concludes that while some organizations and some activities may continue to be affected, they will be able to adapt and carry on their functions.</p> <p>Project employment also has the potential to interfere with some individuals' ability to pursue traditional activities, but a short rotation will continue to be used so workers are not required to be away from their communities for extended periods. The Project also supports participation in harvesting and other traditional activities by providing incomes that can support the purchase of costly equipment and supplies and Baffinland is considering alternative rotation schedules where these activities will not interfere with operations. Individuals employed elsewhere or who pursue traditional activities full-time will not be available for Project employment. These factors have been considered in the revised Labour Market Analysis.</p>
<p>Implications for harvesting livelihoods  <i>(not an EIS Guideline, but is a topic of relevance to the EIS)</i></p>	<p>Consistent with the assessment of the Approved Project, Baffinland acknowledges multiple non-significant residual effects have the potential to combine over the course of the Project. These include effects on key wildlife species as well as on effects that may influence travel and camps, and hence access to wildlife. Given what is known about Inuit land use and harvesting practices, it is considered unlikely that any such combination would lead to a significant adverse effect on Inuit harvesting. While the interactions are expected to be complex and highly intertwined with other factors affecting harvesting in the LSA, the potential for beneficial outcomes continues to be equally or more highly anticipated than the potential for adverse outcomes. The following points provide a rationale in support of this conclusion:</p> <ul style="list-style-type: none"> <li>• Households that gain access to better transportation, harvesting equipment, or supplies as a result of Project-derived income may improve their opportunity to harvest.</li> <li>• Some aspects of the Project may support the development of commercial harvesting activity (e.g. Project purchases of country food for the cafeteria, Project incomes may encourage new business start-ups), while others may serve to strengthen traditional sharing networks.</li> <li>• The ability of members of these households to gain employment may, for some, present the ability to have enough income that groceries, money, harvesting equipment, or the proceeds of harvesting can be shared beyond the immediate household.</li> <li>• The Project may contribute to trends in the adoption of technology by harvesters. This could lead to a divergence between those harvesters who have access to the technology and those who do not. However, income differentials already exist amongst households in the LSA. The introduction of Project jobs may lead to improved wealth distribution in communities. Traditions of sharing equipment in exchange for country food should serve to further reduce the gap between technology 'haves' and 'have-nots'.</li> <li>• A Wildlife Compensation Fund (WCF) has been established under the IIBA and is administered by the QIA. It functions to compensate Inuit for incidents where Project activities interfere with or inhibit harvesting activities. As per Article 17.6 of the IIBA, Baffinland has paid an initial contribution of \$750,000.00 to QIA to support the WCF.</li> </ul> <p>Ongoing Project monitoring of VECs and VSECs will provide early warning of any unanticipated effects related to harvesting, and enable Baffinland, the Inuit community, and Project stakeholders to come up with appropriate solutions to address those issues.</p>

#### 4.6.5 Significance of Residual Livelihood and Employment Effects

As noted above, three residual effects have been carried forward for the Phase 2 Proposal. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for livelihood and employment will be created. More specifically, the Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to livelihood and employment, although positive effects in some areas may be enhanced due to the new Inuit employment commitments made by Baffinland. The Phase 2 Proposal's new employment opportunities may generate additional benefits, but this and the small reduction in total employment levels are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same.

The ratings assigned to the residual effects evaluated above are presented in Table 4.9; these effects were previously assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project. Table 4.9 is presented here for completeness, even though Baffinland acknowledges the significance ratings for these criteria have not changed. Overall assessments of the key indicators 'wage employment' and 'job progression' also remain the same. That is, the Project will continue to have a positive effect on wage employment in the North Baffin LSA by introducing new job opportunities and assisting local residents to access these jobs. The Project will also have a positive effect on the ability of local residents to progress in their jobs and career choices. This effect will arise as a result of the new career paths that will be introduced to the region, from entry level through step-by-step advancement to higher level jobs.

**Table 4.9 Significance of Residual Effects to Livelihood and Employment**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
Creation of Jobs in the LSA	Positive	High	Point-of-hire communities	Community	Continuous	Bystanders	Medium-term	Spontaneous	Significant positive effect (no adverse effect)	High	High
Employment of LSA Residents	Positive	High	Point-of-hire communities	Family	Continuous	Engaged individuals	Medium-term	Spontaneous	Significant positive effect (no adverse effect)	High	Moderate
New Career Paths	Positive	Moderate	Point-of-hire communities	Community	Continuous	Engaged individuals	Long-term	Spontaneous	Significant positive effect (no adverse effect)	High	Moderate

## 4.7 Mitigation and Monitoring Updates

Baffinland continues to pursue increased Inuit employment at the Project and has finalized an IHRS and IPCS with the QIA to this end. The IHRS and IPPS are key strategic documents that describe goals and initiatives that will be used by Baffinland to improve Inuit employment, training, and retention at the Project. The recently developed Q-STEP training program also contains several measures Baffinland will use to increase Inuit employment and skill levels moving forward.

Baffinland will continue tracking potential Project effects on livelihood and employment through its annual socio-economic monitoring program and IIBA implementation reports. This will include monitoring of LSA employment (e.g. hours of labour performed, Inuit employee promotions and turnover), employee origin, and LSA employee payroll amounts. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal.<sup>17</sup> However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

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<sup>17</sup> Appropriate community-level indicator data are currently unavailable for the topic of 'childcare availability and costs'. As such, this topic continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

<sup>18</sup> The following parameters have been used to assess the magnitude of Project effects on parenting: Low, negative (i.e. changes may be perceived in individual children, but do not change the dynamic of groups of children such as in a classroom or day care setting); Moderate, negative (i.e. changes lead to a noticeable change in dynamics of groups of children, but don't cause major concern); High, negative (i.e. changes lead to a noticeable change in dynamics of groups of children, and are a cause of major concern); Low, positive (i.e. changes may be perceived in individual children, but do not change the dynamic of groups of children such as in a classroom or day care setting); Moderate, positive (i.e. changes lead to a noticeable change in dynamics of groups of children); and High, positive (i.e. changes lead to a noticeable change in dynamics of groups of children, and are considered to be substantial).

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## 5 ECONOMIC DEVELOPMENT AND SELF-RELIANCE

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### 5.1 How Has the Economic Development and Self-Reliance Assessment Changed?

Consistent with the assessment of the Approved Project, a modified approach has been taken to assess the significance of the Phase 2 Proposal's effects on this VSEC. This approach involves considering the interactions between the Project and four key components of economic development and self-reliance: land, people, community economies, and territorial economy. Residual effects are not assessed, although the four components mentioned above are considered key indicators. Since several other VECs and VSECs all contribute to this valued component, this assessment is an integration of the effects assessments conducted for these other valued components. Project interactions on the VECs and VSECs that contribute to the economic development and self-reliance VSEC are described in detail elsewhere in the Addendum to the FEIS for the Phase 2 Proposal.

The overall direction of the effects of the Project on the economic development and self-reliance VSEC were assessed for the Approved Project to be positive and significant (Baffinland 2012 and 2013). The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will be sustained, and possibly enhanced as Baffinland looks to boost its efforts in a number of areas, including the recruitment and training of its Inuit workforce, and through further development of Inuit business and contracting opportunities. Overall, the Phase 2 Proposal assessment for the economic development and self-reliance VSEC has not changed from what was assessed for the Approved Project. More specifically:

- The nature and magnitude of effects are consistent with the FEIS and ERP Addendum;
- No new residual effects were identified; and
- Positive overall effects are predicted. No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 5.2 What We've Heard

Baffinland's community engagement program has documented the importance of increased economic development and self-reliance to Inuit. For example, LSA residents told us they wish to see new employment and business development opportunities in the region, and improved infrastructure and services in their communities. LSA residents have also highlighted the importance of maintaining a sustainable mixed economy, and many want opportunities for harvesting, land-use, and country food consumption to continue to exist.

Several challenges for increasing economic development and self-reliance have also been noted in the LSA. These include the remote location of LSA communities, high living costs, small markets, limited business capacity, and the presence of various social challenges. However, the Project is seen by many to provide opportunities that may increase economic development and self-reliance in the LSA. This can occur through the employment and business opportunities the Project provides, in addition to the community benefits it delivers through the Project's IIBA with QIA.

### 5.3 Background

Compared to the rest of Canada, LSA communities typically have small economies, limited business capacity, high rates of unemployment and social assistance, and face various other socio-economic challenges. While these challenges are more pronounced in the North Baffin LSA, Iqaluit also experiences these issues to some degree. However, the traditional economy

remains strong throughout the LSA and many community residents are active in harvesting and other land use activities. The Project has notable potential to provide economic development opportunities and increase Inuit self-reliance through the many employment, training, and business development opportunities it offers. The current operating Project positively affects economic development and self-reliance across the LSA, as confirmed through annual monitoring (Appendix B).

Previously assessed Project effects on economic development and self-reliance are described below. These are not 'residual' effects that underwent significance assessments like those conducted for other VECs and VSECs. As noted previously, an integrated assessment of other relevant Project residual effects was conducted instead. This considered how other VECs and VSECs interact and contribute to four main components of economic development and self-reliance: land, people, community economies, and territorial economy. These four components were initially identified in the FEIS from the *Nunavut Economic Development Strategy: Building a Foundation for the Future* document (The Sivummut Economic Development Strategy Group 2003) as being essential for economic development and self-reliance in Nunavut. These four components remain relevant today and are considered key indicators for the purposes of the effects assessment.

- **Land** - Project effects include increased use of land as described and assessed in the various VEC-related residual effects assessments, along with integrated effects on harvesting related to the land-based economy. The VEC residual effects are, by their nature, negative in direction. An integrated analysis of the combined effects of these VEC and VSEC interactions did not lead to an assessment of adverse effects generated by the Project on harvesting activities and, by extension, for the 'land' component.
- **People** - The Project was expected to provide a significant level of employment to residents of the LSA and have a significant beneficial effect on education and training. The Project will also interact with the level of demand for government services as well as with the ability of government to deliver services. Project interactions on human health and well-being were expected to be complex, with residual adverse effects being experienced amongst some households and positive residual outcomes being experienced in others. Although the potential for some adverse effects was acknowledged, positive overall effects were expected to be more prevalent. Considering these combined interactions, the Project was expected to have an overall significant, beneficial effect in terms of increased capacity and well-being on the 'people' component.
- **Community Economies** - A general increase in household wealth brought about by Project employment and local procurement was expected to enhance the success of community economic development initiatives. However, the regular absence from the community of rotational workers could adversely affect some local organizations and their capacity. While this effect was assessed to be not significant, it was acknowledged as a factor that may interact in a modest way with some organizational capacity. Another factor that could affect organizational capacity in an adverse direction was the anticipated out-migration of some residents. Planned mitigation to help to counter these effects included Baffinland contributions to the INPK fund intended for community support and capacity building, and the expected contribution the Project will have on Inuit and small business development. These contributions were expected to have positive residual effects on community economies. The combination of these effects was assessed to lead to a positive effect on communities by improving their ability to achieve their strategic community development objectives. The potential for a significant beneficial effect on community development exists, however confidence in such an outcome was only moderate. This was due to the complexity of community developmental processes and uncertainties related to Project interactions in areas such as business development and household allocation of time and resources. The positive impact, therefore, was conservatively assessed to be not significant.
- **Territorial Economy** - The Project was expected to make substantial contributions to the territorial economy in several ways, including implementation of the IIBA with QIA and the resource revenues that will flow to Inuit under

the terms of the Nunavut Agreement. The Project will also lead to a substantial increase in economic flows across the territorial economy, stemming from the Project's contributions to Nunavut's GDP, to employment across the territory, and to personal income. The introduction of a substantial new sector to the LSA economy — that of mining — will diversify economic opportunities available to communities of the region. This will be of particular importance given the narrow breadth of the existing economy and its reliance on the public sector for jobs and business opportunities. The long duration of the Project will provide enhanced opportunity for business and local labour force capacity development to occur, since this is a process that can take time. The combined contribution of these effects on 'territorial economy' was considered to be a positive effect. Given the magnitude of economic flows related to the Project, this positive effect was assessed to be significant.

The Project's overall positive effects on economic development and self-reliance were assessed for the Approved Project to be significant. Monitoring results and observations since Project development are consistent with these predictions although LSA employment is one area where Project activities have not fully met Approved Project predictions to-date. Baffinland continues to investigate ways in which Inuit employment can be enhanced and has taken proactive steps towards addressing this issue, as noted elsewhere in this document.

#### **5.4 Project Monitoring**

Recent information relevant to economic development and self-reliance is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included in Appendix B. As noted in Appendix B, monitoring indicators specific to economic development and self-reliance have not been developed, as adequate monitoring is already conducted through indicators developed for other VECs and VSECs. Monitoring to-date largely supports Approved Project predictions presented for these VECs and VSECs.

#### **5.5 Assessment Methodology**

The methods used to assess effects to economic development and self-reliance are consistent with the FEIS (Volume 4, Section 5). Comprehensive baseline information on economic development and self-reliance was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018). An Economic Impact Model (Appendix A) and Labour Market Analysis (TSD 26) were also prepared to support the assessment of the Phase 2 Proposal.

#### **5.6 Effects Assessment**

Consistent with previous assessments of the Approved Project, a modified approach has been taken to assess the significance of the Phase 2 Proposal's effects on this VSEC, which considers the interactions between the Project and four key indicators of economic development and self-reliance in Nunavut: land, people, community economies, and territorial economy. This is an integrated analysis of the results of other VEC and VSEC assessments, rather than new residual effects being identified and assessed for significance. A consideration of how the Project is expected to interact with each of the four key indicators then provides a basis for coming to an overall assessment conclusion for this VSEC.

The nature of the activities associated with the Phase 2 Proposal is such that positive overall effects on this VSEC will be sustained, and possibly enhanced as Baffinland looks to augment its Inuit employment and training efforts through the implementation of the IIBA and associated initiatives such as its IHRS, IPCS, and Q-STEP training program. No new effects will result from the Phase 2 Proposal, as no new impact pathways for economic development and self-reliance will be created.



The estimated workforce for the Phase 2 Proposal will be similar to the Approved Project, with the most distinguishing change in the workforce profile being the introduction of an additional short-term construction phase for the 12 Mtpa North Railway component. A small decrease in total person-years of employment (-12.9%) compared to the Approved Project will occur, although the operation phase of the Project remains unchanged at 21 years. Furthermore, several new contracting opportunities will be created and additional capital expenditures will be required during the construction of the 12 Mtpa operation. While these are expected to create some additional opportunities for economic development and self-reliance, they do not change the previous assessment conclusions; overall, significant positive effects are still predicted.

Phase 2 Proposal interactions with four key indicators related to the economic development and self-reliance VSEC are summarized in Table 5.1 and discussed more fully in Sections 5.6.1 to 5.6.4. While these sections have been updated where appropriate, the replication of key conclusions presented previously by Baffinland (2012, 2013) reflect the fact that overall assessment outcomes remain the same.

**Table 5.1 Phase 2 Proposal Interactions with Key Indicators for Economic Development and Self-Reliance**

Project Infrastructure or Activity	Land	People	Community Economies	Territorial Economy
Project-Wide Changes				
Additional capital expenditure from construction of the 12 Mtpa operation	1	1	1	1
Additional contracting opportunities (additional capex phase)	1	1	1	1
Additional employment opportunities (additional capex phase)	1	1	1	1

**NOTES:**

- Interactions are rated as follows:
  - 0 - No interaction.
  - 1 - Minor interaction post-mitigation, discussion assessment.
  - 2 - Major interaction subject to detailed assessment.

### 5.6.1 Land

Phase 2 Proposal effects on the land component of this VSEC are addressed in biophysical VEC assessments. No significant adverse effects were identified for any of the VECs assessed for the Phase 2 Proposal. Project effects on resources and land use are addressed in Section 9 of this TSD, and are acknowledged to potentially affect harvesting activities in a non-significant manner. The complex interactions between these multiple Project interactions and Inuit participation in land-based livelihoods and harvesting were then addressed in Section 4.6.4 of this TSD. An integrated analysis of the combined effects of the range of VEC and VSEC interactions that may occur did not lead to an assessment of adverse effects generated by the Project on harvesting activities. In fact, the potential for positive outcomes was assessed to be equally or more highly anticipated than the potential for adverse outcomes. As such, no significant adverse effects on the 'land' component of this VSEC are predicted.

### 5.6.2 People

The Project is expected to provide a significant level of employment to residents of the LSA (Section 4). Given the young population profile of the region, much of this employment is expected to be taken up by young adults over 18 years of age. The Project is also assessed to have a significant positive effect on the education and training VSEC (Section 3), through pre-employment and on-the job training provided to LSA residents, in addition to opportunities provided for career advancement.

The Project is expected to interact both with the level of demand for public services as well as with the ability of government to deliver services (Section 7). As a private corporation, Baffinland will not take on responsibilities to deliver government-like services related to basic areas. Nonetheless, employee and family assistance support in areas of personal counselling and financial management may serve to assist households engaged in the Project. Contributions to the INPK community fund may also serve to address some basic service needs at the community level. The effect of the Project on the human health and well-being dimension of economic development and self-reliance is addressed in Section 6. The interactions are expected to be complex, with residual adverse effects being experienced amongst some households and positive residual outcomes being experienced in others. Although the potential for some adverse effects is acknowledged, positive overall effects are expected to be more prevalent. Considering the combined interactions in this area, the Project is expected to have an overall significant, beneficial effect in terms of increased capacity and well-being on the 'people' component of this VSEC.

### 5.6.3 Community Economies

A general increase in household wealth brought about by Project employment and local procurement is expected to enhance the success of community economic development initiatives. Local development will be easier to achieve when there is more local wealth to support local businesses or to apply toward self-employment initiatives (Sections 4 and 8). The regular absence from the community of local workers on rotation may adversely affect some local organizations and their capacity (Section 7). While this effect is assessed to be not significant, it is a factor that may interact in a modest way with some organizational capacity. Another factor that may affect organizational capacity in an adverse direction is the anticipated out-migration of some LSA residents (Section 2). Mitigation to help counter these effects includes establishing points-of-hire in each of the LSA communities, and Baffinland contributions to funds intended for community support and capacity building. The INPK community wellness fund, Business Capacity and Start Up Fund, and Education and Training Fund are described in Section 1, with the terms of Baffinland's participation described in the IIBA. Increases in Inuit employment and training, as envisioned through implementation of the IHRS and Q-STEP training program will also enhance positive outcomes for community economies.

Likewise, the Project is expected to make significant positive contributions to Inuit and small business development (Section 8). The provisions of the IIBA as well as the IPCS, contain measures to encourage the participation of Designated Inuit Firms in Project contracting and procurement opportunities. Finally, monitoring initiatives will contribute to an understanding of the progress that is made in employment, education and training, and procurement from the Inuit business community. This information will help build the knowledge base available to communities through bodies such as the QSEMC and the SEMWG. This knowledge is crucial to supporting ongoing and responsive community economic development planning processes. The combination of these effects is assessed to lead to a positive effect on community economies by improving their ability to achieve their strategic community development objectives. There is potential for a significant beneficial effect on community economies; however, confidence in such an outcome is only moderate. This is due to the complexity of community developmental processes and uncertainties related to Project interactions in areas such as business development and household allocation of time and resources. This positive impact is, therefore, conservatively assessed to be not significant.

### 5.6.4 Territorial Economy

The Phase 2 Proposal will contribute substantially to the territorial economy and towards achieving the objectives of the Nunavut Agreement. This will occur through ongoing implementation of the IIBA signed with QIA in addition to the resource revenues that will continue to flow to Inuit under the terms of the Nunavut Agreement. The Project will also lead to a substantial increase in economic flows across the territorial economy. Sections 4 and 8 discuss some of the benefits that will be provided by the Phase 2 Proposal in Nunavut. The revised Economic Impact Model (Appendix A) further summarizes the Phase 2 Proposal's contributions to Nunavut's GDP, to employment across the territory, and revenues generated for the

Government of Nunavut, Government of Canada, and Inuit associations in Nunavut. The following highlights from the Economic Impact Model give a sense of the Project's substantial expected contributions:

- Total Canadian expenditures by Baffinland could reach \$19.8 billion, which includes approximately \$4.7 billion that will be spent in Nunavut. These values include expenditures associated with the construction and operation of the Project, wages and salaries, and taxes and royalties.
- Total Gross Domestic Product (GDP) that could be generated in the Nunavut economy is estimated at \$19.3 billion. The average annual GDP generated by the Project (over a 24 year period) could amount to \$0.8 billion. This represents 32.9% of the 2015 territorial GDP. The total GDP that could be generated in the Canadian economy is estimated at \$30.7 billion.
- 16,221 total Full-Time Equivalent (FTE) positions will be generated in Nunavut (including direct, indirect, and induced effects). Likewise, 136,745 total FTEs will be generated in Canada.
- Revenues generated for the Government of Nunavut by the Project could total \$680 million, which includes payroll tax, fuel tax, corporate income tax, and other fiscal revenues. Fiscal revenues for the Nunavut government will average \$28.3 million per year (over a 24 year period), which represents an increase of 26.1% of the government's estimated fiscal revenues for 2016-2017 (i.e. \$108.5 million).
- Revenues for Nunavut Inuit organizations could total \$2.0 billion. This includes federal mineral royalties, IIBA mineral royalties, lease payments for the use of Inuit Owned Land (IOL), IIBA fund contributions and administrative expenses, and aggregate royalties.
- Revenues generated for the Federal Government by the Project could total \$1.7 billion, which includes fuel tax, aggregate royalties, corporate income tax, and other fiscal revenues.
- The Project will likely have a significant positive impact on territorial exports and the territorial balance of trade. The average \$1.1 billion generated by the Project in additional exports annually (over a 24 year period) could more than double the value of existing exports (\$937.0 million in 2015). The impact on the balance of trade would also be noteworthy with the Project potentially reducing, on average, the annual territorial deficit by 63.0%.

Mining is a relatively new sector of the LSA economy and the Phase 2 Proposal will sustain the opportunities for economic diversification it has created. This is of particular importance given the narrow breadth of the existing economy and its reliance on the public sector for existing jobs and business opportunities. A key challenge for Nunavut will be to capture these increased economic flows and newly created jobs into the economies of LSA and RSA communities. This will require development of business and local labour force capacity. The beneficial effects of the Project on the 'people' component of this VSEC will help in achieving this objective. The long duration of the Project also provides enhanced opportunity for this capacity development to occur, since this is a process that will take time. The combined contribution of these effects on the 'territorial economy' component of this VSEC is considered to be a positive effect. Given the magnitude of economic flows related to the Phase 2 Proposal, this positive effect is assessed to be significant.

### 5.6.5 Discussion of Other Economic Development and Self-Reliance Topics

Several EIS Guidelines specific to the economic development and self-reliance VSEC were identified by NIRB in the Amended EIS Guidelines. A summary of how the Phase 2 Proposal interacts with each of these guidelines is provided in Table 5.2.

**Table 5.2 EIS Guideline Summaries - Economic Development and Self-Reliance**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
Positive and negative impact on the local economy from regional level and community level	Positive effects on the local economy will be sustained during the Phase 2 Proposal, including the creation of LSA employment and business opportunities (Sections 4 and 8), training and skills development for LSA residents (Section 3), and an expanded market for consumer goods and services in the LSA (Section 8). Successful implementation of employment, training, and business development provisions in the IIBA, through initiatives such as the IHRS, IPCS, and Q-STEP training program, may enhance outcomes in these areas. Baffinland will also continue making local contributions through various IIBA funds (e.g. INPK Fund, Business Capacity and Start-Up Fund, Education and Training Fund). Positive impacts on the territorial economy will be significant and are described in the revised Economic Impact Model (Appendix A). As noted previously, total GDP that could be generated in the Nunavut economy is estimated at \$19.3 billion, with some 16,221 total Full-Time Equivalent (FTE) positions also being generated in Nunavut (including direct, indirect, and induced effects). Revenues generated for the Government of Nunavut by the Project could total \$680 million, while revenues generated for Nunavut Inuit organizations could total \$2.0 billion. Negative economic impacts on LSA communities will be limited, but include competition for labour with some existing organizations and businesses (Sections 4.6.4 and 7.6.1), in addition to some implications for traditional economic activities (Section 5.6.5) and harvesting livelihoods (Section 4.6.4). Closure-related impacts on local businesses and Project employees have also been identified (Sections 2.6.2, 5.6.5, and 8.6.3). Negative economic impacts from the Phase 2 Proposal at the territorial level have not been identified, although eventual closure of the Project will result in the loss of the substantial economic benefits it generates (Section 5.6.5).
Stimulation to local businesses which developed for the Project and depend on the operation of the Project	Positive effects on local businesses will be sustained under the Phase 2 Proposal and include new business opportunities and an expanded market for consumer goods and services (Section 8). Several new contract packages will be created that are specific to the Phase 2 Proposal, in addition to contract packages that are renewals and/or extensions of existing operations contracts (Section 8.6.3). IIBA commitments that support preferential access to Project opportunities by Inuit business, and the implementation of Baffinland's IPCS will further enhance outcomes for LSA residents in this area. Baffinland will also continue supporting the Business Capacity and Start Up Fund in accordance with the provisions of the IIBA to further stimulate business activity in the region.
Potential impact on the traditional economic activities including hunting, fishing and sport hunting /guiding, etc. due to year-round shipping out of Milne Inlet	The potential for the Phase 2 Proposal to interact with traditional economic activities is recognized. Effects on harvesting may arise from changes to Inuit livelihoods associated with Project employment, from Project effects on land use or wildlife, or from combinations of these effects (Section 4.6.4). However, a significant adverse effect on Inuit harvesting is considered unlikely.  The Community Workshops Report (TSD 03) confirms some sport/commercial hunting activities occur in the Milne Inlet/Eclipse Sound area from March to May, with April being the period of peak activity. Baffinland is not proposing to ship during months when sport hunting typically occurs in the Milne Inlet/Eclipse Sound area and therefore, the Phase 2 Proposal is not expected to interact with these activities. Likewise, no commercial-scale fishing operations have been identified by Baffinland in the Eclipse Sound/Milne Inlet area and no interactions with the Phase 2 Proposal are expected. The Project will continue to support participation in harvesting and other traditional economic activities in a positive manner, by providing meaningful incomes that can support the purchase of costly equipment and supplies. Income generated through Project employment and business opportunities may also be used to support new business start-ups or to expand existing businesses in this area (e.g. commercial fisheries establishment).
Potential impact on the tourism from mine development which impairs the 'wilderness experience' of tourism in the Project region due to year-round shipping out of Milne Inlet	The Phase 2 Proposal may create some additional disruptions to the wilderness experience of local tourists beyond those assessed for the Approved Project. These will be due to the increased number of shipping transits that will occur through the Northern Shipping Route during the open-water season. Up to 140 marine vessels per year will call on Milne Port, which is equal to 280 transits through the Milne Inlet/Eclipse Sound area.

**Table 5.2 EIS Guideline Summaries - Economic Development and Self-Reliance**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	<p>This shipping traffic will occur outside the boundaries of Sirmilik National Park but within the boundaries of the Tallurutiup Imanga/Lancaster Sound National Marine Conservation Area. Several tourism businesses currently operate in the Milne Inlet/Eclipse Sound area during the open water season (see Nunavut Tourism 2017a; 2017b), with most of this activity focusing on water-based adventure tourism (e.g. sea kayaking) and cruise ship tourism. The Community Workshops Report (TSD 03) notes sea kayaking tourists can be present in the Milne Inlet/Eclipse Sound area between late July and the end of September, with late July to the end of August being the most popular period. There are two key locations where this activity occurs: Milne Inlet and an area to the northeast of Milne Inlet. Koluktoo Bay in Milne Inlet, more specifically, has previously been identified as a prime viewing area for narwhal.</p> <p>Cruise ships and sailboats are also present in the Milne Inlet/Eclipse Sound area between late July and the end of September, with early August to mid-September being the most popular period (TSD 03 – Community Workshops Report). The Government of Nunavut’s (2017) <i>Master Nunavut Cruise Ship Itinerary 2017</i> notes 13 cruise ships were scheduled to call on the community of Pond Inlet between July 28, 2017 and September 16, 2017, with an estimated 2,979 passengers. Individuals are likely to perceive Project ships negatively and as a detraction from their wilderness experience, however, these disruptions will continue to be infrequent, effects will be constrained to a limited number of individuals, and be limited in temporal and geographic extent. Interactions are expected to be primarily visual in nature, and occur along the shipping route, at anchor locations, or at Milne Port itself. When these and other considerations are taken into account, overall effects are expected to be minor.</p> <p>The Phase 2 Proposal will extend the open water shipping season currently being used for the Approved Project (i.e. mid-July to October). More specifically, the shipping season will be extended into early ice conditions (when the late spring ice is unsafe for Inuit travel, as early as July 1) and into the ice formation period (up to when the landfast ice is being used by Inuit, approximately mid-November). The Community Workshops Report (TSD 03) does not identify any major tourism activities that occur during the ice shoulder seasons in the Milne Inlet/Eclipse Sound area. As such, the Phase 2 Proposal’s extended shipping season is not expected to interact with tourism activity in the Milne Inlet/Eclipse Sound area. Year-round shipping is no longer proposed as part of the Phase 2 Proposal.</p> <p>The Project’s air traffic consists of Jet (Boeing 737) flights from Montreal via Iqaluit (approximately 225 flights per year), and 19-seater Dornier flights between the site and the North Baffin direct hire communities (approximately 315 flights per year). The jet flights operate two to three times per week, and the community flights visit each community approximately once a week. Together these flights result in semi-daily community flights to site each week. In addition, one helicopter is normally stationed at site seasonally to support regional mineral exploration and environmental monitoring programs.</p> <p>During the first two stages of Phase 2 Proposal (construction and operation of the North Railway), the present arrangement will continue with increased flights. No modifications to the existing airstrip at the Mine Site will be necessary. During South Railway construction period, the Steensby airstrip will be constructed (Baffinland 2012). In addition, temporary airstrips will be used along the South Railway during its construction, as described in the FEIS.</p>
Potential impacts related to accessibility and existence of barriers for traveling, fishing, hunting/trapping and other activities by surrounding communities as a result of construction and operation of	<p>The North Railway will follow the existing Tote Road alignment to the extent possible. The Phillip’s Creek valley, as well as the Tugaat River to the northeast, are important routes for hunters accessing the inland for hunting and for travel between Pond Inlet and Igloolik and Hall Beach. Snowmobiles are generally used on these routes. Snowmobile crossings will be possible at most but not all locations along the North Railway during snow cover. As part of Baffinland’s Hunter and Visitor Access Procedure unescorted travel along the Tote Road is prohibited at all times. Travellers are provided with transport by Project personnel along the road, and this practice will</p>

**Table 5.2 EIS Guideline Summaries - Economic Development and Self-Reliance**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
railway including year-round shipping out of Milne Inlet	continue during the construction and operation of the North Rail. Year-round shipping is no longer proposed as part of the Phase 2 Proposal.
Potential impacts on local harvesting activities both in freezing water seasons by shipping on shipping routes, and interference with offshore fisheries/boating in open water season at both Milne Inlet and Steensby Inlet, as well as on shipping routes	Community boating (for travel and marine harvesting) will interact with Project shipping activities. During the open water season, seal and narwhal commonly are harvested along the northern shipping route by Pond Inlet residents. The passing of ore carriers and sealifts has the potential to affect the safety of boaters and impede their harvesting efforts (Section 9.7). Under PC Condition No. 164, Baffinland is responsible to inform communities of planned shipping transits. The location of vessels is provided on Baffinland's website and can be viewed at anytime. With respect to harvesting, the Wildlife Compensation Fund (WCF) provides compensation for potential harvest losses that occur as a result of Project activity.
Disruption of on ice travel routes caused by year-round shipping through land fast ice and including dangers to ice users created by both the track itself and new cracks, which is created in unpredictable places radiating from, or even distant from the track, resulting from winds and currents on the adjacent ice	Year-round shipping is no longer proposed as part of the Phase 2 Proposal. As such disruption of ice travel routes by Project activities will not occur.
Potential impacts on local and regional economy due to temporary closure, final closure	Closure impacts of the Phase 2 Proposal are similar to the Approved Project and include loss of LSA employment opportunities, training and skills development opportunities for LSA residents, and Project-related business opportunities. Likewise, GDP from the Project will cease to be generated as will Project revenues for the territorial and federal governments, and Nunavut Inuit associations (these effects have been summarized in Sections 2.6.2, 5.6.5, and 8.6.3). Community donations and relevant IIBA fund contributions would also cease. In response to Project Certificate Condition No. 149, a further evaluation of the socio-economic effects of mine closure was completed by Baffinland following the FEIS Final Hearing (FHW Consulting 2014). FHW Consulting (2014) describes how Baffinland would engage the Government of Nunavut to establish a Labour Market Partnership and joint Labour Adjustment Committee to deal with workforce adjustment issues in the event of mine closure. FHW Consulting (2014) also describes social and economic impacts of mine closure on employees and contractors, and includes a discussion of Employment Insurance (EI) benefits that would be available. Individual employment skills and experience that are gained, and business capacity that is developed as a result of the Project, are expected to ease the transition associated with mine closure. The QIA has additionally established a Legacy Fund and a Benefits Fund that are designed to provide long-term benefits to residents of the Qikiqtaaluk Region. The Project will make substantial contributions to these funds over time.



### 5.6.6 Significance of Residual Economic Development and Self-Reliance Effects

As noted above, four key indicators were carried forward and assessed for the Phase 2 Proposal. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for economic development and self-reliance will be created. More specifically, the Phase 2 Proposal will not introduce any new activities that change the previously assessed effects to economic development and self-reliance, although positive effects in some areas may be enhanced. The additional short-term construction phase for the 12 Mtpa North Railway component, additional capital expenditure associated with this construction phase, and new employment opportunities (but small reduction in overall employment) will generate additional benefits, but are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same as those presented for the Approved Project. That is, the effects are still assessed to be positive and significant.

A significance table is not included for this VSEC. As noted previously, the assessment of this VSEC was integrative in nature. It relied primarily on the conclusions of other VEC and VSEC residual effect assessments to understand the Phase 2 Proposal's interactions on economic development and self-reliance. Specific residual effects were not identified or assessed for this VSEC. Rather, overall assessments of the key indicators 'land', 'people', 'community economy', and 'territorial economy' were conducted and conclusions were drawn based on this integrated analysis.

The overall direction of the Phase 2 Proposal's effects on the economic development and self-reliance VSEC has been assessed, with a high level of confidence, to be positive. Similar to previous assessments of the Approved Project, direct and indirect economic expansion associated with the Project will create new opportunities for employment and business across the RSA, and particularly within the LSA. The Project will also enhance labour force capacity and increase Inuit business capacity. The assessment of Project interactions on land and land use dimensions of this VSEC suggest that these effects will be multi-dimensional, although no significant adverse effects on the underlying VECs have been assessed. An integrated analysis of the combined effects of the Project did not lead to an assessment of adverse effects on harvesting, and suggested the potential for beneficial outcomes was equally or more highly anticipated than the potential for adverse outcomes. Considering the Project's interactions with these multiple dimensions related to economic development and self-reliance, the overall effects are assessed to be positive and significant.

### 5.7 Mitigation and Monitoring Updates

Baffinland will continue tracking indicators relevant to economic development and self-reliance through its annual socio-economic monitoring program. This will occur primarily through the monitoring of indicators developed for other VECs and VSECs. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.



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## 6 HUMAN HEALTH AND WELL-BEING

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### 6.1 How Has the Human Health and Well-Being Assessment Changed?

The Approved Project was assessed to have both positive and non-significant adverse effects on LSA communities with respect to three key indicators for human health and well-being. These included variable effects for the key indicators ‘well-being of children’ (which includes the residual effects ‘changes in parenting’ and ‘increased household income and food security’) and ‘substance abuse’ (which includes the residual effects ‘transport of substances through Project sites’, ‘affordability of substances’, and ‘attitudes toward substances and addictions’). Non-significant adverse effects were predicted for the key indicator ‘community social stability’ (which includes the residual effect ‘absence from the community during work rotation’) (Baffinland 2012 and 2013). These effects were anticipated to arise primarily from Project employment opportunities; more specifically, the new incomes it brings and challenges fly-in/fly-out employment can present. These effects are currently being monitored and are consistent with original predictions (Appendix B).

The nature of the activities associated with the Phase 2 Proposal are such that these effects are likely to continue, but not increase beyond originally predicted thresholds. Employment levels (which are a key driver of these effects) and mitigation will be similar to the Approved Project and additional effects are not anticipated. While Inuit employment levels have the potential to increase over the long-term (e.g. through new employment-related commitments and implementation of Baffinland’s new IHRS), this also is not expected to influence the original assessment outcomes. Other minor changes to what was previously assessed for the Approved Project are described elsewhere in this section.

Overall, the Phase 2 Proposal’s assessment of human health and well-being has not changed from what was assessed for the Approved Project. More specifically:

- The nature and magnitude of effects are consistent with the FEIS and ERP Addendum;
- No new residual effects were identified; and
- No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 6.2 What We’ve Heard

Approximately 8% of comments recorded over the past two years of engagement on the Phase 2 Proposal were related to the human health and well-being VSEC (66 comments out of 865). Six topic categories have been identified under the human health and well-being VSEC based on feedback received during engagement activities.

The majority of comments received fall under the topic of workplace culture. The comments received under this topic included those pertaining to availability of country foods, Inuit cultural awareness by southern employees, discrimination at the mine site toward Inuit, accommodations at the mine site, and counselling services available to employees.

All comments, concerns, and requests for community benefits are documented and considered. Several of the topics discussed above are reviewed in Section 6.6.

Baffinland has been told that human health and well-being in the LSA is influenced by a complex set of factors, including physical, mental, spiritual, and cultural components. Improvements to various human health and community well-being indicators are also desired in the LSA, and concerns have been raised over the poor health status of many Nunavummiut

when compared to other Canadians. Inuit community members and stakeholders have similarly noted the Project may affect health and community well-being in positive and negative ways. For example, the Inuit worker experience study (Appendix E) discusses some of the benefits Project employment has had on health and well-being in the LSA and the positive work environment that has been created. Appendix E also notes relationship issues have arisen for some employees, but that some relationships have become stronger because of the Project. Effective communication was noted to be particularly important to successful relationship outcomes. Likewise, the topics of country food and food security have also been raised through community engagement and during community workshops held by Baffinland on the Phase 2 Proposal (TSD 03 – Community Workshops Report).

### 6.3 Background

Compared to the rest of Canada, communities in Nunavut typically experience various human health deficits, reduced longevity, and various other socio-economic challenges. While basic health services are provided in all LSA communities, the remote location and small populations of these communities have been limiting factors in their further expansion (Iqaluit is an exception and has more developed infrastructure and services). The current operating Project has had varied effects on human health and well-being across the LSA (Appendix B). Previously assessed Project residual effects on human health and well-being are described below.

- **Changes in parenting** - Baffinland predicted the Project would have a positive effect on parenting (particularly as it applies to well-being of children) in the LSA communities (e.g. from increased confidence and financial independence gained through employment, improved mental well-being from having a job and income). Baffinland also predicted the Project could have some negative effects on parenting, but these would be of a non-significant nature. Associated mitigation measures include a predictable rotational schedule, local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. to familiarize workers and their families with the fly-in/fly-out lifestyle), implementation of an Employee and Family Assistance Program (EFAP) for permanent employees and their dependents, and contributions to the INPK fund through the IIBA with QIA (which is solely administered by the QIA and provides up to \$750,000.00/year for projects in the Qikiqtaaluk Region which enhance community wellness).
- **Household income and food security** - Baffinland predicted the Project would have a positive effect on increased household income and food security (particularly as they apply to well-being of children) in the LSA. Associated mitigation measures include the provision of meaningful local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. which has included a financial management module), and contributions to the INPK fund through the IIBA with QIA.
- **Transport of substances through Project site** - Baffinland predicted the Project could increase availability of substances such as alcohol and illegal drugs in the North Baffin LSA due to their possible transportation through Project sites. Associated mitigation measures include a no drugs/no alcohol policy on site and baggage searches for all employees and contractors arriving at site.
- **Affordability of substances** - Baffinland predicted increased income from employment at the Project could increase the ability of LSA residents to afford substances such as alcohol and illegal drugs. Associated mitigation measures include a no drugs/no alcohol policy and baggage searches for all employees and contractors arriving at site. Baffinland has also implemented an EFAP and contributes to the INPK community wellness fund through its IIBA with QIA.

- **Attitudes towards substances and addictions** - Baffinland predicted the Project could improve attitudes toward substances and addictions in the LSA (i.e. by providing positive incentives for individuals to reduce substance abuse). Associated mitigation measures include a no drugs/no alcohol policy and baggage searches for all employees and contractors arriving at site. Baffinland also implemented an EFAP and contributes to the INPK community wellness fund through its IIBA with QIA.
- **Absence from the community during work rotation** - Baffinland predicted the absence of workers from communities during their work rotations may lead to some moderate adverse effects on community processes (e.g. local coaching, politics, and social organizations) in the LSA. However, it was also predicted that organizations and activities would be able to adapt and carry on their functions in light of these effects. Associated mitigation measures include a short (two week in / two week out) rotation that allows employees to spend considerable time in their home communities. Baffinland also contributes to the INPK community wellness fund through its IIBA with QIA.

The effects to human health and well-being were assessed for the Approved Project to be varied. All potential adverse effects were identified to be non-significant (Baffinland 2012 and 2013) and some positive effects were identified. Monitoring results and observations since Project development are consistent with these predictions, as described in Section 6.4 and following sections.

## 6.4 Project Monitoring

Recent human health and well-being information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included in Appendix B. Related to human health and well-being, Baffinland monitors the following socio-economic indicators or topics (based on available data):

- Total number of youth charged;
- Proportion of taxfilers with employment income and median employment income;
- Percentage of population receiving social assistance;
- Number of drug and alcohol related contraband infractions at Project sites;
- Number of impaired driving violations;
- Number of drug violations;
- Absence from the community during work rotation;
- Prevalence of gambling issues;
- Prevalence of family violence;
- Prevalence of marital problems;
- Percent of health centre visits related to infectious diseases;
- Rates of teenage pregnancy;
- Crime rate;
- Total number of health centre visits in the LSA and RSA;
- Per capita number of health centre visits in the LSA and RSA;

- Number of visits to Project site medic;
- Number of times Baffinland's EFAP is accessed;

Quantitative data are obtained from government statistics (e.g. Nunavut Bureau of Statistics and Statistics Canada) and Company records, while qualitative information is obtained through the QSEMC process and Baffinland's community engagement program. Annual socio-economic monitoring also reports on trends since Project development. A report on the experience of Inuit employed at the Project over the first three years of mine development was also prepared to support the assessment of the Phase 2 Proposal (Appendix E).

Indications of positive effects in several areas have been noted through monitoring. There is no available monitoring data to suggest adverse residual effects to human health and well-being are occurring beyond the extent predicted during the assessment of the Approved Project (Appendix B). However, Baffinland acknowledges there is minimal post-development data currently available and that human health and well-being issues can be influenced by many socio-economic factors. Direct correlations between the Project and these issues, if any, may only come to light with the analysis of additional annual data.

Baffinland's monitoring of government health and well-being statistics has revealed several trends in the LSA communities (see Appendix B for additional details). While there have been decreasing trends in the number of youth charged in the North Baffin LSA and Iqaluit in the post-development period (2013 onwards); these trends were also evident in the pre-development period (i.e. the five-year period preceding Project construction; 2008 to 2012). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends (see Statistics Canada 2017a).

There have also been decreasing trends in the proportion of taxfilers with employment income in the North Baffin LSA and Iqaluit in the post-development period. However, a decreasing trend was also noted prior to Project development in the North Baffin LSA. While Iqaluit went from no change (during the pre-development period) to a decreasing trend (during the post-development period), a comparable situation was also noted across Nunavut. This implies factors other than the Project are likely driving these trends (see Nunavut Bureau of Statistics 2017c). Likewise, while there have been increasing trends in median employment income in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which again implies factors other than the Project are likely driving these trends (see Nunavut Bureau of Statistics 2017c).

Similarly, while there have been decreasing trends in the percentage of the population receiving social assistance in the post-development period in the North Baffin LSA and Iqaluit, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends (see Nunavut Bureau of Statistics 2014).

The number of impaired driving and drug violations in the LSA provides some insight into whether rates of alcohol and drug abuse are changing. While there have been increasing trends in the number of impaired driving and drug violations in the North Baffin LSA in the post-development period, these trends were also evident prior to Project development. Conversely, there have been decreasing trends in these indicators in Iqaluit in the post-development period, which were not evident prior to Project development (they were previously increasing). A comparable situation has been noted across Nunavut. Reasons for the lack of similar trend reversals in the North Baffin LSA are currently unknown (see Nunavut Bureau of Statistics 2017d).

Baffinland also monitors potential indirect effects of the Project on human health and well-being through its annual socio-economic monitoring program. This includes monitoring the topics of substance abuse, family violence, sexually transmitted

infections and other communicable diseases, and gambling, in addition to other topics requested through the Project Certificate (e.g. marital problems, rates of teenage pregnancy, high school completion rates, crime rates). Appropriate indicator data (i.e. annual community-level government statistics) are available for some of these topics. Where appropriate community-level indicator data are unavailable in certain areas (i.e. government statistics may either be unavailable, only be available at a territorial scale rather than a community scale, or not produced every year - e.g. census data), these topics continue to be tracked through the QSEMC process and Baffinland's community engagement program. In this case, concerns and other issues raised during these forums are identified in the socio-economic monitoring report.

Table 6.1 summarizes monitoring results related to potential direct and indirect effects of the Project on human health and well-being; more detailed results and analyses are presented in Appendix B. Other monitoring data collected by Baffinland relevant to the human health and well-being VSEC is reviewed more fully in the appropriate sections below.

**Table 6.1     Summary of Monitoring Results Related to Potential Effects on Human Health and Well-Being**

Indicator(s)	Pre-Development Trend	Post-Development Trend	Trend Since Previous Year	Scale	Summary
Number of youth charged	↓ ↓	↓ ↓	↓ ↑	North Baffin LSA Iqaluit	A decreasing post-development trend in the number of youth charged is apparent in the LSA and was evident prior to the Project
Proportion of taxfilers with employment income	↓ No change	↓ ↓	No change ↑	North Baffin LSA Iqaluit	A decreasing post-development trend in the proportion of taxfilers with employment income is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is also apparent in Iqaluit, after experiencing no change prior to the Project.
Median employment income	↑ ↑	↑ ↑	↓ ↑	North Baffin LSA Iqaluit	An increasing post-development trend in median employment income is apparent in the LSA and was evident prior to the Project.
Percentage of the population receiving social assistance	↓ ↓	↓ ↓	↑ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percentage of the population receiving social assistance is apparent in the LSA and was evident prior to the Project
Number of drug and alcohol related contraband infractions at Project sites	Not applicable	↑	↑	Project	There were 15 drug and alcohol related contraband infractions at Project sites in 2017
Number of impaired driving violations	↑ ↑	↑ ↓	↑ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of impaired driving violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
Number of drug violations	↑ ↑	↑ ↓	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of drug violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
Absence from the community during work rotation	Not available	Not available	Not available	Project	These topics continue to be tracked through the QSEMC process and Baffinland’s community engagement program
Prevalence of gambling issues					
Prevalence of family violence					
Prevalence of marital problems					
Rates of teenage pregnancy					
Percent of health centre visits related to infectious diseases	↓ ↓	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percent of health centre visits related to infectious diseases is apparent in the LSA and was evident prior to the Project
Number of secondary school graduates	↑ ↑	↓ ↓	↑ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in graduation numbers is apparent in the LSA, which was not evident prior to the Project
Secondary school graduation rate	↑	↓	↑	Region	A decreasing post-development trend in graduation rates is apparent in the region, which was not evident prior to the Project
Crime rate	↑ ↑	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in crime rates is apparent in the LSA, which was not evident prior to the Project
Number of times Baffinland’s EFAP is accessed	Not applicable	↑	↑	Project	The EFAP was accessed 38 times in 2017; 12 of these were by Nunavummiut
Number of health centre visits (total)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the total number of health centre visits is apparent in the LSA and was evident prior to the Project

Table 6.1 Summary of Monitoring Results Related to Potential Effects on Human Health and Well-Being

Indicator(s)	Pre-Development Trend	Post-Development Trend	Trend Since Previous Year	Scale	Summary
Number of health centre visits (per capita)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the per capita number of health centre visits is apparent in the LSA and was evident prior to the Project
Number of visits to Project site medic	Not applicable	↑	↑	Project	There were 6,337 visits to the Project site medic in 2017; 1,193 of these were by Inuit

**Guide to Using the Table:**  
*Indicator(s):* Indicators are an important aspect of socio-economic monitoring. Indicators are metrics used to measure and report on the condition and trend of a VSEC.  
*Trend:* Refers to whether an indicator has exhibited change and describes the direction of that change. Black arrows (↑↓) indicate the direction of change that has occurred. Where there is no discernable or significant change ‘No change’ is used. Where there are insufficient data or other issues preventing a trend analysis, ‘Not applicable’ or ‘Not available’ are used. ‘Pre-development trend’ refers to the five-year period preceding Project construction (i.e. 2008 to 2012). In some cases, averaged data from this period have been compared against averaged data from previous years (i.e. 2003-2007, where available) to determine a trend. ‘Post-development trend’ refers to the period after Project construction commenced (i.e. 2013 onwards). Averaged data from this period may have also been compared against averaged data from the pre-development period to determine a trend. ‘Trend since previous year’ refers to the two most recent years in which indicator data are available.  
*Scale:* ‘Region’ refers to data that are available for the Qikiqtaaluk Region. ‘North Baffin LSA’ refers to data that are available for the North Baffin Local Study Area communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet. ‘Project’ refers to data that are available for the Mary River Project.  
*Summary:* A brief description of the trend and/or related data.



## 6.5 Assessment Methodology

The methods used to assess effects to human health and well-being are consistent with the FEIS (Volume 4, Section 6). Comprehensive baseline information on human health and well-being was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018) and updated baseline information provided in Appendix C. A report on the experience of Inuit residents employed at the Project over the first three years of mine development (Appendix E; BDSI, 2016) and on community workshops held by Baffinland for the Phase 2 Proposal (TSD 03 – Community Workshops Report) were also prepared to support the assessment of the Phase 2 Proposal.

## 6.6 Effects Assessment

Baffinland predicted six residual effects associated with the human health and well-being VSEC would occur due to the Approved Project. These include ‘changes in parenting’ and ‘increased household income and food security’ (which together fall under the key indicator ‘well-being of children’); ‘transport of substances through Project site’, ‘affordability of substances’, and ‘attitudes toward substances and addictions’ (which together fall under the key indicator ‘substance abuse’), and ‘absence from the community during work rotation’ (which falls under the key indicator ‘community social stability’). These were assessed primarily due to concerns raised about the potential for Project employment to influence human health and well-being in these areas in the LSA. In other words, Project employment may have positive effects on household financial independence and personal well-being, but incomes from Project employment can also be spent unwisely and some Project activities have the potential for adverse human health effects. These existing impact pathways are expected to remain in place for the Phase 2 Proposal. However, no new residual effects will result from the Phase 2 Proposal, as no new impact pathways for human health and well-being will be created.

The estimated workforce for the Phase 2 Proposal is expected to be similar to the Approved Project workforce, although a small decrease in total person-years of employment (-12.9%) will occur. The most distinguishing change in the workforce profile will be the introduction of an additional short-term construction phase for the 12 Mtpa North Railway component, where additional employment opportunities will be created. Completion of this new construction phase will occur immediately prior to construction of the South Railway component. The operation phase of the Project remains unchanged at 21 years.

While Baffinland acknowledges major employment and operational changes have the potential to amplify effects (both positive and negative) on human health and well-being, the actual changes being proposed are not considered substantial. Because new construction employment opportunities will be short-term and overall employment is similar to the Approved Project, changes to existing effects are not anticipated. Potential future changes to levels of Inuit employment are also a potential driver of outcomes related to human health and well-being, and will be assessed further in the context of the Phase 2 Proposal.

Phase 2 Proposal interactions with key indicators for the human health and well-being VSEC are summarized in Table 6.2, while residual effects are assessed more fully in Sections 6.6.1 to 6.6.5. Section 6.6.6 provides discussions on other aspects of human health and well-being identified by the NIRB in the Amended EIS Guidelines, while Section 6.6.7 reviews the significance conclusions for human health and well-being residual effects.

**Table 6.2 Phase 2 Proposal Interactions with Key Indicators for Human Health and Well-Being**

Project Infrastructure or Activity	Well-Being of Children	Substance Abuse	Community Social Stability
<b>Project-Wide Changes</b>			
Additional employment opportunities (additional capex phase)	1	1	1

**NOTES:**

- Interactions are rated as follows:
  - No interaction.
  - Minor interaction post-mitigation, discussion assessment.
  - Major interaction subject to detailed assessment.

### 6.6.1 Changes in Parenting

Phase 2 Proposal employment will continue to have significant positive effects on parenting in the LSA, particularly as it applies to well-being of children. This will occur primarily from improved well-being parents gain from having a good job, reduced financial stresses in the family, and improved food security. While Baffinland acknowledges Phase 2 Proposal employment could have some adverse effects on parenting similar to the Approved Project (e.g. challenges related to parental absence, the transition between parental comings and goings, changing parental expectations, and the response of parents to the stresses and issues brought about by fly-in/fly-out employment), these will continue to be of a non-significant nature.

There are existing indications the Project is positively contributing to the enhanced well-being of children, by providing LSA residents (e.g. parents) with opportunities to obtain meaningful employment and incomes. These opportunities increase household financial independence and can help reduce the various family stresses and uncertainties associated with un- and under-employment. For example, since 2014 Baffinland has provided approximately \$33.3 million in payroll to its Inuit employees, and since Project development a total of \$819.1 million worth of contracts has been awarded to Inuit-owned businesses and joint ventures (Appendix B). These new contributions to the Nunavut economy are a direct result of Project development and represent a positive effect in a region with otherwise limited economic opportunities. Baffinland has also implemented an EFAP for permanent employees and their dependents who may require family-related, parenting, or other forms of counselling and personal assistance.

No negative Project-related trends in this area have been identified by Baffinland's monitoring program to-date (Appendix B). For example, the number of youth charged is a useful indicator of parenting performance in the LSA communities. This is because children with stable homes and effective parents can be expected to have fewer encounters with the law. Monitoring suggests factors other than the Project are likely driving current trends. However, crime rates can be influenced by many different socio-economic factors and Baffinland will continue to track this topic through its annual socio-economic monitoring reports.

Baffinland expects positive parenting effects will continue under the Phase 2 Proposal, but acknowledges overall effects on parenting will be variable. The Project benefits experienced by some children are not considered to offset the negative effects that may be experienced by other children. Therefore, both groups (i.e. children who enjoy overall beneficial effects from their parents' work and children who experience overall negative effects) will continue to be considered in the assessment (as they were for the Approved Project). New short-term construction employment opportunities and the small decrease in overall person-years of employment projected for the Phase 2 Proposal (-12.9%) are not anticipated to be an important influence on this effect.

Baffinland also acknowledges the desire for Inuit employment levels to be improved at the Project, and the Company has continued to take positive steps in this regard. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional LSA residents can be expected to benefit from the employment opportunities provided by the Project and some positive effects on parenting could be enhanced. Corresponding increases in adverse effects experienced by other children could also occur (as additional parental absences and work-related stresses are potentially created), but will vary depending on exact levels of Inuit employment that are reached, which is currently unknown.

However, the Project's labour demand will continue to exceed the LSA Inuit labour supply (see TSD 26 – Labour Market Analysis), which limits the degree to which additional adverse effects can occur. Baffinland also continues to document worker experiences and collect data in this area, so that worker support programs can be adapted to address work-related family issues as necessary. For example, Baffinland has worked with the QIA to implement an annual Workplace Conditions Review (as per Section 11.13 of the IIBA). One element of this process is to conduct regular surveys of Project employees to document current workplace conditions and potential future improvements. The most recent survey was completed in January 2018. As per Baffinland's new IHRS developed with the QIA, all employees (both of Baffinland and its contractors) will also be encouraged to participate in an exit interview. Feedback collected from exit interviews will be analysed and systemic concerns will be addressed.

Furthermore, Baffinland will continue to discuss the issue of children and fly-in/fly-out lifestyles as part of its revised pre-employment orientation training. The Company will also continue contributing to community wellness programs through the INPK fund (which provides up to \$750,000.00/year for projects in the Qikiqtaaluk Region) and will continue providing workers with access to Elders on-site for counselling purposes. Permanent employees and their dependents will also continue to have access to the Project's EFAP, where family-related and other matters can be discussed in confidence with trained professionals. Beginning in 2018 and at the QIA's and GN's request, Baffinland began reporting on the number of times its EFAP program is accessed by Project employees yearly as a new socio-economic monitoring indicator.

For these reasons, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. The positive residual effects of the Phase 2 Proposal are expected to be prevalent, of moderate magnitude, and of continuous frequency. These effects are therefore assessed to be significant.<sup>18</sup> The negative residual effects of Project-induced changes to parenting on the well-being of children are still expected to be of low magnitude and limited to occasional instances with individual children. These residual effects are therefore assessed to be not significant. Baffinland will continue to track this issue moving forward and will employ adaptive management so its mitigation measures function as anticipated.

### 6.6.2 Household Income and Food Security

The Phase 2 Proposal will continue to have positive effects on the well-being of children in the LSA, through increases to household income and food security generated by Project employment opportunities. Implementation of the Phase 2 Proposal does not change the Project's positive effects in this area and Baffinland has successfully demonstrated the benefits it has provided since Project development. For example, Baffinland has provided LSA residents with new opportunities to obtain employment and incomes which can increase household financial independence and assist with the purchase of store-

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<sup>18</sup> The following parameters have been used to assess the magnitude of Project effects on parenting: Low, negative (i.e. changes may be perceived in individual children, but do not change the dynamic of groups of children such as in a classroom or day care setting); Moderate, negative (i.e. changes lead to a noticeable change in dynamics of groups of children, but don't cause major concern); High, negative (i.e. changes lead to a noticeable change in dynamics of groups of children, and are a cause of major concern); Low, positive (i.e. changes may be perceived in individual children, but do not change the dynamic of groups of children such as in a classroom or day care setting); Moderate, positive (i.e. changes lead to a noticeable change in dynamics of groups of children); and High, positive (i.e. changes lead to a noticeable change in dynamics of groups of children, and are considered to be substantial).

bought and/or country food and the participation in local food harvesting activities. These new contributions to the Nunavut economy are a direct result of Project development and represent a positive effect in a region with otherwise limited economic opportunities. Baffinland also contributes to the INPK fund through its IIBA negotiated with QIA, through which food security-related initiatives may be considered for support.

As detailed in Section 6.4, no negative Project-related trends in this area have been identified by Baffinland's monitoring program to-date (Appendix B). However, employment income and social assistance rates can be influenced by many different socio-economic factors. Direct correlations between the Project and employment income and social assistance rates, if any, will only come to light with the analysis of additional annual data. Baffinland will continue to track this topic through its annual socio-economic monitoring reports. There is currently no indication the original prediction is not being met. In fact, there are positive indications the Project continues to improve household income and food security in the LSA, through providing LSA residents with meaningful employment opportunities and through contributions to community wellness initiatives. Likewise, Baffinland continues to make positive contributions to the four components of food security (i.e. availability, accessibility, quality, and use) through initiatives commensurate with its role as a regional mineral developer (see Table 10-1 in Appendix B). Baffinland anticipates these positive effects will continue (and may be enhanced) under the Phase 2 Proposal.

The small decrease in overall person years of employment projected (-12.9%) and new short-term construction employment opportunities created by the Phase 2 Proposal are not anticipated to be an important overall influence on the effect. Should Inuit employment levels increase at the Project (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional LSA residents can be expected to benefit from the employment opportunities provided by the Project and some positive effects on household income and food security could be enhanced.

For these reasons, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. Positive residual effects on the well-being of children related to increased household income and food security in the LSA are still expected to be long-term, of high magnitude, and significant.<sup>19</sup>

### 6.6.3 Transport of Substances through Project Sites

The Phase 2 Proposal could contribute to the increased availability of substances such as alcohol and illegal drugs in the North Baffin LSA, due to their possible transportation through Project sites. However, implementation of the Phase 2 Proposal does not change the Project's originally predicted effects in this area as the operational changes are modest and existing mitigation measures will remain in place. Project monitoring also suggests the original predictions remain accurate. While all contraband infractions are of concern and taken seriously by Baffinland, the infractions that have occurred to-date represent only a small number of individuals from the Project workforce. All individuals who do not comply with Baffinland's no drugs/no alcohol policy are immediately removed from site and disciplinary action (up to and including termination) is commenced. This management response supports Baffinland's goal of 'Safety First, Always' while also preventing further transport of contraband substances through Project sites.

New short-term construction employment opportunities created by the Phase 2 Proposal and the small decrease in overall person years of employment projected (-12.9%) are not anticipated to be an important overall influence on this effect. Baffinland also acknowledges the potential for Inuit employment levels to increase at the Project (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26). While additional Inuit employment could theoretically lead to increased transportation of substances through Project sites to the North Baffin LSA communities these employees originate

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<sup>19</sup> While descriptive thresholds between magnitude ratings were not developed for this residual effect, 'Low', 'Moderate', and 'High' parameters were used to assess the general magnitude of Project effects on household income and food security, relative to the baseline.

from, there are good reasons to suggest this will not occur in any notable way. For example, Project labour demand will continue to exceed the LSA Inuit labour supply (see TSD 26), which limits the degree to which additional adverse effects can occur. Existing mitigation measures (i.e. a no drugs/no alcohol policy on site, ship-to-shore security measures, and baggage searches for all employees and contractors arriving at site) will also remain in place and have proven effective at minimizing contraband at Project sites. Ongoing monitoring also supports the conclusion of the previous effects assessment, as only a small number of contraband infractions have been documented by Baffinland to-date. While it is possible that some contraband may go undetected, it is considered unlikely that substantial quantities of banned substances go unnoticed. Control measures at site are also typically more stringent than that of the regular transportation links into the LSA communities. Any increase in overall (including non-Inuit) Project employment compared to what was previously predicted in the FEIS ERP Addendum is also not expected to significantly change this effect, for reasons similar to those noted above.

As such, Baffinland expects its original predictions will remain valid for the Phase 2 Proposal. Some transportation of substances may continue to occur, but this effect will be low in magnitude, of intermittent frequency, and reversible once the Project is complete.<sup>20</sup> However, Baffinland will also continue to monitor trends in this area through its annual socio-economic monitoring program.

#### 6.6.4 Affordability of Substances and Attitudes Toward Substances and Addictions

The Phase 2 Proposal will continue to increase the affordability of substances (e.g. alcohol, drugs) in the LSA through new employment income. However, affordability alone does not confirm substance use will occur, so the direction of this effect is neutral. At the same time, the Phase 2 Proposal will continue to have a positive effect on improved attitudes and behaviours toward substances and addictions in the LSA, by providing positive incentives for individuals to reduce their level of substance abuse and to address addictions. Those who manage to develop healthy behaviours toward substances, for example, are better able to maintain their employment and progress in their jobs.

As noted in the assessment of the Approved Project, significance of these two residual effects was deferred to a combined assessment of how 'affordability of substances' and 'attitudes towards substances and addictions' interact to influence substance abuse, overall. A reasonable probability still exists that a moderate negative outcome will be noticeable during a transitional period of adaptation to the income generated by the Project. If this occurs, some increase in substance abuse could occur in the short-term, although this overall negative residual effect is assessed to be not significant due to its short duration and moderate magnitude. Over the medium-term and extending beyond Project termination, however, an overall positive residual effect on substance abuse is anticipated to arise due to improved attitudes and increased 'opportunity cost' brought about by the Project.<sup>21</sup> This positive residual effect is assessed to be not significant based on the moderate magnitude and a moderate level of uncertainty related to its occurrence.<sup>22</sup>

<sup>20</sup> While descriptive thresholds between magnitude ratings were not developed for this residual effect, 'Low', 'Moderate', and 'High' parameters were used to assess the general magnitude of Project effects on transport of substances through Project sites, relative to the baseline.

<sup>21</sup> Maintaining stable employment (and income) will be contingent on an ability to work without access to substances for two weeks out of four, and an ability to maintain the discipline needed to show up on time for work-related travel. For those who have addictions problems, these constraints will introduce positive incentives to come to terms with them.

<sup>22</sup> The following parameters have been used to assess the magnitude of overall Project effects on substance abuse: Low, negative outcome (i.e. increased substance abuse may be perceived in individuals but is not noticeable at the community level by those who deal with these issues, such as RCMP, health, and social service workers); Moderate, negative outcome (i.e. increased substance abuse is noticeable at the community level and is considered by those who deal with these issues to be associated with the Project. However, the increase does not cause major concern); High, negative outcome (i.e. increased substance abuse at the community level is widely perceived by community members as well as by front-line workers to be a cause of major concern and is considered to be associated with the Project); Low, positive outcome (i.e. decreased substance abuse may be perceived in individuals but is not noticeable at the community level by those who deal

There is no available monitoring data to suggest effects are occurring beyond the extent predicted during the assessment of the Approved Project (Appendix B). While increasing trends in the number of impaired driving and drug violations in the North Baffin LSA have been noted in the post-development period (in comparison to decreasing trends occurring in Iqaluit and Nunavut), reasons for this are currently unknown and may simply be a continuation of pre-development trends. Longer-term outcomes are also unknown, including whether a transitional period of adaptation is occurring. Baffinland acknowledges some concerns have been raised about increased substance use associated with new Project incomes but notes there is minimal post-development data currently available and these issues can be influenced by many socio-economic factors. Direct correlations between the Project and these issues, if any, may only come to light with the analysis of additional annual data. However, there are positive indications the Project continues to improve attitudes toward substances and addictions in the LSA, by providing LSA residents with meaningful employment opportunities within a drug and alcohol-free environment. Baffinland also provides access to an EFAP for permanent employees and their dependents who may require assistance with drug and alcohol-related issues. The INPK Fund is also available to support community wellness initiatives in several areas, potentially including those related to substance use.

New short-term construction employment opportunities created by the Phase 2 Proposal and the small decrease in total person years of employment are not anticipated to be important overall influences on these effects. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional LSA residents can be expected to benefit from the employment opportunities provided by the Project. However, any increase in substance affordability will continue to be balanced by improvements in attitudes towards substances and addictions among Project staff that occur (as predicted for the Approved Project), and an overall positive effect on substance abuse is still anticipated over the medium-to-long term. For these reasons, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal.

#### 6.6.5 Absence from the Community During Work Rotation

The Phase 2 Proposal will continue to have some adverse effects on LSA community processes (e.g. local coaching, politics, and social organizations) related to worker absence during their fly-in/fly-out site rotations. Implementation of the Phase 2 Proposal does not alter the Project's effects in these areas, as the proposed operational changes are modest and existing mitigation measures will remain in place. Based on available monitoring information, the Project does not currently appear to be a significant contributor to this issue. While appropriate community-level indicator data are currently unavailable for this topic, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. No comments related to the absence of workers from communities during their work rotations were made at the 2016/2017 QSEMC meetings or during Baffinland's 2016/2017 community engagement activities (although some comments were made on family-related and other socio-economic issues, as noted in Appendix B and JPCSL 2017a). Some comments have also been received about potentially increasing the length of employment rotations and/or shortening off-rotation periods.

However, Baffinland acknowledges worker absence from their communities and families has been identified as a concern in the past (the assessment of the Approved Project summarized some of these concerns). Baffinland will continue to use a short rotation (i.e. two week in/two week out) during the Phase 2 Proposal, so that workers will not be required to be away from their communities for extended periods of time. Pre-employment training programs will also review strategies for successful rotational work with prospective employees, so they can come better prepared to deal with challenges that may

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with these issues); Moderate, positive outcome (i.e. decreased substance abuse is noticeable at the community level and is considered by those who deal with these issues to be associated with the Project); and High, positive outcome (i.e. decreased substance abuse at the community level is widely noticed by community members as well as by front-line workers to improve the quality of life of the community, and this is considered to be associated with the Project).



arise. Furthermore, Baffinland's recently developed IHRS notes the Company will consider adopting alternative rotation schedules that are better aligned with familial and community activities. The INPK fund that Baffinland contributes to also continues to provide support to various community wellness initiatives across the Qikiqtaaluk Region that may assist in this regard.

The short-term construction employment opportunities created by the Phase 2 Proposal and the small decrease in overall person years of employment projected for the Phase 2 Proposal are not anticipated to be an important overall influence on this effect. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), additional LSA residents can be expected to benefit from the employment opportunities provided by the Project. However, increased employment could amplify some effects related to worker absence from their communities. Based on anticipated levels of Inuit LSA employment and the fact not everyone who is available to work will necessarily pursue Project employment (e.g. those with significant community/family responsibilities may choose to stay in their communities – see TSD 26), the magnitude of this effect remains moderate (and may be lower in those communities with fewer Inuit employees).<sup>23</sup> This means that while some organizations and some activities may continue to be affected, they will be able to adapt and carry on their functions, which constitutes a non-significant effect. Consideration of potential alternative rotation schedules for Inuit LSA residents and other existing mitigation measures will help further reduce effects in this area. For these reasons, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal.

## 6.6.6 Discussion of Other Human Health and Well-Being Topics

Several EIS Guidelines specific to the human health and well-being VSEC were identified by NIRB in the Amended EIS Guidelines. A summary of how the Phase 2 Proposal interacts with each of these guidelines is provided in Table 6.3.

**Table 6.3 EIS Guideline Summaries - Human Health and Well-Being**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
Discussion of the standards, guidelines and regulations that the Project will incorporate during construction and operations, at various project sites to minimize the impacts and protect workers' health	Potential effects on the health of workers will continue to be mitigated through internal management plans (e.g. Health and Safety Management Plan, Human Resources Management Plan) and through relevant territorial legislation (e.g. Labour Standards Act, Mine Health and Safety Act, Safety Act, Public Health Act, Workers' Compensation Act). More recently, Baffinland has been in the process of developing an integrated Health, Safety, Environment, Community, and Security (HSECS) Management Plan to further improve its activities in this area.
Assessment of the health, safety and security of workers at the job sites taking account different project phases and locations (e.g. explosive manufacturing plant, drilling and blasting operation, and heavy equipment operations)	Given that only modest changes to the workforce profile are expected, the Phase 2 Proposal is not expected to introduce changes that would create new effects on the health, safety, and security of workers at job sites. While there are some new operational components associated with the Phase 2 Proposal (e.g. addition of a northern rail line, expansion of the Milne Port facilities, increased shipping activities in Eclipse Sound/Milne Inlet), similar components have already been assessed and received regulatory approval for the Approved Project. Baffinland has developed comprehensive worker health and safety management measures on-site and is in the process of developing an integrated Health, Safety, Environment, Community, and Security (HSECS) Management Plan to further improve its activities in this area. Baffinland will continue to be proactive in

<sup>23</sup> The following parameters have been used to assess the magnitude of Project effects on absence of workers from their communities: Low (i.e. the absence of individuals is noticed but does not raise concern for the functioning of community activities or institutions); Moderate (i.e. the absence of individuals begins to create challenges for some institutions or community activities, but these are able to be addressed); and High (i.e. the absence of individuals from the community creates challenges that cannot be adequately addressed, leading to a decline in the capacity of institutions or a reduction or cancellation of some community activities).



**Table 6.3 EIS Guideline Summaries - Human Health and Well-Being**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
<p>Potential impacts on human health from air contamination, fugitive dusts resulting from air and ground traffic, potential impacts to potable water quality, and exposure to escalated noise and extreme weather conditions</p>	<p>identifying potential health, safety, and security issues on-site and will use adaptive management to improve its activities in these areas in an ongoing manner.</p> <p><b>Air Quality</b> - There are no permanent off-site receptors near the Project sites. HTO cabins exist at Milne Port and the Mine Site. Revised air quality modelling found that offset receptors will not be adversely affected by air contaminants (RWDI 2018; KP 2018).</p> <p><b>Potential impacts to potable water quality</b> – impacts to potable water quality are not anticipated; the water quality assessment presented in the FEIS (Volume 7, Section 3) predicted that water quality in receiving waters receiving mine effluent will meet water quality objectives based upon the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CCME 2012). Aquatic life guidelines are generally more stringent than drinking water guidelines. As such, impacts to human health of land users from drinking local waters affected by the Project are not expected.</p> <p><b>Noise</b> - Noise levels at the Milne Port HTO cabin will exceed the 40 dBA threshold (RWDI, 2017; KP 2018). The 40 dBA threshold is generally applied to permanent residences.</p> <p><b>Extreme weather conditions</b> – Baffinland workers follow company health and safety procedures and guidelines that aim among other things to address potential occupational health and safety risks presented by the weather including extreme weather events.</p>
<p>Potential impacts on human health from bioaccumulation and take-up of contaminants associated with changes to the level of contaminants loadings in country foods (i.e. wildlife and vegetation consumed by humans)</p>	<p>A screening level Country Foods Risk Assessment was undertaken for the Phase 2 Proposal (TSD 11 – Evaluation of Exposure Potential from Ore Dusting Events on Selected VECs: Humans, Caribou and Blueberry). Metals are naturally occurring in the environment and are present within existing soils and vegetation in the region. Mining activities will result in release of ore dusts in the vicinities of the Project Development Areas (PDAs) at the Mine Site, Milne Port, as well as along the Northern Transportation Corridor. Dustfall predictions indicate that the areas outside the PDAs that will potentially receive higher dustfall rates are small in size, which limits the exposure potential for people, wildlife, and plants. In general, metals that are reported to bioaccumulate in food chains are present at low or very low (below detection limits) concentrations in dustfall near the Project. Therefore, the potential for bioaccumulation in food chains is considered low. It is considered unlikely that ore dust deposition from the Project would result in levels of metals in blueberries or caribou tissues that would be harmful to human health, if consumed. Similarly, it is considered unlikely that ore dust deposition from the Project would result in levels of metals in lichen that would be harmful to caribou health. This conclusion is based on consideration of the areas expected to be affected by dustfall, the predicted future soil and vegetation concentrations, and the home range of caribou.</p>
<p>Potential impacts of workplace discipline and cultural conflicts among Nunavummiut and Southern workers</p>	<p>Increased conflicts among Nunavummiut and southern workers are not anticipated to result from the Phase 2 Proposal. Baffinland has continued to investigate how conflicts among Nunavummiut and southern workers can be avoided. For example, Baffinland recently commissioned a report on the experience of Inuit employed at the Project over the first three years of mine development (Appendix E). While various perspectives were shared, several workplace challenges were identified in the report including different communication styles across cultures, and perceptions of prejudice, discrimination, and racism. Several suggestions for developing a more inclusive and supportive workplace culture were also identified in the report. Baffinland</p>

**Table 6.3 EIS Guideline Summaries - Human Health and Well-Being**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	<p>continues to conduct cultural awareness training and has offered work-readiness training to Inuit employees to help reduce potential employment-related conflicts. Furthermore, Baffinland has worked with the QIA to develop an annual Workplace Conditions Review, where regular surveys of Project employees will document current workplace conditions and potential future improvements. In addition, Baffinland has zero tolerance for racism and discrimination at its Project sites and has developed employee disciplinary and grievance procedures in support of this. Baffinland also regularly conducts community engagement activities (e.g. public, Inuit community, and stakeholder meetings, Annual Project Review Forum) in the North Baffin LSA, which provide a forum for various issues and concerns (including those related to employment) to be raised by the public. Baffinland will also continue tracking employment-related issues through its community engagement program and the QSEMC process.</p>
<p>Potential impacts on human health and wellbeing within the RSA resulting from indirect effects of the Project (e.g. substance abuse, family violence, sexually transmitted infections and other communicable diseases and gambling)</p>	<p>Similar to the Approved Project, the Phase 2 Proposal may contribute to some indirect health and well-being effects (e.g. substance abuse, family violence, sexually transmitted infections and other communicable diseases and gambling). However, these effects can also be influenced by several non-Project socio-economic factors and their magnitude is difficult to predict. No new types of indirect human health and well-being effects are expected to arise from the Phase 2 Proposal in the LSA. This is because no new pathways for indirect effects will be created and existing impact pathways are expected to remain in place. Monitoring data suggests current effects are not of a significant nature, although Baffinland acknowledges some concerns have been raised on these topics. Any additional effects that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project. However, Baffinland will continue to monitor these topics and has developed programs to help mitigate related effects (e.g. EFAP, on-site Elders, on-site medic, INPK Fund). Any effects will continue to be focused on the LSA, largely due to Baffinland's commitment to priority hiring from these communities. Any effects that may arise in the RSA are expected to be fewer than those encountered in the LSA.</p>
<p>Potential impacts on community safety and security with consideration for a potential influx of Project personnel into local communities during the life of the Project</p>	<p>Given that only modest changes to the workforce profile are expected, the Phase 2 Proposal is not anticipated to have any additional impacts on community safety and security related to migration in the North Baffin LSA (see Section 2.6.1 for additional information on migration effects). Furthermore, only limited-to-negligible migration effects have been identified by Baffinland through its socio-economic monitoring program to-date (Appendix B). Any additional in-migration to Iqaluit that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project. While this could result in some additional community policing demands in Iqaluit, these are expected to be manageable. Furthermore, Project Certificate Condition No. 161 already addresses this issue. It asks the Government of Nunavut to work with the Royal Canadian Mounted Police, so they are prepared to handle ongoing Project-related demographic changes and subsequent crime prevention that may be needed as a result of the development, operation, and closure of the Project.</p>
<p>Discussion of concerns relating to human safety due to potential railway accidents, malfunctions (e.g. derailment) and natural disasters (e.g. earthquakes and hazardous weather events)</p>	<p>Human safety concerns and considerations were discussed previously in the assessments of the Approved Project for Human Health and Well-Being (Volume 4, Section 6), Resources and Land Use (Volume 4, Section 10), and Accidents and Malfunctions (Volume 9, Section 2). This included a review of management plans and procedures relevant to potential railway accidents, malfunctions, and natural disasters. Existing management plans (e.g. Health and Safety Management Plan, Spill Contingency Plan, Emergency Response Plan) remain relevant to the Phase 2</p>

**Table 6.3 EIS Guideline Summaries - Human Health and Well-Being**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	<p>Proposal. While significant railway accidents, malfunctions, and natural disasters are unlikely, Baffinland acknowledges they still have the potential to occur and impact human safety. The mitigation and management measures developed in support of the Phase 2 Proposal provide risk control and outline the response protocols that will be taken in the event of an emergency. Baffinland's Hunter and Visitor Site Access Procedure (Baffinland 2015), also requires individuals travelling in the area to sign-in upon arrival at Milne Port and the Mine Site to make their presence known. These individuals are further required to follow designated travel routes and protocols for safety purposes.</p>
<p>Potential impacts to human health as a result of increased use of the Tote Road for ore haulage and Milne Inlet Port facilities, including exposure to noise, dust and gaseous emissions</p>	<p>There are no permanent off-site receptors near the Project sites. Revised air quality modelling found that offset receptors will not be adversely affected by air contaminants (TSD 07 Atmospheric Assessment). Noise levels at the Milne Port HTO cabin will exceed the 40 dBA threshold (TSD 07). The 40 dBA threshold is generally applied to permanent residences. In addition, the Phase 2 Proposal originally included plans to haul 12 Mtpa of ore to Milne Port using trucks. This is no longer proposed in favour of the North Railway, which will reduce exposure to air contaminants and noise associated with heavy truck traffic.</p>
<p>Potential impacts to human health as a result of ice breaking activities and associated accidents</p>	<p>Under the originally conceived Phase 2 Proposal both an 8.5-month shipping season and an annual winter sealift were proposed. However, based on feedback, voicing concerns over ice breaking through Eclipse Sound, Baffinland has removed these components from the Phase 2 Proposal. Other human safety concerns and considerations were discussed in the assessments of the Approved Project for Human Health and Well-Being (Volume 4, Section 6), Resources and Land Use (Volume 4, Section 10), and Accidents and Malfunctions (Volume 9, Section 2). This included discussions on ice breaking activities in Steensby Inlet and the need to ensure the safety of land users operating nearby. Management plans specific to shipping (including ice breaking accidents) and emergency response were also developed for the Approved Project (e.g. Health and Safety Management Plan, Spill Contingency Plan, Emergency Response Plan).</p>
<p>Potential impacts to food security as a result of wildlife disturbance (marine and terrestrial), reduced access to traditional harvesting areas (via increased intensity in road haulage and shipping), as well as increases in employment and purchasing power</p>	<p>Baffinland acknowledges harvesting and consumption of country food remains a valued and important part of the Inuit culture and diet. Baffinland also acknowledges concerns have been expressed about potential negative effects of the Project on local harvesting, and about declining rates of country food consumption and the lack of food security in Nunavut, generally. As noted in Section 6.6.2, Baffinland anticipates the Phase 2 Proposal will continue to have a positive effect on increased household income and food security in the LSA, by providing LSA residents with meaningful incomes (through employment) that enable the purchase of store-bought and/or country food and support the participation in harvesting activities. Baffinland also continues to make positive contributions to the four components of food security (i.e. availability, accessibility, quality, and use) through initiatives commensurate with its role as a regional mineral developer (see Table 10-1 in Appendix B). The Phase 2 Proposal is not expected to meaningfully affect wildlife populations that are harvested, or access to these wildlife populations (Section 9). A Wildlife Compensation Fund provides hunters with access to compensation for valid claims that access to harvesting has been restricted due to the Project. The Phase 2 Proposal will continue to make overall positive contributions to food security in the LSA.</p>
<p>Potential impacts to human health and community well-being of the local communities associated with impacts of the increased ore haulage on</p>	<p>An evaluation of exposure potential from ore dusting on select country foods (TSD 11) was undertaken for the Phase 2 Proposal. This risk assessment revisited an earlier evaluation prepared for the Approved Project (FEIS Appendix 6G), based upon updated dust deposition modelling prepared for the Phase 2 Proposal (TSD</p>

**Table 6.3 EIS Guideline Summaries - Human Health and Well-Being**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
marine and terrestrial country food sources in the RSA	07). TSD 11 established that ore dust accumulations over the life of the Project are unlikely to result in levels of metals in blueberries or caribou tissues that would be harmful to human health, if consumed. Similarly, it is considered unlikely that ore dust deposition from the Project would result in levels of metals in lichen that would be harmful to caribou health. Additionally, metals that are known to bioaccumulate in the food chains are present at low or very low (below detection limits) concentrations in dustfall near the Project. Hence, the potential for bioaccumulation in food chains is low.

### 6.6.7 Significance of Residual Human Health and Well-Being Effects

As noted above, six residual effects have been carried forward for the Phase 2 Proposal. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for human health and well-being will be created. More specifically, the Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to human health and well-being, although positive effects in some areas may be enhanced. The operation phase of the Project remains unchanged at 21 years. New short-term construction employment opportunities created by the Phase 2 Proposal and the small decrease in total person years of employment are not considered substantial changes and overall assessment outcomes for human health and well-being remain the same. The ratings assigned to the residual effects evaluated above are presented in Table 6.4. Positive effects are generally predicted to be significant (with the exception of one non-significant positive effect), while all adverse effects are predicted to be not significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project. As such, Table 6.4 is presented here for completeness, even though Baffinland acknowledges the significance ratings for other criteria haven't changed.

An overall assessment of the key indicator 'well-being of children' (which includes the residual effects 'changes to parenting' and 'household income and food security') was also presented in the assessment of the Approved Project, which provided an opportunity to consider how these two determinants of child well-being interact. The conclusions of this analysis remain the same for the Phase 2 Proposal. The effect of a parent gaining employment at the Project is expected to be experienced as an overall benefit by the majority of children. This will arise from multiple factors, including the improved well-being their parents gain from having a good job, reduced financial stresses in the family, and improved food security. For a minority of children, challenges related to parental absence, the transition between parental comings and goings, changing parental expectations, and the response of parents to the stresses and issues brought about by fly-in/fly-out employment are expected to lead to some adverse residual effects. Positive residual effects of the Project on human health and well-being are anticipated to significantly improve the well-being of most children of parents working at the Project. The potential that some children may experience an overall decline in well-being is acknowledged, and is assessed to be not significant, based on low magnitude and infrequent occurrence.

Likewise, overall assessments of the key indicators 'substance abuse' and 'community social stability' remain the same. During an early period of transition, the potential for negative residual effects on substance abuse is acknowledged but assessed to be not significant due to its short duration and moderate magnitude. Over the medium-term and extending beyond Project termination, an overall positive residual effect on substance abuse is anticipated. This is assessed to be not significant based on the moderate magnitude and a moderate level of uncertainty related to its occurrence. Negative residual effects arising from the absence of workers from the community are also recognized to occur, although not at a high enough magnitude for significant effects on community social stability, and are therefore assessed to be not significant.

Table 6.4 Significance of Residual Effects to Human Health and Well-Being

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
Changes in parenting	Variable <sup>24</sup>	Moderate (positive effect) Low (adverse effect)	Point-of-hire communities	Family	Continuous (positive effect) Intermittent (adverse effect)	Engaged families	Long-term	Spontaneous	Significant positive effect Not significant adverse affect	High	High (positive effect) Moderate (adverse effect)
Household income and food security	Positive	High	Point-of-hire communities	Family (extended)	Continuous	Bystanders	Long-term	Spontaneous	Significant positive effect (no adverse effect)	High	High
Transport of substances though Project sites	Negative	Low	North Baffin point-of-hire communities	Community	Intermittent	Bystanders	Medium	Spontaneous	Not significant	Moderate	High
Affordability of substances	Neutral	High	Point-of-hire communities	Families	Continuous	Engaged families	Medium	Spontaneous	Non-significant adverse effect (short-term), non-significant positive effect (medium-to-long term) <sup>25</sup>	High	Moderate
Attitudes toward substances and addictions	Positive	Moderate	Point-of-hire communities	Community	Continuous	Bystanders	Long-term	Non-reversible		High	
Absence from the community during work rotation	Negative	Moderate	Point-of-hire communities	Community	Continuous	Bystanders	Medium	Spontaneous	Not significant	High	High

<sup>24</sup> Project benefits experienced by some children are not considered to offset the negative effects that may be experienced by other children. Therefore, both groups (i.e. children who enjoy overall beneficial effects from their parents' work and children who experience overall negative effects) are assessed separately.

<sup>25</sup> The overall effect of the Project on substance abuse is expected to be determined by the balance between two contrasting effects: 1) affordability of substances, and 2) attitudes towards substances and addictions. For this reason, the determination of significance considered these combined effects.

## 6.7 Mitigation and Monitoring Updates

Baffinland will continue to track potential changes to human health and well-being through its annual socio-economic monitoring program. This will include monitoring of government statistics on health, substance abuse, crime, and other topics; Project health statistics (e.g. number of visits to Project site medic, number of times Baffinland's EFAP is accessed); information received through the QSEMC process and Baffinland's community engagement program; and other relevant information. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal.<sup>26</sup> However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

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<sup>26</sup> Appropriate community-level indicator data are currently unavailable for the topics of 'absence from the community during work rotation', 'prevalence of gambling issues', 'prevalence of family violence', 'prevalence of marital problems', and 'rates of teenage pregnancy'. As such, these issues will continue to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

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## 7 COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES

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### 7.1 How Has the Community Infrastructure and Public Services Assessment Changed?

The Approved Project was assessed to have both positive and adverse effects on LSA communities with respect to the community infrastructure and public services key indicator ‘hamlet staff recruitment and retention’ (Baffinland 2012 and 2013). More specifically, the Project was predicted to have a significant positive residual effect on labour force capacity, and non-significant adverse residual effect on competition for skilled workers. These effects were anticipated to arise from Project employment opportunities that will build the capacity of the local labour force over time through work-related skills development and experience, but may also create competition with local employers.

The nature of the activities associated with the Phase 2 Proposal are such that these effects are likely to continue, but remain within originally predicted thresholds. Phase 2 Proposal employment levels will be similar to the Approved Project and additional competition with local employers will be limited. Furthermore, the operation phase of the Project remains unchanged at 21 years. Other minor changes to what was previously assessed for the Approved Project are described elsewhere in this section.

Overall, the Phase 2 Proposal’s assessment of community infrastructure and public services has not changed from what was assessed for the Approved Project. More specifically:

- The nature and magnitude of effects are consistent with the FEIS and ERP Addendum;
- No new residual effects were identified; and
- No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 7.2 What We’ve Heard

Comments recorded over the past two years of engagement on the Phase 2 Proposal have related to the community infrastructure and public services VSEC.

Community infrastructure and public service limitations were noted in the LSA, and several requests for Baffinland’s assistance in this area have been made. Questions on local emergency response capabilities and procedures related to the Project have also been raised. Baffinland continues to track comments on the Project through its community engagement program. All requests for community benefits and/or Company donations are documented and considered.

Adequate infrastructure and service availability contributes positively to community well-being and development outcomes. The Inuit community and stakeholders had previously expressed a strong desire to see several improvements to community infrastructure and public services in the LSA. This includes improvements to basic infrastructure (e.g. housing, municipal services), construction of new recreational facilities and community freezers, and enhanced health services and facilities, amongst other areas. While Project employment opportunities have been welcomed by local residents, concerns have been expressed about its potential effect on the ability of local employers to provide necessary staff and/or services in their communities.



### 7.3 Background

Compared to the rest of Canada, LSA communities typically experience several infrastructure and public service deficits. While basic infrastructure and services are provided in all LSA communities (Iqaluit is an exception and has somewhat more developed infrastructure and services), the remote location and small populations of these communities have been limiting factors in their further expansion. The current operating Project has had varied effects on community infrastructure and public services across the LSA (Appendix B). Previously assessed Project residual effects on community infrastructure and public services are described below.

- **Competition for skilled workers** - Baffinland predicted the Project could negatively affect the ability of hamlets to maintain their staff in the short-term, due to increased competition for skilled workers created because of the Project. Associated mitigation measures include the provision of ongoing skills training to local residents, combined with work experience generated by the Project. These measures will increase the pool of skilled workers in the local labour force in the medium to long-term and negate any short-term, negative Project effects.
- **Labour force capacity** - Baffinland predicted the Project could positively affect the ability of hamlets to maintain their staff in the medium to long-term, due to the increased labour force capacity created because of the Project. Associated mitigation measures include the provision of ongoing skills training to local residents, combined with work experience generated by the Project. Together, these are expected to increase the overall pool of skilled workers in the local labour force from which hamlets (and other local and regional businesses/organizations) can draw upon.

The positive effects to community infrastructure and public services were assessed to be significant, while the adverse effects were assessed to be not significant (Baffinland 2012 and 2013). Monitoring results and observations since Project development are consistent with these predictions, as described in Section 7.4.

### 7.4 Project Monitoring

Recent community infrastructure and public services information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included as Appendix B. Related to community infrastructure and public services, Baffinland monitors the following socio-economic indicators:

- Number of Project employees who left positions in their community;
- Training and experience generated by the Project;
- Inuit employee turnover;
- Total number of health centre visits in the LSA and RSA;
- Per capita number of health centre visits in the LSA and RSA;
- Number of visits to Project site medic;
- Baffinland use of LSA community infrastructure; and
- Number of Project aircraft movements at LSA community airports.

Data are obtained from Company and contractor records, active Company monitoring (e.g. results of a voluntary Inuit Employee Survey), and government statistics (e.g. Nunavut Bureau of Statistics and Statistics Canada). Annual socio-economic monitoring also reports on trends since Project development. Monitoring-to-date supports Approved Project predictions for community infrastructure and public services and identifies positive effects the Project has had (Appendix B).

For example, ongoing monitoring confirms some Project employees have left positions in their communities to pursue employment at the Project. The 2018 Inuit Employee Survey indicates 22 individuals (or 31.4% of known survey responses) resigned from a previous job in order to take up employment with the Project. Of these individuals, 7 were in casual/part-time positions and 15 were in full-time positions. The Project also continues to generate substantial training and experience opportunities for its employees. Since 2013, the Project has cumulatively generated 122,950 hours of training for Project employees, 15,867 hours (or 12.9%) of which were completed by Inuit employees (not including any additional training gained by Project contractors). Likewise, approximately 8.8 million hours of Project labour have been cumulatively performed in Nunavut since 2013, 1.48 million hours (or 16.8%) of which were performed by Inuit employees and contractors. Employee turnover also continues to occur at the Project; in 2017, there were 42 Inuit employee departures (not including contractors) at the Project, which equates to a 45% Inuit employee turnover rate.

Other monitoring data collected by Baffinland relevant to the community infrastructure and public services VSEC is reviewed more fully in the appropriate sections below.

## 7.5 Assessment Methodology

The methods used to assess effects to community infrastructure and public services are consistent with the FEIS (Volume 4, Section 7). Comprehensive baseline information on community infrastructure and public services was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018) and updated baseline information provided in Appendix C. A report on the experience of Inuit residents employed at the Project over the first three years of mine development (Appendix E) was also prepared to support the assessment of the Phase 2 Proposal.

## 7.6 Effects Assessment

Baffinland predicted two residual effects associated with the community infrastructure and public services VSEC would occur due to the Approved Project. These include 'competition for skilled workers' and 'labour force capacity' (which fall under the key indicator 'hamlet staff recruitment and retention'). These effects were assessed due to concerns raised about the potential for Project employment to affect hamlet staff recruitment and retention in the North Baffin LSA. Existing impact pathways are expected to remain in place for the Phase 2 Proposal; however, no new residual effects will result from the Phase 2 Proposal, as no new impact pathways for community infrastructure and public services will be created.

The estimated overall workforce for the Phase 2 Proposal will be similar to the Approved Project, with only a small decrease in total person-years of employment (-12.9%) occurring. As noted previously, the most distinguishing change in the workforce profile will be the introduction of an additional short-term construction phase for the 12 Mtpa North Railway component, where additional employment opportunities will be created. This new construction phase will occur immediately prior to construction of the South Railway component. The operation phase of the Project remains unchanged at 21 years. While Baffinland acknowledges major employment and operational changes have the potential to affect the community infrastructure and public services VSEC, the actual changes being proposed are not considered substantial. Because the new construction employment opportunities will be short-term, they are not expected to create a notable increase in competition for skilled workers. Any new competition-related effects will also continue to be balanced (and eventually offset) by increases in labour force capacity generated over time. Potential changes to future levels of Inuit employment are also a potential driver of outcomes related to this VSEC, and will be assessed further in the context of the Phase 2 Proposal.

Phase 2 Proposal interactions with key indicators for the community infrastructure and public services VSEC are summarized in Table 7.1, while residual effects are assessed more fully in Sections 7.6.1 and 7.6.2. Section 7.6.3 provides discussions on

other aspects of community infrastructure and public services identified by the NIRB in the Amended EIS Guidelines, or by Baffinland itself. Section 7.6.3 reviews the significance conclusions for community infrastructure and public services residual effects.

**Table 7.1 Phase 2 Proposal Interactions with Key Indicators for Community Infrastructure and Public Services**

Project Infrastructure or Activity	Hamlet Staff Recruitment and Retention
<b>Project-Wide Changes</b>	
Additional employment opportunities (additional capex phase)	1

**NOTES:**

- Interactions are rated as follows:
  - No interaction.
  - Minor interaction post-mitigation, discussion assessment.
  - Major interaction subject to detailed assessment.

### 7.6.1 Competition for Skilled Workers

Project employment opportunities are likely to continue drawing some workers away from their jobs in LSA communities (including hamlet jobs), but competition for skilled workers is not anticipated to undergo a noticeable change under the Phase 2 Proposal. This is because new construction employment opportunities will be short term and only a small decrease in total person years of employment compared to the Approved Project will occur (-12.9%). Any increased competition for skilled workers created by the Project would also continue to be balanced by corresponding increases in labour force capacity generated over this time (see Section 7.6.2).

As detailed in Section 7.4, ongoing monitoring (Appendix B) confirms some Project-driven competition for workers has occurred during the Approved Project. There is no available data to suggest competition for skilled workers is occurring beyond the extent predicted during the assessment of the Approved Project, or is affecting hamlet staff recruitment and retention in any notable way. In fact, community engagement conducted by Baffinland indicates strong demand for employment opportunities in the LSA continues to exist (which suggests there are few local positions that are going unstaffed). Nunavut's unemployment rate (11.8% in April 2018) also remains significantly higher than Canada's overall unemployment rate (6.2% in April 2018) (NBS 2018). This high rate of unemployment highlights the ongoing need for new job creation in the territory, which the Phase 2 Proposal can help provide. Likewise, the Inuit worker experience study (Appendix E) describes the lack of full-time hamlet work (and other job opportunities) in many communities and important role the Project has played in helping fill this gap.

Ongoing training and experience generated by the Project, in addition to regular employee turnover, have arguably already begun to increase the pool of skilled workers in the local labour force (see Section 7.6.2). Given this and the modest changes to the workforce profile that are expected, the Phase 2 Proposal is not anticipated to introduce changes that would create notable additional competition for skilled workers in the LSA. Baffinland anticipates its original predictions for the Approved Project will remain valid for the Phase 2 Proposal. Competition effects will continue to be experienced primarily in the North Baffin LSA communities due to the smaller pool of skilled workers available there, although effects could arise in Iqaluit to some degree. While moderate magnitude<sup>27</sup>, short-term adverse effects on community staffing may continue to result from

<sup>27</sup> While descriptive thresholds between magnitude ratings were not developed, 'Low', 'Moderate', and 'High' parameters were used to assess the general magnitude of Project effects on the hamlet staff recruitment and retention key indicator, relative to the baseline.

the Project, they will be of a non-significant (and reversible) nature. Any short-term effects will continue to be offset by the additional labour force capacity created by the Project over the medium to long-term.

Baffinland acknowledges the desire for Inuit employment levels in the LSA to be improved at the Project and the Company has continued to take positive steps in this regard. Baffinland also acknowledges the LSA's young and rapidly growing population may contribute to increased labour availability in the future. In the event Inuit employment were to increase in the future (an increase is identified as a possibility in the Labour Market Analysis; TSD 26), some skilled worker competition effects could be amplified. However, this effect would be moderated by 1) the step-wise development of the Project, where local employment levels increase gradually over time; 2) additional labour force capacity created by the Project; and 3) Project fly-in/fly-out jobs not being desired or appropriate for all LSA residents (i.e. many residents will choose to remain in their communities). The Project's labour demand will also continue to exceed the LSA Inuit labour supply (see TSD 26 – Labour Market Analysis), which will further limit the amount of competition that occurs. While the significance conclusions presented for the Approved Project remain the same for the Phase 2 Proposal, Baffinland will continue to monitor trends in this area through its socio-economic monitoring program.

### 7.6.2 Labour Force Capacity

The Phase 2 Proposal will continue having a positive effect on labour force capacity development in the LSA given Project employment and training will continue to generate work-related experience and skills development opportunities for LSA residents. Existing Inuit employment, contracting, and training commitments will be maintained by Baffinland and several new commitments have been made that will enhance outcomes for the Phase 2 Proposal.

Baffinland monitoring data confirms the Project's beneficial effects in this area. For example, the Project continues to generate substantial training and experience opportunities for its employees. Since 2013, the Project has cumulatively generated 15,867 hours of training for Inuit employees (or 12.9% of the total), which doesn't include additional training gained by Project contractors. Appendix B contains additional details on the training programs that have been provided to LSA residents to-date. Likewise, approximately 1.48 million hours of Project labour (or 16.8% of the total) have been cumulatively performed in Nunavut by Inuit employees and contractors since 2013. These new employment and training contributions to the Nunavut economy are a direct result of Project development and represent a positive effect in a region with otherwise limited economic opportunities.

Employee turnover also continues to occur at the Project, which allows at least some previous Project employees to become available for employment elsewhere. While high rates of employee turnover are undesirable in most workplaces, some degree of turnover is expected and considered normal. In 2017, there were 42 Inuit employee departures (not including contractors) at the Project, which equates to a 45% Inuit employee turnover rate.<sup>28</sup> Project training and experience opportunities, combined with regular employee turnover, have helped increase the overall pool of skilled workers in the LSA labour force from which hamlets (and other local and regional businesses/organizations) can now draw upon.

Baffinland anticipates its positive effect on LSA labour force capacity will continue and potentially be enhanced under the Phase 2 Proposal. Existing Inuit employment, contracting, and training commitments (e.g. through the IIBA) have already provided benefits and will remain in place. Additional gains are likely to be made through successful implementation of employment and training provisions in the IIBA through initiatives such as the IHRS, IPCS, and Q-STEP training program all developed jointly with the QIA. Enhanced positive effects could also result from the new types of employment opportunities

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<sup>28</sup> Baffinland acknowledges the current Inuit employee turnover rate is higher than desired. Baffinland continues to monitor employee turnover causes and outcomes, and is committed to reducing turnover and increasing Inuit employment where feasible. Section 4 (Livelihood and Employment) provides further details on the Inuit employment initiatives Baffinland is currently undertaking.

created under the Phase 2 Proposal (e.g. additional construction, port, shipping, and rail-related employment) and the skills training that would be required to support these jobs. The small decrease in overall person years of employment projected for the Phase 2 Proposal is not considered a substantial influence on this effect.

In the event Inuit employment were to increase at the Project in the future (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26), the LSA can be expected to benefit from additional labour force capacity development. However, overall significance conclusions for this residual effect will not be affected by the Phase 2 Proposal. A high magnitude positive effect is still predicted to arise in the LSA, with high confidence. As noted in Section 7.6.1, this improved labour force capacity will help offset Project effects on competition for skilled workers, over time.

### 7.6.3 Discussion of Other Community Infrastructure and Public Services Topics

Several EIS Guidelines specific to the community infrastructure and public services VSEC were identified by NIRB in the Amended EIS Guidelines. One additional topic of discussion has also been identified by Baffinland. A summary of how the Phase 2 Proposal interacts with each of these topics is provided in Table 7.2.

**Table 7.2 EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
<p>Assessment of incremental costs imposed by the needs from the Project directly or indirectly on public infrastructure and services</p>	<p>Potential incremental costs imposed by the Project on public infrastructure and services were assessed previously for the Approved Project. These included potential demands placed on transportation infrastructure (e.g. the Iqaluit airport) and medical services, and potential local resident demands for improved infrastructure and services resulting from increased disposable income and personal mobility. Only minor incremental costs on public infrastructure and services have been identified by Baffinland's monitoring program to-date (Appendix B). Baffinland does not anticipate any significant changes to occur in this area under the Phase 2 Proposal, although some increased use of LSA community airports will occur. Additional air traffic will be required to support the development of the Phase 2 Proposal (to support new construction activities and the transportation of workers and materials).. Increased airport use is expected to be concentrated primarily on the Iqaluit airport, as Iqaluit may be used as a stopover point for flights originating from the south (where many workers and materials will continue to be sourced from). Airport landing, re-fuelling, and other fees will also continue to be paid by Baffinland, and the recent opening of the new Iqaluit airport should help alleviate additional strains from increased Project (and non-Project) air traffic in the future.</p> <p>Any additional effects (i.e. costs) on public infrastructure and services that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project. They are also expected to be reasonably manageable by current service providers.</p>
<p>Evaluation of the effect on services and/or infrastructure in public and private sectors, due to the potential use by the Project directly or indirectly</p>	<p>Potential effects on public and private services and infrastructure due to potential use by the Project were previously assessed for the Approved Project. This analysis concluded some incremental costs on public infrastructure and services (e.g. transportation and medical services) could occur, in addition to the creation of economic benefits for private businesses in Nunavut. Increased incomes from the Project may also (indirectly) lead some individuals to increase their use of local services and infrastructure (new incomes may encourage some individuals to purchase new goods/services from local retailers, new vehicle purchases may result</p>

**Table 7.2 EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
	<p>in additional road maintenance being required, new incomes may encourage more air travel and vacations, etc.). Some incremental use of public infrastructure and services will continue under the Phase 2 Proposal, but will be minor and similar to the Approved Project (Project use of private LSA/RSA business services is an economic benefit which may be enhanced under the Phase 2 Proposal's new contracting opportunities (Section 8)).</p>
<p>Assessment of public health and environmental health needs and implications to the Proponent's community initiatives</p>	<p>The Phase 2 Proposal will continue to have some implications for public and environmental health in the LSA (e.g. related to health and safety of workers on-site, potential indirect health effects on communities, demand for services). These will be similar to the Approved Project (but see Sections 6 and elsewhere in 7.6.3 for additional details). Baffinland's existing management plans and mitigation in this area (e.g. Health and Safety Management Plan, Spill Contingency Plan, Emergency Response Plan) will continue to address Project-related public and environmental health issues. More recently, Baffinland has been in the process of developing an integrated Health, Safety, Environment, Community, and Security (HSECS) Management Plan to further improve its activities in this area. In addition to initiatives that focus on site-related or worker-based issues, it is worth noting the Company also supports various initiatives that enhance overall community well-being in the LSA. For example, Baffinland contributes to the INPK fund through its IIBA negotiated with QIA, which provides up to \$750,000.00/year for projects in the Qikiqtaaluk Region which enhance community wellness. This fund serves to provide benefits to LSA residents who may not have a direct employment relationship (or benefit from) the Project.</p>
<p>An assessment of potential increased demand for health care system, including standard medical system, emergency response and emergency medical care, medivac and other emergencies, as well as challenges brought by the increased demand</p>	<p>The potential for increased demands to be placed on the health care system was previously assessed for the Approved Project. Direct impact on medical service demand could arise from increased medical check-ups as well as work-related injuries that will arise at the mine site, although this demand will be mitigated by Baffinland establishing their own medical capabilities on-site and by bringing in medical staff to carry out work-related check-ups. Some medical emergencies may require medical evacuation to hospital facilities in Iqaluit or Ottawa, although these incidents are expected to be infrequent. None of these demands are considered to be capable of overwhelming or unduly straining local health care systems. Any additional effects (i.e. demands) that may be induced by the Phase 2 Proposal would be incremental and minor compared to what was previously assessed for the Approved Project. They are also expected to be reasonably manageable by current service providers. Existing management measures will also remain in place.</p> <p>An on-site Project medic will continue to provide employees with regular access to medical services. A MOU signed with the GN regarding site health services and medevac procedures also addresses this issue (first signed in 2013 and subsequently updated in 2017). This MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN for costs associated with the medical transportation of employees and for conducting pre-employment medical exams.</p>



**Table 7.2 EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
<p>A discussion of the potential to bring in freight for communities by return shipping, and likelihood to share shipping costs with local communities, which will likely reduce the life expenditure of local communities</p>	<p>The potential for the Project to bring in freight for communities by ‘return shipping’ was previously addressed in the assessment of the Approved Project. Baffinland acknowledges some residents have expressed interest in the potential for the Project to lower the cost of community freight by providing return shipping services. Baffinland will continue to explore the feasibility of such opportunities with communities on a case by case basis.</p>
<p>Discussion of building new and updating the existing structures (e.g. weather shields, outposts) beyond communities on hunting/traveling routes, and/or at hunting grounds to facilitate local hunting activities/traveling in Project areas</p>	<p>This topic was previously addressed in the assessment of the Approved Project and included a commitment by Baffinland to install emergency shelters along the Tote Road. These shelters have been built and are currently available for any individual (LSA residents included) to take refuge in the event of an emergency. They will remain in place during the Phase 2 Proposal. LSA residents travelling through Project areas will also continue to be provided with access to Project sites (subject to safety and operational considerations) and be offered a hot meal. Baffinland has developed access and check-in procedures for travellers visiting the Mary River and Milne Port sites, including route maps and written instructions which have been provided to community residents. Baffinland also worked with the Pond Inlet HTO in 2014 to relocate and replace an existing HTO cabin at the Mine Site, as the previous cabin was within current mine operations. Baffinland is open to discussion with the MHTO regarding the relocation of the cabin at Milne Port if the MHTO and community desire it.</p>
<p>A discussion of community access to Project infrastructure upon closure, including the Tote Road, railway and sea port facilities</p>	<p>The topic of community access to Project infrastructure upon closure was previously addressed in the assessment of the Approved Project, and this discussion remains valid for the Phase 2 Proposal. Upon Project completion, it is not anticipated these facilities would find a viable use for other purposes and will be decommissioned. However, Baffinland acknowledges that future discussions with Inuit communities and stakeholders (e.g. government, QIA, other mineral developers) could identify potential alternative uses for this infrastructure upon closure. Baffinland’s Interim Closure and Reclamation Plan (Baffinland, 2016c) provides additional details on closure plans for the Project.</p>
<p>Potential impacts of increased employment, wages, and nearby activities, particularly ice breaking and bridge operations on community infrastructure and public services during Phase 2</p>	<p>Discussion of potential impacts on community infrastructure and public services due to increased employment, wages, and nearby activities (e.g. ice breaking and bridge operations) is a new topic identified in the Phase 2 Proposal EIS Guidelines that Baffinland was requested to provide information on. Given that only modest changes to the workforce profile are expected, the Phase 2 Proposal will not be introducing changes that would alter previously assessed effects on employment and wages (further discussion on this topic is provided in Section 4 – Livelihood and Employment). As noted elsewhere in Section 7.6.3, Project incomes may also help alleviate strains on public housing availability, by increasing the purchasing power of LSA residents and decreasing the number of individuals receiving income support. Some individuals may pursue home ownership options as a result of these new incomes. In addition, increased disposable income arising from Project employment may lead to increased demand for/placed on some hamlet infrastructure (e.g. employees may purchase new vehicles, which could lead to a need for improved roads and intersections, increased maintenance, or other measures). Increased personal mobility could also increase the demand</p>



**Table 7.2 EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
	<p>for levels of infrastructure and services that more closely approach those of larger centres.</p> <p>Adverse effects on community infrastructure and public services related to ice breaking and bridge operations, specifically, are not expected to occur under the Phase 2 Proposal. Ice breaking operations have been removed from the Phase 2 Proposal Project Description (which negates the need for bridge operation). Increased open water shipping activities, in addition to some shoulder season shipping through Eclipse Sound/Milne Inlet are now proposed instead. The potential effects of these new activities on community land users are assessed in Section 9 (Culture, Resources, and Land Use). These activities are not expected to affect community infrastructure and public services in a notable way.</p>
<p>Public housing availability                      (not an EIS Guideline, but is a topic of relevance to the EIS)</p>	<p>Baffinland anticipates the Project will, over time, increase the purchasing power of LSA residents and decrease the number of individuals receiving income support. This is expected to occur primarily through increases in local wealth generated by employment and other Project-related economic opportunities. How Project employees spend their income will ultimately be a personal choice; however, access to adequate housing (including private home ownership) is often an important goal for many individuals. Personal incomes generated by the Project will help individuals and families accomplish this goal should they wish.</p> <p>Furthermore, additional Project-related in-migration is not expected to occur in the North Baffin LSA because of the Phase 2 Proposal, beyond what has previously been predicted for the Approved Project (see Section 2 – Population Demographics). Without in-migration for Project jobs, additional strains on housing availability are not expected to arise. This is primarily due to the Iqaluit and southern point-of-hire that has been established by Baffinland, which encourages non-Inuit to continue residing in the south and not relocate. Baffinland’s existing LSA point-of-hire communities and commitment to pay for transportation costs for employees from non-point-of-hire Qikiqtaaluk communities further reduces the probability of Inuit mobility becoming substantial.</p> <p>The Nunavut Housing Corporation (NHC) also continues to make investments in new housing units across the territory and has several existing programs which support improved access to housing for Nunavut residents. These programs include recent changes made to the Public Housing Rent Scale (in 2014) to reduce disincentives to work and encourage savings (e.g. by assessing only the incomes of the two primary tenants rather than non-primary tenants, placing limits on rent increases due to income increases yearly until the rent assessed total is eventually reached). The NHC also offers home purchase assistance programs (e.g. the Nunavut Downpayment Assistance Program; Tenant to Owner Program) and home renovation and repair programs to Nunavut residents (NHC 2016c). Together, these programs and investments are expected to lead to improved housing circumstances for individuals, help reduce overcrowding, and address public housing deficits in the territory.</p> <p>For these reasons combined, additional strains on public housing in the LSA are not envisioned to result from the Phase 2 Proposal. However, housing-related issues will continue to be tracked through the Project’s socio-economic monitoring program (e.g. Project Certificate condition #133 requests Baffinland conduct a regular employee survey that includes questions on housing). Baffinland will also continue engaging the QSEMC</p>

**Table 7.2 EIS Guideline / Other Topic Summaries – Community Infrastructure and Public Services**

EIS Guideline / Other Topic	Summary of Interactions - Phase 2 Proposal
	and SEMWG, so that housing and other related issues can be discussed in an on-going manner.

#### 7.6.4 Significance of Residual Community Infrastructure and Public Services Effects

As noted above, two residual effects have been carried forward for the Phase 2 Proposal. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for community infrastructure and public services will be created. More specifically, the Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to community infrastructure and public services, although positive effects in some areas may be enhanced. However, the new construction employment opportunities will be short-term and the small decrease in total person-years of employment are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes for community infrastructure and public services remain the same.

The ratings assigned to the residual effects evaluated above are presented in Table 7.3. The effect on ‘competition for skilled workers’ was assessed to be adverse, but not significant. The effect on ‘labour force capacity’ was assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project. Table 7.3 is presented here for completeness, even though Baffinland acknowledges the significance ratings for these criteria haven’t changed.

An overall assessment of the key indicator ‘hamlet staff recruitment and retention’ (which includes the two residual effects noted above) was also presented in the assessment of the Approved Project. The conclusions of this analysis remain the same for the Phase 2 Proposal. That is, the Project may lead to some residual adverse effects on the ability of hamlets to recruit and retain workers, as the level of competition for these workers increases through Project hiring. However, these effects are not considered to be significant, based on their short-term duration and as Project-initiated training leads to improved levels of skill and experience in the labour force. As training and experience increases in the medium to long-term, this labour force capacity development effect will lead to significant positive outcomes on hamlet abilities to recruit workers.

#### 7.7 Mitigation and Monitoring Updates

Baffinland will continue to track potential Project effects on community infrastructure and public services through its annual socio-economic monitoring program. This will include monitoring of employee-specific information (e.g. through surveys, and employment and training records), Project-related community infrastructure use, government statistics (e.g. on health centre usage), and other relevant information. Baffinland’s current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project’s overall socio-economic performance in the future.

**Table 7.3 Significance of Residual Effects to Community Infrastructure and Public Services**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
Competition for skilled workers	Negative	Moderate	Point-of-hire communities	Community	Occasional	Bystanders	Short-term	Reversible	Not significant	High	High
Labour force capacity	Positive	High	Point-of-hire communities	Community	Continuous	Bystanders	Project life	Non-reversible	Significant positive effect (no adverse effect)	High	High

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## 8 CONTRACTING AND BUSINESS OPPORTUNITIES

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### 8.1 How Has the Contracting and Business Opportunities Assessment Changed?

The Approved Project was assessed to deliver positive effects in the LSA and RSA with respect to the key indicator ‘business opportunities’. More specifically, the Project was predicted to have positive residual effects on creating an expanded market for business services to the Project in the LSA and RSA, and creating an expanded market for consumer goods and services in the LSA (Baffinland 2012 and 2013). These were anticipated to arise from new business opportunities created by the Project and new incomes generated through Project-related employment. No adverse residual effects were predicted with respect to contracting and business opportunities. Positive effects are currently being realized by businesses and individuals throughout Nunavut (Appendix B).

The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will continue to be realized, and possibly enhanced as Baffinland looks to expand its operations (e.g. through additional capital expenditure and contracting opportunities associated with the 12 Mtpa phase) and boost its local contracting efforts through the implementation of its IPCS, recently developed jointly with the QIA.

Overall, the Phase 2 Proposal assessment of contracting and business opportunities has not changed from what was assessed for the Approved Project. More specifically:

- The nature and magnitude of effects are largely consistent with the FEIS and ERP Addendum;
- No new residual effects were identified; and
- Positive effects are predicted. No significant negative effects are predicted.

Additional information in support of this assessment is provided in the sections below. New material relevant to the Phase 2 Proposal is also included, where appropriate.

### 8.2 What We’ve Heard

Inuit community members and stakeholders have described the need for increased economic development in Nunavut and have highlighted the role it plays in helping communities achieve their sustainability goals. They have also told us new contracting and business opportunities in the LSA are a desired benefit of the Project, and important pathway through which local and regional economic development can occur. These messages have been relayed to Baffinland through community engagement during the Project planning and operations phases, and more recently for the Phase 2 Proposal.

Furthermore, several comments recorded over the past two years of engagement on the Phase 2 Proposal were related to the contracting and business opportunities VSEC. Three topic categories have been identified during engagement sessions for the Phase 2 Proposal, with the majority of comments raised pertaining to contracting opportunities.

Interest has been expressed in learning more about the contracting and business opportunities associated with the Project, ways in which these benefits can be captured locally, and about local contract notification procedures.

Baffinland has taken steps to enhance its Inuit contracting programs and address feedback, as discussed further in the sections below.

### 8.3 Background

Compared to the rest of Canada, communities in Nunavut typically have small economies, limited business development opportunities, and face various economic challenges (e.g. small markets, remote locations, high operating costs). The current operating Project has had positive effects on contracting and business in the LSA, primarily through the creation of new procurement and contracting opportunities resulting from mine development. These positive effects are notable and represent significant contributions to an otherwise limited territorial economy. Previously assessed Project residual effects on contracting and business opportunities are described below.

- **Expanded market for business services to the Project** - Baffinland predicted the Project would have a positive effect on creating market opportunities for businesses in the LSA and RSA to supply goods and services to the Project. Associated mitigation measures include the implementation of several Inuit contracting policies. These policies have been designed to assist Inuit firms in developing capacity in the bidding process and to provide opportunities for large contracts to be broken down into smaller components which can then be bid on by Inuit firms. Baffinland's IIBA with the QIA also includes provisions related to local business development. For example, a Business Capacity and Start-Up Fund has been created (which is administered by Kakivak, a subsidiary of the QIA) to assist Designated Baffin Inuit Firms. Baffinland contributes \$250,000 annually (in accordance with the provisions of the IIBA) to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.
- **Expanded market for consumer goods and services** - Baffinland predicted the Project would expand the market for consumer (i.e. non-Project related) goods and services across the LSA. While no specific mitigation measures related to this prediction were proposed in the FEIS, Company commitments related to Inuit employment and contracting support the development of an expanded market for consumer goods and services in the LSA. This is because of the increased purchasing power local residents are expected to have due to Project-induced direct and indirect employment income.

The positive effects on contracting and business opportunities were assessed for the Approved Project to be significant (Baffinland 2012 and 2013). Monitoring results and observations since Project development are consistent with these predictions (Appendix B). Baffinland also continues to investigate ways in which Inuit contracting can be enhanced and has recently finalized an IPCS with the QIA to this end. However, it will likely take several years to fully realize the Project's local business development potential (mine production only began in late 2014). Relevant business skills, capacities, and resources can take time to fully develop in regions with otherwise limited economic development.

### 8.4 Project Monitoring

Recent contracting and business opportunities information is provided in Baffinland's annual socio-economic monitoring reports, the most recent of which is included in Appendix B. Related to contracting and business opportunities, Baffinland monitors the following socio-economic indicators:

- Value of procurement with Inuit-owned businesses and joint ventures;
- LSA employee payroll amounts; and
- Number of registered Inuit firms in the LSA.

Data for these indicators are obtained primarily from Company records and the Inuit Firm Registry database maintained by Nunavut Tunngavik Inc. (NTI). Annual socio-economic monitoring also reports on trends since Project development.

Monitoring to-date supports Approved Project predictions of positive effects of the Project on contracting and business opportunities (Appendix B).

Table 8.1 summarizes the procurement that has occurred with Inuit-owned businesses and joint ventures from 2013 to 2017.<sup>29</sup> Eighteen contracts worth approximately \$387.2 million were awarded to Inuit-owned businesses and joint ventures in the LSA in 2017. Since Project development (i.e. 2013), a total of \$819.1 million worth of contracts have been awarded to Inuit-owned businesses and joint ventures. The differing values in Table 8.1 are at least partly reflective of the construction activities that have occurred during varying periods on site (e.g. 2013 was a major construction year) and the transition to increased operational activities that occurred in 2015.

**Table 8.1 Procurement with Inuit-Owned Businesses and Joint Ventures (2013 to 2017)**

Procurement Details	Year				
	2013	2014	2015	2016	2017
Value of Procurement with Inuit-Owned Businesses and JVs	\$200 million	\$64 million	\$103.5 million	\$64.4 million	\$387.2 million
Total Number of Contracts with Inuit-Owned Businesses and JVs	13	19	12	9	18
Number of Contracts with Inuit-Owned Businesses and JVs in the LSA	6	3	5	9	18

Considerable amounts have also been spent on Baffinland's Inuit employee payroll since Project development (approximately \$33.2 million since 2014). Increased income from direct and indirect Project employment provides LSA residents with a greater capacity to purchase local goods and services, and can also act to stimulate further business growth.

In addition, the number of active Inuit firms<sup>30</sup> registered in the LSA communities increased between 2013 and 2017, which suggests another potential positive Project effect. In 2017, a total of 153 active Inuit firms were registered with NTI in the LSA. Forty-four of these firms were based in the North Baffin LSA communities and 109 were based in Iqaluit. Anecdotal evidence shared with Baffinland by its suppliers indicates that at least some new Inuit firms were registered because of Project-related contracting opportunities. However, it is acknowledged that several factors can contribute to the decision to start (or not start) a new business beyond the presence of a single mining project.

## 8.5 Assessment Methodology

The methods used to assess effects to contracting and business opportunities are consistent with the FEIS (Volume 4, Section 8). Comprehensive baseline information on contracting and business opportunities was previously presented in the FEIS. This updated effects assessment is further supported by subsequent socio-economic monitoring undertaken between 2013 and 2017 (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018), and updated baseline information provided in Appendix C. An updated Economic Impact Model (Appendix A) and Labour Market Analysis (TSD 26) were also prepared to support the assessment of the Phase 2 Proposal.

<sup>29</sup> Values included in this table may be inclusive of amounts committed to through existing contracts, but not yet spent.

<sup>30</sup> Nunavut Tunngavik Inc. (NTI) maintains an Inuit firm registry database for Nunavut. This database (i.e. NTI 2017) provides the name of each registered Inuit firm, describes each firm's area of business operations, and location where the firm is based. Information for 2013 to 2015 is presented in Appendix A and was obtained directly from NTI (E. Eegeesiak 2016, personal communication), while information for 2016 to 2017 was obtained from the NTI database (i.e. NTI 2017).

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## 8.6 Effects Assessment

Baffinland predicted two residual effects associated with the contracting and business opportunities VSEC would occur due to the Approved Project. These include 'expanded market for business services to the Project' and 'expanded market for consumer goods and services' (which together fall under the key indicator 'business opportunities'). These effects were anticipated to arise from new business opportunities created by the Project and new incomes generated through Project-related employment. The nature of the activities associated with the Phase 2 Proposal are such that these positive effects will be sustained, and possibly enhanced as Baffinland looks to expand its operations and boost its local contracting efforts through the implementation of its IPCS. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for contracting and business opportunities will be created.

The most notable changes that will occur because of the Phase 2 Proposal are additional capital expenditure and contracting opportunities associated with construction of the 12 Mtpa operation, and additional short-term construction employment opportunities (primarily with contractors). This new construction phase will occur immediately prior to construction of the South Railway component, although the operation phase of the Project remains unchanged at 21 years. The above-noted changes may create some new (or enhanced) contracting and business opportunities in the LSA and RSA, but are not expected to change previous assessment outcomes. Table 8.2 lists the titles of new major contract packages that will be required for the Phase 2 Proposal. These changes will be assessed further in the context of the Phase 2 Proposal in the sections below.



**Table 8.2 New Contract Opportunities Associated with the Phase 2 Proposal**

Phase 2 Proposal Contract Package Titles	
Power Distribution Cable	Locomotives
Early Earthworks	Ore Wagons
Earthworks North	Fuel Storage
Earthworks South	Rail System
Construction Equipment	Construction Accommodation Camp and Services
Quarry Drill Rigs	Permanent Accommodation Camp
Ore Dock	Workshops
Bulk Materials Handling & Processing	EPCM Early Works
Wrap Around MEIP	EPCM Services Execution
Mine Site Permanent Camp	Third Party Vendor and Pre-Assembly Yard QA-QC
Pre-Cast Concrete	Site Survey
Power Distribution E-Houses	Second Consolidation Hub Baie Comeau
Power Generation	Site Services
Jaw Crusher Upgrade	Sealift Offload
Mobile Equipment - Mine Production	Communications and Data Services
Mobile Equipment - Other	Air Services - Passenger from Regional Airports to Mirabel
EPCM Vehicles	Transport of HME from Milne Port to Mine Site

Phase 2 Proposal interactions with key indicators for the contracting and business opportunities VSEC are summarized in Table 8.3, while residual effects are assessed more fully in Sections 8.6.1 and 8.6.2. Section 8.6.3 provides discussions on other aspects of contracting and business opportunities identified by the NIRB in the Amended EIS Guidelines, while Section 8.6.4 reviews the significance conclusions for contracting and business opportunities residual effects.

**Table 8.3 Phase 2 Proposal Interactions with Key Indicators for Contracting and Business Opportunities**

Project Infrastructure or Activity	Business Opportunities
<b>Project-Wide Changes</b>	
Additional capital expenditure from construction of the 12 Mtpa operation	1
Additional contracting opportunities (additional capex phase)	1
Additional employment opportunities (additional capex phase)	1

**NOTES:**

- Interactions are rated as follows:
  - No interaction.
  - Minor interaction post-mitigation, discussion assessment.
  - Major interaction subject to detailed assessment.

### 8.6.1 Expanded Market for Business Services to the Project

The Phase 2 Proposal will continue to create market opportunities for businesses in the LSA and RSA to supply goods and services to the Project. This is because Baffinland's existing Inuit contracting and procurement commitments will be maintained, and several new opportunities will be created as a result of the Phase 2 Proposal. Baffinland procurement data confirms the significant Project benefits that have been provided in this area. Notably, \$819.1 million worth of contracts have been awarded to Inuit-owned businesses and joint ventures since Project development. In 2017 alone, 18 contracts worth approximately \$387.2 million were awarded to Inuit-owned businesses and joint ventures, all in the LSA.

These positive effects are a result of mitigation measures designed by Baffinland, including the implementation of several Inuit contracting policies. These policies provide preferential access to contracts by Inuit firms, assist Inuit firms in developing capacity in the bidding process, and provide opportunities for large contracts to be broken down into smaller components which can then be bid on by Inuit firms. Baffinland's IIBA with the QIA also includes provisions related to local business development. For example, a Business Capacity and Start-Up Fund has been created to assist Designated Baffin Inuit Firms. Baffinland contributes \$250,000 (in accordance with the provisions of the IIBA) annually to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.

Baffinland also recently finalized an IPCS with the QIA, which is expected to enhance the business opportunities available to Inuit under the Phase 2 Proposal. The IPCS addresses several Inuit contracting requirements contained in the IIBA and identifies preferential opportunities and procedures for Inuit Firms to contract with Baffinland. More specifically, it describes the methodologies through which Inuit Firms can participate in the Project, and outlines specific objectives and targets with respect to Inuit participation in procurement and contracting opportunities between 2017 and 2020. Participation will be accomplished by identifying Inuit Firms with suitable capabilities to execute each scope of work and engaging them in direct negotiations (where appropriate) or in a competitive tender process. The four main phases of Baffinland's Inuit contracting cycle, as identified in the IPCS include:

1. **Procurement planning** – Baffinland annually submits a list of anticipated contracts to QIA, after which Baffinland and QIA attempt to reach a consensus on Inuit content requirements for each anticipated contract (including a MIEG, unbundling, and other terms and conditions).
2. **Pre-qualification** – The objectives of the pre-qualification process are to develop a contracting strategy (e.g. direct negotiation, competitive tender) that is appropriate for the scope of work; to identify contractors with the experience and capacity to carry out the work; and to utilize Inuit Firm data to inform contract tailoring and Inuit Firm capacity building. Main steps in the process include:
  - Baffinland identifies a need for contracting, and develops an initial scope of work and contracting strategy to address this need.
  - Baffinland notifies QIA of scope and contracting strategy; QIA provides support in identifying suitable Inuit Firms for both the prime contract and potential subcontracts. The bidders list is finalized.
  - If the contract is directly negotiated, there is no further pre-qualification. If the contract is competitively tendered, Baffinland issues a Request for Expressions of Interest.
  - Expressions of Interest are evaluated, and shortlisted bidders are identified. Shortlisted bidders proceed to the main tender phase.
3. **Tender** - The objective of the tender process is to select a contractor who demonstrates a clear understanding of the scope of work and the ability to execute the work in compliance with the contract. Main steps in the process include:

- Baffinland prepares the tender package, including establishment of a preliminary Minimum Inuit Employment Goal (MIEG) based on the scope of work being considered.
  - The tender package is released, and clarification requests from bidders are addressed by Baffinland. At the end of the clarification period, bidders submit preliminary bids.
  - Baffinland identifies potential areas for negotiation, and negotiations with the bidders take place. Bidders submit final bids.
  - The final bids are evaluated for technical competence, schedule, commercial competitiveness, Inuit content, etc. Baffinland recommends the preferred bidder to management, and the contract is awarded.
- 4. Execution** - The objectives during contract execution are to verify that the scope of work is completed in compliance with the terms, conditions, and requirements of the contract. This includes technical and commercial requirements, as well as those set out in the Contractor's Inuit Content Plan and compliance with the contract MIEG. Main steps in the process include:
- Contractors submit monthly Inuit content reports (employment / training) to Baffinland, and these are reviewed by Baffinland for compliance with the contract MIEG.
  - If the contractor is in compliance with the contract MIEG, no further review is required for that month. If the contractor is not in compliance, review is required to understand if the contractor has employed best efforts.
  - If the contractor fails to demonstrate the use of best efforts, Baffinland suggests a collaborative process to support the contractor such that the contractor is able to improve its Inuit content.
  - Inuit content reports are aggregated by Baffinland and submitted to the QIA.

Various business capacity building initiatives are also included in the IPCS. For example, Baffinland has committed to offer information sessions and workshops to Inuit Firms registered on the DIFL in the North Baffin communities and Iqaluit. The *information sessions* will provide details about upcoming contracts and procurement phases. The *workshops* will be more focused and hands-on in their approach than the information sessions, and will focus on particular areas of procurement phases to help build Inuit Firms' business capacities. The reporting components of the IPCS will be used by QIA to aid in the determination of future funding areas of the BCSF.

Baffinland anticipates market opportunities for businesses in the LSA and RSA will be sustained and potentially enhanced under the Phase 2 Proposal. Existing Inuit contracting commitments will remain in place and additional gains are likely through successful implementation of Baffinland's new IPCS. Additional positive effects could result from the new contracting opportunities associated with the Phase 2 Proposal (as described further in Section 8.6.3). While these may create some new (or enhanced) contracting and business opportunities in the LSA and RSA, they are not expected to change overall assessment outcomes; the significant positive effect determination presented for the Approved Project remains the same for the Phase 2 Proposal.

However, one notable change has been made to the 'magnitude' rating previously presented for this residual effect.<sup>31</sup> Where the magnitude of Project effects on market opportunities in the LSA was previously identified as 'uncertain' (due to uncertainties related to capacity and entrepreneurial interest in the LSA), it has now been identified as 'moderate-high'. This

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<sup>31</sup> The following parameters were used to assess the magnitude of Project effects on market opportunities: Low (i.e. opportunities that are accessible to local business arise from time-to-time but are sporadic and are not considered by the front-line business community to change the environment for business), Moderate (i.e. accessible opportunities for local business are enhanced and are considered by the front-line business community to improve the environment for business), and High (i.e. accessible opportunities for local business are enhanced and the improved business environment is readily apparent to the general population through clear evidence of business expansion).

is the same magnitude rating attributed to the RSA, and is a result of evidence collected through Baffinland's monitoring program which confirms contracts with Inuit-owned businesses and joint ventures in the LSA continue to be established (see Table 8.1).

### 8.6.2 Expanded Market for Consumer Goods and Services

The Phase 2 Proposal will continue expanding the market for consumer goods and services across the LSA. More specifically, local residents will continue to gain increased purchasing power through Project-related (i.e. direct/indirect) employment income and other Project expenditures. Increased income from Project employment provides LSA residents with a greater capacity to purchase local goods and services and acts to stimulate local business growth. Baffinland has demonstrated the positive effects it has had in this area. Considerable amounts have been spent both on Baffinland's Inuit employee payroll (approximately \$33.2 million since 2014) and contracting with Inuit-owned businesses and joint ventures (approximately \$819.1 million since 2013) since Project development (Appendix B). These new contributions to the Nunavut economy are a direct result of Project development and represent a positive effect.

The number of registered Inuit firms in the LSA is another useful indicator of the degree to which an expanded market for consumer goods and services may have been created by the Project. This is because new Project-generated consumer discretionary income would be expected to result in increased demand for (and spending on) local goods and services. Subsequently, the number and offerings of local businesses would be expected to increase to meet this demand. The number of active Inuit firms registered in the North Baffin LSA communities has increased by 15 since 2013, while the number of active Inuit firms registered in Iqaluit has increased by 40 since 2013, which suggests a potential positive Project effect. It's understood that wealth generated through employment may also increase an individual's ability to start a new business.

Baffinland anticipates these positive effects will be sustained and potentially enhanced under the Phase 2 Proposal. Existing Inuit employment and contracting commitments will be maintained and additional gains are likely to be made through successful and ongoing implementation of the IIBA and associated instruments (e.g. Baffinland's new IHRS and IPCS). These are key strategic documents that outline Baffinland's commitments to enhanced Inuit employment and contracting at the Project. Additional positive effects could also result from new contracting and employment opportunities associated with the Phase 2 Proposal. Increased Inuit employment levels (an increase is identified as a possibility in the Labour Market Analysis; see TSD 26) could provide additional benefits in this area.

While new (or enhanced) market opportunities may arise in the LSA, they are not expected to change previous assessment outcomes; the moderate magnitude significant positive effect determination presented for the Approved Project remains the same for the Phase 2 Proposal. It is also possible that monitoring will uncover additional beneficial Project effects; for example, it may take an extended period for some businesses to respond to emerging commercial opportunities.

### 8.6.3 Discussion of Other Contracting and Business Opportunities Topics

Several EIS Guidelines specific to the contracting and business opportunities VSEC were identified by NIRB in the Amended EIS Guidelines. A summary of how the Phase 2 Proposal interacts with each of these guidelines is provided in Table 8.4.

**Table 8.4 EIS Guideline Summaries - Contracting and Business Opportunities**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
<p>Assessment of both negative and beneficial economic effects from the Project's contracting and business opportunities through the Project lifespan and updated with any changes to the Project</p>	<p>The Phase 2 Proposal will continue to have positive economic effects (described in Section 8.6.1 and 8.6.2), some of which may be enhanced (through new contracting and employment opportunities, implementation of the IHRS and IPCS). Additional positive effects would result from new contracting opportunities created by the Phase 2 Proposal, including those associated with construction of the North Railway component, construction of a second ore dock and other facilities at Milne Port, and increased shipping and other activities.</p> <p>Over 30 new contract packages will be created that are specific to the Phase 2 Proposal, with a total estimated value of nearly \$770 million. This is in addition to several contract packages that are renewals and/or extensions of existing operations contracts, but will still be required to advance the Phase 2 Proposal; these have a total estimated value of over \$80 million. The economic value of these new contract packages is substantial, and is anticipated to create new opportunities for Nunavut-based businesses.</p> <p>Additional positive effects on local contracting and business opportunities could result from implementation of Baffinland's new IPCS developed with the QIA. The IPCS describes the methodologies through which Inuit Firms can participate in the Project, and is a key strategic document that outlines specific objectives and associated targets with respect to Inuit participation in procurement and contracting opportunities. Baffinland's updated Economic Impact Model (Appendix A) also provides information on the magnitude of the Phase 2 Proposal's overall economic effects.</p> <p>Negative economic effects are not anticipated, although effects associated with the Project's closure phase are described elsewhere in Section 8.6.3.</p>
<p>Opportunities for local, regional, and territorial businesses to supply goods and services both directly to the Project, and indirectly to meet the demand created by the expenditure of new income by employment in the Project with updates for any changes to the Project</p>	<p>Opportunities for local, regional, and territorial businesses to supply goods and services both directly to the Project, and indirectly to meet the demand created by the expenditure of new income from Project employment were previously assessed for the Approved Project to be substantial. As noted in Sections 8.6.1 and 8.6.2, Project monitoring has confirmed the positive effects the Project has had in this area to-date. Baffinland anticipates opportunities for businesses to supply goods and services will continue and potentially be enhanced under the Phase 2 Proposal. Existing Inuit employment and contracting commitments will remain in place, while additional gains are likely to be made through successful implementation of Baffinland's new IHRS and IPCS. Additional positive effects could also result from new contracting opportunities created by the Phase 2 Proposal and any increases to Inuit employment levels that may be achieved (and associated increases in the spending of discretionary income by new employees).</p>
<p>Assessment of the Project effects on other local and regional economic sectors, in particular the competition to other business' needs due to limited capacity of local business</p>	<p>As noted in Section 8.6.2, the Phase 2 Proposal will continue expanding the market for consumer goods and services in the LSA, primarily because of the increased purchasing power local residents will have due to Project-induced direct and indirect employment income. The Economic Impact Model (Appendix A) highlights the economic contributions of the Phase 2 Proposal beyond just the LSA. However, Baffinland acknowledges the limited capacity of some local businesses and the potential for Project needs to compete with existing (i.e. non-Project) demands placed on these businesses. The expanded market for consumer goods and services the Phase 2 proposal will create in the LSA (Section 8.6.2) is expected to help alleviate some of these strains. Baffinland anticipates local businesses will grow and adapt in response to Project opportunities over time, and that more robust and capable business models will be created as a result.</p> <p>Baffinland also acknowledges Project employment opportunities may create some competition for local workers with LSA businesses and organizations. This issue is explored more fully in Section 7 (Community Infrastructure and Public Services), but will be addressed over time through ongoing training and experience generated by the Project, in addition to regular employee turnover. Together, these will increase the pool of skilled workers in the local labour force. Ex-Project workers will then be available to work with other local</p>

**Table 8.4 EIS Guideline Summaries - Contracting and Business Opportunities**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	businesses and organizations, should they wish. Finally, Baffinland continues to support local business capacity building initiatives through its IIBA, such as the Business Capacity and Start-Up Fund (BCSF).
Assessment of the contributions made to public, communities and Inuit from the Project with updates for any changes to the Project	The Phase 2 Proposal will continue contributing to the public, communities, and Inuit. The economic contributions of the Phase 2 Proposal are substantial (see Sections 4, 5, and 8 and Appendix A), and additional contributions will occur through commitments contained in the IIBA (e.g. Education and Training Fund, BCSF, INPK Fund), implementation of the IHRS and IPCS, and Baffinland's community donations program.
Assessment of the project-related procurement, and potential capacity to meet the Project needs with updates for any changes to the Project	Baffinland anticipates the Phase 2 Proposal will result in several new contracting opportunities for Inuit businesses, but acknowledges business capacity limitations exist in the LSA. Baffinland supports measures that address business capacity issues in the LSA (e.g. IPCS, BCSF), but some procurement is still expected to occur with non-LSA companies. This is because certain contracting packages associated with the Phase 2 Proposal require specialized skills and expertise that are otherwise unavailable among LSA businesses (e.g. related to rail construction and operation) or the procurement of goods that are not produced within Nunavut (e.g. locomotives and ore wagons).
Discussion on barriers to local business capacity building	Baffinland described various barriers to local business capacity building in the assessment of the Approved Project and continues to acknowledge their presence in the LSA. These include a lack of financial resources for individuals contemplating business start-up; limited business development experience and expertise; distance from major markets; and remote, high-cost operating environments; amongst others. Baffinland will continue to support measures that address business capacity issues in the LSA during the Phase 2 Proposal, such as the IIBA's BCSF and through commitments contained in the IPCS. The reporting components of the IPCS will be used by QIA to aid in the determination of future funding areas of the BCSF.
Assessment of existing country food supply sources from the Project region and Nunavut, and opportunities to supply Inuit workers at the Project	Potential business opportunities to supply Inuit workers at the Project with country foods were described in the assessment of the Approved Project. Baffinland understands and respects the importance of country food for the health and well-being of Inuit. Consumption of country food provides a social occasion for Inuit to come together and has considerable nutritional value. Country food kitchens have been established at both camps (mine and port site complexes) and in the past have been stocked with country foods purchased by Baffinland from an approved vendor. Inuit employees are also encouraged to bring their own country foods to site and prepare them in the country food kitchens. Any equipment required to prepare and cook country food is provided by Baffinland. It is the responsibility of those using the country food kitchen facilities to clean up the area afterwards, however cleaning staff sanitize the country food kitchens daily. Site-based country food kitchens will continue to operate during the Phase 2 Proposal and country foods will be purchased by Baffinland where feasible from an approved vendor and provided to employees. The Nunavut Development Corporation's website (NDC 2017) provides information on several current country food retailers operating in Nunavut.
Assessment of opportunities for local communities to diversify their economic sources and to supply new goods and services to meet the need from the Project	An assessment of opportunities for local communities to diversify their economic sources and to supply goods and services to meet the needs of the Project was previously presented for the Approved Project. Baffinland has successfully demonstrated several positive effects it has had during the Approved Project. For example, \$387.2 million in contracts was issued to Inuit-owned businesses and joint ventures in the LSA in 2017 alone, and a total of \$819.1 million in contracts has been awarded to Inuit-owned businesses and joint ventures since Project development (2013 onwards). The Phase 2 Proposal will continue to provide opportunities for local communities to diversify their economic sources, through new (and existing) contracting and business opportunities. As noted in the FEIS, Baffinland has implemented active mitigation measures to support business development and to enhance the capacity of LSA businesses to capture opportunities generated from the Project.



**Table 8.4 EIS Guideline Summaries - Contracting and Business Opportunities**

EIS Guideline	Summary of Interactions - Phase 2 Proposal
	Baffinland also anticipates new commitments related to Inuit contracting included in the IPCS will contribute to enhanced certainty and business capacity in this area. The BCSF may also assist in this regard.
Potential impacts on local businesses and services, which developed for the Project and depend on the operation of the Project after temporary suspension and final closure	Potential impacts associated with Project closure are similar to those previously assessed for the Approved Project. However, Baffinland has taken certain steps to help ease the transition associated with mine closure (e.g. the Phase 2 Proposal has been developed so that the Project continues to operate in an economically viable manner, through ongoing support of the IIBA's BCSF). Individual employment skills and experience that are gained, and business capacity that is developed, are also expected to ease the transition associated with mine closure. These enhanced capacities should make it easier for individuals and businesses to take on other opportunities once the Project is complete.
Potential contracting and business opportunities associated with the Tote Road upgrades, additional port facilities, ice-breaking, and trans-shipment of iron ore	New contracting opportunities created by the Phase 2 Proposal include those related to construction of the North Railway component, construction of a second ore dock and other facilities at Milne Port, increased shipping, and other activities. Ice-breaking and trans-shipment of ore are no longer being proposed for the Phase 2 Proposal. Over 30 new contract packages will be created that are specific to the Phase 2 Proposal, with a total estimated value of nearly \$770 million. This is in addition to several contract packages that are renewals and/or extensions of existing operations contracts, but will still be required to advance the Phase 2 Proposal; these have a total estimated value of over \$80 million. The economic value of these new contract packages is substantial, and is anticipated to create opportunities for several Nunavut-based businesses. Inuit contracting commitments contained in the IIBA and the recently developed IPCS will help provide opportunities for Inuit firms.

#### 8.6.4 Significance of Residual Contracting and Business Opportunities Effects

As noted above, two residual effects have been carried forward for the Phase 2 Proposal. No new residual effects will result from the Phase 2 Proposal, as no new impact pathways for contracting and business opportunities will be created. The Phase 2 Proposal will not be introducing any new activities that change the previously assessed effects to contracting and business opportunities, although positive effects in some areas may be enhanced. The additional capital expenditure, contracting, and employment opportunities associated with construction of the 12 Mtpa operation will generate additional benefits, but are not considered substantial changes. The operation phase of the Project is also unchanged at 21 years and overall assessment outcomes remain the same.

The ratings assigned to the residual effects evaluated previously are presented in Table 8.5; these effects were previously assessed to be positive and significant. Baffinland has used the same significance criteria determinations and conclusions for the Phase 2 Proposal as were presented for the Approved Project, with one notable exception. As noted previously, the magnitude rating for the residual effect 'expanded market for business services to the Project' has been changed from 'uncertain' in the LSA, to 'moderate-high'. This is the same magnitude rating attributed to the RSA and has been changed as a result of evidence collected through Baffinland's monitoring program confirming contracts with Inuit-owned businesses and joint ventures in the LSA continue to be established. Table 8.5 is otherwise presented here for completeness, even though Baffinland acknowledges the significance ratings for other criteria haven't changed.

An overall assessment of the key indicator 'business opportunities' (which includes the residual effects 'expanded market for business services to the Project' and 'expanded market for consumer goods and services') was also presented in the assessment of the Approved Project. The conclusions of this analysis remain the same for the Phase 2 Proposal. The Project will have a significant positive effect on the level of opportunities available for local businesses. These opportunities will be



available over the relatively long-term horizon of the Project, and many will be available on a continuous basis. These are considered to be important attributes of the Project's effect on business opportunities.

## **8.7 Mitigation and Monitoring Updates**

Baffinland continues to take steps towards increasing Inuit contracting and employment at the Project and has finalized an IPCS with the QIA to this end. The IPCS describes goals and initiatives that will be used by Baffinland to improve Inuit contracting during the Phase 2 Proposal. Baffinland will monitor and report on the results of IPCS initiatives through quarterly and annual IIBA implementation reports, and the Project's socio-economic monitoring report.

Furthermore, Baffinland will continue to track Project-generated contracting and business opportunity outcomes through its annual socio-economic monitoring program. This will include monitoring the value of procurement with Inuit-owned businesses and joint ventures, LSA employee payroll amounts, and the number of registered Inuit firms in the LSA. Baffinland's current monitoring program is robust and no changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring, and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

**Table 8.5 Significance of Residual Effects to Contracting and Business Opportunities**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the Effects Prediction)
Expanded Market for Business Services to the Project	Positive	Moderate-high	LSA and RSA	Community	Continuous	Engaged individuals	Medium-term	Spontaneous	Significant positive effect (no adverse effect)	High	High <sup>32</sup>
Expanded Market for Consumer Goods and Services	Positive	Moderate	Point-of-hire communities	Community	Continuous	Bystanders	Medium-term	Spontaneous	Significant positive effect (no adverse effect)	High	

<sup>32</sup> Confidence in the prediction that overall effects on business opportunities will be positive, is high.

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## 9 CULTURE, RESOURCES AND LAND USE

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### 9.1 How Has the Culture, Resources and Land Use Assessment Changed?

The assessment for culture, resources and land use has not noticeably changed with the Phase 2 Proposal. The Phase 2 Proposal will involve the following activities and infrastructure that will interact with culture, resources and land use:

- An expanded terrestrial footprint with the addition of the North Railway, which will affect archaeological sites of low cultural significance and may affect Inuit travel through the area
- Additional infrastructure and intensity of Project activity at Milne Port will alter the Project's potential interactions with other land users
- Increased frequency of shipping, with larger vessels, and a shipping season that expands into the shoulders of the open water shipping season

The conclusions of this assessment are that:

- The nature and magnitude of the effects to culture, resources and land use are consistent with the FEIS
- Marine harvesting may be affected to a greater degree due to the increased shipping activity associated with the Phase 2 Proposal
- Potential risks to land use and public safety have changed somewhat from the Approved Project: the increased ship traffic and activities at Milne Port will be more disruptive, and the switch to rail is expected to be less disruptive compared to road ore haulage operations
- Twelve additional cultural heritage sites identified along the North Railway will require mitigation
- No significant effects are predicted

### 9.2 What We've Heard

Participants in consultation activities expressed a number of concerns pertaining to culture, resources and land use. Members within all of the primary communities expressed some level of concern with respect to harvesting wildlife and the potential impacts the Project may have on their ability to continue to harvest wildlife. Community members noted concern of mine operations, and in particular shipping, in interfering with their ability to harvest terrestrial and marine wildlife and in turn compromising their way of life. Examples of concerns raised include increased hunting difficulties from impacts to caribou migration or contamination of the land interfering with hunting grounds, and ship passages interfering and increasing the difficulty of harvesting marine wildlife. Although specific concerns regarding cultural resources were not explicitly expressed during community engagement sessions, general comments regarding the importance of preserving and maintaining Inuit culture and lifestyles were raised.

Five key topics were identified pertaining to this VSEC; the issues noted for each key topic are detailed below:

- **Inuit Lifestyles and Traditions** - concerns predominately were related to the transition to working at the Project and the potential impact it may have on Inuit lifestyles and traditions. Participants asked about supports available to workers, country food availability on site, and cultural training for southern workers.
- **Light, Noise, Emissions and Visual Disruption** – the community member raised concern regarding potential impacts to marine mammals from noise generated by vessels; it was suggested Baffinland use Navy Board Inlet.

- **Marine Travel, Camps, and Harvesting** – comments pertained to concerns community members had related to winter shipping and the potential impact it would have on marine wildlife, on hunters accessing hunting locations, and on the ability to cross the ship track. Baffinland has acknowledge a great deal of concern raised by community members regarding shipping through ice and has amended the Phase 2 Proposal to remove winter shipping including the annual winter sealift.
- **Terrestrial Travel, Camps, and Harvesting** – comments covered a range of issues related to terrestrial travel, camping and harvesting including caribou monitoring programs, wildlife compensation, hunting areas, and discussion with the HTO in Pond Inlet regarding HTO cabins and travel routes inland to the Mary River area for hunting.
- **Traditional Knowledge** – participants reiterated the importance of traditional knowledge, the value it can provide, and that it should be considered equally with scientific study. It was also noted that more should be done to support Elders as they are the ones teaching the youth.

Baffinland has taken into consideration the comments and concerns raised by Inuit community members and stakeholders in the planning of the Phase 2 Proposal. Baffinland revised the original plan by removing trans-shipping and reducing the 8.5-month shipping season following initial engagement on the Phase 2 Proposal and as a result of the Phase 2 Proposal Community Workshop (TSD 03). The company has also removed the annual winter sealift following concerns submitted by residents of Pond Inlet and the QIA to the Nunavut Planning Commission (NPC) during the amendment process to the transportation corridor amendment of the North Baffin Regional Land Use Plan (NBRLUP; NPC 2000) in support of the Phase 2 Proposal.

## 9.3 Background

### 9.3.1 Cultural Heritage

Archaeological surveys were conducted over a number of field seasons (2006 to 2008, 2010 to 2012, 2016) within the Project's local study area (LSA). The surveys documented archaeological sites containing a variety of stone features, including circles that probably represent tent rings, caches, traps, cairns and inukshuit as well as more recent features such as wood cabins and modern artifacts such as a plastic sled runner. The remains found throughout the study area cover a long period of occupation from the Pre-Dorset culture (around 3,500 years old) to the present. Some of the sites contain remains from a variety of stone tools and by-products of their manufacture. Several artifacts that may be attributable to the Pre-Dorset and Dorset cultures have been recovered.

These investigations have established that this general area has seen substantial use throughout the human past. Both Milne Port and Steensby Port have revealed high densities of archaeological remains indicating repeated use both now and in the past. The presence of large numbers of archaeological sites in the Phillips Creek valley has confirmed its importance as a travel corridor to the interior for a considerable time. No sacred places or burial sites were found, though such places have been identified outside of the LSA during the Inuit knowledge studies conducted for the Project (TSD 05 – Mary River Inuit Study Knowledge Mapbook). The knowledge gained from this work has been used to locate Project facilities away from important archaeological sites where possible; to assess any residual impacts and to formulate preservation and mitigation plans for any important archaeological resources to be affected by Project development.

Inuit knowledge and land use studies further describe culturally significant features and locations, and both historic and contemporary land use (FEIS Appendix 4C, KP 2010b; TSD 03 - Community Workshop Report; TSD 05 - Mary River Inuit Study Knowledge Mapbook).

The current operating Project has minimal effects on existing identified cultural resource sites. Previously assessed effects of the Project on cultural heritage are described below.

- **Ground disturbance** – The effects of ground disturbance were assessed to be limited to the PDA. Mitigating and/or staking and flagging the identified archaeological sites prior to the onset of construction reduces the frequency and probability of unexpectedly encountering sites during ground disturbance activities. Ground disturbance impacts, if they occur, are short-term and generally limited to the construction phase of the Project. The residual impact of ground disturbance activities on cultural heritage resources was assessed in the FEIS as not significant.
- **Chance finds due to ground disturbance** - The FEIS identified the possibility of chance finds during the construction phase and closure phase of the Project. A Chance Finds Procedure is contained in the Environmental Protection Plan (EPP; Baffinland, 2016a, and well as the Cultural Heritage Resources Protection Plan (Baffinland 2016d), and training is provided to workers so that they may recognize chance finds, stop work, and report the findings. Since construction there have not been any chance finds identified at either the Mine Site or Milne Port.
- **Human presence at Project sites** - Human presence is related to employees conducting regular operational activities, such as plowing the road, as well as employees and visitors at Project sites. Workers and visitors are required to follow standards and procedures outlined in the EPP for avoiding archaeological sites, dealing with chance finds and for prohibiting the collection of artifacts or the building of new Inuksuits. An exclusion area has been maintained since 2007 east of the camp at Milne Port, restricting access due to the large number of culturally significant archaeological sites in that area.
- **Accidental events** - Most accidental events are considered unlikely, however those that have the potential to impact archaeological sites include vehicle accidents, train derailments, accidental detonation of explosives and accidental releases of hazardous materials. The potential risk of accidental events on archaeological sites has been assessed to be negligible.
- **Unauthorized removal of artifacts** - As part of orientation and induction training workers are educated on the importance of leaving artifacts in their location, not removing them, and reporting such finds to the Environmental Department at site. Exclusion zones have also been established (for example Milne Inlet beach) to reduce the likelihood of unauthorized removal of artifacts. As a result, the FEIS assessed this to be an unlikely occurrence with the overall assessment significance for this effect to be not significant.

The FEIS concluded that with the implementation of mitigation procedures and the Cultural Heritage Resource Protection Plan (Baffinland, 2016d), the Project is expected to have negligible residual effect on the disturbance or removal of archaeological sites, and on cultural resources.

### 9.3.2 Resources and Land Use

Connection to and a deep understanding of the land was necessary for the survival of those newcomers and these traditions have been passed on through the generations. The pursuit of activities such as harvesting, travel and camping continue to be of importance to Inuit, both from a cultural perspective as well as for subsistence and recreation. The consumption of country foods is important for the health and well-being of residents in the LSA. Resources that are harvested in the portion of the LSA affected by the Phase 2 Proposal include but are not limited to caribou, narwhal, polar bear, seals, fish, soapstone, berries and other terrestrial plants, and marine invertebrates and plants (Baffinland 2014a; KP 2010a).

Caribou in the North Baffin follow a cycle of high and low abundance. Current caribou numbers indicate a low point in population in the North Baffin area, requiring residents to travel further to hunt caribou. Hence, few residents currently hunt caribou, though this will change as the caribou population rebounds. Marine harvesting occurs throughout the LSA (Figure 9.1). Other resources, such as berries, are harvested as a secondary, opportunistic harvesting activity when individuals are already out on the land.

Travel and camping are largely pursued in combination with harvesting and visiting other communities (Baffinland 2014a; KP, 2010). Travel routes exist on ice, in water, and over land. Important travel routes that will have a direct relationship with the Phase 2 Proposal include a travel route from Pond Inlet through Eclipse Sound into Milne Inlet and through Navy Board Inlet and the Phillips Creek valley, which is used as a guide for inland travel from Milne Inlet. Travel routes are presented on Figure 9.2, while camping locations are presented on Figure 9.3.

Previously assessed Project effects on resources and land use are described below.

- **Wildlife harvesting by Inuit** - Effects of the Project on harvesting were assessed as follows:
  - Marine Mammals - The potential for Project shipping to affect the harvesting of marine mammals, either due to impacts to marine mammal populations or by affecting harvesting activities, was assessed. The assessments concluded that the Approved Project would result in negligible effects.
  - Fish - Local residents focus their fishing efforts at streams and lakes containing anadromous Arctic char. The lakes and streams in the Project area contain land-locked Arctic char populations only. For this reason, the previous assessments concluded that the effects on harvesting of fish would be negligible.
  - Caribou - The ability of Inuit to harvest caribou could be affected if population level effects to caribou occurred as a result of the Project, or if caribou harvesting was somehow restricted. The previous assessments established that the loss of caribou habitat was modest, and mortalities (i.e. due to collisions) were unlikely. The residual effect of the Project on caribou harvesting was assessed to be not significant.
- **Travel and Camps** - The Project may impair land use in Project areas and along transportation corridors. Related to the issue of access to travel routes and camps was also the issue of whether or not the Project presented a risk to public safety, specifically the safety of other land users. The following effects were assessed and were determined to be not significant:
  - Safe travel around Eclipse Sound and Pond Inlet
  - Safe travel through Milne Port
  - Emissions and noise disruptions at camps
  - Sensory disturbances and safety along Tote Road
  - Detour around Mine Site for safety and travel
  - HTO cabin closure
  - Difficulty and safety relating to railway crossing
  - Detour around Steensby Port
  - Restriction of camping locations around Steensby Port

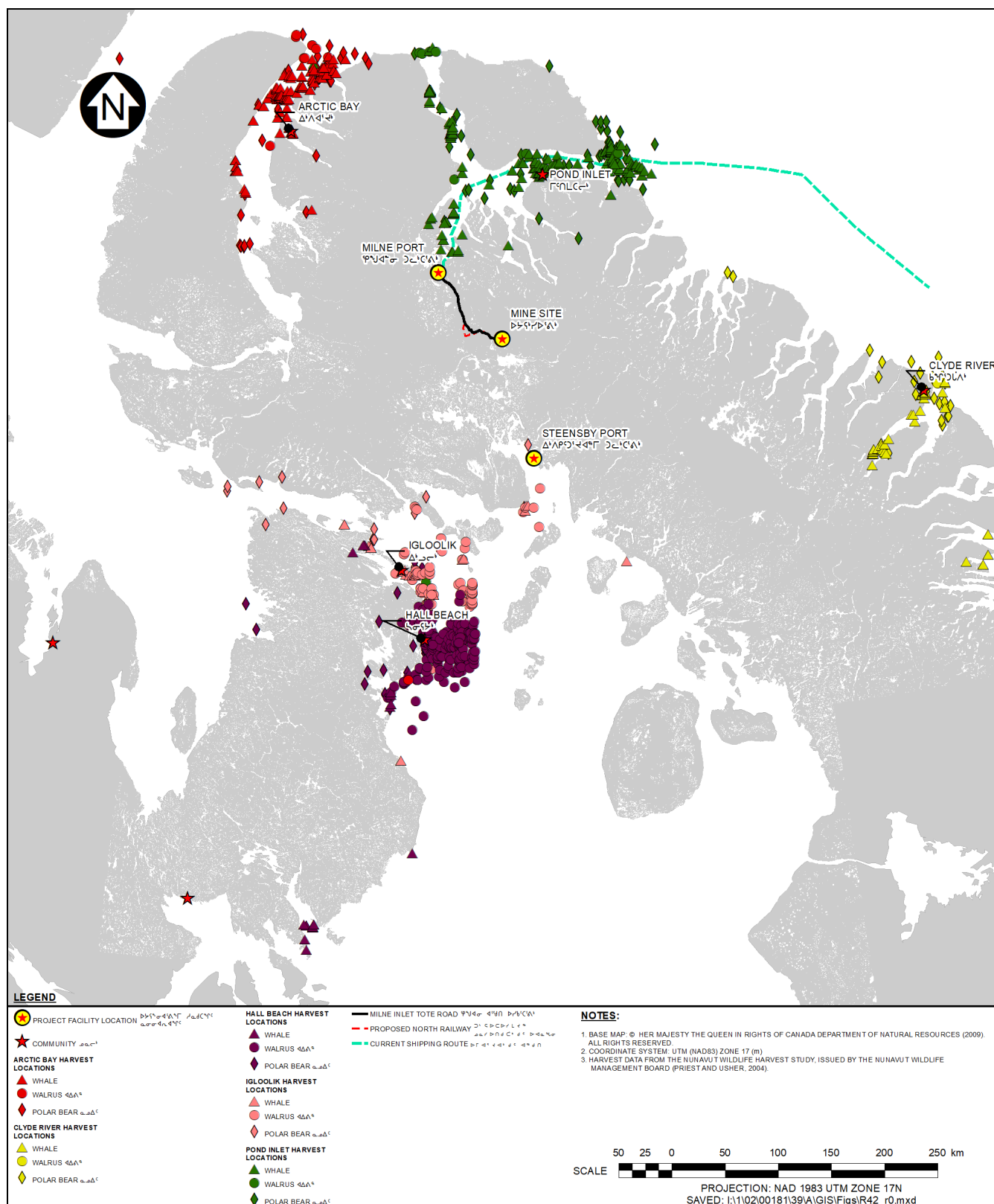


Figure 9.1 Marine Mammal Harvesting





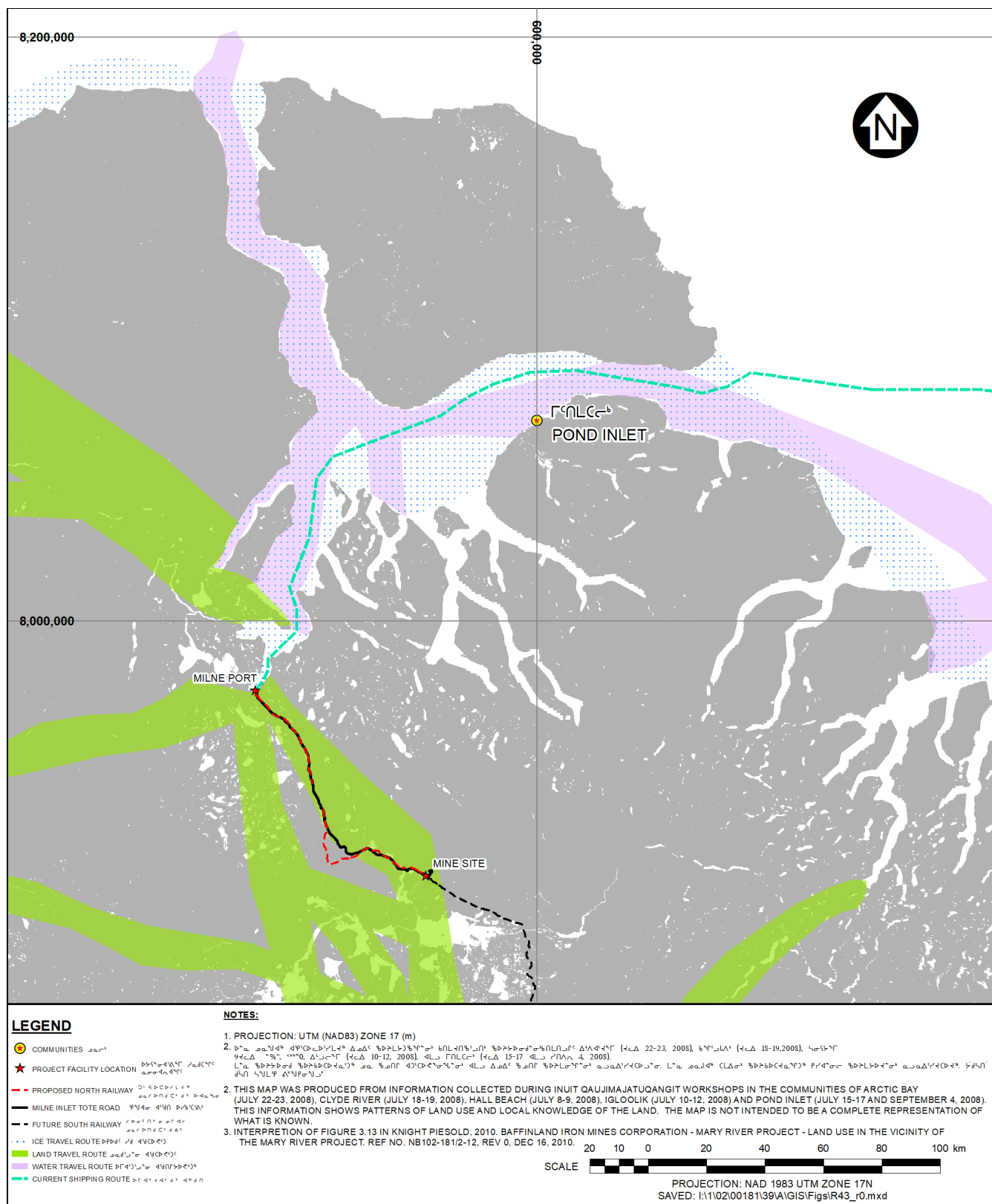


Figure 9.2 Travel Routes

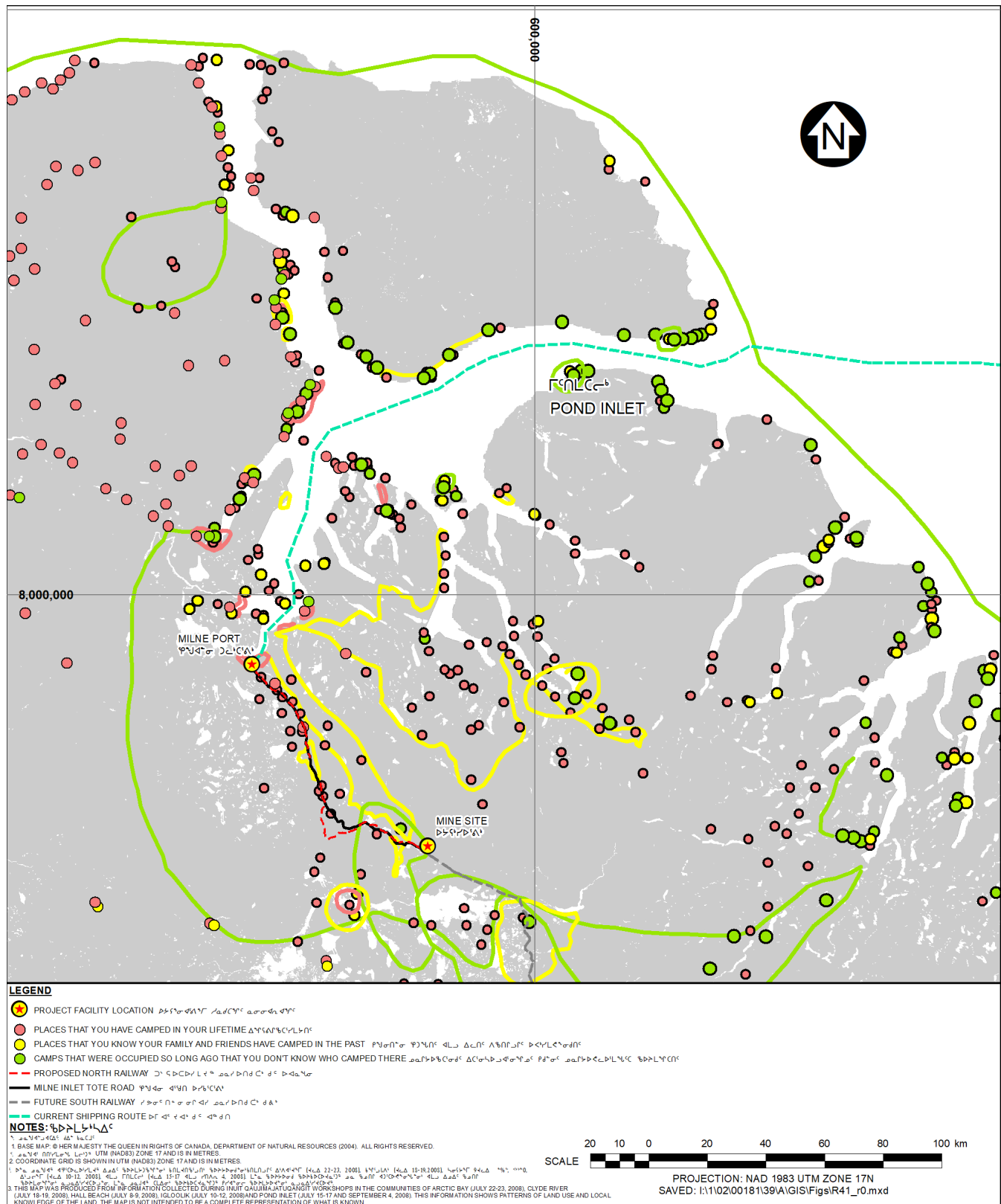


Figure 9.3 Camping Locations

## 9.4 Project Monitoring

Project monitoring related to culture, resources and land use include the following:

- Periodic monitoring of archaeological sites that have been protected by snow fencing and other measures
- Completion of an annual archaeological status report, which documents any archaeological surveys or mitigation work that was completed by Baffinland in the previous year, and any archaeological work or potential project interactions with archaeological sites in the upcoming year
- Socio-economic monitoring, which tracks the number land user visits at Project sites and Wildlife Compensation Fund (WCF) claims submitted to the QIA and claim outcomes (Appendix B).

All archaeological sites identified as being directly affected by the ERP operation were mitigated prior to the onset of construction. No chance finds were reported during construction of the ERP operation in 2013 and 2014. Periodic monitoring of archaeological sites has not shown the need for further mitigation.

Following Baffinland's Hunter and Visitor Site Access Procedure (Baffinland 2015), individuals travelling in the area are requested to sign-in upon arrival at Milne Port and the Mine Site to make their presence known and are required to follow designated travel routes for safety purposes. Project employees also have the responsibility to report sightings of land users. The number of hunters and visitors is maintained by Baffinland in a log of land use visitor person-days (Table 9.1).

**Table 9.1 Number of Recorded Land Use Visitor Person-Days at Project Sites**

Year	Mary River	Milne Port	Total
2013	41	0	41
2014	14	57	71
2015	4	212	216
2016	15	278	293
2017	26	128	154

Under Article 17 of the IIBA Baffinland is required to provide an initial contribution of \$750,000 to the QIA to create a WCF. In 2016, the QIA began accepting and reviewing claims under the WCF. To date three claims have been submitted, and all two claims were awarded compensation under the WCF:

- An approved claim relating to a narwhal hunt that could not be completed because of the appearance of an ore ship in the immediate vicinity;
- A claim relating to fishing Arctic char was denied as it was determined there was no direct connection with Baffinland and that the abundance of Arctic char varies annually; and
- An approved claim was filed in 2017, details of which were not available at the time of report production.

## 9.5 Assessment Methodology

The methodology used herein to assess impacts to culture, resources and land use is consistent with the assessment methodology presented in the FEIS.

## 9.6 Climate Change Considerations

Climate change is expected to have an effect on culture, resources and land use in North Baffin. With respect to archaeological resources:

- Increases in the depth of the active layer and thawing of ice-rich and thaw-sensitive soils has the potential to reveal additional archaeological sites that may require mitigation in the future;
- Extreme precipitation events and increased river flows may lead to increase erosion thereby revealing additional archaeological sites that may require mitigation in the future; and
- Increases in temperature may impact how well certain archaeological features are preserved.

However, the effects of climate change will not have a direct interaction with cultural resources affected by the Project. Archaeological sites within or in close proximity to the Project footprint will be mitigated prior to construction, thereby removing their potential to be disturbed by climatic changes.

A changing climate may affect the ability of Inuit to access the land and resources:

- Increasing temperatures have the potential to change ice conditions, which may present safety concerns;
- A reduced length of time of ice cover reduce the duration of access to the ice for hunting; and
- Potential for climate change to affect harvesting if the wildlife populations to be harvested are meaningfully affected by climate change.

An updated climate change assessment, which incorporates traditional knowledge regarding Inuit observations of a changing climate, is presented by Baffinland (2018).

## 9.7 Effects Assessment

Project interactions related to the Culture, Resources and Land Use VSEC in relation to the Phase 2 Proposal are shown in Table 9.2.

**Table 9.2 Phase 2 Proposal Interactions with Culture, Resources and Land Use**

Project Infrastructure or Activity	Cultural Resources	Harvesting	Travel and Camps
<b>Mine Site</b>			
Replace trucking operation ore stockpiles and truck loading facilities/equipment with larger ore stockpiles and rail loading facilities (with secondary crushing relocated to Milne Port)	1	2	2
<b>Tote Road</b>			
Realignments of the Tote Road to accommodate the North Railway	1	1	1
Short-term traffic increase associated with increased ore haulage to 12 Mtpa and to support rail construction	1	2	2
Reduced road traffic once the North Railway is operational	1	2	2
<b>North Railway</b>			
New PDA resulting in loss of additional terrestrial habitat	2	2	2
Transport construction equipment and supplies	1	1	1
Quarry, crush, screen, haul and place aggregate	2	1	2

Table 9.2 Phase 2 Proposal Interactions with Culture, Resources and Land Use

Project Infrastructure or Activity	Cultural Resources	Harvesting	Travel and Camps
Construct rail embankment, superstructure, bungalows, etc.	1	2	2
Transport 12 Mtpa of ore over the railway	1	2	2
Transport of supplies and fuel over the railway	1	1	1
Conduct regular inspection and maintenance of the railway	1	1	1
<b>Milne Port</b>			
Expanded PDA resulting in loss of additional terrestrial habitat	2	2	2
Construct second ore dock (includes pile driving and dredging but no blasting)	1	2	2
Construct additional ore stockpiles and material handling facilities	1	1	1
Construct railway lines, rail maintenance facilities	2	1	1
Construct ancillary port facilities (additional fuel storage, etc.)	2	1	1
Load ore on ships at two docks at a higher combined transfer rate	1	2	2
Increased number of sealift vessels unloaded by barge or at freight dock	1	2	2
Increased number of tug and line vessels operating at the docks	1	2	2
<b>Shipping</b>			
Increased ore carrier transits to and from Milne Port during open water, a portion of which are larger vessels (Cape size)	1	2	2
Increased vessel anchoring at assigned anchorages	1	2	2
Increased fuel tanker transits to and from Milne Port during open water	1	2	2
Vessel transits to and from Milne Port during the shoulder seasons	1	2	2

**NOTES:**

1. 1 - Minor interaction post-mitigation, discussion assessment.
- 2 - Major interaction subject to detailed assessment.

The Phase 2 Proposal involves the following new or modified activities potentially relevant to Inuit access to resources and to land use:

- **Mine Site** - An increase in the production rate that will result in increased air contaminant and noise emissions.
- **Northern Transportation Corridor** - A temporary increase in truck haulage of ore to 12 Mtpa concurrent with construction of the North Railway, followed by a switch from road to rail for hauling ore to the Port
- **Milne Port** - Construction of a second ore dock; increased shipping and ship-loading activities; a slight increase in the PDA; an increase in air contaminant concentrations and noise levels
- **Shipping** - Increased shipping during the open water; shipping during the shoulder seasons (during ice formation and following ice breakup) outside of the period that Inuit use the landfast ice

The above activities represent modifications to previously assessed activities that had the potential to affect culture, resources and land use. Several effects assessed for the Approved Project (Baffinland 2012 and 2013) remain unchanged in the context of the Phase 2 Proposal. These effects include:

- Cultural Resources
  - Chance finds due to ground disturbance
  - Human presence at Project sites

- Accidental events
- Unauthorized removal of artifacts
- Resources and Land Use
  - Detour around Mine Site for safety and travel
  - HTO cabin closure
  - Detour around Steensby Port
  - Restriction of camping locations around Steensby Port

Because the previous effect assessments of the above-mentioned effects completed for the Approved Project remain valid and the effects are not expected to be altered by Phase 2 Proposal activities, they are not carried forward in the effects assessment. Previously assessed effects on culture, resources and land use that are identified as having a new interaction with the Phase 2 Proposal, as well as new effects identified, are discussed in greater detail in the sections that follow.

### 9.7.1 Cultural Resources

#### Ground Disturbance

The North Railway proposed in the Phase 2 Proposal will parallel the Tote Road alignment from the Mine Site to the Port Site, moving away from the existing Tote Road only where required due to terrain and other technical considerations. A slight expansion of the Milne Port PDA to the southwest is required to accommodate a landfill and a laydown area. Due to the expansion archaeological surveys were completed in 2016. Further surveys will be carried out in 2018 in advance of any work associated with the Phase 2 Proposal. Due to the expansion of the PDA, six archaeological sites located within 30 m will need to be mitigated, while six archaeological sites located between 30 and 100 m from Phase 2 Proposal infrastructure will require protection measures (Figure 9.4). Four additional archaeological sites were identified within the footprint of a proposed quarry. However, given the higher cultural significance of these sites (two of the sites are paleo-eskimo sites that contained soapstone artifacts), Baffinland decided to relocate the quarry to avoid impacts to those four sites.

As part of the FEIS submission, Baffinland prepared a Preliminary Archaeology Mitigation Plan (FEIS Appendix 4D; Pinard 2011), that details the mitigation strategies for the identified archaeological sites. The general mitigation strategy is a three-step process taken for consideration at each individual site:

1. Avoidance
2. Protection
3. Systematic Data Recovery (scientific investigation and recovery of information from the resource by excavation or other methods)

The appropriate mitigation option is determined by the nature of the resource and any associated threats. Table 9.3 presents the 12 archaeological sites potentially requiring mitigation as a result of the Phase 2 expansion, and the proposed mitigation for each site.

With the implementation of the proposed mitigation, potential impacts to archaeological sites are offset and the Project is expected to have negligible residual effects on ground disturbance of archaeological sites.



**Table 9.3 Proposed Mitigation of Archaeological Sites for the Phase 2 Proposal**

Site	Distance from PDA (m)	Archaeological Features	Level of Significance	Proposed Mitigation
<b>Milne Port</b>				
OIHc-32	35 <sup>2</sup>	Tent ring (2), kayak rest (1)	1	Plan, photo, complete excavation, drawing
<b>Northern Transportation Corridor</b>				
OiHa-13	73	Tent ring (1), cache (1)	2	Plan, protection through staking, ropes or fencing
OiHa-16	63	Tent ring (1)	2	Plan, protection through staking, ropes or fencing
OiHa-9	0 <sup>3</sup>	Tent ring (1), cache (1)	2	Plan, protection through staking, ropes or fencing
OjHa-4	58	Tent ring (2)	2	Plan, protection through staking, ropes or fencing
OkHb-16	57	Tent ring (2), cache (1)	2	Plan, protection through staking, ropes or fencing
OkHb-27	0	Tent ring (4), cache (1)	3	Plan, photo, 2 quadrants in each structures, drawing
OkHb-37	19	Cache (1)	3	Photo, drawing, test pit
OkHc-10	95	Tent ring (1)	3	Photo, protection through staking, ropes or fencing
OkHc-4	22	Tent ring (3), cache (1), children house (1)	2	Plan, photo, complete excavation, drawing
OkHc-7	24	Tent ring (5), Children houses (2)	2	Plan, photo, complete excavation, drawing
OIHc-33	0	Cache (1)	3	Photo, drawing, test pit

**NOTES:**

1. Level of significance rating: 1 – High; 2 – Moderate; 3 – Low
2. Although OIHc-32 is 35 m from the railway, it is less than 30 m from the Tote Road.
3. Although OiHa-9 is located within the PDA, it is on the outer edge of a large quarry and will likely not be disturbed. If quarry activities approach the site, the site archaeologist will confirm the course of action.

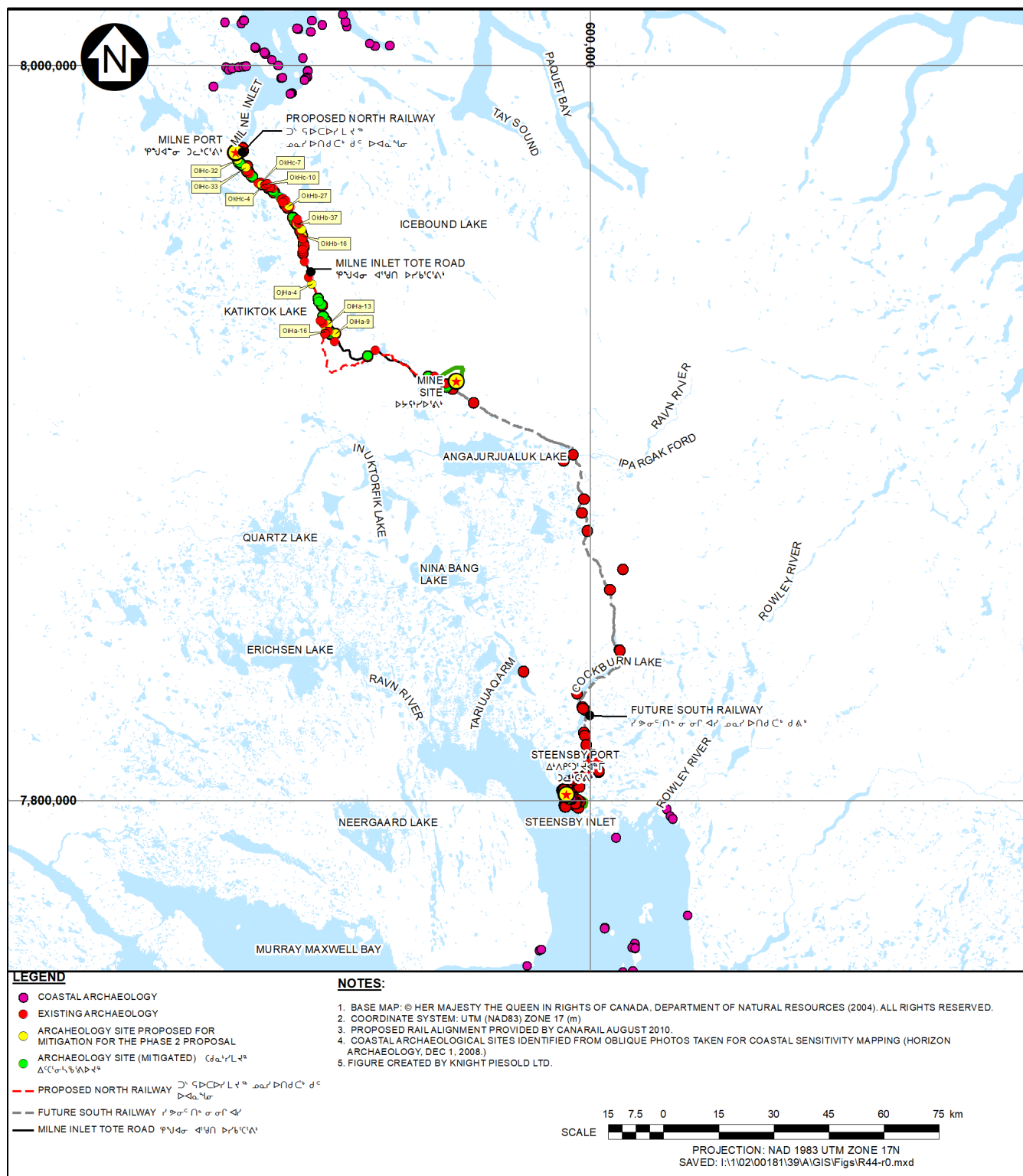


Figure 9.4 Known Archaeological Sites

### 9.7.2 Harvesting

The Phase 2 Proposal has the same footprint as the current ERP operation, namely shipping along the Northern Shipping Corridor through Pond Inlet, Eclipse Sound and Milne Inlet, and a terrestrial footprint that includes Milne Port, the Mine Site, and the connecting Northern Transportation Corridor.

An overview of Inuit harvesting activities is provided in Section 9.3. JPCSL (2017b) provides a description of harvesting and land use activities specific to the original Phase 2 Proposal (which included trans-shipment and shipping in ice). Additional land use and harvesting information is presented by KP (2010 and 2015). The area affected by the Phase 2 Proposal is used almost exclusively by Pond Inlet residents.

Key harvesting activities relevant to the Phase 2 Proposal include:

- Harvesting of caribou:
  - Caribou are hunted across the terrestrial regional study area; Milne Inlet is a key point of entry inland for hunters from Pond Inlet
- Harvesting of marine mammals:
  - Hunting narwhal, polar bear, seals, and to a lesser degree beluga whale and walrus (based on low abundance in the area), during the open water season throughout Pond Inlet, Eclipse Sound, Navy Board Inlet, Milne Inlet and other fiords connected to Eclipse Sound
  - Hunting seals throughout the landfast ice area but concentrated near to the community during the ice-covered period
  - Hunting of narwhal, ringed seals and bearded seals and occasionally beluga whale at the floe edges located at the entrance to Pond Inlet and the top of Navy Board Inlet

As described in Section 9.3.2, the Project has the potential to impact harvesting by either adversely affecting the populations being harvested, or by making it more difficult (or more effort) to undertake the harvest activity. Harvesting close to the community is important due to cost increases associated with going out on the land.

#### Caribou Harvesting

Caribou harvesting has the potential to be affected by the Phase 2 Proposal, through the construction and operation of the North Railway. Several potential impacts to caribou, identified in TSD 10 – Terrestrial Wildlife Baseline and Impact Assessment, can make it more difficult or require greater effort to successfully harvest caribou including:

- Reduction in habitat effectiveness;
- Barriers to caribou movement; and
- Caribou mortality.

These impacts and their effect on caribou harvesting are discussed below.

The additional footprint and sensory disturbance associated with the Phase 2 Proposal will reduce habitat effectiveness across the North Baffin caribou herd range by 2.4%, 4.8% and 5.0% during calving, growing and winter seasons (TSD 10). A very modest incremental loss in habitat effectiveness will result relative to the Approved Project (-0.4% in calving season, -1.2% in growing season, and -0.7% in winter season) (TSD 10). The residual effect was determined to be not significant and is not predicted to adversely affect the ability of Inuit to harvest caribou compared to current harvesting efforts.

Caribou movement patterns can be altered by Phase 2 Proposal infrastructure or activities that act as a barrier to caribou movement. Point source disturbances are unlikely to change caribou movement patterns, however linear infrastructure (such as the rail) can block movement or cause caribou to change movement routes. The caribou currently found in the region are non-migratory and it is not expected that migratory caribou will return to the area until population begins to increase (TSD 10). Given the limited range and low populations of caribou currently present in the Terrestrial Regional Study Area (TRSA), the interaction between caribou and the rail and road is expected to be limited.

In the short-term, there will be high intensity activities along the Tote Road and North Railway as construction and operation are undertaken concurrently. There will be a temporary increase in the volume of vehicular traffic along the Tote Road during the construction phase of the North Rail. The trucks hauling materials and workers will compound trucks hauling ore to Milne Port during the construction phase. The maximum tonnage approved for transport over the road of 4.2 Mtpa. Provided approval for the Phase 2 Proposal is received, Baffinland intends to transport up to 12 Mtpa of ore by truck over the Tote Road (over the 3-year construction phase). In the long-term (once construction is finished) the amount of sensory disturbance along the northern transportation corridor will decrease below current levels. Given the increase in traffic during the construction phase, potential exists for a greater number of wildlife interactions with the Project, and thereby the potential risk of caribou mortality will increase slightly; however, will be reduced in likelihood once the railway is operational and truck traffic is significantly reduced. The original Phase 2 Proposal (Baffinland 2014b) contemplated using trucks to haul 12 Mtpa of ore over the Tote Road for the duration of the operation phase. The use of the North Railway represents an improvement in terms of the level of sensory disturbance to caribou. In addition, the WCF presents a mechanism by which compensation may be paid for lost harvests due to the Project.

If collisions were to occur, the effect would be limited to individuals. An increased risk of caribou mortality will continue to be reduced by implementing the measures described in the Terrestrial Environment Mitigation and Monitoring Plan (TEMMP; Baffinland, 2016b). This include traffic controls (e.g. speed limits, seasonal traffic limits, regular monitoring and proximity to transportation corridors) and a no-hunting policy for Project personnel while onsite. Therefore, a short-term increase in traffic is not expected to change the risk profile. The mortality from collisions has the potential of a low magnitude adverse effect on the harvesting of caribou.

During the operation phase, the effect on the ability of Inuit to harvest caribou will remain unchanged in comparison to the FEIS assessment. The Phase 2 Proposal is not predicted to require Inuit to exert additional effort or cause difficulty in harvesting caribou under most circumstances. If this does occur, compensation is available to hunters under the WCF. As a result, the Phase 2 Proposal is predicted to have a low magnitude adverse effect on the harvesting of caribou.

### **Marine Mammal Harvesting**

The Project currently involves sealift deliveries of equipment and materials to Milne Port, and the shipment of ore from Milne Port to Europe, during the open water season. Under the Phase 2 Proposal, 12 Mt of ore will be transported from Milne Port. Table 9.4 compares current traffic with that predicted for the operation of the Phase 2 Proposal.

**Table 9.4 Project Related Vessel Traffic**

Vessel	ERP	Phase 2 Proposal
Panamax size ore carriers	58	68
Capesize ore carriers	-	64
Sealift	10	4
Tanker	3	4
Total Number of Vessels	71	140
Shipping Season	July 1 to October 10	July 1 to November 15

Baffinland intends to ship during the open water season and limited shipping may occur within the shoulder seasons (during ice break-up and ice formation). This would result in shipping occurring between July 1 and November 15. Critical to the success of shipping in the shoulder seasons will be discussions with the community leading up to when shipping in ice is being contemplated.

The harvesting areas of each of the North Baffin LSA communities were described in FEIS Appendix 4C (KP 2010a), and shown on Figure 9.3. Any effects resulting from the Phase 2 Proposal on resources and land use will be experienced primarily by the community of Pond Inlet. A harvesting calendar, developed during the Phase 2 Proposal Community Workshops by participants in Pond Inlet is shown in Figure 9.5. Marine mammals typically harvested by Inuit along the Northern Shipping Corridor, include whales (mainly narwhal), seal, polar bear, and occasionally walrus. The impacts of the Phase 2 Proposal on these marine key indicator species are assessed in TSD 24 – Marine Mammal Baseline and Impact Assessment.

Harvesting of marine wildlife is concentrated near the community, although harvesting occurs throughout Pond Inlet, Eclipse Sound, Navy Board Inlet and Milne Inlet. With ship passage through Milne Inlet, Eclipse Sound out to Baffin Bay interaction between boaters and ships will occur. Contemporary land use activities, as described by participants in the Phase 2 Proposal Community Workshops, are shown in Figures 9.6 through 9.10.

According to the harvesting calendar, narwhal is the only marine mammal that are harvested at an increased frequency/intensity during the open water shipping season. Other harvesting occurring in Eclipse Sound during the open water season is for seals. Seals are also harvested during ice cover on landfast ice. Hunting at the floe edge at Pond Inlet occurs from mid-November to the end of June, outside of the proposed shipping period. Marine mammals typically harvested at the floe edge include seals, polar bear, walrus and narwhal.

Harvesting periods in Navy Board Inlet have also been identified, however harvesting within Navy Board Inlet is not expected to interact with current or proposed Project activities.

In considering the incremental increase in shipping associated with the Phase 2 Proposal, available narwhal harvest data were reviewed to understand if the current Project has negatively affected narwhal harvests. The Nunavut Wildlife Management Board (NWMB), in co-management with the Department of Fisheries and Oceans Canada (DFO), establish quotas (termed “total allowable harvests”, or TAH) for narwhal harvesting in Nunavut. Narwhal harvests relative to the TAHs for each of the five North Baffin LSA communities over the period of 1998 to 2015 are shown on Figure 9.11 (DFO 2016). Pond Inlet’s harvests have remained well below quota limits since the establishment of a quota (Figure 9.11). Nonetheless, when the TAH was increased in 2013, the narwhal harvest increased as well (but still below the new TAH). Since the operation of the Project, there has been an increase in successful harvests by Pond Inlet. While 2013 to 2015 is a short period of time, it appears that narwhal harvests have not decreased as a result of the Project over this time.

The Phase 2 Proposal will not result in adverse effects to marine mammals according to the marine mammal assessment (TSD 24). Since the Project is not predicted to result in decreases in marine mammal populations, and Pond Inlet's narwhal harvests from 2013 to 2015 are at the highest levels since 2000, the Phase 2 Proposal is unlikely to affect the harvesting of marine mammals. Isolated instances where Project shipping interrupts an individual hunt is likely to occur to some degree, and these instances are potentially eligible for compensation under the WCF. One claim under this scenario was awarded compensation in 2016.



- NOTES:
- Information on this calendar was provided by residents of Pond Inlet who participated in community workshops held for Baffinland Iron Mines Corporation's Phase 2 proposal.
  - Light green periods are when the activity was identified to occur.
  - Dark grey periods are when the activity was identified to occur more frequently/intensively.
  - Periods labelled as 'peak' are when selected land use activities were identified to occur most frequently/intensively within the dark gray periods.
  - This calendar is for general informational purposes only and may not fully represent all land use activities occurring in the area.

Figure 9.5 Marine Mammal Harvesting Calendar

















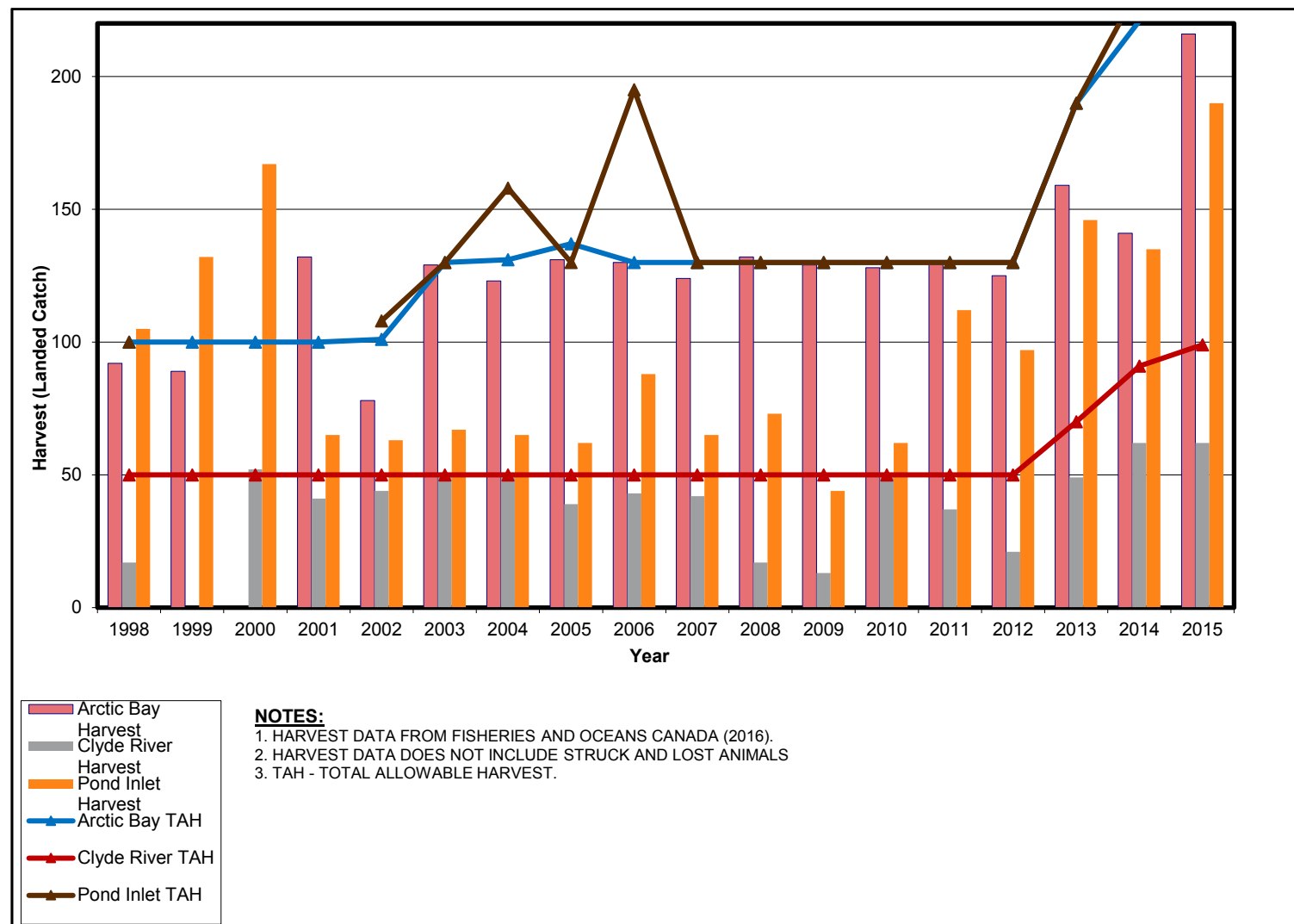


Figure 9.11 Narwhal Harvests 1998 - 2015

In addition to providing compensation for lost harvests due to the Project through the WCF, a number of additional mitigation measures have been incorporated into planning of the Phase 2 Proposal since Baffinland issued its initial Project Proposal in October 2014 (Baffinland 2014b). The original Phase 2 Proposal included an 8.5-month shipping season, trans-shipping within Milne Port or Eclipse Sound, and a winter sealift. Based upon feedback from local communities, the Phase 2 Proposal was reconfigured to eliminate trans-shipping and the winter sealift, and to concentrate shipping within the open water and shoulder shipping seasons, thereby avoiding shipping in ice. Other mitigation already employed and described in the Shipping and Marine Wildlife Management Plan (Baffinland 2016e) includes communicating near real-time vessel locations using exactAIS®, available through Baffinland's website, and various measures to reduce potential disturbance to marine mammals by Project vessels, including vessel speed reductions within Eclipse Sound and Milne Inlet.

With the appropriate mitigation in place, the potential impact on the quantity of marine mammals harvested by level of effort is determined to be of low magnitude and is evaluated to be not significant.

### 9.7.3 Travel and Camps

Travel and camping in North Baffin is conducted as part of harvesting activities, inter-community travel, and to pursue family time out on the land.

The Phase 2 Proposal will interact with travelling and camps as follows:

- During open water, shipping has the potential to interact with boaters travelling in waters near of Pond Inlet, Eclipse Sound and Pond Inlet
- Port activities have the potential to interact with individuals travelling inland through Milne Inlet and those staying at or next to the HTO cabin along the Milne Inlet beach east of the port
- Transportation of ore and personnel along the northern transportation corridor (North Railway and Tote Road)

#### 9.7.3.1 Safe Travel within Pond Inlet, Eclipse Sound and Milne Inlet during Open Water

During Phase 2 operations, 12 Mtpa of iron ore will be shipped through Milne Port annually. The majority of shipping will occur during the open water season, however shipping in the shoulder season, during ice formation and ice breakup is also proposed. The start and end of the shipping season will be determined annually based on consultation with the MHTO, but is estimated to be between July 1 and November 15. In July, shipping may commence once the MHTO has deemed the ice unsafe for travel. Shipping will cease when the ice is thick enough to support travel and hunting, which is typically mid-November.

Eclipse Sound and Pond Inlet are used for hunting and travel by the residents of Pond Inlet. The ore carriers could interact with other boats traveling in the area. Travelers through and around Eclipse Sound and Pond Inlet could be negatively affected when boaters share the water with ore carriers transiting to and from Milne Port. The number and size of ore carriers sailing to Milne Port will increase as part of the Phase 2 Proposal (Table 9.4). The incremental increase in shipping is not expected to noticeably interrupt open water travel by other boaters any more than the Approved Project, given the significant space available relative to the number of vessels.

Under PC Condition No. 164, Baffinland is required to inform communities of planned shipping transits to help community member plan safe travel routes. Baffinland has utilized exactAIS® to track and report vessel movements. The location of vessels is provided on Baffinland's website (<http://www.baffinland.com/mary-river-mine/location/?lang=en>) and can be viewed at any time by anyone with access to the internet. The boater/vessel effect is determined to be of moderate magnitude and intermittent frequency resulting in a not significant effect.



#### 9.7.3.2 Sensory Disturbance at Camps

Milne Port will remain an industrial site that will be off limits to unaccompanied land users. Camping locations have been identified along the coast of Milne Inlet, with an HTO cabin located east of the Port boundary. Hunters or community members camping near the HTO cabin will likely hear noise from the Project. Noise modelling results indicate noise levels at the HTO cabin will be between 45 and 50 dBA (TSD 07 - Atmospheric Assessment). The maximum predicted noise level of 50 dBA is equivalent to the ambient noise level from human activity in an urban centre during the daytime. These levels will be noticeable and have a potential to cause sleep disturbance. With respect to air quality, the maximum predicted levels of SO<sub>2</sub>, NO<sub>2</sub>, CO and PAI are below their respective indicator thresholds everywhere outside the PDA, including at/near the HTO cabin. The maximum predicted levels of TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, and dustfall are not expected to exceed their respective indicator thresholds at the HTO cabin (TSD 07).

Although the HTO cabin at Milne Port can continue to be used at its current location with minimal disturbance from the Project, Baffinland will discuss this with the Mittimatalik HTO and the Pond Inlet community to determine if this will be a material change to land users, and consider potential mitigation measures if necessary.

The HTO cabin outside of the Mine Site area and on the west side of Camp Lake is beyond the zone of exceedance of all air quality indicator thresholds from Mine Site sources. At approximately 800 m from the Tote Road, however, the HTO cabin will experience PM<sub>10</sub> exceedances from Tote Road and rail construction sources. These exceedances will occur during the 3-year construction phase. With respect to noise, the cabin will experience noise levels between 33 and 35 dBA, which is below the 40 dBA threshold.

#### 9.7.3.3 Safe Travel Inland through Milne Port

Milne Inlet is accessible by landfast ice and by water, and is both a camping location and part of the inland route connecting North Baffin communities. Residents of Pond Inlet and Arctic Bay, when traveling inland or visiting other communities, use the Milne Port area.

Milne Port is an industrial site with controlled access to other land users. Baffinland has established the Hunter and Visitor Site Access Procedure (Baffinland 2015) for the safety of all hunters and visitors to site. The boundary is clearly marked with appropriate signage. Individuals travelling in the area are requested to sign-in upon arrival at Milne Port and the Mine Site to make their presence known and are required to follow designated travel routes. Project employees also have the responsibility to report sightings of land users.

Camping locations have been identified along the shore of Milne Inlet. Generally, the beach area at the head of the inlet is used for camping, with the eastern edge of the beach being the main camping location. Camping will still be possible at this location. Noise modeling and air quality modeling will be below established thresholds.

The facilities at Milne Port affect the ability of Inuit travellers and hunters to freely and safely travel inland. The effect is assessed to be of low magnitude and not significant.

#### 9.7.3.4 Sensory Disturbance and Safety along the Tote Road

The total number of round trips of ore trucks transporting 3.4 Mt of ore in 2016 was 27,677. The daily average number of round trips in the same period was 76. During the construction phase of the Phase 2 Proposal, Baffinland intends to transport 6 Mt of ore over the Tote Road. During this time, the average number of round trips per day will increase to 134 or approximately 49,000 round trips per year. In addition, the traffic volume of service vehicles is expected grow slightly from the current level of non-ore traffic of 5,000 round trips per year as this takes into account vehicular traffic used to construct



the North Railway (TSD 02 - Project Description). Once the North Railway is operational, rail traffic will consist of seven round trips per day and service vehicle traffic on the Tote Road will be approximately 30 to 40 daily trips.

As part of Baffinland's Hunter and Visitor Site Access Procedure (Baffinland 2015), unescorted travel along the Tote Road is prohibited at all times. This is to prevent accidents and injuries due to potential collisions with heavy equipment, thereby helping with the safety of travellers and Project employees.

Although there will be an increase in sensory disturbance along the Tote Road, this will be a temporary disturbance limited to the three years of construction and is not expected to affect travel. Following the construction phase the sensory disturbance is anticipated to be dramatically reduced. Based on the moderate magnitude, short-term duration, and reversibility of the effect, the effect is assessed to be not significant.

#### 9.7.3.5 *Difficulty and Safety Relating to Railway Crossing*

The 110 km north railway will connect the Mine Site to Milne Port. The railway will include four bridges and ten crossings with the Tote Road. Each of the two trains will complete three round trips per day, or a total of six round trips per day. Each train will consist of two locomotives and 72 to 80 ore cars. The railway design is similar to that of the south railway proposed in the FEIS.

Inuit travel extensively throughout the North Baffin region, including in the vicinity of the Tote Road and the proposed North Railway. The Phillip's Creek valley, as well as the Tugaat River to the northeast, are important routes for hunters accessing the inland as well as for inter-community travel between Pond Inlet and Igloolik or Hall Beach. Most of these routes are used by snowmobiles, but some all-terrain vehicle (ATV) use occurs as well. Snowmobile crossings will be possible at most but not all locations during snow cover.

The embankment slopes along most of the alignment will be blasted rock, which will be large diameter angular material. While this material is not dissimilar to the local terrain, and with snow cover, will likely be passable with a snowmobile, ATVs may experience difficulties in some locations. Rock cuts ranging for 1 m to 8 m will at various points along the North Rail. Where rock cuts pose a safety risk, Baffinland will erect fencing.

The railway corridor could cause travelers to detour to find suitable crossing; however, several mitigation measures have been identified in the Railway Management Plan presented in the FEIS (FEIS Appendix 10D-9.1; Canarail Consultants Ltd. 2011). This plan will be updated to reflect conditions specific to the North Railway. The plan considers two primary mitigation measures to address public safety hazards along the railway: public education, and the establishment of designated locations for safe crossing.

The development of a railway will adversely affect easterly and westerly travel. The railway is assessed to have a low magnitude effect on the difficulty and safety of travel. Based on the low magnitude, continuous frequency, and proposed mitigation measures the adverse effect is deemed not significant.

Sensory disturbance along the North Railway not anticipated to occur in a noticeable way and it therefore not carried forward as a residual effect.

#### 9.7.4 *Significance of Residual Resources and Land Use Effects*

The residual effects of the Phase 2 Proposal on resource and land use effects are assessed in Table 9.5.

**Table 9.5 Significance of Residual Effects on Resources and Land Use**

Residual Effect	Residual Effect Evaluation Criteria								Significance of Residual Effect	Qualifiers	
	Direction	Magnitude	Geographic Extent	Social Extent	Frequency	Equity	Duration	Reversibility		Probability (Likelihood of the Effect Occurring)	Certainty (Confidence in the effects prediction)
Ground Disturbance	Negative	Low	Confined to LSA	-	Infrequent	-	Short Term	Irreversible	Not Significant	High	High
Caribou Harvesting	Negative	Low	Smaller Communities	Hunters; Family	Infrequent	Bystanders	Medium Term	Irreversible	Not Significant	Low	Moderate
Marine Mammal Harvesting	Negative	Low	Smaller Communities	Hunters; Family	Infrequent	Bystanders	Medium Term	Irreversible	Not Significant	Moderate	Moderate
Safe Travel within Pond Inlet, Eclipse Sound, Milne Inlet during Open Water	Negative	Moderate	Smaller Communities	Hunters; Family	Intermittent	Bystanders	Medium Term	Reversible	Not Significant	High	Moderate
Sensory Disturbance at Camps	Negative	Moderate	Smaller Communities	Hunters; Family	Continuous	Bystanders	Medium Term	Reversible	Not Significant	High	High
Safe Travel Inland through Milne Port	Negative	Low	Smaller Communities	Hunters; Family	Continuous	Bystanders	Medium Term	Reversible	Not Significant	High	Moderate
Sensory Disturbance along the Tote Road	Negative	Moderate	Smaller Communities	Hunters; Family	Intermittent	Bystanders	Short Term	Reversible	Not Significant	High	Moderate
Difficulty and Safety relating to Railway Crossing	Negative	Low	Smaller Communities	Hunters; Family	Continuous	Bystanders	Medium Term	Management Required	Not Significant	High	High

## 9.8 Mitigation and Monitoring Plan Updates

The Cultural Heritage Resource Plan, (Baffinland 2016d) will not require material changes to its technical content, but will require minor updates to incorporate the scope of the Phase 2 Proposal. Archaeological mitigation measures identified in Table 9.3 are being implemented in 2018.

Monitoring plan updates will be required for the Railway Management Plan (FEIS Appendix 10D-9.1; Canarail Consultants Ltd. 2011) to incorporate the north railway, and the Shipping and Marine Wildlife Management Plan (Baffinland, 2016e) to take into account the increased shipment of ore from Milne Port and around the shipping start and stop dates with respect to Inuit use of ice in the shoulder season.

## 10 BENEFITS, ROYALTY AND TAXATION

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### 10.1 How Has the Benefits, Royalty and Taxation Assessment Changed?

Since the FEIS and FEIS Addendum, Baffinland successfully negotiated an IIBA with the QIA that was signed in September 2013. Baffinland has also conducted an updated Economic Impact Model (Appendix A) to demonstrate the economic benefits from the Phase 2 Proposal. The impact statement presented in the FEIS and FEIS Addendum remains valid in that the Project will have significant beneficial effect on benefits, royalty and taxation within the North Baffin communities, Nunavut and Canada.

### 10.2 What We've Heard

The communities potentially affected by the Project are understandably interested to understand what benefits may accrue to them; specifically regarding direct benefits, royalty, and the IIBA (Figure 10.1). Benefits, royalty, and taxation was identified as one of the top five issues raised by community residents based on the number of comments received.

Comments received on the subject of Benefits were sub-divided into three sub-categories: direct benefits, IIBA, and royalties. The comments received under each sub-category are summarized below:

- **Direct Benefits** - Community members expressed a desire for Baffinland provide direct benefits to the North Baffin LSA communities outside of the IIBA. Community members feel that benefits from the IIBA to date have not been highly visible. Direct benefits individuals have expressed interest include:
  - Funding for community events and projects (Community feasts, sport uniforms, programming for children and youth)
  - Payment and benefit directly to communities and or individuals (Food hampers, direct financial support, seasonal community contributions such as Christmas baskets, company sponsorship of community initiatives, etc.)
- **IIBA** - The majority of comments related to the IIBA were in the provision of direct benefits to the community. Community members also raised questions on how they can access the various funds made available through the IIBA, such as the Wildlife Compensation Fund (WCF) and the Ilagiktunut Nunalinnullu Pivalliajutsait Kiinaujat (INPK) Fund, in order to realize the benefits currently available. Community members were also expressed concerns over changes in impacts due to the development of the Phase 2 Proposal and whether it would affect the distribution of benefits among the communities and within the IIBA.
- **Royalties** - Compared to the other two categories very few comments were recorded pertaining to royalties. The suggestion was made that benefits should be distributed according to impact and/or paid directly to the communities.

Based on feedback received during the various consultation events, it is evident that Baffinland and the QIA need to better communicate the benefits currently available to impacted community members and provide support within the communities to help individuals and organizations to successfully access the available funds.

Funds available through the IIBA provide financial support to community projects and programs and help address some of the direct benefit interests expressed by community members. For example, the INPK fund, established through Article 12 of the IIBA, to address social and cultural impacts of the Project is available for organizations, committees, associations, and individuals based in or working in partnership with Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet. Additionally,

revenues from the IIBA, commercial lease and aggregate concession agreements will eventually reach the communities as described further below.

Outside of the IIBA, the QIA provides other funding opportunities such as the Community Initiatives Fund (QIA n.d). It is expected that monies paid to the QIA by Baffinland will have ultimately help increase funds available to support the Community Initiatives Fund and other such funds and programs available to the Inuit in the Qikiqtani Region.

### 10.3 Background

The 2017-18 territorial budget was \$1.7 billion (Government of Nunavut 2017a). With a population of just over 38,000 territorial government services total over \$44,000 per capita. The largest single expenditure, \$357 million (over \$9,300 per capita) is made for health services.

During the 2017-18 fiscal year, the territorial government expects to raise \$211 million from taxes and other own-source revenues. Personal taxes are estimated at \$32 million and corporate taxes at \$15 million. Payroll taxes and tobacco taxes are other large revenue-providers at \$27 million and \$17 million, respectively. Fuel tax generates an additional \$12 million. The GN is planning a fiscal surplus of about \$23 M in 2017-2018 (Government of Nunavut 2017b).

Baffinland previously assessed a significant positive residual effects of the Project of Project revenues flowing to the territorial government, and no adverse effects occurring to the benefits, royalty, and taxation VSEC.

### 10.4 Project Monitoring

Monitoring of the benefits predicted under the benefits, royalty and taxation VSEC is reported annually as part of Baffinland's socio-economic monitoring program and both quarterly and annually to the QIA as prescribed in the IIBA. Payroll and corporate taxes paid by Baffinland to the territorial government are monitored under the socio-economic monitoring report (Appendix B), and Monitoring results confirm that the Project is having a significant positive effect on revenues flowing to the territorial government.

Benefits delivered by the Project that are reported to the QIA under the IIBA include Inuit employment, Inuit procurement through contracting Inuit firms, and Inuit training hours.

### 10.5 Assessment Methods

Assessment methods are consistent with those presented in the FEIS. Baffinland prepared an updated Economic Impact Model (Appendix A) to reflect the potential economic benefits associated with the Phase 2 Proposal.

### 10.6 Effects Assessment

The Approved Project provides significant positive effects with respect to the benefits generated in Nunavut. The Phase 2 Proposal will provide an incremental increase to these already significant effects. The following assessment focuses on the incremental increase in benefits as a result of the Phase 2 Proposal. The following topics are discussed in the context of Benefits, Royalty, and Taxation:

- Benefits that will be delivered to Inuit of the Qikiqtani Region through the IIBA;
- Revenues that will accrue to Inuit organizations (NTI and the QIA); and
- Revenues that will accrue to the Government of Nunavut and the Government of Canada.

Other Benefits including employment, education and training, and business opportunities are described in Sections 3 to 5, and 8.

#### 10.6.1 Status of the IIBA

The Project is currently subject to an IIBA between Baffinland and the QIA under Article 26 of the *Nunavut Agreement* (INAC and NTI, 2010). The IIBA was signed by both parties on September 6, 2013. Section 11 Governance and Leadership provides detail on the structure of the IIBA.

Baffinland and the QIA are approaching a mandatory review of the IIBA every three years in accordance with Article 20 of the IIBA. Under Article 3.3, the same mandatory review can be triggered by a Change in Scope, which includes an environmental assessment under Article 12 of the *Nunavut Agreement*, except for project amendments to Project Certificates or other licences or permits. The mandatory review includes review of the following articles:

- Article 4 - Implementation
- Article 6 - Contracting
- Article 7 - Employment
- Article 8 - Education and Training
- Article 11 - Workplace Conditions
- Article 12 - Support for Communities
- Article 13 - Travel and Access
- Article 14 - Project Stewardship

Financial aspects of the IIBA are not included in mandatory reviews unless by mutual agreement. The review aims to determine whether performance evaluations of IIBA implementation results indicate lack of success in achieving the objectives, and the outcome of the review may be to enter negotiations to amend the Agreement. The review process is in its early stages at the time of writing.

An arbitration decision concluded that Baffinland is required to continue advance payments of \$5 million annually, rather than production-based royalty payments, which Baffinland began making in 2015 upon the operation of the Early Revenue Phase. By the end of 2017, Baffinland had made \$38 M in advance royalty payments under the IIBA (including CPP).

There is no legal mechanism that requires the negotiation of IIBAs outside of the Nunavut Settlement Area. The FEIS concluded that potential impacts to Inuit outside of the Baffin region, by the Project and its shipping, are negligible with little to no interaction. Similarly, the Phase 2 Proposal is not anticipated to have interactions with Inuit outside of the Qikiqtani Region and thereby no potential impacts have been identified. Based on the lack of Project interaction with Inuit outside of the Baffin region no consideration of negotiating IIBAs outside of the QIA has been made.

#### 10.6.2 Revenues to the QIA

The QIA currently receives the following revenues from the Project (Appendix A):

- **IIBA Mineral Royalty** - A mineral royalty is payable annually at a rate of 1.19% of Net Sales Revenue (NSR), with an advanced royalty payment schedule of up to \$75 M. The estimated life-of-mine (LOM) mineral royalty payable to the QIA under the IIBA is \$396 M.

- **Commercial Lease Rents** - Including a minimum rent payment of \$3 M plus inflation adjustment, as well as aggregate royalty payments (\$2.50/bank m<sup>3</sup>) and landfill tipping fees (\$50/m<sup>3</sup> for quantities exceeding a minimum allowance of 5,000 m<sup>3</sup>). The estimated LOM payments under the Commercial Lease is \$73.1 M and the estimated LOM payments under the aggregate royalty is \$27.6 M.
- **IIBA Fund Contributions and Other Payments** - Under the terms of the IIBA, Baffinland has provided one-time and annual contributions to a number of funds established under the IIBA (Table 10.1). Baffinland also covers the QIA's costs to administer the IIBA (Table 10.2).

**Table 10.1 Baffinland's Contributions to IIBA and Other Funds**

Annual Fund Contributions	Amount	Schedule
Education and Training Fund	\$1,000,000	First two years only
Annual Scholarship Fund	\$35,000	Annual
Laptop Program (voluntary, outside of IIBA)	\$40,000	Annual
Business Capacity and Start Up Fund	\$250,000	Annual
Wildlife Compensation Fund	\$750,00	One-time (2016)
Iiagiiktunut Fund	\$375,00	Annual

Baffinland's fund contributions include one-time contributions of \$2.75 M made in 2016 and earlier, and annual contributions of \$660,000 (Table 10.2). Baffinland's voluntarily annual laptop program, involving delivery of a laptop computer to every high school graduate in the North Baffin LSA (a cost of approximately \$40,000 per year), is outside of the IIBA fund contributions. Baffinland has delivered 575 laptops to the five North Baffin communities since 2007.

**Table 10.2 IIBA Administration Costs Paid by Baffinland**

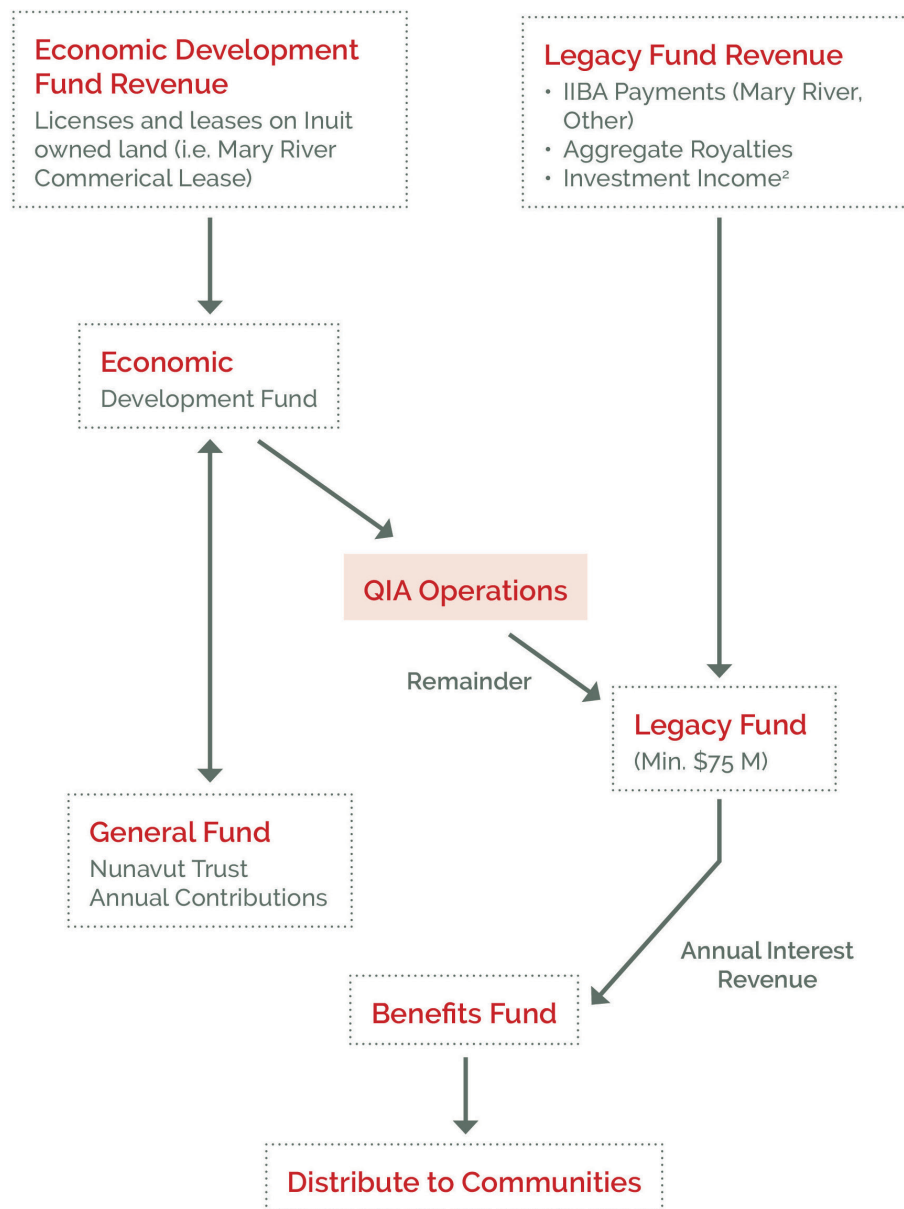
QIA's IIBA Administration Costs	Representative Annual Cost
Salaries	\$500,000
Reimbursable Expenses (meetings, etc.)	\$100,000
Technical Support (Consultants)	\$540,000
Fund Administration Costs	\$50,000
IIBA Forum	\$125,000
<b>Total</b>	<b>\$1,315,000</b>

The Phase 2 Proposal will affect the profit margins (i.e., the NSR) upon which the IIBA Mineral Royalty is based, which is expected to increase the LOM IIBA Mineral Royalty. Additional Commercial Lease payments will be made, though the increased payments have not been calculated. Construction of the North Railway and other project components associated with the Phase 2 Proposal will result in the payment of an estimated \$27 M in additional aggregate royalties' payable to the QIA (with additional aggregate royalty payable to the Crown - see Section 10.6.5).

An Economic Impact Model (Appendix A) developed estimates of the LOM revenues that are expected to accrue to the QIA as a result of the Phase 2 Proposal. A number of assumptions have been made regarding production rates, iron ore prices, and capital and operating costs. The estimated LOM revenues to the QIA from the Phase 2 Proposal are presented in Section 10.6.4.



The QIA has developed a new Revenue Policy, which enables the QIA to provide stable benefits to Inuit, while reducing reliance on outside funding over time by creating an internal pool of revenue for benefits and programs (QIA 2017a). How revenues flow according to the Revenue Policy is shown on Figure 10.1.



NOTES:

1. Mary River is currently the main source of IIBA Payments.
2. Investment Income sources include: Nunavut Resource Trust, dividends from QC and Nunasi Corp., and income from legacy fund investments.

**Figure 10.1 QIA Revenue Policy**

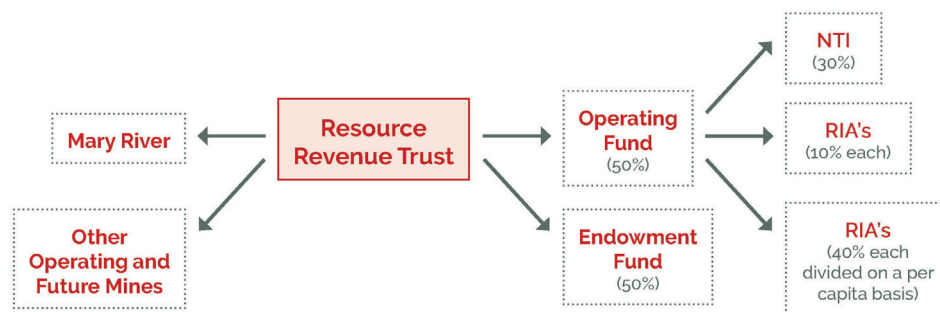
With the development of the Legacy Fund and Benefits Fund, the QIA is better able to fund programing across the Qikiqtani Region. The QIA recently announced that it expects to have an additional \$1 million for programs in the Qikiqtani Region, due to the two new funds (QIA 2017b). Programs and benefits delivered by the QIA to Inuit in the Qikiqtani Region will fall under two themes including cultural activities and daycare and early childhood learning (QIA 2017b). A Benefit

Fund Policy was developed in 2017, which outlines the steps the QIA will take to distribute funds to Inuit in the Qikiqtani Region. A seven step process will identify key themes and benefit fund programs every two years, beginning in 2017 (QIA 2017c). The QIA identified its intentions to spend money in the Benefit Fund on social and cultural programs that benefit the Qikiqtani Inuit, based on review of the *QIA Benefit Fund: Key Themes Report* rather than cash payouts (QIA, 2017d).

### 10.6.3 Revenues Payable to NTI

Deposit No. 1 is located on grandfathered federal mining leases that has been designated as Inuit surface and subsurface lands. As such, a Federal Mining Royalty (FMR) will be payable to INAC under the Nunavut Mining Regulations (Territorial Lands Act), but the monies will be passed to NTI. Based on the economic impact model, the FMR is estimated to generate \$1.4 B in revenue for the NTI during the life of the mine (see Table 10.4).

Resources collected by the NTI from FMR and mineral exploration agreements are distributed to the NTI and all three Regional Inuit Associations (RIAs) according to NTI's Resource Revenue Policy (NTI 2011). The flow of revenues from NTI to the RIAs is shown in Figure 10.2.



**Figure 10.2 NTI Resource Revenue Policy**

### 10.6.4 Breakdown of Revenues Payable to the QIA and NTI from the Phase 2 Proposal

An updated Economic Impact Model was completed in support of the Phase 2 Proposal (Appendix A). Based on existing agreements and current scenarios Inuit associations could collect an estimated \$1.9 B from the Phase 2 Proposal over the 2017-2040 period. The largest source of revenues is expected to be from FMR, with a total estimate at \$1.4 B. The FMR are payable to INAC, but are then transferred to NTI under the Nunavut Land Claim Agreement. It should be noted that FMR payments are difficult to estimate in future years as they depend to a large extent on the actual revenues and expenditures. The mineral royalty under the IIBA is expected total \$396 M over the LOM. Payments for use of Inuit-owned land could reach a total of \$73.1 M, while Aggregate Royalties could bring in \$27.6 M. Table 10.3 details the revenues for NTI and the QIA that are expected from the Phase 2 Proposal.

**Table 10.3 Comparison of Revenues for Inuit Associations (M\$) Over Life of Project**

Revenue Source	Phase 2 Proposal	Payable to
Federal Mineral Royalties Payable to INAC for Transfer to NTI	\$1,421.7	NTI
IIBA Mineral Royalty Payable to the QIA	\$396.0	QIA
Commercial Lease Payments to the QIA	\$73.1	QIA
Funding for Inuit Organizations and Local Committees	\$65.6	QIA
Aggregate Royalties payable to the QIA	\$27.6	QIA
Overall Revenue	\$1,984	

### 10.6.5 Additional Revenues to Government from the Phase 2 Proposal

Total fiscal revenues generated for the Government of Nunavut are estimated at \$679.9 M over the life of the Project. The largest component is the corporate income tax revenue with revenues estimated at \$321 M. Territorial fuel tax has estimated revenues of \$182.5 M, based on estimated fuel volume, payroll tax is estimated at \$51.3 M revenue, and other fiscal revenues are estimated to bring in a total of \$125 M.

Federal fiscal revenues are estimated at \$1.6 B including \$35.8 M aggregate royalties, \$80.2 M from fuel taxes, \$359.7 M from corporate income tax, and \$1.1 B from other fiscal revenues. Table 10.4 details the revenues for the Government of Nunavut and the Government of Canada that are expected from the Phase 2 Proposal.

**Table 10.4 Comparison of Revenues for Government (M\$) Over Life of Project**

Revenue Source	Government of Nunavut	Government of Canada
	Phase 2 Proposal	Phase 2 Proposal
Payroll Tax	\$51.3	-
Fuel Tax	\$182.5	\$80.2
Corporate Income Tax	\$321.0	\$359.7
Other Fiscal Revenues	\$125.0	\$1,203.4
Aggregate Royalties	-	\$35.8
Overall Revenue	\$679.9	\$1,679.1

Baffinland approached the Government of Nunavut to negotiate a Development Partnership Agreement (DPA) in September 2013. However, a DPA between Baffinland the Government of Nunavut was not formalized. Details regarding the status of DPAs are provided in Section 11.

Baffinland will consider re-engaging with the GN on this topic once a replacement policy has been developed by the GN.

## 10.7 Mitigation and Monitoring Plan Updates

Baffinland will continue to track potential changes to population demographics in the LSA and RSA through its socio-economic monitoring program and engage both the Mary River SEMWG and QSEMC on the topic of socio-economic monitoring. No changes to the socio-economic monitoring program related to population demographic are required.

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## 11 GOVERNANCE AND LEADERSHIP

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### 11.1 How Has the Governance and Leadership Assessment Changed?

In the FEIS, Governance and Leadership was addressed as a subject of note. The Phase 2 Proposal does not change the effects of the Project on Governance and Leadership. Since the FEIS, Baffinland and Qikiqtani Inuit Association (QIA) have negotiated an Inuit Impact and Benefit Agreement (IIBA), a number of initiatives have been launched, and socio-economic monitoring has been ongoing.

In line with the FEIS, the Project is considered to have a positive and significant effect on Governance and Leadership.

### 11.2 What We've Heard

Inuit community members and stakeholders have not raised concerns regarding governance and leadership directly to Baffinland. Potentially relevant to Governance and Leadership with respect to the Project, however, are public statements were made by representatives of North Baffin communities in early 2017 that indicate a desire to split from the QIA and form their own Designated Inuit Association (DIO) under the *Nunavut Agreement*. Seven North Baffin communities are proposing to split from the QIA, and these include each of the five LSA communities. According to CBC News, North (2017), the push to form a separate organization stems from control over royalty payments from the Mary River Project: the communities want more control over the royalties. QIA's royalties from Baffinland are currently being saved in a legacy fund.

In a Mary 23, 2017 open letter to the NTI President and Board, former Pond Inlet Mayor Charlie Inuarak indicated frustration that NTI could not accommodate the matter at an April 2017 NTI Board meeting, and stated the following (Nunatsiaq News 2017).

*We, the North Baffin Communities of Igloolik, Sanirajak [Hall Beach], Ikpiarjuk [Arctic Bay], Qausuittuq [Resolute], Ausuittuq [Grise Fiord], Mittimatalik [Pond Inlet] and Kangiqtugaapik are desiring to create our own regional Inuit organization. Under our Nunavut Land Claims Agreement we have a right to create such a body.*

Baffinland has not been approached by this North Baffin group, and remains committed to working with the QIA until such time that a change is made with respect to the DIO applicable to the Project under the *Nunavut Agreement*, if such a change were to occur. Baffinland is committed to working within the regulatory regime and supporting Inuit leadership capacity building in its impacted communities.

### 11.3 Background

The governmental regime in the Project region remains unchanged from that described in the socio-economic baseline study presented for the Approved Project (FEIS Appendix 4A; BDSI 2010) The FEIS discussed three topics, as subjects of note, with respect to the Project's interaction with Governance and Leadership:

- The strategic Value of the Project: how the Project fit with regional and local strategic plans
- The Governance Regime for the Project: mainly a discussion of the IIBA as well as DPAs with the GN
- The Project's Contributions to Socio-economic Monitoring

The FEIS concluded that the Project is considered to fit well with the strategic priorities for the RSA and for the communities of the North Baffin LSA.

## 11.4 Assessment Methods

The current assessment revisits the three topics raised in the FEIS and provides an update on the Project that is now four years into the execution of a signed IIBA and that has also been undertaking socio-economic monitoring.

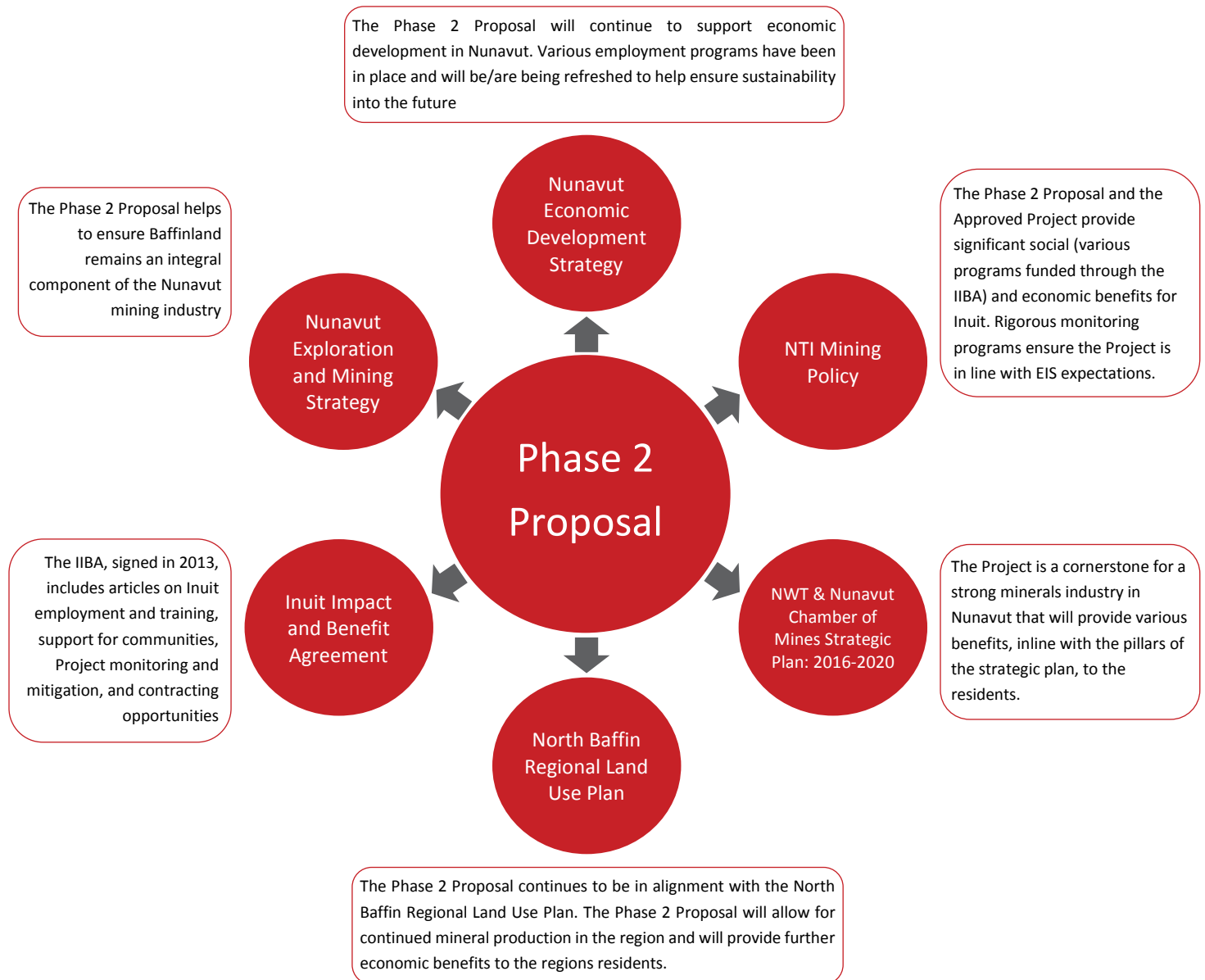
## 11.5 Strategic Value of the Project

The regional and national economic impact of the Project to the end of 2016 is summarized in Sections 5 and 10. The Project has already delivered significant economic development to Nunavut, and specifically the affected North Baffin communities.

As described in the FEIS (Volume 4, Section 13), the Project is consistent with a number of regional strategic plans. The Phase 2 Proposal ensures the sustainability of the Mary River Project in the more immediate term. The relationship of the Phase 2 Proposal with current Nunavut-wide and regional strategies, policies, plans and agreements is shown on Figure 11.1.

Relevant Nunavut-wide and regional strategic plans referenced in Figure 11.1 include:

- Nunavut Economic Development Strategy (The Sivummut Economic Development Strategy Group 2003)
  - Over arching strategy for the vision of economic development in Nunavut with the goal of a high sustainable quality of life.
- NTI's Mining Policy (NTI, n.d.)
  - Support and promote the development of mineral resources if there are significant long-term social and economic benefits for Inuit that are consistent with protecting the eco-systemic integrity of the Nunavut Settlement Area
- The Northwest Territories and Nunavut Chamber of Mines' Strategic Plan: 2016 to 2020 (Northwest Territories (NWT) and Nunavut Chamber of Mines 2016)
  - A strong minerals industry that benefits the Peoples of the North. Pillars of the Strategic Plan include, public and community engagement, government/ landowner relations, infrastructure development, lands access/ regulatory matters, membership support, and sound governance and financial
- North Baffin Regional Land Use Plan (Nunavut Planning Commission 2000)
  - Provide direction with respect to proposed land uses in the region. For mining the Plan's objectives are to encourage mineral exploration and production while protecting wildlife and maximizing economic benefits, to improve knowledge of mineral potential, to ensure community are prepared to take advantage of economic opportunities, to ensure mining activities proceed with minimal adverse effects, and to increase local knowledge of the location of carving stone
- The IIBA for the Mary River Project (QIA and Baffinland 2013)
  - The IIBA, signed in 2013, includes articles on Inuit employment and training, support for communities, Project monitoring and mitigation, and contracting opportunities
- Nunavut Exploration and Mining Strategy (GN Economic Development & Transportation n.d.)
  - Goal is to create the conditions for a strong and sustainable minerals industry that contributes to a high and sustainable quality of life for all Nunavummiut



**Figure 11.1 Strategic Value of the Project with Respect to Nunavut Strategic Plans**



At an Arctic wide scale, the territorial ministers developed a *Pan-Territorial Vision for Sustainable Development*, which reinforces that regions desire and commitment toward enhancing the economic success and quality of life of its residents (Government of Nunavut, Government of Northwest Territories, Yukon Government 2017). The Phase 2 Proposal fits within the principles and vision established through the Pan-Territorial Vision in that it builds upon the development of Nunavut's economy, provides sustainable jobs to residents, and continues partnerships with Inuit owned firms for procurement of goods and services.

The Federal government is in the process of developing an *Arctic Policy Framework* (Indigenous and Northern Affairs Canada (INAC) 2017). The objective of "the objective of the framework is to provide overarching direction to the Government of Canada's priorities, activities and investments in the Arctic" (INAC 2017). The development of the Phase 2 Proposal fits within the themes currently identified to anchor discussions on the framework (which may evolve overtime). The continued development of the Project will help to ensure the continued success of the Arctic economy through resource development and ensure the growth of strong Arctic people and communities through employment, skills development, and benefits following to the QIA, NTI and the federal and territorial governments.

On a more local level, the community of Pond Inlet, in a 2011 planning workshop on sustainable community infrastructure, established the following eight (8) Community Sustainability Goals (Aarluk Consulting Inc. 2011):

- Meet basic human needs;
- Achieve a sustainable economy and self-reliance;
- Ensure equitable access for all residents and financial sustainability;
- Promote individual and community health and well-being;
- Use resources efficiently;
- Reduce waste and hazardous waste;
- Protect and promote Inuit culture, heritage and language; and
- Protect the environment and ecosystems.

The Project contributes positively to the first four sustainability goals listed above.

## 11.6 Governance Regimes

The governance regimes applicable to the Project include:

- Nunavut Mining Regulations (Minister of Justice [Canada] 2017) applicable to grandfathered federal mining claims;
- Nunavut Tunngavik Inc.'s (NTI's) Resource Revenue Policy (NTI 2011);
- IIBA with the Designated Inuit Organization (the QIA in the Qikiqtani Region) pursuant to the Nunavut Agreement (INAC and NTI 2010);
- North Baffin Regional Land Use Plan (Nunavut Planning Commission (NPC) 2000);
- Project Certificate No. 005 issued to Baffinland by the NIRB pursuant to the Nunavut Agreement (INAC and NTI 2010);
- Various other permits, approvals, licences and authorizations;

- Voluntary Development Partnership Agreements (DPAs), subject to the Government of Nunavut's Development Partnership Agreement Policy (GN 2012); and
- Various other Federal and territorial (Nunavut) legislation.

Environmental legislation applicable to the Project is described in Section 4. The Amended EIS Guidelines (NIRB 2015) refer to the IIBA and DPAs, the current status of which are described below.

#### 11.6.1 IIBA

The Project is currently subject to an IIBA between Baffinland and the QIA under Article 26 of the *Nunavut Agreement* (INAC and NTI, 2010). The IIBA was signed by both parties on September 6, 2013.

The IIBA is administered by two committees: the Joint Executive Committee (JEC) and the Joint Management Committee (JMC). The JEC consists of three senior level representatives from the QIA and Baffinland, including a Co-Chair, an IIBA Coordinator and one other representative from each party. The JMC consists of four representatives from each of QIA and Baffinland, including each party's IIBA Coordinator and Employment and Training Officer, as well as two additional members to be appointed at the discretion of each party.

As set out in IIBA Article 4.7, the role of the JEC is to:

- Assess Project workforce requirements and projected availability of potential Inuit employees;
- Establish the Minimum Inuit Employment Goal (MIEG) and review compliance with the MIEG;
- Review and approve the mandated reports of the JMC;
- Review training and education opportunities for Inuit on an annual basis; and
- Review the contracting process, including contract awards (both actual and anticipated), maintain and update as necessary a list of Inuit firms for contracting purposes, review Inuit content in contract awards, maintenance of a list of Inuit firms, review of Inuit content.

The role of the JMC as set out in IIBA Article 4.8 is to:

- Share information respecting training initiatives, employment targets and contract awards;
- Update data to be supplied to the JEC for reporting purposes;
- Communicate operational concerns of the Company and QIA related to implementation;
- Forward concerns from either Baffinland or the QIA to the JEC for review and resolution; and
- Make recommendations to the JEC on actions to enhance Inuit participation and advance other IIBA objectives.

Several IIBA initiatives aim to enhance social and economic status of communities and their residents. These include:

- **INPK Fund** - The Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat (INPK) Fund is a community wellness fund to help address the anticipated social and cultural impacts of the Mary River Project for the five primarily affected North Baffin communities.

- **Business Capacity and Start-Up Fund** - Monetary contribution to the fund to assist Baffin Inuit firms to develop in various areas of business management including locating and access start-up capital, management development, ongoing business management, financial management, contracts and procurement, and human resources management.
- **Education and Training Fund** - Monetary contribution to assist with Inuit training relevant to the Project, the mining industry, and North Baffin communities.
- **Achievement and Scholarship Awards** - Scholarships provided to North Baffin students pursuing post-secondary studies
- **Work Ready Program** - Provide future Inuit employees with an advanced understanding of some of the demands of working at the Project.
- **Training and Skills Development** - Baffinland provides training and skills development to their employees and enables new skills development through the use of simulator equipment.
- **IIBA Forum Meetings** - Held in communities annually to enable community member participation and awareness around the IIBA and the contributions made by Baffinland to the QIA under the IIBA.
- **Inuit Human Resource Strategy (IHRS)** - Developed with the objective to promote a working relationship with Inuit communities, create an inclusive and culturally aware workforce, and increase Inuit recruitment, succession and retention at the Project.
- **Inuit Procurement and Contracting Strategy (IPCS)** - Focuses on engagement with Inuit firms and local contractor employees.

Quarterly and annual reports are prepared by Baffinland detailing the status of various IIBA Articles and the contributions made by Baffinland to the QIA under the IIBA.

Baffinland and the QIA are approaching a mandatory review of the IIBA every three years in accordance with Article 20 of the IIBA. Under Article 3.3, the same mandatory review can be triggered by a Change in Scope, which includes an environmental assessment under Article 12 of the Nunavut Agreement, except for project amendments to Project Certificates or other licences or permits. The mandatory review includes review of the following articles:

- Article 4 - Implementation
- Article 6 - Contracting
- Article 7 - Employment
- Article 8 - Education and Training
- Article 11 - Workplace Conditions
- Article 12 - Support for Communities
- Article 13 - Travel and Access
- Article 14 - Project Stewardship

Financial aspects of the IIBA are not included in mandatory reviews unless by mutual agreement. The review aims to determine whether performance evaluations of IIBA implementation results indicate lack of success in achieving the objectives, and the outcome of the review may be to enter negotiations to amend the agreement. The review process is in its early stages at the time of writing.

### 11.6.2 DPAs

The GN established the concept of Development Partnership Agreements (DPAs) some time ago, and articulate the basis for negotiating such agreements with mining proponents in a Development Partnerships Policy that was effective over the period of January 2012 to March 2016 (GN, 2012).

Baffinland issued an invitation letter to the Government of Nunavut in September 2013 regarding the negotiation of a DPA. However, a DPA between the GN and Baffinland has not yet been formalized. It has come to Baffinland's attention that the DPA program for new mines is currently on hold, while the GN's Department of Economic Development and Transportation and Department of Finance work to develop a replacement (Gregoire 2016). For added context, the GN's Department of Economic Development and Transportation webpage on this topic (i.e. Government of Nunavut 2017c) contains a DPA Policy that is noted to have expired on March 31, 2016.

### 11.6.3 Potential Interest Conflicts

Section 8.2.10.3 of the Amended EIS Guidelines requires Baffinland to provide an assessment of how potential interest conflicts will be managed in current governance regime during Project development. Baffinland's interpretation is that this means how will Baffinland manage various interests from other parties surrounding the Project and any potential benefits. To this regard, Baffinland will comply with all regulatory requirements and work with the regulatory framework and will adhere to the requirements set forth in the IIBA.

## 11.7 Contributions to Socio-Economic Monitoring

In Project Certificate Condition No. 129, NIRB strongly encouraged Baffinland to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC) along with other agencies and affected communities, and to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the North Baffin region as a whole. To this end, the Mary River Socio-Economic Monitoring Working Group (MRSEMWG) was established in 2013 as a sub-group of the regional Q-SEMC, and the Mary River Community Group.

The MRSEMWG is a partnership made up of Baffinland, Government of Nunavut, Government of Canada, and QIA representatives. The MRSEMWG provides support to QSEMC's regional monitoring initiatives through project-specific socio-economic monitoring. The MRSEMWG is intended to provide members with a forum in which they may engage the work of QSEMC through identification of areas of mutual interest and socio-economic monitoring priorities related to the Project, communities, and the Baffin region as a whole (MRSEMWG Terms of Reference 2012).

Annual socio-economic monitoring undertaken by Baffinland is presented to the QSEMC and Working Group members annually. The participants review and provide insight and highlight areas of concern or areas where monitoring can become more robust. In 2016, Baffinland revised their socio-economic monitoring program to better serve the committee and to ensure monitoring of each final EIS predicted impact is occurring (Jason Prno Consulting Services Ltd. 2016). Additional indicators were identified to monitor the effects on human health and well-being and community infrastructure and public services.

## 12 SOCIO-ECONOMIC MONITORING

### 12.1 Introduction

Baffinland has been undertaking socio-economic monitoring for the Project since 2013. To-date, five socio-economic monitoring reports have been produced (BDSI 2014 and 2015; JPCSL 2016, 2017a and 2018). Baffinland took a stepwise approach to developing its socio-economic monitoring program, focusing its initial reporting on a small number of VSECs and indicators. The framework for this initial socio-economic monitoring program was described in the FEIS (Volume 4, Section 15). As time progressed and lessons were learned, however, a more detailed socio-economic monitoring plan was developed by Baffinland. This plan now addresses all VSECs assessed for the Approved Project and includes over 45 monitoring indicators. The current plan supports comprehensive socio-economic monitoring for the Project and supersedes previous plan iterations presented in the assessments of the Approved Project. Further details on the Project's socio-economic monitoring plan are provided in Appendix B, but are also summarized below for convenience.

### 12.2 Socio-Economic Monitoring Requirements

Existing Project-related socio-economic monitoring requirements originate from the Nunavut Agreement and NIRB Project Certificate No. 005. The Nunavut Agreement is a comprehensive land claims agreement signed in 1993 between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada. As a result of signing the Nunavut Agreement, Inuit exchanged Aboriginal title to all their traditional land in the Nunavut Settlement Area for a series of rights and benefits. The Nunavut Agreement also created various 'institutions of public government' such as the NIRB and Nunavut Water Board and established conditions for the review and oversight of resource development projects. Article 12, Part 7 of the Nunavut Agreement provides details on monitoring programs which may be required under a NIRB project certificate and notes the purpose of these programs shall be:

- (a) to measure the relevant effects of projects on the ecosystemic and socio-economic environments of the Nunavut Settlement Area;*
- (b) to determine whether and to what extent the land or resource use in question is carried out within the predetermined terms and conditions;*
- (c) to provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and*
- (d) to assess the accuracy of the predictions contained in the project impact statements.*

NIRB issued an amended Project Certificate No. 005 (NIRB 2014) approving the ERP on May 28, 2014. NIRB (2014a) and Section 12.4 of Appendix B should be consulted for further information on the terms and conditions specific to socio-economic monitoring that were included in the Project Certificate.

Several conditions included in Project Certificate No. 005 relate to Baffinland's engagement with the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC). The QSEMC is one of three regional socio-economic monitoring committees in Nunavut. These committees were established in 2007 to address project certificate requirements for project-specific monitoring programs and to create a discussion forum and information sharing hub that supports impacted communities and interested parties to take part in monitoring efforts (SEMCs 2016). Baffinland is actively involved in the QSEMC and regularly participates in its meetings.

The Mary River Socio-Economic Monitoring Working Group (SEMWG, or Working Group) Terms of Reference also provides guidance on Baffinland's socio-economic monitoring program. Baffinland, in addition to the Government of Nunavut, the Government of Canada, and the Qikiqtani Inuit Association (QIA), is a member of the SEMWG. The SEMWG is intended to support the QSEMC's regional monitoring initiatives through Project-specific socio-economic monitoring. The SEMWG also supports the fulfillment of terms and conditions set out in Project Certificate No. 005 that relate to socio-economic monitoring. Baffinland is actively involved in the SEMWG and regularly participates in its meetings. A Terms of Reference for the SEMWG can be found in Appendix B and are currently under review by the Working Group members to develop any necessary modifications. It describes the Working Group's purpose; membership and member roles; objectives; and reporting, communication, and meeting requirements. Furthermore, Section 4.1 of the Terms of Reference notes that Baffinland:

*"...will prepare an annual socio-economic report, presenting performance data, to the Nunavut Impact Review Board for review... containing data on the indicators selected by the Working Group for the previous calendar year (January to December). These reports will further describe the Company's participation in the [QSEMC], other collaborative monitoring processes and any activities related to better understanding of socio-economic processes."*

As established in the SEMWG Terms of Reference, the Working Group members agreed that collaboration is required to effectively monitor the socio-economic performance of the Mary River Project. It was acknowledged that Baffinland is best able to collect and provide data concerning employment and training in relation to the Project, and the Government of Nunavut and the Government of Canada are best able to report public statistics on general health and well-being, food security, demographics, and other socio-economic indicators at the community and territorial level. The QIA was noted to be best able to provide information and data relating to Inuit land use and culture at the community and regional level.

### 12.3 Socio-Economic Monitoring Objectives

Project-specific socio-economic monitoring programs in Nunavut are generally expected to focus on two areas: 'effects monitoring' and 'compliance monitoring'. Effects monitoring keeps track of the socio-economic effects of a project to see if management plans are working or if any unexpected effects are occurring. Compliance monitoring occurs to make sure proponents follow the terms and conditions of the licences, decisions, and certificates issued by authorizing agencies (NIRB 2013). This focus is commensurate with socio-economic monitoring best-practice (e.g. Noble 2015; Vanclay et al. 2015) and can assist companies with achieving their sustainable development goals.

Socio-economic monitoring also supports adaptive management, as findings can alert project proponents to the emergence of unanticipated effects and help initiate a management response. Furthermore, regular review of monitoring plans will help determine whether existing socio-economic indicators and monitoring methods remain appropriate (Vanclay et al. 2015).

In consideration of the above, Baffinland's socio-economic monitoring program aims to meet the following objectives:

1. Evaluate the accuracy of selected socio-economic effect predictions presented in the Mary River Project FEIS and identify any unanticipated effects.
2. Help identify areas where Baffinland's existing socio-economic mitigation and management programs may not be functioning as anticipated.
3. Assist regulatory and other agencies in evaluating Baffinland's compliance with socio-economic monitoring requirements for the Project.

4. Support adaptive management, by identifying potential areas for improvement in socio-economic monitoring and performance, where appropriate.

Baffinland's socio-economic monitoring reports present information related to the VSECs assessed in the FEIS. Throughout these reports, predicted residual VSEC effects and associated mitigation measures are described. In some other cases, socio-economic Project Certificate conditions are described instead of effect predictions. This is followed by a presentation of indicator data (where available) and an analysis of that data. This structure allows Baffinland's reporting to align with the FEIS predictions and Project Certificate conditions, and increases comparability between them and currently available data.

## 12.4 Socio-Economic Monitoring Plan

Baffinland will continue to conduct comprehensive socio-economic monitoring for the Project. A long-term socio-economic monitoring plan is presented in Appendix B (see Table 1-1 and Section 1.4) and summarizes indicators and data sources for all VSECs assessed in the FEIS (or notes where monitoring is not required or other forms of issue tracking and monitoring are taking place). More specifically, indicators are proposed for VSEC-related residual effects and information that has been requested through the Project Certificate.

Prior to finalizing the Project's socio-economic monitoring plan presented in Appendix B, Baffinland solicited feedback from members of the SEMWG on a draft version of the plan presented in the 2015 monitoring report (JPCSL 2016). Baffinland also identified several internal refinements to this plan and its approach to socio-economic monitoring prior to finalization. Some of these refinements included the modification of previously proposed indicators and/or addition of new indicators, aggregation of some community-level data to a more appropriate scale of analysis (e.g. presenting aggregated data for the North Baffin LSA rather than for individual communities), and the introduction of data trends analyses. Baffinland's current monitoring program is robust and no significant changes to it are envisioned because of the Phase 2 Proposal. However, Baffinland will continue to engage both the SEMWG and QSEMC on the topic of socio-economic monitoring (including the topic of data gaps), and will use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

Baffinland also acknowledges the structure and content of its socio-economic monitoring report may benefit from additional refinement in the future; suggestions from reviewers on how indicators and data sources could potentially be improved are welcome. It is further acknowledged that any significant changes to the Project's socio-economic monitoring program require discussion with the SEMWG. Likewise, Appendix B includes several instances where indicators haven't been identified by Baffinland for various reasons (e.g. monitoring is already conducted elsewhere, no residual effects were identified in the FEIS, insufficient data availability). In some additional cases, other forms of issue tracking will take place (e.g. through the QSEMC process or Baffinland's community engagement program). Should new indicators be required for these topics in the future, they will be selected in consultation with the SEMWG.

Also worthy of note is Baffinland's recent participation in the September 2017 territorial socio-economic monitoring workshop held by the GN in Iqaluit. Primary objectives of this workshop included developing a list of core monitoring indicators for the territory, identification of methods for addressing data gaps, establishing preferred monitoring report compositions and assessment methodologies, and endorsement of the GN's territorial reporting proposal. Baffinland was an active participant in this workshop (in addition to other territorial mineral developers, federal/territorial governmental agencies, and Inuit organizations) and provided feedback throughout the process. The Government of Nunavut recently issued its final workshop report and recommendations (i.e. Government of Nunavut 2018). Baffinland will investigate the possibility of further aligning its monitoring program with the Government of Nunavut's recommendations, where appropriate, following its review of the report.



Additional details on the Project's current socio-economic monitoring plan, methods employed, findings, and concordance with Project Certificate requirements are provided in Appendix B.

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# APPENDIX A

## ECONOMIC IMPACT MODEL



# Assessment of Economic Benefits Generated by the Mary River Project's Phase 2 Proposal FINAL



Assessment of Economic Benefits  
Generated by the Mary River Project's  
Phase 2 Proposal  
FINAL

By

EcoTec Consultants

June 2018

## TABLE OF CONTENTS

INTRODUCTION.....	5
SECTION I – Project Expenditures and Employment.....	11
SECTION II – Estimates of Economic Benefits.....	27
SECTION III – Importance of the Project for the Nunavut Economy.....	46
CONCLUSION .....	49
ANNEX A – Marcel LeBreton - Economist.....	50
ANNEX B – Economic Impact Model (EIM) .....	52

#### DISCLAIMER

By its very nature, this document is highly prospective: it deals with numbers that are based on scenarios and hypotheses for a future that extends to 2040 and beyond. The estimations of economic benefits outlined in this report are just that: estimations based on scenarios and hypothesis taking place in future years. No conclusion or inference should be made based on the content of this report regarding investment or financial decisions about the Mary River Project, Baffinland Iron Mines Corporation (Baffinland), iron ore, the mining sector in general or the Nunavut and Canadian economy.

Furthermore, this report is based on the best available data from Baffinland, Hatch, Knight Piésold and other sources regarding the Mary River Project's Phase 2 Proposal. This document constitutes neither an endorsement of the data used here nor an explicit statement about the accuracy of that data. A mining project by its very nature is highly dynamic and the economics of such a project, including costs, employment, production schedules, exchange rates and other elements change on a weekly basis. Therefore, it is possible that as circumstances changed over the course of the production of this report, some data used in this document may already be obsolete. Such is the nature of a large engineering project spanning over 20 years.

Finally, estimation of the economic benefits generated by the Mary River Project, notably indirect and induced employment, Gross Domestic Product and some tax revenues have been done using an economic impact model based on the Statistics Canada Input-Output Model of the Canadian Economy (interprovincial version) developed and used by EcoTec Consultants for this report. The client, Baffinland, had no role or input into the modelling and calculations leading to the estimates of economic benefits presented in this document.

## INTRODUCTION

The Mary River Project is an operating iron ore mine located in the Qikiqtani Region of Nunavut (Figure 1). Baffinland Iron Mines Corporation (Baffinland) is the owner and operator of the Project.

Project Certificate No 005 currently authorizes Baffinland to mine up to 22.2 million tonnes per annum (Mtpa) of iron ore from Deposit No. 1. Of this, the Company is authorized to transport 18 Mtpa of ore by rail to Steensby Port for year-round shipping through Foxe Basin and Hudson Strait (the original project proposal described in the FEIS), and 4.2 Mtpa of ore by truck to Milne Port for open water shipping (the Early Revenue Phase). To date, Baffinland has been operating the 4.2 Mtpa Early Revenue Phase.

Baffinland is seeking a second amendment to its Project Certificate No. 005 to allow the Company to implement its Phase 2 Proposal. The Phase 2 Proposal consists of a near-term expansion of the 4.2 Mtpa Early Revenue Phase operation to 12 Mtpa, and the subsequent additional development of the 18 Mtpa south rail project.

The Phase 2 Project will involve the following components and activities:

- An increase in mining production over time from 4.2 Mtpa to 12 Mtpa, and eventually to 30 Mtpa
- Further development of the Northern Transportation Corridor which will include:
  - Tote Road upgrades
  - Construction of a railway adjacent to the Tote Road
  - Increased truck transits on the Tote Road until the northern railway is operational
  - Construction of a rail terminal at Milne Port for unloading of ore
  - Construction of a maintenance facility and construction camp mid-way along the northern transportation corridor
- Further development of the Milne Port area which will include:
  - A second ore dock
  - A freight dock
  - Relocation of secondary crushing and screening from the Mine Site to Milne Port
  - Construction of a rail maintenance facility
- Changes to shipping activities which include:
  - An increase in shipping transits through Northern Shipping Route during the open-water season, and shoulder season as may be required.

FIGURE 1  
Project Location





This document estimates the likely economic benefits of the Phase 2 Proposal on the economy of Nunavut and the Canadian economy at large. Assessments of those benefits, on a yearly basis, concentrate on four statistics:

- Employment expressed in Full-Time Equivalents (FTEs)
- Gross Domestic Product (GDP) expressed in millions of Canadian dollars (M\$)
- Revenues for the Inuit Associations in Nunavut
- Fiscal revenues for the Nunavut and federal governments.

The economic benefits are estimated for the Project as a whole which is, for the purpose of this study, divided into four major components (see Figure 2 for the project schedule):

- 1) Operations (OPEX) over the 2017-2037 period. Year 2017 is included as a reference point regarding the present-day economic benefits of the project. The OPEX data include a small amount of sustaining capital.
- 2) An investment (CAPEX) over the 2018-2021 period to increase production to 12 million tons per year (12 Mtpa) from year 2022 onward. This investment is called "12 Mtpa" in this document.
- 3) An investment (CAPEX) in 2025-2028 to further increase production to 30 Mtpa starting in 2029. This investment is called "18 Mtpa" in this document. The core of this investment would be the construction of a 149-km rail line between the mine and a newly built port at Steensby Inlet.
- 4) Closure of the mine over the 2038-2040 period. Although the monitoring period will last several more years after 2040, the bulk of the expenses for closure will be over that three-year period.

FIGURE 2

Project Schedule, 2017-2040

2017	OPERATION S	
2018		PHASE 2 CAPEX (12 mtpa)
2019		
2020		
2021		
2022		
2023		
2024		
2025		CAPEX 18 mtpa
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		
2036		
2037		
2038		CLOSURE
2039		
2040		

Source : Baffinland

The first part of this report will provide an overview of the scope of the Mary River Project over the 2017-2040 period, including expenditures and employment in Nunavut and Canada. It will also show the expected revenues for selected Inuit organizations in Nunavut: Nunavut Tunngavik Inc. (NTI) and Qikiqtani Inuit Association (QIA). The NTI coordinates and manages Inuit responsibilities set out in the Nunavut Agreement (Indian and Northern Affairs Canada and Nunavut Tunngavik Inc., 2010<sup>1</sup>) and ensures the federal and territorial governments meet their obligations under the Agreement (NTI, 2017<sup>2</sup>). The QIA is the representative of the Inuit of Baffin Region. The other two regional Inuit associations (RIAs) in Nunavut are the Kivalliq Inuit Association and Kitikmeot Inuit Association, both of which will also benefit from a portion of the mineral royalty revenues associated with the Mary River Project.

The second part of the report outlines the estimations of economic benefits (employment, GDP and overall tax revenues) by year for Nunavut and Canada.

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<sup>1</sup> Indian and Northern Affairs Canada and Nunavut Tunngavik Inc., 2010. *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, as Amended – Consolidated Version (amendments included herein are up to January 29, 2009)*. Published under the joint authority of Nunavut Tunngavik Inc. and the Minister of Indian Affairs and Northern Development and Federal Interlocutor for Métis and Non-Status Indians Ottawa, 2010. ISBN 978-1-100-15387-3.

<sup>2</sup> <http://www.tunngavik.com/about/>

#### IMPORTANT NOTES

- 1) All dollar amounts are expressed in Canadian dollars (CAD) unless otherwise stated. The exchange rate used when converting USD data into CAD was \$1.29 CAD = \$1.00 USD.
- 2) Efforts have been made to identify direct imports of goods and services (including financing costs). The Economic Impact Model (EIM) did also calculate likely import content for items purchased in Canada but likely manufactured in other countries. An example of this is machinery and equipment purchased by Baffinland from a dealer or wholesaler in Ontario: the initial expenditure is made in Canada, but the real Canadian content is much lower (due to large import content).
- 3) The focus of this document is on Nunavut first with Canada as a whole being a secondary priority. Therefore, no significant effort was made to identify economic benefits on a province-by-province basis.
- 4) Using present-day geographical origins of workers (employees and contractors) at the Mary River Project, direct employment (and related salaries and benefits) has been allocated based on the province or territory of permanent residency, not the place of work. Therefore, employment, personal income and economic benefits generated by consumer expenditures are based on the territory or province of permanent residency. This approach better reflects where economic benefits actually take place.
- 5) In order to provide prudent estimates of economic benefits for Nunavut, no attempt was made to calculate additional economic benefits by spending either (a) Nunavut Government fiscal revenues or (b) projected revenues for the Qikiqtani Inuit Association (QIA) generated by the Mary River Project in the Nunavut economy.

## SECTION I – Project Expenditures and Employment

This section provides an overview of the size of the Mary River Project over the 2017-2040 period, including the investments required and the operating expenses as well as direct employment.

Total expenditures by Baffinland are expected to reach \$19.8 B between 2017 and 2040 inclusively (see table I-1). The amount likely to be spent in Nunavut over that period is estimated at \$4.7 B, including wages and salaries for Nunavut residents<sup>3</sup>, taxes and royalties as well as other expenditures for either construction or operation of the mine's facilities. Total direct employment, either employees of Baffinland or construction workers employed during capital phases (CAPEX), are expected to total 43,823 Full-Time Equivalents (FTEs) for the country as a whole over the life of the Phase 2 Proposal. Direct employment of Nunavut residents is expected to reach 8,691 FTEs.

The two shaded areas of table I-1 correspond to the periods when expenditures for the two CAPEX projects will be in addition to expenditures for operation of the mine facilities: the expansion to an annual production of about 12 million tons (12 Mtpa) is expected to span the 2018-2021 period and the expansion to add another 18 Mtpa (for a total annual production of 30 Mtpa) is projected to start in 2025 and be completed by 2028. The two CAPEX periods will significantly increase both the level of expenditure and the number of jobs in the Nunavut and Canadian economies. For example, peak employment is expected to be reached in 2026: 759 FTEs in Nunavut (including operations at the mine as well as from construction crews) and 3,849 for Canada as a whole. Figure I-1 and Figure I-2 show the year-by-year evolution of expenditures and employment for both Nunavut and Canada.

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<sup>3</sup> In this document, the term 'Nunavut residents' is considered similar to 'Inuit workers': there is no attempt to distinguish between Inuit and non-Inuit residents. Given the primarily Inuit ethnic composition of the Nunavut population (especially in northern Baffin Island) as well as the emphasis on providing economic benefits and opportunities to Inuit, an overwhelming majority of jobs created in Nunavut are expected to be filled by Inuit workers.

**TABLE I-1**

Expenditures, Nunavut and Canada,  
M\$ and FTEs

Years	Nunavut		Canada <sup>4</sup>	
	Expenditures	Direct Employment	Expenditures	Direct Employment
2017	\$23.0	178	\$152.2	903
2018	\$104.5	319	\$626.0	1,614
2019	\$157.2	413	\$961.3	2,083
2020	\$114.6	393	\$643.1	1,983
2021	\$77.2	268	\$456.1	1,357
2022	\$55.2	232	\$370.2	1,177
2023	\$55.5	232	\$380.8	1,177
2024	\$54.9	232	\$395.1	1,177
2025	\$140.2	389	\$1,077.6	1,975
2026	\$335.6	759	\$2,408.0	3,849
2027	\$302.3	712	\$2,242.9	3,611
2028	\$216.5	568	\$1,724.7	2,883
2029	\$91.5	419	\$763.0	2,126
2030	\$136.5	419	\$749.2	2,126
2031	\$202.9	419	\$755.3	2,126
2032	\$277.0	419	\$780.3	2,126
2033	\$307.2	419	\$804.9	2,126
2034	\$414.1	419	\$909.8	2,126
2035	\$495.8	419	\$1,058.9	2,126
2036	\$540.5	419	\$1,178.5	2,126
2037	\$538.8	419	\$1,178.5	2,126
2038	\$20.4	75	\$82.0	300
2039	\$16.4	75	\$65.2	300
2040	\$14.0	75	\$55.5	300
<b>Total</b>	<b>\$4,691.8</b>	<b>8,691</b>	<b>\$19,819.5</b>	<b>43,823</b>

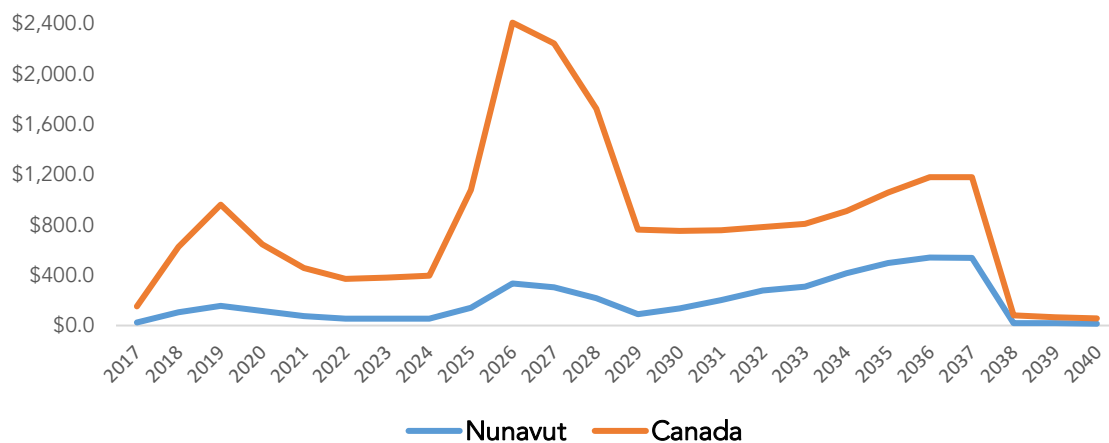
Sources: Baffinland and EcoTec Consultants

<sup>4</sup> Canada numbers always include Nunavut unless otherwise stated.



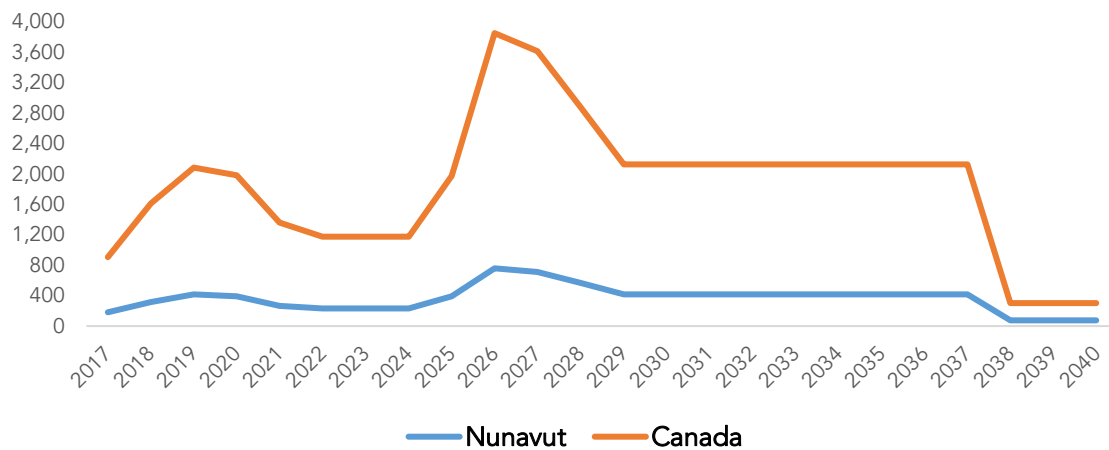
**FIGURE I-1**

Expenditures by Year, Nunavut and Canada,  
M\$



**FIGURE I-2**

Direct Employment by Year, Nunavut and Canada,  
FTEs



Expenditures and direct employment by component for both Nunavut and Canada are detailed in the next four tables (Table I-2 through Table I-5). The components are shown in chronological order of their start date. The largest expenditures will take place over time for operations of the mine: a total of \$3.6 B will be spent in Nunavut over the 2017-2037 period. The funds will be split between wages and salaries for residents of Nunavut, for suppliers of the mine (catering, transportation, etc.), taxes for both levels of governments (including fuel tax, payroll tax, royalties, etc.) and various payments to Inuit associations. The expenditures in Nunavut are expected to reach a maximum of \$540.5 M in 2036, a significant portion of which could be represented by royalties.

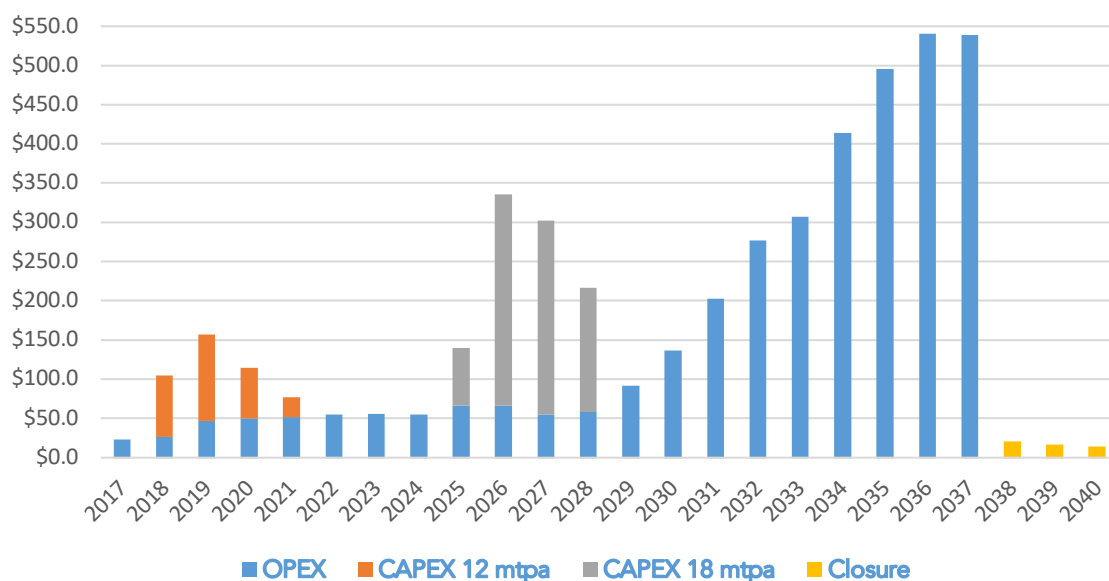
The total value of expenditures made in Nunavut for the expansion to 12 Mtpa is expected to reach \$278.4 M over the 2018-2021 period. The size of the CAPEX for the 18 Mtpa project should be much larger with total direct expenditures in Nunavut estimated at \$748.7.8 M over four years (2025-28). Finally, expenditures for the closure of the mine are expected to be concentrated over the 2037-2040 period with a total estimated at \$50.8 M for Nunavut.

**TABLE I-2**

**Expenditures by Project Component, Nunavut,  
M\$**

Years	Operations	CAPEX 12 Mtpa	CAPEX 18 Mtpa	Closure	Total
2017	\$23.0	\$0.0	\$0.0	\$0.0	\$23.0
2018	\$26.2	\$78.3	\$0.0	\$0.0	\$104.5
2019	\$47.1	\$110.1	\$0.0	\$0.0	\$157.2
2020	\$50.3	\$64.4	\$0.0	\$0.0	\$114.6
2021	\$51.5	\$25.8	\$0.0	\$0.0	\$77.2
2022	\$55.2	\$0.0	\$0.0	\$0.0	\$55.2
2023	\$55.5	\$0.0	\$0.0	\$0.0	\$55.5
2024	\$54.9	\$0.0	\$0.0	\$0.0	\$54.9
2025	\$66.1	\$0.0	\$74.1	\$0.0	\$140.2
2026	\$66.2	\$0.0	\$269.4	\$0.0	\$335.6
2027	\$55.0	\$0.0	\$247.3	\$0.0	\$302.3
2028	\$58.6	\$0.0	\$157.9	\$0.0	\$216.5
2029	\$91.5	\$0.0	\$0.0	\$0.0	\$91.5
2030	\$136.5	\$0.0	\$0.0	\$0.0	\$136.5
2031	\$202.9	\$0.0	\$0.0	\$0.0	\$202.9
2032	\$277.0	\$0.0	\$0.0	\$0.0	\$277.0
2033	\$307.2	\$0.0	\$0.0	\$0.0	\$307.2
2034	\$414.1	\$0.0	\$0.0	\$0.0	\$414.1
2035	\$495.8	\$0.0	\$0.0	\$0.0	\$495.8
2036	\$540.5	\$0.0	\$0.0	\$0.0	\$540.5
2037	\$538.8	\$0.0	\$0.0	\$0.0	\$538.8
2038	\$0.0	\$0.0	\$0.0	\$20.4	\$20.4
2039	\$0.0	\$0.0	\$0.0	\$16.4	\$16.4
2040	\$0.0	\$0.0	\$0.0	\$14.0	\$14.0
<b>Total</b>	<b>\$3,613.9</b>	<b>\$278.4</b>	<b>\$748.7</b>	<b>\$50.8</b>	<b>\$4,691.8</b>

Sources: Baffinland and EcoTec Consultants

**FIGURE I-3****Expenditures by Project Component by Year, Nunavut, M\$**

Direct employment in Nunavut by component (Table I-3) closely aligns with direct expenditures: operations are by far the largest provider of employment for Nunavut residents with an estimated 6,391 FTEs. Peak employment of 419 FTE per year is expected to occur from 2029 to 2037 when the mine will be at maximum production of 30 Mtpa. The second-largest source of employment is expected to occur when the Project expands production by an additional 18 Mtpa, with total FTEs estimated at 1,500 over the 2025-2028 period. The CAPEX investments required to increase production to 12 Mtpa are expected to generate 575 temporary FTEs for Nunavut residents from 2018 to 2021. Another 225 FTE for residents of the territory are expected to be created for the closure of the site between 2038 and 2040.

**TABLE I-3**

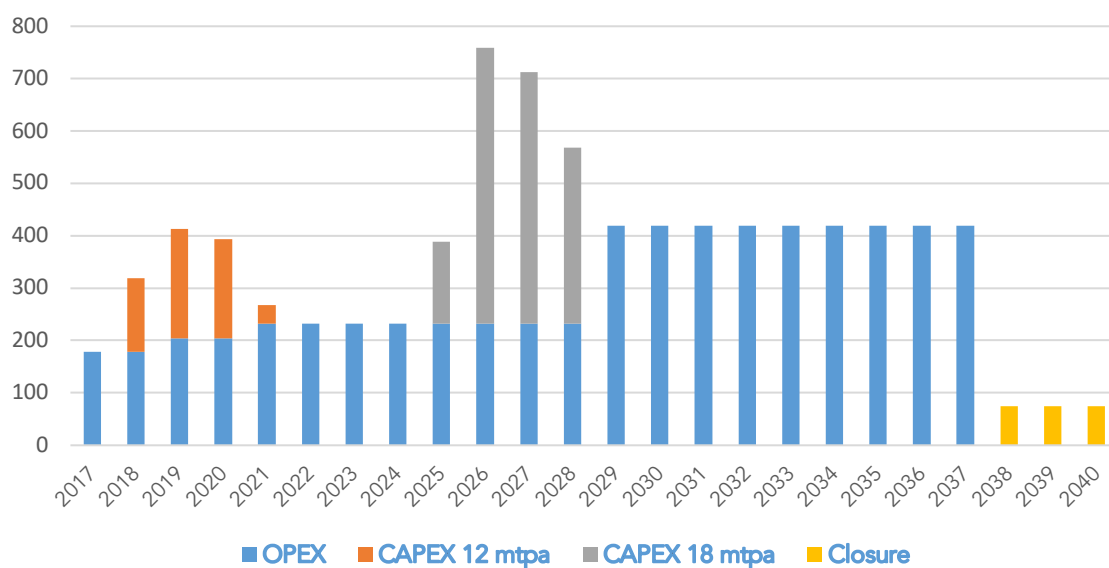
**Direct Employment by Project Component, Nunavut, FTEs**

Years	Operations	CAPEX 12 Mtpa	CAPEX 18 Mtpa	Closure	Total
2017	178	0	0	0	178
2018	178	141	0	0	319
2019	204	209	0	0	413
2020	204	189	0	0	393
2021	232	36	0	0	268
2022	232	0	0	0	232
2023	232	0	0	0	232
2024	232	0	0	0	232
2025	232	0	157	0	389
2026	232	0	527	0	759
2027	232	0	480	0	712
2028	232	0	336	0	568
2029	419	0	0	0	419
2030	419	0	0	0	419
2031	419	0	0	0	419
2032	419	0	0	0	419
2033	419	0	0	0	419
2034	419	0	0	0	419
2035	419	0	0	0	419
2036	419	0	0	0	419
2037	419	0	0	0	419
2038	0	0	0	75	75
2039	0	0	0	75	75
2040	0	0	0	75	75
<b>Total</b>	<b>6,391</b>	<b>575</b>	<b>1,500</b>	<b>225</b>	<b>8,691</b>

Sources: Baffinland and EcoTec Consultants

**FIGURE I-4**

**Direct Employment by Project Component by Year, Nunavut, FTEs**



As shown in Table I-4, operation of the mine is expected to cost \$13.5 B between 2017 and 2037, including all taxes, royalties and payments to Inuit associations. From a budget of \$152.2 M in 2017, annual expenditures are expected to rise as production increases over the years: they will peak at \$1.2 B in 2036 and 2037.

The total value of expenditures for the expansion to 12 Mtpa is expected to reach \$1.25 B over the 2018-2021 period. The outlays for the CAPEX 18 Mtpa project are estimated at \$4.82 B over four years (2025-28). Finally, most of the expenditures for the closure of the mine are expected to take place over the 2037-2040 period with a total estimated at \$202.7 M.

**TABLE I-4****Expenditures by Project Component, Canada,  
(M\$)**

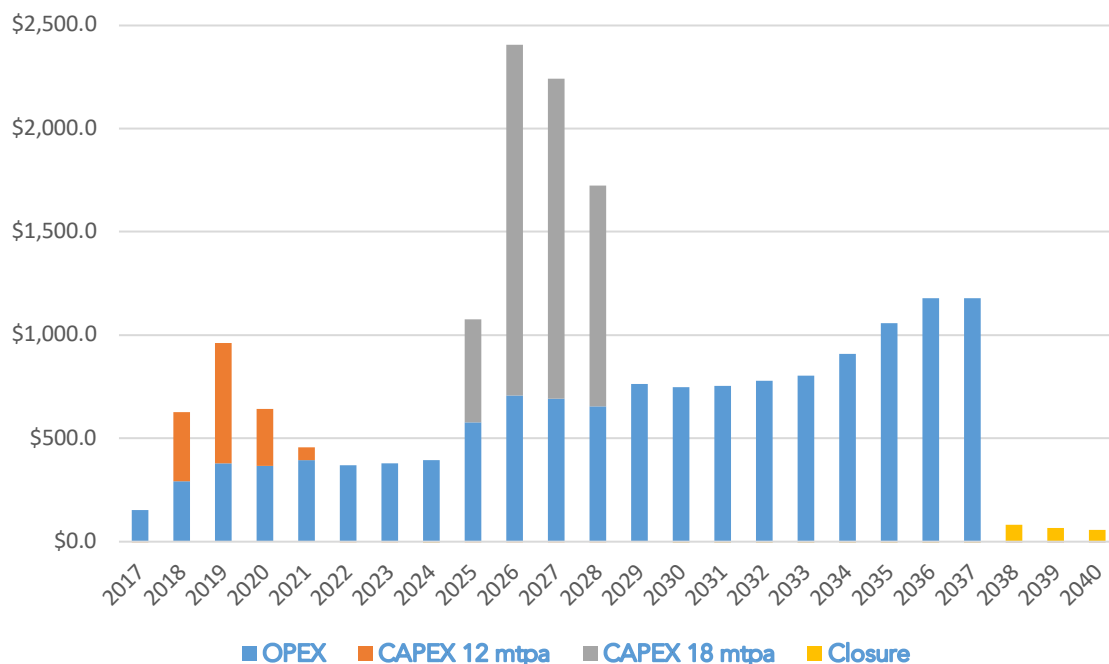
Years	Operations	CAPEX 12 Mtpa	CAPEX 18 Mtpa	Closure	Total
2017	\$152.2	\$0.0	\$0.0	\$0.0	\$152.2
2018	\$292.5	\$333.5	\$0.0	\$0.0	\$626.0
2019	\$379.6	\$581.8	\$0.0	\$0.0	\$961.3
2020	\$366.2	\$276.9	\$0.0	\$0.0	\$643.1
2021	\$395.7	\$60.3	\$0.0	\$0.0	\$456.1
2022	\$370.2	\$0.0	\$0.0	\$0.0	\$370.2
2023	\$380.8	\$0.0	\$0.0	\$0.0	\$380.8
2024	\$395.1	\$0.0	\$0.0	\$0.0	\$395.1
2025	\$576.3	\$0.0	\$501.4	\$0.0	\$1,077.6
2026	\$708.5	\$0.0	\$1,699.5	\$0.0	\$2,408.0
2027	\$692.8	\$0.0	\$1,550.1	\$0.0	\$2,242.9
2028	\$653.7	\$0.0	\$1,071.0	\$0.0	\$1,724.7
2029	\$763.0	\$0.0	\$0.0	\$0.0	\$763.0
2030	\$749.2	\$0.0	\$0.0	\$0.0	\$749.2
2031	\$755.3	\$0.0	\$0.0	\$0.0	\$755.3
2032	\$780.3	\$0.0	\$0.0	\$0.0	\$780.3
2033	\$804.9	\$0.0	\$0.0	\$0.0	\$804.9
2034	\$909.8	\$0.0	\$0.0	\$0.0	\$909.8
2035	\$1,058.9	\$0.0	\$0.0	\$0.0	\$1,058.9
2036	\$1,178.5	\$0.0	\$0.0	\$0.0	\$1,178.5
2037	\$1,178.5	\$0.0	\$0.0	\$0.0	\$1,178.5
2038	\$0.0	\$0.0	\$0.0	\$82.0	\$82.0
2039	\$0.0	\$0.0	\$0.0	\$65.2	\$65.2
2040	\$0.0	\$0.0	\$0.0	\$55.5	\$55.5
<b>Total</b>	<b>\$13,542.4</b>	<b>\$1,252.5</b>	<b>\$4,821.9</b>	<b>\$202.7</b>	<b>\$19,819.5</b>

Sources: Baffinland and EcoTec Consultants



FIGURE I-5

Expenditures by Project Component by Year, Canada, M\$



A total of 32,422 FTE of employment is expected to be generated for Canadian workers during the 21 years of operations between 2017 and 2037. The annual workforce is expected to increase from 903 FTEs in 2017 to 1,177 in 2021 as production ramps up to 12 Mtpa. Peak employment of 2,126 FTE is expected to occur between 2029 to 2037 when the mine will be at maximum production of 30 Mtpa. The second-highest employment numbers are expected to occur when the Project expands production by an additional 18 Mtpa, with total FTEs estimated at 7,610. The CAPEX investments required to increase production to 12 Mtpa are expected to generate 2,891 FTE from 2018 to 2021. Finally, 900 FTE are expected to be created during the closure of the site between 2038 and 2040.

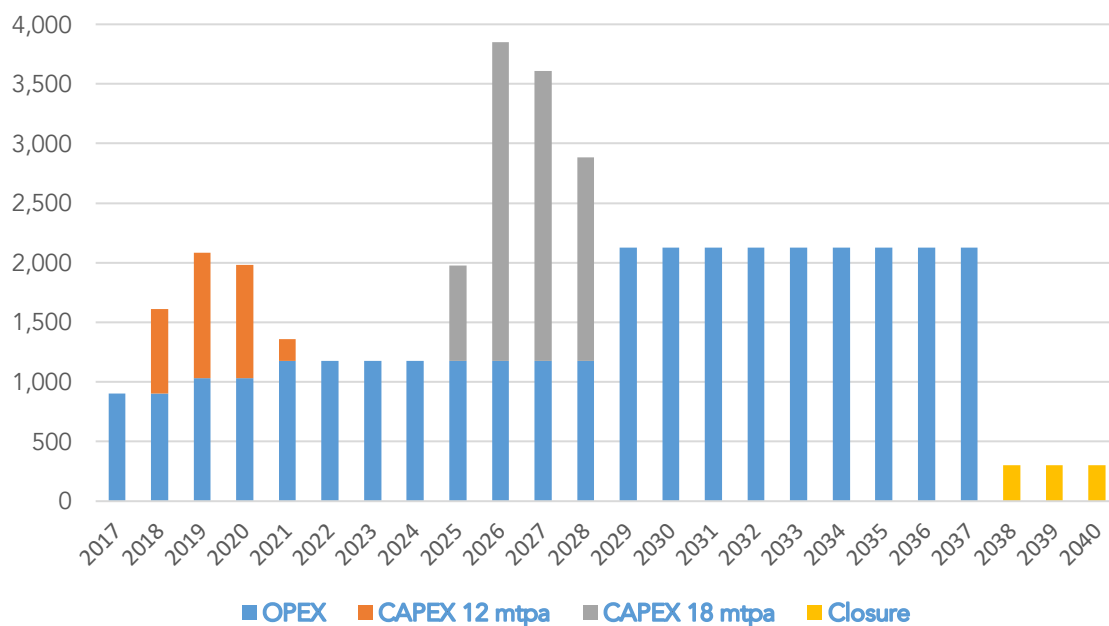
**TABLE I-5****Direct Employment by Project Component, Canada  
(FTEs)**

Years	Operations	CAPEX 12 Mtpa	CAPEX 18 Mtpa	Closure	Total
2017	903	0	0	0	903
2018	903	711	0	0	1,614
2019	1,033	1,050	0	0	2,083
2020	1,033	950	0	0	1,983
2021	1,177	180	0	0	1,357
2022	1,177	0	0	0	1,177
2023	1,177	0	0	0	1,177
2024	1,177	0	0	0	1,177
2025	1,177	0	798	0	1,975
2026	1,177	0	2,672	0	3,849
2027	1,177	0	2,434	0	3,611
2028	1,177	0	1,706	0	2,883
2029	2,126	0	0	0	2,126
2030	2,126	0	0	0	2,126
2031	2,126	0	0	0	2,126
2032	2,126	0	0	0	2,126
2033	2,126	0	0	0	2,126
2034	2,126	0	0	0	2,126
2035	2,126	0	0	0	2,126
2036	2,126	0	0	0	2,126
2037	2,126	0	0	0	2,126
2038	0	0	0	300	300
2039	0	0	0	300	300
2040	0	0	0	300	300
<b>Total</b>	<b>32,422</b>	<b>2,891</b>	<b>7,610</b>	<b>900</b>	<b>43,823</b>

Sources: Baffinland and EcoTec Consultants

FIGURE I-6

Direct Employment by Project Component by Year, Canada, FTEs



Based on existing agreements and current scenarios and hypotheses, Inuit associations could collect an estimated \$2.0 B from the Mary River mine over the 2017-2040 period. Table I-6 provides a detailed breakdown of the potential revenue. All the revenues except the royalties for aggregate royalties (\$27.6 M) are included in the OPEX expenditures already discussed (see table I-2 and Table I-4). Royalties for aggregates are split between the two CAPEX phases.

TABLE I-6

Revenues for Inuit Associations by Source of Revenue, Nunavut,  
M\$

Years	Federal Mineral Royalties	IIBA Mineral Royalty	IOL Land Lease	Funding for Inuit organizations and local committees (IIBA) <sup>5</sup>	Aggregate Royalties	TOTAL
2017	\$0.0	\$5.0	\$2.3	\$2.0	\$0.0	\$9.3
2018	\$0.0	\$5.0	\$2.3	\$2.0	\$0.0	\$9.3
2019	\$0.0	\$9.4	\$2.4	\$3.7	\$0.0	\$15.5
2020	\$0.0	\$12.6	\$2.4	\$3.7	\$9.6	\$28.3
2021	\$0.0	\$12.4	\$2.4	\$3.7	\$9.6	\$28.1
2022	\$0.0	\$13.7	\$2.4	\$3.7	\$0.0	\$19.8
2023	\$0.0	\$13.5	\$2.4	\$3.7	\$0.0	\$19.5
2024	\$0.0	\$13.5	\$2.4	\$3.7	\$0.0	\$19.5
2025	\$0.0	\$13.5	\$2.4	\$3.7	\$2.8	\$22.3
2026	\$0.0	\$13.5	\$2.4	\$3.7	\$2.8	\$22.3
2027	\$0.0	\$13.5	\$2.4	\$3.7	\$2.8	\$22.3
2028	\$0.0	\$17.1	\$2.4	\$3.7	\$0.0	\$23.2
2029	\$0.0	\$28.1	\$5.0	\$2.8	\$0.0	\$35.8
2030	\$44.9	\$28.1	\$5.0	\$2.8	\$0.0	\$80.8
2031	\$111.3	\$28.1	\$5.0	\$2.8	\$0.0	\$147.2
2032	\$185.4	\$28.1	\$5.0	\$2.8	\$0.0	\$221.3
2033	\$215.6	\$28.1	\$5.0	\$2.8	\$0.0	\$251.5
2034	\$215.9	\$28.1	\$5.0	\$2.8	\$0.0	\$251.8
2035	\$215.9	\$28.2	\$5.0	\$2.8	\$0.0	\$251.8
2036	\$216.2	\$28.2	\$5.0	\$2.8	\$0.0	\$252.1
2037	\$216.5	\$28.2	\$5.0	\$2.8	\$0.0	\$252.4
2038	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2039	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2040	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<b>Total</b>	<b>\$1,421.7</b>	<b>\$396.0</b>	<b>\$73.1</b>	<b>\$65.6</b>	<b>\$27.6</b>	<b>\$1,984.1</b>

Sources: Baffinland, Hatch and Knight Piésold

<sup>5</sup> Includes IIBA Fund Contributions and Administrative Expenses.

The largest source of revenues for Inuit associations could be Federal Mining Royalties (FMR) with a total estimated at \$1.4 B<sup>6</sup>. Payments under FMR take into account depreciation of assets as well as current expenditures. Therefore, such payments tend to flow towards the latter years of a mine's life. In this case, it is projected that FMR payments would flow over the 2030-2037 period. Payments would start at \$44.9 M in 2030 and top \$216.5 M in 2037.

It should be noted that FMR payments are difficult to estimate in future years as they depend to a large extent on the actual revenues (production x price of iron ore) and expenditures (both investments and operations). The mineral royalty under the current Inuit Impact and Benefits Agreement (IIBA Royalty; 1.19% of Net Sales Revenue) is expected to total \$396.0 M over the life of the Project with annual payments reaching about \$28.1 M per year over the 2029-2037 period. Payments for use of Inuit-owned land (IOL Land Lease) could reach a total of \$65.6 M, while Aggregate Royalties could bring in \$82.3 M. See also Figure I-7 for potential yearly revenues for Inuit associations.

#### CAUTION

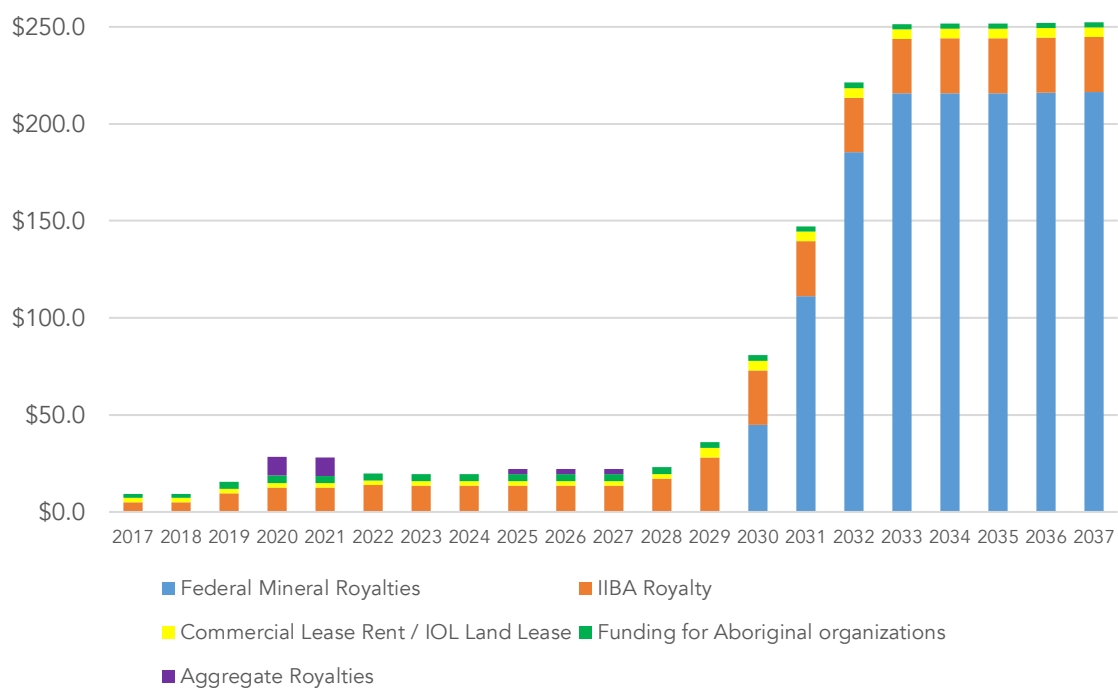
As has already been stated earlier in this document, estimates of expenditures, revenues, royalties to be paid, etc. rest to a significant extent on scenarios and hypotheses about future events. The future price of iron ore is one important element of the scenarios that is unknown. Therefore, estimates of revenues for Inuit associations contained in Table I-6 should be seen in the same light as the rest of this document: a general guidance about potential economic benefits. The amounts mentioned in table I-6, especially those under Federal Mineral Royalties, are merely indicative of potential benefits for Inuit associations. Nothing more.

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<sup>6</sup> Federal Mining Royalties are payable to NTI, and NTI has a resource revenue policy that will see a portion of the FMR income reach each of the RIAs, with the QIA receiving more than the other two RIAs because the Project is in the Qikiqtani Region.

**FIGURE I-7**

Revenues for Inuit Associations by Source by Year, Nunavut, M\$



## SECTION II – Estimates of Economic Benefits



This section provides an estimate of potential economic benefits which could be generated by the Mary River Project for the Nunavut and Canadian economies over the 2017-2040 period. First, some definitions are in order:

#### **Direct Economic Benefits**

In the case of Project expenditures, direct economic benefits refer to the employees of the construction/contractor firms working on the Project site (for the construction phase) or the employees working at the project site (or its ancillary installations) once it is operational (operations phase).

#### **Indirect Economic Benefits: Suppliers**

The indirect benefits are essentially the suppliers for the mine. Indirect benefits also encompass the suppliers of the mine's suppliers and the suppliers of those suppliers, etc. As a whole, indirect benefits represent the total economic benefits of business-to-business purchases.

#### **Induced Economic Benefits: Household Expenditures**

Induced economic impacts are generated by the consumer expenditures of employees of all the firms that benefited from the direct and induced impacts. It is important to have an accurate assessment of the induced impacts in order to fully comprehend the overall economic benefits generated by the Mary River Project. The induced economic benefits are calculated based on the province or territory of permanent residency, not based on the place of work.

#### **Net Exports from Nunavut**

One important element of the potential economic benefits of the Mary River Project is its impact on the balance of trade: exports of goods and services minus imports. According to Statistics Canada, exports of goods and services from Nunavut totalled \$937.0 M in 2015 while imports reached \$2.1 B, resulting in a trade deficit of \$1.2 B. It is expected that exports and imports linked to the Mary River Project will significantly improve the balance of trade for Nunavut.

Total value of exports from the Project is expected to reach \$27.1 B from 2017 to 2040. From 2023 to 2027, exports of iron ore from the mine are expected to be \$812.0 M per year, which would represent an increase of 86.7% over the value for 2015 exports. In 2028 (as the 18 Mtpa ramps up) this value is \$1.1 B, and from 2029 to 2037, annual exports are expected to total \$2.1 B annually, representing more than double Nunavut's 2015 exports. Total import values for Mary River are estimated at \$9.4 B. This figure includes \$4.5 B in goods and services (including financing costs) purchased directly outside Canada by Baffinland. Total net balance of trade is expected to reach \$17.7 B for Canada over the 2017-2049 period. Figure II-1 provides an overview of the impact Mary River will have on the Nunavut balance of trade, using the 2015 balance of trade as a baseline.

**TABLE II-1**

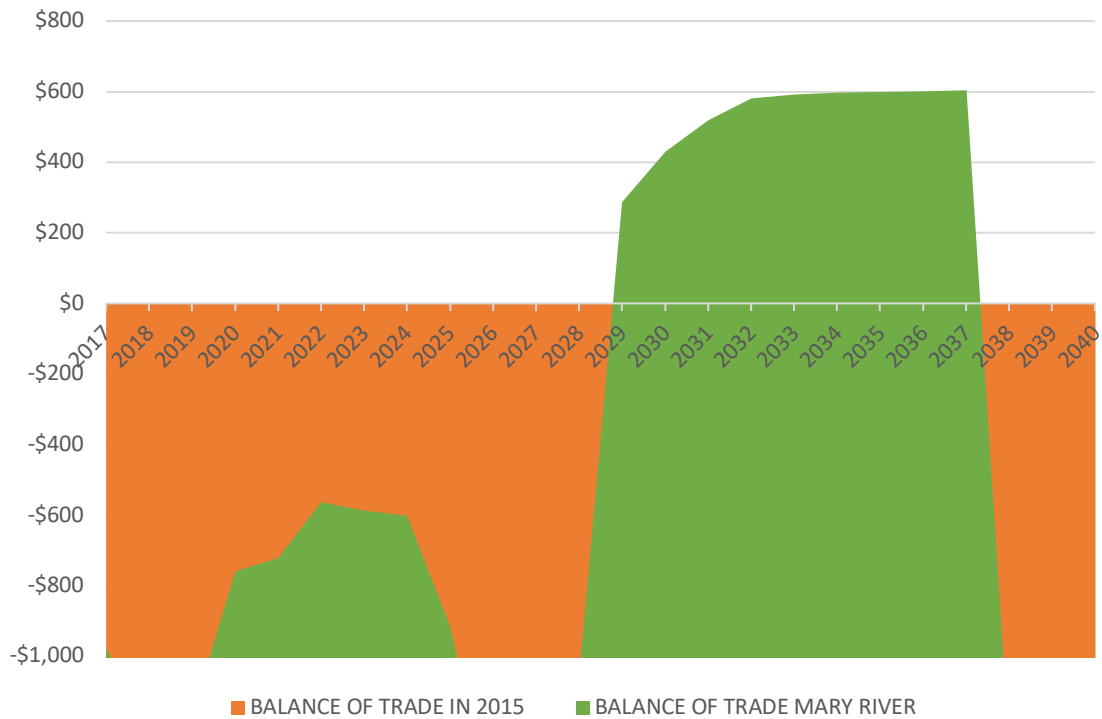
**Value of Exports and Imports Generated by the Mary River Project, 2017-2040, M\$**

	Amounts
Value of exports (iron ore)	\$27,123.2
Imports outside model	\$4,526.5
Direct imports calculated by model	\$1,189.3
Indirect and induced values calculated by model	\$3,651.1
<b>Total imports</b>	<b>\$9,366.9</b>
<b>Exports Net of Imports</b>	<b>\$17,756.3</b>

Sources: Baffinland, Hatch and EcoTec Consultants

FIGURE II-1

Annual value of Exports and Imports Generated by the Mary River Project, Nunavut, 2015 Balance of Trade Used as Baseline, 2017-2040, M\$



## Gross Domestic Product

It is probable that Mary River will generate a significant level of economic activity in the Nunavut and Canadian economies. The best measure of economic activity as measured in monetary terms is the Gross Domestic Product (GDP). The GDP estimates provided here are 'expenditure-based' and add together three categories of expenditures: household final consumption expenditures, business gross fixed capital formation (value of CAPEX for both 12 Mtpa and 18 Mtpa phases) and balance of trade (exports - imports). Table II-2 contains the total GDP estimates for Nunavut.

The estimate for the total GDP that could be generated in the Nunavut economy over the 2017-2049 period is estimated at \$19.3 B. Household expenditures are expected to total \$0.5 B with gross fixed capital formation estimated at \$1.0 B. Net trade (exports minus imports) is estimated (see also Table II-1) at \$17.8 B. From a total GDP estimated at \$274.3 M in 2017, Mary River is expected to increase the Nunavut GDP by between \$1.5 to \$1.8 B annually over the 2029-2037 period. Therefore, relative to economic activity generated by the mine in 2017, it is estimated that the benefits will increase over eightfold after production reach 30 Mtpa in 2029.

TABLE II-2

Estimates of Total Gross Domestic Product (GDP), Nunavut,  
M\$

Years	Consumer expenditures	Gross Fixed Capital Formation	Net Exports - Imports	Total GDP	Relative to 2017 GDP
2017	\$6.5	\$0.0	\$196.3	\$202.8	1.0
2018	\$20.8	\$78.3	-\$8.7	\$90.4	0.4
2019	\$28.7	\$110.1	\$5.9	\$144.6	0.7
2020	\$25.9	\$64.4	\$414.7	\$505.0	2.5
2021	\$16.6	\$25.8	\$453.0	\$495.4	2.4
2022	\$14.5	\$0.0	\$611.4	\$625.9	3.1
2023	\$14.6	\$0.0	\$587.8	\$602.4	3.0
2024	\$14.5	\$0.0	\$573.4	\$588.0	2.9
2025	\$27.0	\$74.1	\$255.9	\$357.0	1.8
2026	\$52.3	\$269.4	-\$305.9	\$15.7	0.1
2027	\$51.3	\$247.3	-\$361.1	-\$62.4	-0.3
2028	\$41.2	\$157.9	\$123.5	\$322.6	1.6
2029	\$24.5	\$0.0	\$1,462.3	\$1,486.8	7.3
2030	\$22.4	\$0.0	\$1,606.0	\$1,628.4	8.0
2031	\$22.2	\$0.0	\$1,693.8	\$1,715.9	8.5
2032	\$22.1	\$0.0	\$1,756.8	\$1,779.0	8.8
2033	\$22.1	\$0.0	\$1,767.1	\$1,789.2	8.8
2034	\$22.1	\$0.0	\$1,771.4	\$1,793.5	8.8
2035	\$22.1	\$0.0	\$1,773.6	\$1,795.7	8.9
2036	\$22.1	\$0.0	\$1,776.1	\$1,798.2	8.9
2037	\$21.9	\$0.0	\$1,779.1	\$1,801.0	8.9
2038	\$8.6	\$0.0	-\$90.2	-\$81.6	-0.4
2039	\$6.6	\$0.0	-\$44.7	-\$38.2	-0.2
2040	\$5.6	\$0.0	-\$27.9	-\$22.2	-0.1
2041-49	\$0.9	\$0.0	-\$13.2	-\$12.3	-0.1
<b>Total</b>	<b>\$537.3</b>	<b>\$1,027.1</b>	<b>\$17,756.3</b>	<b>\$19,320.7</b>	

Sources: EcoTec Consultants

The level of economic activity likely to be generated at the national level is shown in Table II-3. That table contains the total GDP estimates for Canada, including Nunavut.

Total GDP that could be generated in the Canadian economy is expected to reach \$30.7 B. The largest component would be the balance of trade with exports exceeding national imports by \$17.8 B. In second place are household expenditures with an expected value of \$6.8 B followed by gross fixed capital formation estimated at \$6.1 B. From a total GDP estimated at \$242,6 M in 2017, Mary River is expected to increase the national GDP by about \$2.0 B annually over the 2031-2037 period.

TABLE II-3

Estimates of Total Gross Domestic Product<sup>7</sup>, Canada,  
M\$

Years	Consumer expenditures	Gross Fixed Capital Formation	Net Exports - Imports	Total GDP
2017	\$49.9	\$0.0	\$196.3	\$246.2
2018	\$177.7	\$333.5	-\$8.7	\$502.4
2019	\$296.3	\$581.8	\$5.9	\$884.0
2020	\$287.7	\$276.9	\$414.7	\$979.4
2021	\$201.2	\$60.3	\$453.0	\$714.5
2022	\$160.6	\$0.0	\$611.4	\$772.0
2023	\$148.4	\$0.0	\$587.8	\$736.2
2024	\$142.2	\$0.0	\$573.4	\$715.6
2025	\$296.7	\$501.4	\$255.9	\$1,053.9
2026	\$695.9	\$1,699.5	-\$305.9	\$2,089.5
2027	\$829.9	\$1,550.0	-\$361.1	\$2,018.9
2028	\$747.5	\$1,071.0	\$123.5	\$1,942.0
2029	\$467.1	\$0.0	\$1,462.3	\$1,929.4
2030	\$327.1	\$0.0	\$1,606.0	\$1,933.1
2031	\$275.7	\$0.0	\$1,693.8	\$1,969.5
2032	\$254.5	\$0.0	\$1,756.8	\$2,011.3
2033	\$245.1	\$0.0	\$1,767.1	\$2,012.2
2034	\$240.9	\$0.0	\$1,771.4	\$2,012.3
2035	\$238.9	\$0.0	\$1,773.6	\$2,012.5
2036	\$238.1	\$0.0	\$1,776.1	\$2,014.2
2037	\$235.3	\$0.0	\$1,779.1	\$2,014.3
2038	\$117.1	\$0.0	-\$90.2	\$26.8
2039	\$77.0	\$0.0	-\$44.7	\$32.2
2040	\$55.7	\$0.0	-\$27.9	\$27.8
2041-49	\$30.2	\$0.0	-\$13.2	\$17.0
<b>Total</b>	<b>\$6,836.5</b>	<b>\$6,074.4</b>	<b>\$17,756.3</b>	<b>\$30,667.2</b>

Sources: EcoTec Consultants

## Employment

<sup>7</sup> The GDP estimated for this project includes neither profit nor depreciation values associated with the Mary River Project.

As the best measure of economic activity measured in monetary terms is the Gross Domestic Product (GDP), the best measure of the impact on the labour market is the number of jobs likely to be generated (measured as full-time equivalent (FTEs)). It is also one of the measures best understood by stakeholders involved in the Project. Table II-4 contains the total employment estimates for Nunavut and Canada, including direct, indirect and induced impacts.

It should be noted that employment for Nunavut reflects the number the residents of the territory working as a result of Mary River's activities, not the number of workers at the mine site. Similarly, national employment includes all employment by Canadian residents, regardless of the place of work. This way of accounting for employment (place of residence instead of place of work) is done to provide a realistic picture of potential economic benefits for Nunavut, including for its resident workforce. Using employment estimates based on the place of work would severely distort employment opportunities for residents of the territory, most of them Inuit.

Using the place of residence also accounts for the fact that the rather small labour market of Nunavut has a limited ability to supply significant numbers of workers, especially in skilled trades required for many positions in the mining, engineering, and construction industries.

The number of FTEs generated by Mary River for residents of Nunavut is expected to reach 16,221 FTE, a multiplier effect of 1.9 when compared to the direct employment figure of 8,691 (see Table I-3).

Peak employment of 1,421 FTE is expected in 2026 (with the CAPEX 18 Mtpa investment in addition to ongoing production at the mine site). From 255 FTE estimated generated in 2017, Mary River is expected to add another 1,166 FTE for residents 2026. Employment in the territory is expected to stabilize at 692 over the 2032-2037 period. Therefore, relative to economic activity generated by the mine in 2017, it is estimated that the employment could increase over fivefold over the 2026-2028 period and could stabilize at a level 2.7 times higher from 2030 to 2037.

Within Canada, the number of FTEs generated by Mary River is expected to reach 136,745 FTE (a multiplier value of 3.1) with peak employment of 15,740 FTEs in 2027. Figure II-2 shows the ratio of annual GDP and employment compared to 2017 economic benefits for Nunavut.



**TABLE II-4**

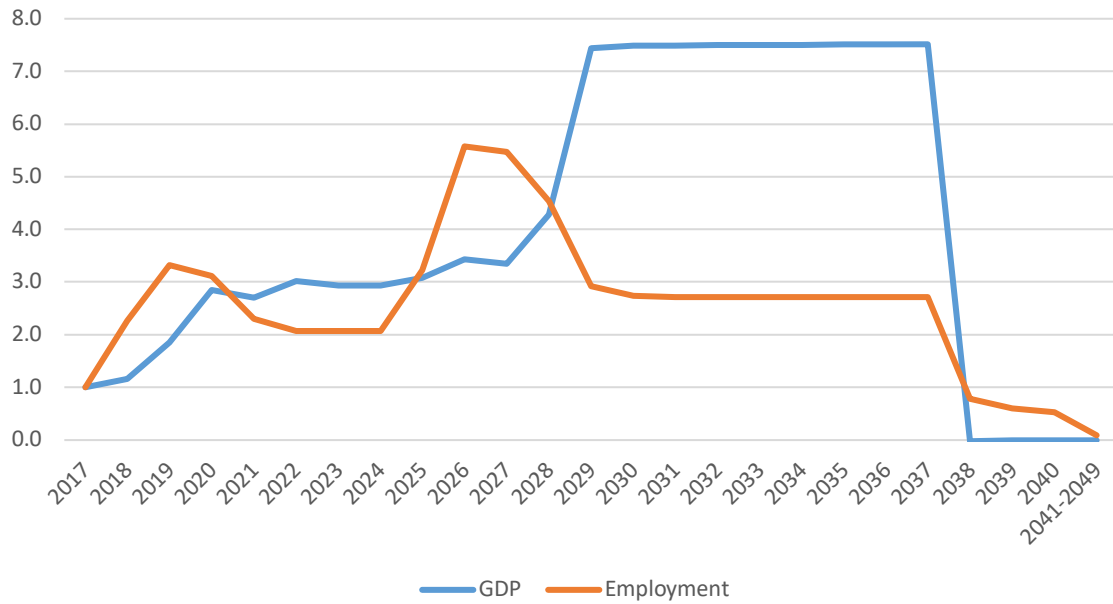
**Estimates of Employment, Nunavut and Canada, FTEs**

Years	Nunavut Employment	Relative to 2017 Nunavut Employment	Canada Employment
2017	255	1.0	1,323
2018	577	2.3	3,511
2019	846	3.3	5,672
2020	793	3.1	5,598
2021	586	2.3	4,179
2022	527	2.1	3,462
2023	527	2.1	3,234
2024	526	2.1	3,124
2025	820	3.2	5,903
2026	1,421	5.6	13,322
2027	1,395	5.5	15,740
2028	1,156	4.5	14,218
2029	745	2.9	9,264
2030	697	2.7	6,730
2031	692	2.7	5,790
2032	692	2.7	5,397
2033	692	2.7	5,224
2034	692	2.7	5,145
2035	692	2.7	5,110
2036	692	2.7	5,093
2037	692	2.7	5,086
2038	200	0.8	1,989
2039	152	0.6	1,317
2040	133	0.5	962
2041-49	23	0.1	353
<b>Total</b>	<b>16,221</b>		<b>136,745</b>

Sources: Baffinland and EcoTec Consultants

FIGURE II-2

Ratio of Annual GDP and Employment Generated by the Project Compared to Benefits Generated in 2017, Nunavut



## Fiscal Revenues

Fiscal revenues generally represent a rather important element of economic benefits generated by major mining projects. Mary River is no different in this regard and the next few tables provide a breakdown of those revenues for the two levels of governments (i.e. territorial and federal), by year. Other fiscal revenues are a category of revenues that includes personal income tax, corporate income tax (except for Baffinland), sales taxes and various smaller taxes and fees collected by governments.

Total fiscal revenues for the Government of Nunavut are estimated at \$679.9 M over the life of the Project. The largest component is corporate income tax on Baffinland's revenues with \$321.0 M all earmarked for the 2034-2037 period. The territorial fuel tax comes in second place with revenues estimated at \$182.5 M based on estimated fuel volume. Revenues from this tax are expected to flow throughout the life of the Project with maximum annual inflows of about \$11.7 M over the 2029-2037 period, with production at 30 Mtpa.

Other fiscal revenues would bring in a total of \$125.0 M and the payroll tax (2% payable on all wages and salaries paid to workers, based on the place of work) is expected to generate \$51.3 M. Figure II-3 shows both territorial and federal fiscal revenues, by year.

TABLE II-5

Total Fiscal Revenues by Source of Income, Nunavut Government,  
M\$

Years	Payroll Tax	Fuel Tax	Corporate income tax	Other fiscal revenues	Total
2017	\$0.8	\$1.7	\$0.0	\$3.4	\$5.9
2018	\$2.0	\$2.8	\$0.0	\$4.2	\$8.9
2019	\$2.6	\$6.8	\$0.0	\$4.5	\$13.8
2020	\$2.5	\$5.8	\$0.0	\$4.2	\$12.5
2021	\$1.2	\$4.9	\$0.0	\$4.0	\$10.1
2022	\$1.0	\$4.5	\$0.0	\$4.1	\$9.6
2023	\$1.0	\$5.0	\$0.0	\$4.2	\$10.3
2024	\$1.0	\$5.0	\$0.0	\$4.2	\$10.2
2025	\$2.3	\$7.3	\$0.0	\$5.0	\$14.7
2026	\$5.4	\$11.8	\$0.0	\$6.0	\$23.2
2027	\$5.0	\$11.2	\$0.0	\$5.9	\$22.1
2028	\$3.8	\$9.4	\$0.0	\$5.4	\$18.6
2029	\$2.3	\$11.7	\$0.0	\$7.8	\$21.8
2030	\$2.3	\$11.7	\$0.0	\$7.7	\$21.7
2031	\$2.3	\$11.7	\$0.0	\$7.6	\$21.7
2032	\$2.3	\$11.7	\$0.0	\$7.6	\$21.7
2033	\$2.3	\$11.7	\$0.0	\$7.6	\$21.7
2034	\$2.3	\$11.7	\$13.5	\$7.6	\$35.2
2035	\$2.3	\$11.7	\$74.1	\$7.6	\$95.8
2036	\$2.3	\$11.7	\$115.2	\$7.6	\$136.9
2037	\$2.3	\$11.7	\$118.3	\$7.5	\$139.8
2038	\$0.5	\$0.4	\$0.0	\$0.5	\$1.4
2039	\$0.5	\$0.3	\$0.0	\$0.4	\$1.1
2040	\$0.5	\$0.2	\$0.0	\$0.2	\$0.9
2041-49	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1
<b>Total</b>	<b>\$51.3</b>	<b>\$182.5</b>	<b>\$321.0</b>	<b>\$125.0</b>	<b>\$679.9</b>

Sources: Hatch and EcoTec Consultants

Table II-6 provides the breakdown of fiscal revenues by sources for the federal government over the life of the Project. Federal fiscal revenues are estimated at \$1.7 B including other fiscal revenues of \$1.2 B. Corporate income tax on Baffinland's revenues comes in second place with \$359.7 M over the 2035-2037 period. The federal fuel tax is third with revenues estimated at \$80.2 M. It is expected that the aggregate royalties will bring in \$35.8 M for the federal treasury.

It should be noted that revenues under the Federal Mineral Royalties are assigned to Inuit associations and not the federal government as Indigenous and Northern Affairs Canada (INAC) collects the money on behalf of Nunavut Tunngavik Inc. for distribution to the three Inuit associations of Nunavut.

**TABLE II-6**

**Total Fiscal Revenues by Source of Income, Federal Government<sup>8</sup>,  
M\$**

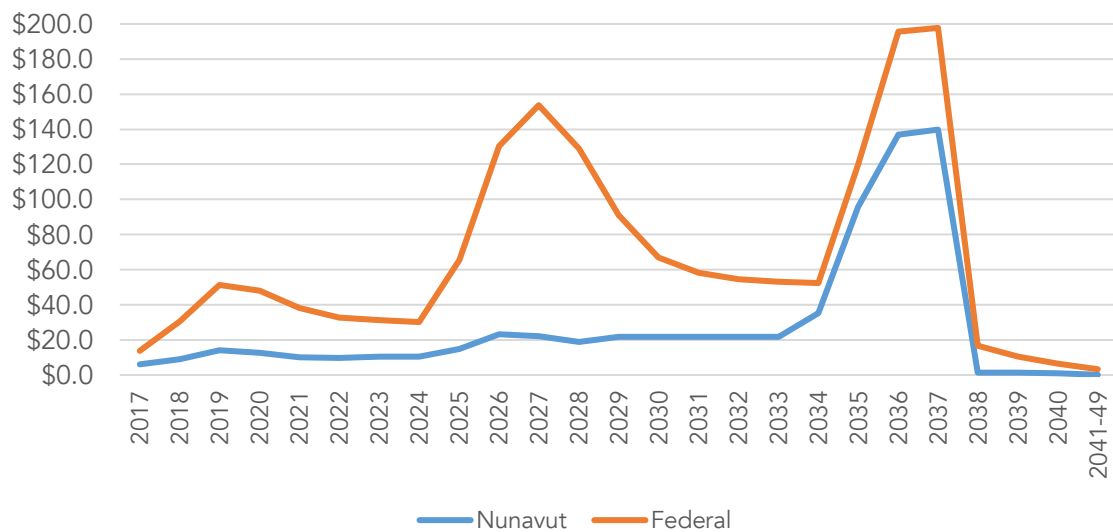
Years	Fuel Tax	Aggregate Royalties	Corporate income tax	Other fiscal revenues	Total
2017	\$0.8	\$0.0	\$0.0	\$12.8	\$13.6
2018	\$1.2	\$0.0	\$0.0	\$29.4	\$30.6
2019	\$3.0	\$0.1	\$0.0	\$48.2	\$51.3
2020	\$2.6	\$0.1	\$0.0	\$45.5	\$48.1
2021	\$2.1	\$0.0	\$0.0	\$36.0	\$38.1
2022	\$2.0	\$0.0	\$0.0	\$30.7	\$32.7
2023	\$2.2	\$0.0	\$0.0	\$28.9	\$31.1
2024	\$2.2	\$0.0	\$0.0	\$27.8	\$30.0
2025	\$3.2	\$11.9	\$0.0	\$50.4	\$65.5
2026	\$5.2	\$11.9	\$0.0	\$113.4	\$130.5
2027	\$4.9	\$11.9	\$0.0	\$136.7	\$153.5
2028	\$4.1	\$0.0	\$0.0	\$124.8	\$128.9
2029	\$5.1	\$0.0	\$0.0	\$85.8	\$91.0
2030	\$5.1	\$0.0	\$0.0	\$61.7	\$66.8
2031	\$5.1	\$0.0	\$0.0	\$52.9	\$58.1
2032	\$5.1	\$0.0	\$0.0	\$49.3	\$54.5
2033	\$5.1	\$0.0	\$0.0	\$47.8	\$52.9
2034	\$5.1	\$0.0	\$0.0	\$47.1	\$52.2
2035	\$5.1	\$0.0	\$67.9	\$46.8	\$119.8
2036	\$5.1	\$0.0	\$143.9	\$46.6	\$195.7
2037	\$5.1	\$0.0	\$147.8	\$44.8	\$197.8
2038	\$0.2	\$0.0	\$0.0	\$16.3	\$16.5
2039	\$0.1	\$0.0	\$0.0	\$10.1	\$10.2
2040	\$0.1	\$0.0	\$0.0	\$6.4	\$6.5
2041-49	\$0.0	\$0.0	\$0.0	\$3.2	\$3.2
<b>Total</b>	<b>\$80.2</b>	<b>\$35.8</b>	<b>\$359.7</b>	<b>\$1,203.4</b>	<b>\$1,679.1</b>

Sources: HATCH and EcoTec Consultants

<sup>8</sup> Federal government revenues collected in all provinces and territories.

**FIGURE II-3**

**Nunavut and Federal Government Total Tax Revenues by Year, M\$**



Although revenues for Inuit associations are not fiscal revenues, they do represent commitments that compel the project ownership to provide some level of monetary compensation for use of Inuit lands and resources. Table II-7 below provides an overall view of both fiscal revenues and potential payments to Inuit associations.

It is estimated that about \$4.3 B will be collected by the two levels of government and Inuit associations of Nunavut as a result of the Mary River Project. Over 60% (61.3%) of that total (\$2.7 B) would benefit the residents of Nunavut: \$2.0 B for Inuit associations and \$0.7 B for the territorial government. Revenues for Inuit associations are expected to increase over time, going from an estimated \$9.3 M in 2017 to about \$252 M between 2033 and 2037 inclusively, 27.1 times the 2017 revenues. Fiscal revenues for the territorial government are expected to increase even more, going from \$5.9 M in 2017 to as much as \$139.8 M in 2037, 23.8 times the 2017 revenues. Figure II-3 displays the respective share of revenues for all three organizations.



TABLE II-7

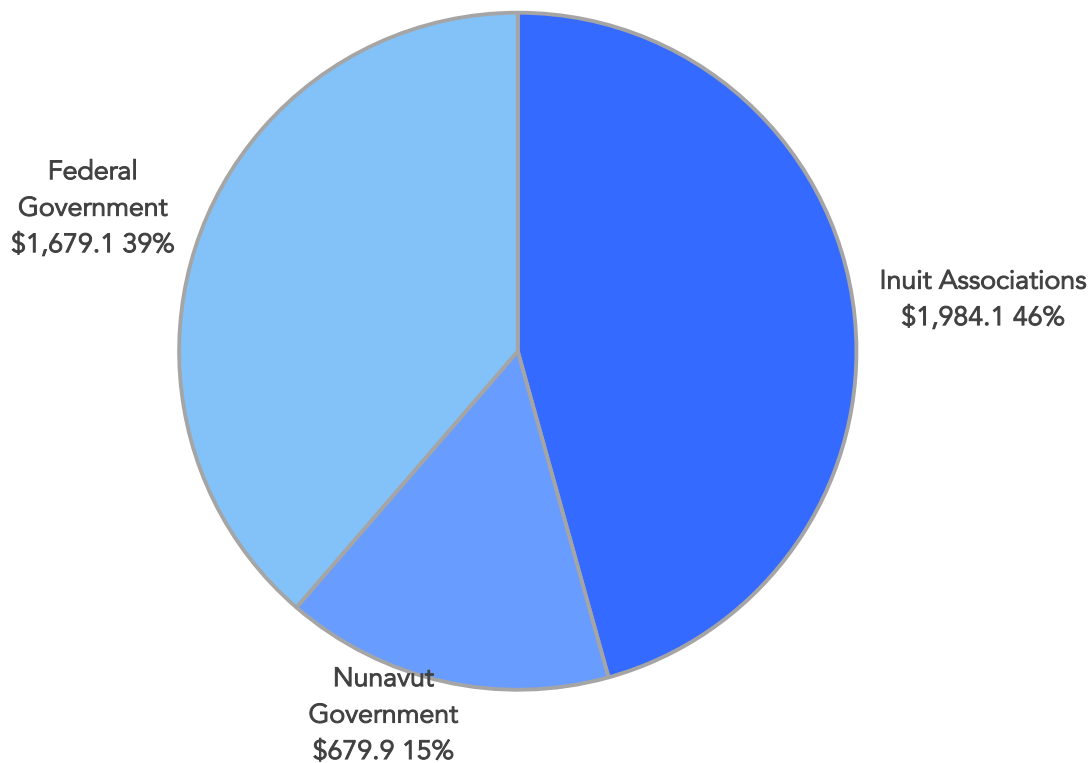
Total Revenues, Inuit Associations, Nunavut and  
Federal Governments,  
M\$

Years	Inuit Associations	Nunavut Government	Relative to 2017 Inuit	Relative to 2017 NU Gvt	Federal Government	Total
2017	\$9.3	\$5.9	1.0	1.0	\$13.6	\$28.8
2018	\$9.3	\$8.9	1.0	1.5	\$30.6	\$48.8
2019	\$15.5	\$13.8	1.7	2.4	\$51.3	\$80.6
2020	\$28.3	\$12.5	3.0	2.1	\$48.1	\$88.9
2021	\$28.1	\$10.1	3.0	1.7	\$38.1	\$76.4
2022	\$19.8	\$9.6	2.1	1.6	\$32.7	\$62.1
2023	\$19.5	\$10.3	2.1	1.7	\$31.1	\$60.9
2024	\$19.5	\$10.2	2.1	1.7	\$30.0	\$59.8
2025	\$22.3	\$14.7	2.4	2.5	\$65.5	\$113.7
2026	\$22.3	\$23.2	2.4	3.9	\$130.5	\$187.2
2027	\$22.3	\$22.1	2.4	3.8	\$153.5	\$198.0
2028	\$23.2	\$18.6	2.5	3.2	\$128.9	\$170.6
2029	\$35.8	\$21.8	3.9	3.7	\$91.0	\$148.6
2030	\$80.8	\$21.7	8.7	3.7	\$66.8	\$169.3
2031	\$147.2	\$21.7	15.8	3.7	\$58.1	\$226.9
2032	\$221.3	\$21.7	23.8	3.7	\$54.5	\$297.5
2033	\$251.5	\$21.7	27.0	3.7	\$52.9	\$326.1
2034	\$251.8	\$35.2	27.1	6.0	\$52.2	\$432.4
2035	\$251.8	\$95.8	27.1	16.3	\$119.8	\$581.6
2036	\$252.1	\$136.9	27.1	23.3	\$195.7	\$702.2
2037	\$252.4	\$139.8	27.1	23.8	\$197.8	\$702.3
2038	\$0.0	\$1.4	0.0	0.2	\$16.5	\$17.9
2039	\$0.0	\$1.1	0.0	0.2	\$10.2	\$11.3
2040	\$0.0	\$0.9	0.0	0.2	\$6.5	\$7.4
2041-49	\$0.0	\$0.1	0.0	0.0	\$3.2	\$3.3
<b>Total</b>	<b>\$1,984.1</b>	<b>\$679.9</b>			<b>\$1,679.1</b>	<b>\$4,343.1</b>

Sources: HATCH and EcoTec Consultants

**FIGURE II-3**

Total Revenues, Inuit Associations, Nunavut and  
Federal Governments,  
M\$ and percentages



## SECTION III – Importance of the Project for the Nunavut Economy

The real significance of potential economic benefits is best understood when those benefits are compared to present day economic statistics. In other words, how important the estimated benefits are in relation to the current Nunavut economy. Table III-1 provides some useful comparison with the GDP, the labour market, government fiscal revenues and the balance of trade.

The potential economic benefits associated with Mary River represent a significant percentage of the Nunavut economy. The average annual GDP generated by the Project over the 2017-2040 period could amount to \$0.8 B. This represents 32.9 % of the 2015 territorial GDP, which indicates the potential for strong GDP growth. The annual average of 675 FTE for residents would represent 5.0 % of total employment (12.0 % of private sector employment) based on 2016 numbers. A more meaningful comparison for the labour force would be looking at the number of unemployed as a "reservoir" for workers. The number of unemployed in 2016 was estimated at 2,400 in Nunavut. Annual employment generated by Mary River could theoretically provide jobs for 28.1 % of the unemployed in the territory.

The potential fiscal revenues for the Nunavut government average \$28.3 M per year, a number that would represent an increase of 26.1 % of government's estimated \$108.5 M in fiscal revenues for 2016-2017.

The Project will likely have a significant positive impact on territorial exports and balance of trade. For instance, the average \$1.1 B in additional exports could more than double the existing exports value (\$937.0 M in 2015). The impact on the balance of trade would also be noteworthy with the Project potentially reducing, on average, the annual deficit by 63.0 %. From 2029 to 2037, the balance of trade could become strongly positive, depending on the actual level of imports over that period.

**TABLE III-1**

**Economic Benefits of Mary River Relative to the Nunavut Economy  
(M\$, jobs, FTEs and percentages)**

Statistics	Nunavut Economy	Mary River Project	Percentage of Nunavut Economy
Average 2017-2040			
Gross Domestic Product (2015)	\$2,447.0	\$805.0	32.9%
Employment (2016)	13,517	675	5.0%
Number of unemployed (2016)	2,400	(675)	56.8%
Fiscal Revenues 2016-2017	\$108.5	\$28.3	26.1%
Exports (2015)	\$937.0	\$1,130.1	120.6%
Balance of trade (2015)	-\$1,175.0	\$739.8	-63.0%

Sources: Statistics Canada, Nunavut Department of Finance and EcoTec Consultants

## CONCLUSION

The Mary River Project is a major investment project for Nunavut. Over a 24-year period, up to \$19.8 B could be spent on both operations and investments, including an estimated \$4.7 B directly in the Nunavut economy. To put things into perspective, total investments (gross fixed capital formation) for 2015 and 2016 in Nunavut were about \$1.0 B. However, the actual economic benefits will depend on several factors, including:

- External factors that are both hard to predict and impossible to control. First and foremost being the price of iron ore. This in turn depends on factors such as the strength of economic growth in key economies (China, the USA, Europe, etc.).
- Internal planning at Baffinland that will, to some extent, react to external factors such as the price of iron ore. The actual implementation of the various phases (CAPEX 12 Mtpa and CAPEX 18 Mtpa) both in terms of levels of expenditures and timing may vary significantly from the scenario proposed here. This is particularly true of the plan to expand production from 12 to 30 Mtpa after 2028.
- The ability of the Nunavut economy and its labour market to adapt to and benefit from the economic opportunities offered by the Mary River Project. One of the most important unknowns is the number of residents who will actually work at the Project. The same is true for suppliers: it is difficult to determine exactly to which extent the private sector in Nunavut will be able to supply goods and services required for the mining operations and CAPEX phases.

Although the exact economic benefits for the territory are unknown at this point in time, it is fairly certain that the economy of Nunavut will benefit significantly from the Mary River Project. The Project, with the levels of expenditures associated with the scenario presented in this document, has the potential to significantly boost economic growth with both investments and exports, provide a substantial number of jobs for residents, generate meaningful fiscal revenues for both levels of government and share important revenues with Inuit associations in Nunavut.

## ANNEX A – Marcel LeBreton - Economist

Marcel LeBreton has a Masters in Economics from the University of Moncton. He is the President of EcoTec Consultants, a consulting firm specializing in the field of economic impact studies. Over the last 35 years Mr. LeBreton has contributed to over 450 studies throughout Canada, many of which involved the assessment of economic benefits in the mining sector.

Mr. LeBreton is a recognized expert in the field of economic impact studies and has spoken in front of international audiences in Paris, Brussels, Shanghai, the United States and Canada on topics such as model development and economic benefits assessments.

Some of the work he has done in the mining industry includes the following:

1. In 2015 and 2016, Mr. LeBreton made two major studies for the Quebec Mining Association (QMA). The first one was about employment, wages, benefits and hours worked in the mining industry in the province. The second study provided a detailed assessment of economic benefits generated in the province of Quebec, by region, and for Canada as a whole by the (a) operating and exploration activities and (b) capital expenditures by the mining industry for 2014. Both studies are being updated in 2017 with 2016 data from the mining sector in Quebec.
2. In 2014, did the economic impact assessment of the Murray River Coal Mine Project in BC. Economic benefits were provided for CAPEX and OPEX by Regional Districts within BC and by provinces and territories within Canada. Done in partnership PWC (Vancouver).
3. In 2011, assessment of the yearly economic benefits for British Columbia (for each Regional District) and Canada (by province) of the construction and operation of the Kerr, Sulphurets and Mitchell (KSM) gold mining project (Seabridge Gold). Done in partnership with Rescan (Saskatoon), now ERM.
4. Assessment of the yearly economic benefits for Saskatchewan (on a county-by-county basis) and Canada (by province) of the construction and operation of the Jansen Potash Mine project (BHP Billiton), 2010-1. Done in partnership with Rescan (Saskatoon), now ERM.

5. Production of a report assessing the economic benefits likely to be generated by the construction and operation of the Sisson Mine Project in New Brunswick.
6. The economic benefits brought to the economy of Yukon and the rest of Canada, by provinces, by the mining industry operating in that territory.
7. The expected economic benefits from two mining projects in Quebec: a nickel mine and a gold mine in Northern Quebec. Estimations for job creation as well as GDP generation were calculated for each of the 17 Administrative Areas in the province.
8. Impact of the closure of the zinc-lead-copper-silver Brunswick Mine (including the smelter in Belledune) on the economy of Gloucester County and each and every county in the province of New Brunswick.
9. Impact of the Voisey's Bay nickel mine project (in Labrador) on the economy of several Canadian provinces.



## ANNEX B – Economic Impact Model (EIM)

Estimation of potential economic benefits generated by the Mary River Project, notably indirect and induced employment, some Gross Domestic Product components and some tax revenues have been done using an economic impact model (EIM) based on the Statistics Canada Input-Output Model of the Canadian Economy (Interprovincial version) developed and used by EcoTec Consultants for this report. The EIM is based on data from 2013 to 2015 and includes 295 goods and services and 117 industries.

Input-Output (IO) models are widely used to calculate economic impacts throughout Canada. These models provide a fairly accurate representation of the national, provincial or regional economy. By following the path taken by the mine's expenditures throughout the economy, IO models are able to estimate total sales and employment by industry as well as government tax revenues.

The first step is to identify goods and services that Baffinland will buy directly from other countries. These imports are subtracted from expenditures linked to the Project (OPEX, CAPEX 12 Mtpa, CAPEX 18 Mtpa and closure). This information was provided by Baffinland and Hatch.

The second step is to break down the remaining expenditures into those that would be made in Nunavut proper and those made directly in other provinces (Ontario, Alberta, Quebec, etc.). Baffinland and HATCH provided most of the information required to do this breakdown.

The third step is when expenditures by goods and services are entered into the EIM in the Nunavut module of the model and in other provincial modules (for amounts spent in other provinces). The core of the EIM operates with a standard input-output algorithm. When expenditures first enter the EIM import coefficients are applied to account for the leakage of expenditures for items that are not produced within the province (for example money spent on purchasing mining equipment from a wholesaler in Ontario would have a large import content). Sales within the province are allocated to the industries that produce the specific goods and services purchased; each of these industries will, in turn, purchase goods and services to produce what they sell as determined by their technology mix and use of factors of production (labour and capital). For purchases outside of the province, an interprovincial trade flow matrix is used to allocate production by industry and province.

The EIM continues to iterate until all expenditures have dissipated (i.e., imports, taxes, and savings are all leakages that eventually reduce the amount of money available for purchases to zero). At this point, the Model stops and the total effects as measured by gross production (sales) by industry are summed for all iterations. Using the estimate of gross production, industry-specific employment coefficients, and data on salaries by industry, employment numbers are estimated. It should be noted that the EIM used is dynamic and that economic benefits generated by a given

expenditure are calculated over a number of years until there is no more money circulating in the Nunavut or Canadian economy. This is why some tables in Section II have impact results over the 2041-2049 period: these are mostly residual amounts from expenditures linked to the closure of the mine.

Tax revenues from personal income tax, corporate profit tax, and indirect tax (predominantly sales tax) is calculated with coefficients derived from Statistics Canada and Canada Revenue Agency information. The amount of money collected by governments is subtracted from wages and salaries and profits at each round of expenditures.

### **Assumptions and Limitations**

The models used to calculate the economic benefits are based, like any model, on certain assumptions and have some limitations. Some of the known limitations of Input-Output models are:

- A known limitation of Input-Output models that is of particular interest for Nunavut is that there are no supply constraints. In the case of the Nunavut economy, strong economic growth marked by higher levels of investment, employment and consumer expenditures will likely be met by a combination of: (i) the local economy providing some of the required labour, goods and services; (ii) labour, goods and services that cannot be supplied locally will be imported (from the rest of Canada and from other countries) and (iii) prices will rise in response to demand levels that are higher than the local and import ability to supply the required inputs.
- Constant ratio of employment to outputs. For example, the model assumes that higher demand for heavy machinery repairs will generate increased employment. This may or may not be the case, depending on the actual changes in sales.
- Fixed technology. Technology is assumed constant over time. Therefore, a doubling of sales for a given industry will always lead to a doubling of its expenditures in the same proportions. Hence, there are no economies of scale.

# **APPENDIX B**

## **2017 SOCIO-ECONOMIC MONITORING REPORT FOR THE MARY RIVER PROJECT**

# **2017 Socio-Economic Monitoring Report for the Mary River Project**

**March 31, 2018**

**Prepared For:  
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This report has been prepared by Jason Prno (PhD) of Jason Prno Consulting Services Ltd. on behalf of Baffinland Iron Mines Corporation. This report has been reviewed by Baffinland Iron Mines Corporation and may contain various company statements.

**Suggested Citation**

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## EXECUTIVE SUMMARY

This report has assessed the socio-economic performance of the Mary River Project in 2017, as well as Baffinland's compliance with various Project Certificate terms and conditions. Performance was assessed using socio-economic indicators and information for several Valued Socio-Economic Components (VSECs) included in the Final Environmental Impact Statement (FEIS):

- Population demographics
- Education and training
- Livelihood and employment
- Contracting and business opportunities
- Human health and well-being
- Community infrastructure and public services
- Resources and land use
- Economic development and self-reliance
- Benefits, royalty, and taxation

The information presented in this report supports many of the FEIS predictions for these VSECs and identifies positive effects the Project has had. For example, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 full-time equivalent positions (FTEs). Of this total, 313,068 hours were worked by residents of the LSA, representing approximately 155 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees (not including contractors) and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017.

Employment in the LSA is one area where Project activities didn't fully match FEIS predictions in 2017, as LSA employment hours in 2017 were somewhat lower than originally predicted. Likewise, there were several Inuit employee departures in 2017. Baffinland continues to take positive steps to address the issue of Inuit employment and recently finalized its Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS) with the QIA. These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time.

Furthermore, Baffinland and the QIA are partners in the \$19 million Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program, which has been designed to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and other actions to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should also assist with increasing LSA employment over time. However, additional monitoring will be necessary to track the success of these and other Baffinland Inuit employment programs. Baffinland will also continue to track employee turnover causes and outcomes, moving forward.

Where appropriate, trends have been described for indicators assessed in this report. These trends (i.e. pre-development, post-development, and since the previous year) demonstrate whether an indicator has exhibited change and describes the direction of that change. Trend analyses can be useful for assessing potential Project influences on an indicator. The table that follows summarizes the information and trends observed in 2017 relative to previous years. In some cases, additional data and

monitoring will be necessary before the FEIS predictions presented in this report can be fully verified. In others, direct correlations between the Project and data trends were either unable to be identified or were unclear. The process of socio-economic monitoring often requires many years of data to effectively discern trends and causality. Even then, various factors may be found to influence causality and some of these may not be easy to measure. Successful socio-economic monitoring for the Project will require appropriate long-term data, the regular input of all Project stakeholders, and a focus on continuous improvement.

2017 Socio-Economic Monitoring Reporting Summary for Baffinland Iron Mines Corporation’s Mary River Project

VSEC	Indicator(s)	Pre-Development Trend	Post-Development Trend	Trend Since Previous Year	Scale	Summary
Population Demographics	Known in-migrations of non-Inuit Project employees and contractors	Not applicable	No change	No change	North Baffin LSA	Since 2015, a net of zero known non-Inuit employees/contractors have in-migrated to the North Baffin LSA
	In-migration of non-Inuit to the North Baffin LSA	Not available	Not available	Not available	North Baffin LSA	Limited data currently available. However, the percentage of Inuit vs. non-Inuit residents in the North Baffin LSA has remained relatively constant.
	Known out-migrations of Inuit Project employees and contractors	Not applicable	↑	No change	North Baffin LSA	Since 2015, a net of five known Inuit employees/contractors have out-migrated from the North Baffin LSA
	Out-migration of Inuit from the North Baffin LSA	Not available	Not available	Not available	North Baffin LSA	Limited data currently available. However, the percentage of Inuit vs. non-Inuit residents in the North Baffin LSA has remained relatively constant.
	Population estimates	↑ ↑	↑ ↑	↑ ↑	North Baffin LSA Iqaluit	Population numbers continue to increase across the territory
	Nunavut net migration	↑	↓	↑	Territory	An decreasing post-development trend in Nunavut annual net migration is currently occurring
	Employee and contractor changes of address, housing status, and migration intentions	Not applicable	Not applicable	Not applicable	Project	22.8% of the 2018 Inuit Employee Survey respondents housing situation changed in the past 12 months. 9.9% moved to a different community in the past 12 months but no one moved into or out of the North Baffin LSA. 17.7% intend to move to a different community in the next 12 months. 8.8% intend to move away from the North Baffin LSA. No individuals intend to move into the North Baffin LSA. 60.7% of respondents currently live in public housing.
	Employee and contractor origin	Not applicable	Not applicable	Not applicable	Project	An average of 1,572 individuals worked at the Project in 2017, of which 219 were Inuit. Most the Project’s Inuit employees and contractors were based in LSA communities. Most of the Project’s non-Inuit employees and contractors were based in Canadian locations outside of Nunavut.
Education and Training	Participation in pre-employment training	Not applicable	↑	No change (not offered 2014-2017)	Project	Since 2012, there have been 277 graduates of Baffinland pre-employment training programs. A new Work Ready program will be delivered in local communities beginning in 2018.
	Number of secondary school graduates	↑ ↑	↓ ↓	↑ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in graduation numbers is apparent in the LSA, which was not evident prior to the Project
	Secondary school graduation rate	↑	↓	↑	Region	A decreasing post-development trend in graduation rates is apparent in the region, which was not evident prior to the Project
	Investments in school-based initiatives	Not applicable	↑	No change	Project	Investments continued to be made in school-based initiatives in 2017. These included laptop donations to secondary school graduates and the launch of a community literacy initiative.
	Hours of training completed by Inuit employees and contractors	Not applicable	↑	↑	Project	Inuit received 4,024 hours of training in 2017 and a total of 15,867 training hours since Project development
	Types of training provided to Inuit employees and contractors	Not applicable	↑	No change	Project	Inuit continue to receive various forms of Project-related training
	Apprenticeships and other opportunities	Not applicable	↑	No change	Project	One Inuit apprentice worked at the Project in 2017
	Education and employment status prior to Project employment	Not applicable	Not applicable	Not applicable	Project	54.0% of 2018 Inuit Employee Survey respondents had no certificate, diploma or degree, 32.0% had a high school diploma or equivalent, and 14.0% of respondents had higher than a high school diploma or equivalent. 31.4% resigned from a previous job in order to take up employment with the Project and 3.1% suspended or discontinued their education because they were hired to work at the Project.
Livelihood and Employment	Hours of Project labour performed in Nunavut	Not applicable	↑	↑	Project	2,380,990 hours of labour were performed in Nunavut in 2017 and 8,837,636 hours of labour have been performed since Project development
	Project hours worked by LSA employees and contractors	Not applicable	↑ ↑	↓ ↑	North Baffin LSA Iqaluit	229,658 hours of labour were performed by North Baffin LSA residents (9.6% of total) and 83,410 hours of labour were performed by Iqaluit residents (3.5% of total) in 2017
	Inuit employee promotions	Not applicable	↑	↓	Project	3 Inuit employee promotions occurred in 2017
	Inuit employee turnover	Not applicable	↑	No change	Project	There were 42 Inuit employee departures in 2017, equal to an Inuit employee turnover rate of 45%
	Hours worked by female employees and contractors	Not applicable	↑	↑	Project	162,550 hours were worked by female employees and contractors in 2017 (6.8% of total), 85,988 hours of which were worked by Inuit females (3.6% of total)
	Childcare availability and costs	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process and Baffinland’s community engagement program
Contracting and Business Opportunities	Value of procurement with Inuit-owned businesses and joint ventures	Not applicable	↑	↑	Project	Baffinland awarded \$387.2 million in contracts to Inuit-owned businesses and joint ventures in 2017; a total of \$819.1 million has been awarded to Inuit-owned businesses and joint ventures since Project development
	LSA employee payroll amounts	Not applicable	↑	↓	Project	Approximately \$7.06 million in payroll was provided to LSA residents in 2017. Since 2014, Baffinland has provided approximately \$33.3 million in payroll to its Inuit employees.
	Number of registered Inuit firms in the LSA	Not available	↑ ↑	↑ ↓	North Baffin LSA Iqaluit	There were 44 NTI-registered Inuit firms in the North Baffin LSA and 109 in Iqaluit in 2017
Human Health and Well-Being	Number of youth charged	↓ ↓	↓ ↓	↓ ↑	North Baffin LSA Iqaluit	A decreasing post-development trend in the number of youth charged is apparent in the LSA and was evident prior to the Project



	Proportion of taxfilers with employment income	↓ No change	↓ ↓	No change ↑	North Baffin LSA Iqaluit	A decreasing post-development trend in the proportion of taxfilers with employment income is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is also apparent in Iqaluit, after experiencing no change prior to the Project.
	Median employment income	↑ ↑	↑ ↑	↓ ↑	North Baffin LSA Iqaluit	An increasing post-development trend in median employment income is apparent in the LSA and was evident prior to the Project.
	Percentage of population receiving social assistance	↓ ↓	↓ ↓	↑ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percentage of the population receiving social assistance is apparent in the LSA and was evident prior to the Project
	Number of drug and alcohol related contraband infractions at Project sites	Not applicable	↑	↑	Project	There were 15 drug and alcohol related contraband infractions at Project sites in 2017
	Number of impaired driving violations	↑ ↑	↑ ↓	↑ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of impaired driving violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
	Number of drug violations	↑ ↑	↑ ↓	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of drug violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
	Absence from the community during work rotation	Not available	Not available	Not available	Project	These topics continue to be tracked through the QSEMC process and Baffinland’s community engagement program
	Prevalence of gambling issues					
	Prevalence of family violence					
	Prevalence of marital problems					
	Percent of health centre visits related to infectious diseases	↓ ↓	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percent of health centre visits related to infectious diseases is apparent in the LSA and was evident prior to the Project
	Rates of teenage pregnancy	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process and Baffinland’s community engagement program
	Crime rate	↑ ↑	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in crime rates is apparent in the LSA, which was not evident prior to the Project
	Number of times Baffinland’s EFAP is accessed	Not applicable	↑	↑	Project	The EFAP was accessed 38 times in 2017; 12 of these were by Nunavummiut
Community Infrastructure and Public Services	Number of Project employees and contractors who left positions in their community	Not applicable	Not applicable	Not applicable	Project	The 2018 Inuit Employee Survey indicated 22 individuals (or 31.4% of respondents) resigned from a previous job in order to take up employment with the Project. Of these, 7 were casual/part-time positions and 15 were full-time positions.
	Number of health centre visits (total)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the total number of health centre visits is apparent in the LSA and was evident prior to the Project
	Number of health centre visits (per capita)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the per capita number of health centre visits is apparent in the LSA and was evident prior to the Project
	Number of visits to Project site medic	Not applicable	↑	↑	Project	There were 6,337 visits to the Project site medic in 2017; 1,193 of these were by Inuit
	Baffinland use of LSA community infrastructure	Not applicable	↑	No change	Project	Baffinland continued to use some LSA community infrastructure to support Project operations in 2017
	Number of Project aircraft movements at LSA community airports	Not applicable	↑	↑	Project	There were 1,628 Project aircraft movements at LSA airports in 2017
Resources and Land Use	Number of recorded land use visitor person-days at Project sites	Not applicable	↑	↓	Project	There were 154 recorded land use visitor person-days at Project sites in 2017
	Number of wildlife compensation fund claims	Not applicable	↑	No change	Project	One claim was submitted to QIA for review in 2017 and was approved. It resulted in compensation of \$14,200.00 being paid.
Economic Development and Self-Reliance	Project harvesting interactions and food security	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process, Baffinland’s community engagement program, and related indicators
Benefits, Royalty, and Taxation	Payroll and corporate taxes paid by Baffinland to the territorial government	Not applicable	↑	↑	Project	Approximately \$1.491 million in employee payroll tax was paid to the GN in 2017. Increased tax amounts are anticipated to be paid once the Company becomes profitable.

**Guide to Using the Table:**

**VSEC:** Refers to ‘Valued Socio-Economic Component’ and includes a selection of VSECs assessed in the Mary River Project FEIS.

**Indicator(s):** Indicators are an important aspect of socio-economic monitoring. Indicators are metrics used to measure and report on the condition and trend of a VSEC.

**Trend:** Refers to whether an indicator has exhibited change and describes the direction of that change. Black arrows (↑↓) indicate the direction of change that has occurred. Where there is no discernable or significant change ‘No change’ is used. Where there are insufficient data or other issues preventing a trend analysis, ‘Not applicable’ or ‘Not available’ are used. ‘Pre-development trend’ refers to the five-year period preceding Project construction (i.e. 2008 to 2012). In some cases, averaged data from this period have been compared against averaged data from previous years (i.e. 2003-2007, where available) to determine a trend. ‘Post-development trend’ refers to the period after Project construction commenced (i.e. 2013 onwards). Averaged data from this period may have also been compared against averaged data from the pre-development period to determine a trend. ‘Trend since previous year’ refers to the two most recent years in which indicator data are available.

**Scale:** ‘Territory’ refers to data that are available for Nunavut. ‘Region’ refers to data that are available for the Qikiqtaaluk Region. ‘North Baffin LSA’ refers to data that are available for the North Baffin Local Study Area communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet. ‘Project’ refers to data that are available for the Mary River Project.

**Summary:** A brief description of the trend and/or related data.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>II</b>
<b>TABLE OF CONTENTS.....</b>	<b>VI</b>
<b>LIST OF TABLES .....</b>	<b>XI</b>
<b>LIST OF FIGURES.....</b>	<b>XI</b>
<b>ABBREVIATIONS.....</b>	<b>XIII</b>
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 MARY RIVER PROJECT OVERVIEW.....	1
1.2 SOCIO-ECONOMIC MONITORING REQUIREMENTS .....	1
1.3 REPORT OBJECTIVES AND ORGANIZATION .....	3
1.4 SOCIO-ECONOMIC MONITORING PLAN.....	4
<b>2. METHODS.....</b>	<b>8</b>
2.1 ANALYSIS OF PROJECT EFFECTS .....	8
2.2 DATA SOURCES .....	9
2.3 DATA LIMITATIONS .....	10
2.4 KEY CHANGES SINCE PREVIOUS YEAR'S REPORT .....	11
<b>3. POPULATION DEMOGRAPHICS .....</b>	<b>13</b>
3.1 DEMOGRAPHIC CHANGE.....	13
3.1.1 Project Certificate Term or Condition.....	13
3.1.2 Indicator Data .....	13
3.1.3 Analysis .....	16
3.2 IN-MIGRATION OF NON-INUIT PROJECT EMPLOYEES INTO THE NORTH BAFFIN LSA .....	16
3.2.1 Predicted Effect and Mitigation Measures .....	16
3.2.2 Indicator Data .....	17
3.2.3 Analysis .....	17
3.3 OUT-MIGRATION OF INUIT RESIDENTS FROM THE NORTH BAFFIN LSA .....	18
3.3.1 Predicted Effect and Mitigation Measures .....	18
3.3.2 Indicator Data .....	18
3.3.3 Analysis .....	19
3.4 EMPLOYEE CHANGES OF ADDRESS, HOUSING STATUS, AND MIGRATION INTENTIONS.....	20
3.4.1 Project Certificate Term or Condition.....	20
3.4.2 Indicator Data .....	20
3.4.3 Analysis .....	22
3.5 EMPLOYEE ORIGIN .....	22
3.5.1 Project Certificate Term or Condition.....	22
3.5.2 Indicator Data .....	23
3.5.3 Analysis .....	23
<b>4. EDUCATION AND TRAINING .....</b>	<b>25</b>
4.1 IMPROVED LIFE SKILLS AMONGST YOUNG ADULTS .....	25
4.1.1 Predicted Effect and Mitigation Measures .....	25

4.1.2	Indicator Data .....	25
4.1.3	Analysis .....	25
4.2	INCENTIVES RELATED TO SCHOOL ATTENDANCE AND SUCCESS.....	26
4.2.1	Predicted Effect and Mitigation Measures .....	26
4.2.2	Indicator Data .....	26
4.2.3	Analysis .....	28
4.3	OPPORTUNITIES TO GAIN SKILLS .....	29
4.3.1	Predicted Effect and Mitigation Measures .....	29
4.3.2	Indicator Data .....	29
4.3.3	Analysis .....	30
4.4	EDUCATION AND EMPLOYMENT STATUS PRIOR TO PROJECT EMPLOYMENT .....	33
4.4.1	Project Certificate Term or Condition.....	33
4.4.2	Indicator Data .....	33
4.4.3	Analysis .....	34
<b>5.</b>	<b>LIVELIHOOD AND EMPLOYMENT .....</b>	<b>36</b>
5.1	CREATION OF JOBS IN THE LSA .....	36
5.1.1	Predicted Effect and Mitigation Measures .....	36
5.1.2	Indicator Data .....	36
5.1.3	Analysis .....	37
5.2	EMPLOYMENT OF LSA RESIDENTS .....	37
5.2.1	Predicted Effect and Mitigation Measures .....	37
5.2.2	Indicator Data .....	37
5.2.3	Analysis .....	38
5.3	NEW CAREER PATHS .....	41
5.3.1	Predicted Effect and Mitigation Measures .....	41
5.3.2	Indicator Data .....	41
5.3.3	Analysis .....	42
5.4	BARRIERS TO EMPLOYMENT FOR WOMEN .....	43
5.4.1	Project Certificate Term or Condition.....	43
5.4.2	Indicator Data .....	43
5.4.3	Analysis .....	45
<b>6.</b>	<b>CONTRACTING AND BUSINESS OPPORTUNITIES.....</b>	<b>47</b>
6.1	EXPANDED MARKET FOR BUSINESS SERVICES TO THE PROJECT .....	47
6.1.1	Predicted Effect and Mitigation Measures .....	47
6.1.2	Indicator Data .....	47
6.1.3	Analysis .....	47
6.2	EXPANDED MARKET FOR CONSUMER GOODS AND SERVICES .....	48
6.2.1	Predicted Effect and Mitigation Measures .....	48
6.2.2	Indicator Data .....	48
6.2.3	Analysis .....	50
<b>7.</b>	<b>HUMAN HEALTH AND WELL-BEING.....</b>	<b>51</b>
7.1	CHANGES IN PARENTING .....	51
7.1.1	Predicted Effect and Mitigation Measures .....	51
7.1.2	Indicator Data .....	51
7.1.3	Analysis .....	52

7.2	HOUSEHOLD INCOME AND FOOD SECURITY .....	52
7.2.1	Predicted Effect and Mitigation Measures .....	52
7.2.2	Indicator Data .....	53
7.2.3	Analysis .....	55
7.3	TRANSPORT OF SUBSTANCES THROUGH PROJECT SITES .....	56
7.3.1	Predicted Effect and Mitigation Measures .....	56
7.3.2	Indicator Data .....	56
7.3.3	Analysis .....	57
7.4	AFFORDABILITY OF SUBSTANCES / ATTITUDES TOWARD SUBSTANCES AND ADDICTIONS .....	57
7.4.1	Predicted Effect and Mitigation Measures .....	57
7.4.2	Indicator Data .....	57
7.4.3	Analysis .....	59
7.5	ABSENCE FROM THE COMMUNITY DURING WORK ROTATION .....	60
7.5.1	Predicted Effect and Mitigation Measures .....	60
7.5.2	Indicator Data .....	60
7.5.3	Analysis .....	60
7.6	PREVALENCE OF GAMBLING ISSUES .....	61
7.6.1	Project Certificate Term or Condition .....	61
7.6.2	Indicator Data .....	61
7.6.3	Analysis .....	61
7.7	PREVALENCE OF FAMILY VIOLENCE .....	62
7.7.1	Project Certificate Term or Condition .....	62
7.7.2	Indicator Data .....	62
7.7.3	Analysis .....	62
7.8	PREVALENCE OF MARITAL PROBLEMS.....	62
7.8.1	Project Certificate Term or Condition .....	62
7.8.2	Indicator Data .....	62
7.8.3	Analysis .....	63
7.9	RATES OF SEXUALLY TRANSMITTED INFECTIONS AND OTHER COMMUNICABLE DISEASES .....	64
7.9.1	Project Certificate Term or Condition .....	64
7.9.2	Indicator Data .....	64
7.9.3	Analysis .....	65
7.10	RATES OF TEENAGE PREGNANCY.....	65
7.10.1	Project Certificate Term or Condition .....	65
7.10.2	Indicator Data .....	65
7.10.3	Analysis .....	66
7.11	CRIME.....	66
7.11.1	Project Certificate Term or Condition .....	66
7.11.2	Indicator Data .....	67
7.11.3	Analysis .....	67
7.12	EMPLOYEE AND FAMILY ASSISTANCE PROGRAM .....	68
7.12.1	Project Certificate Term or Condition .....	68
7.12.2	Indicator Data .....	68
7.12.3	Analysis .....	68
<b>8.</b>	<b>COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES .....</b>	<b>69</b>
8.1	COMPETITION FOR SKILLED WORKERS.....	69
8.1.1	Predicted Effect and Mitigation Measures .....	69

8.1.2	Indicator Data .....	69
8.1.3	Analysis .....	69
8.2	LABOUR FORCE CAPACITY.....	70
8.2.1	Predicted Effect and Mitigation Measures .....	70
8.2.2	Indicator Data .....	70
8.2.4	Analysis .....	71
8.3	PRESSURES ON EXISTING HEALTH AND SOCIAL SERVICES PROVIDED BY THE GN THAT MAY BE IMPACTED BY PROJECT-RELATED IN-MIGRATION OF EMPLOYEES.....	71
8.3.1	Project Certificate Term or Condition.....	71
8.3.2	Indicator Data .....	71
8.3.3	Analysis .....	73
8.4	PROJECT-RELATED PRESSURES ON COMMUNITY INFRASTRUCTURE.....	74
8.4.1	Project Certificate Term or Condition.....	74
8.4.2	Indicator Data .....	74
8.4.3	Analysis .....	76
<b>9.</b>	<b>RESOURCES AND LAND USE.....</b>	<b>77</b>
9.1	VARIOUS RESIDUAL EFFECTS.....	77
9.1.1	Predicted Effect and Mitigation Measures .....	77
9.1.2	Indicator Data .....	77
9.1.3	Analysis .....	78
<b>10.</b>	<b>ECONOMIC DEVELOPMENT AND SELF-RELIANCE.....</b>	<b>79</b>
10.1	PROJECT HARVESTING INTERACTIONS AND FOOD SECURITY .....	79
10.1.1	Project Certificate Term or Condition.....	79
10.1.2	Indicator Data .....	79
10.1.3	Analysis .....	83
<b>11.</b>	<b>BENEFITS, ROYALTY, AND TAXATION .....</b>	<b>85</b>
11.1	PAYMENTS OF PAYROLL AND CORPORATE TAXES TO THE TERRITORIAL GOVERNMENT .....	85
11.1.1	Predicted Effect and Mitigation Measures .....	85
11.1.2	Indicator Data .....	85
11.1.3	Analysis .....	85
<b>12.</b>	<b>CONCLUDING REMARKS .....</b>	<b>86</b>
12.1	SUMMARY.....	86
12.1.1	Report Summary .....	86
12.1.2	Summary of Regional and Cumulative Economic Effects .....	87
12.2	ADAPTIVE MANAGEMENT .....	88
12.3	FUTURE MONITORING AND REPORTING .....	89
12.4	CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS ON SOCIO-ECONOMIC MONITORING .....	90
<b>13.</b>	<b>REFERENCES .....</b>	<b>91</b>
<b>APPENDIX A: SEMWG TERMS OF REFERENCE</b>		
<b>APPENDIX B: 2017 QSEMC &amp; SEMWG MEETING MINUTES</b>		

**APPENDIX C: CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS RELATED TO SOCIO-ECONOMIC MONITORING**

**APPENDIX D: RESPONSES TO NIRB RECOMMENDATIONS ON THE 2016 SOCIO-ECONOMIC MONITORING REPORT**

**APPENDIX E: 2018 INUIT EMPLOYEE SURVEY**

## LIST OF TABLES

Table 1-1: Socio-economic monitoring plan for the Mary River Project .....	6
Table 2-1: Key changes since previous year's report .....	12
Table 3-1: 2016 population estimates .....	14
Table 3-2: Known in- and out-migration of Project employees and contractors in the North Baffin LSA (2015 to 2017) .....	17
Table 3-3: Changes in Inuit employee and contractor housing situation (2018 Inuit Employee Survey results) .....	20
Table 3-4: Changes in Inuit employee and contractor community (2018 Inuit Employee Survey results) .....	21
Table 3-5: Current Inuit employee and contractor housing status (2018 Inuit Employee Survey results) .....	21
Table 3-6: Inuit employee and contractor migration intentions (2018 Inuit Employee Survey results) .....	22
Table 3-7: Mary River Project employees and contractors by origin and ethnicity in 2017 .....	24
Table 4-1: Hours of training completed (2013 to 2017) .....	29
Table 4-2: Highest level of education obtained (2018 Inuit Employee Survey results) .....	33
Table 4-3: Employment status prior to Project employment (2018 Inuit Employee Survey results) .....	34
Table 4-4: Education status prior to Project employment (2018 Inuit Employee Survey results) .....	34
Table 5-1: Hours of Project labour performed in Nunavut (2013 to 2017) .....	37
Table 5-2: Hours of Project labour performed in Nunavut (2013 to 2017) .....	40
Table 5-3: Baffinland Inuit employee promotions (2014 to 2017) .....	41
Table 5-4: Baffinland employee departures (2013 to 2017) .....	42
Table 5-5: Hours worked by Project employees and contractors in Nunavut, by ethnicity and gender (2013 to 2017) .....	46
Table 6-1: Procurement with Inuit-owned businesses and joint ventures (2013 to 2017) .....	48
Table 6-2: NTI registered Inuit firms in the LSA (2013 to 2017) .....	50
Table 7-1: Number of drug and alcohol related contraband infractions at Project sites (2013 to 2017) .....	57
Table 7-2: Marital status of individuals 15 years and over (2011 and 2016) .....	63
Table 7-3: Number of times Baffinland's EFAP is accessed annually (2015 to 2017) .....	68
Table 8-1: Number of visits to Project site medic (2013 to 2017) .....	73
Table 8-2: Number of Project aircraft movements at LSA community airports (2014 to 2017) .....	76
Table 9-1: Number of recorded land use visitor person-days at Project sites (2013 to 2017) .....	78
Table 10-1: Food security components and Baffinland's role .....	84

## LIST OF FIGURES

Figure 3-1: Total population (2008 to 2016) .....	14
Figure 3-2: Percentage of Inuit versus non-Inuit residents in the North Baffin LSA (2008 to 2016) .....	15
Figure 3-3: Nunavut net migration (2008/09 to 2016/17) .....	16
Figure 4-1: Secondary school graduates (2008 to 2016) .....	27
Figure 4-2: Secondary school graduation rates (2008 to 2016) .....	28
Figure 4-3: Types and hours of training provided (2017) .....	32
Figure 6-1: Baffinland LSA employee payroll, by community (2017) .....	49
Figure 7-1: Number of youth charged (2008 to 2016) .....	52

<b>Figure 7-2: Proportion of taxfilers with employment income (2008 to 2015)</b> .....	54
<b>Figure 7-3: Median employment income (2008 to 2015)</b> .....	54
<b>Figure 7-4: Percentage of population receiving social assistance (2008 to 2013)</b> .....	55
<b>Figure 7-5: Number of impaired driving violations (2008 to 2016)</b> .....	58
<b>Figure 7-6: Number of drug violations (2008 to 2016)</b> .....	59
<b>Figure 7-7: Percent of health centre visits related to infectious diseases (2008 to 2015)</b> .....	65
<b>Figure 7-8: Number of violations per 100,000 persons (2008 to 2016)</b> .....	67
<b>Figure 8-1: Number of health centre visits (2008 to 2015)</b> .....	72
<b>Figure 8-2: Per capita number of health centre visits (2008 to 2015)</b> .....	73



## ABBREVIATIONS

<b>Baffinland</b>	Baffinland Iron Mines Corporation
<b>BCLO</b>	Baffinland Community Liaison Officer
<b>EFAP</b>	Employee and Family Assistance Program
<b>ERP</b>	Early Revenue Phase
<b>ESDC</b>	Employment and Social Development Canada
<b>FEIS</b>	Final Environmental Impact Statement
<b>FTE</b>	Full-Time Equivalent
<b>GDP</b>	Gross Domestic Product
<b>GN</b>	Government of Nunavut
<b>IHRS</b>	Inuit Human Resources Strategy
<b>IIBA</b>	Inuit Impact and Benefit Agreement
<b>INPK</b>	Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat
<b>IPCS</b>	Inuit Procurement and Contracting Strategy
<b>LSA</b>	Local Study Area
<b>MIEG</b>	Minimum Inuit Employment Goal
<b>MOU</b>	Memorandum of Understanding
<b>NBS</b>	Nunavut Bureau of Statistics
<b>NIRB</b>	Nunavut Impact Review Board
<b>North Baffin LSA</b>	The communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet
<b>NTI</b>	Nunavut Tunngavik Incorporated
<b>Post-Development</b>	Period after Project construction commenced (i.e. 2013 onwards)
<b>Pre-Development</b>	Five-year period preceding Project construction (i.e. 2008 to 2012)
<b>Project</b>	Mary River Project
<b>QIA</b>	Qikiqtani Inuit Association
<b>QSEMC</b>	Qikiqtaaluk Socio-Economic Monitoring Committee
<b>Q-STEP</b>	Qikiqtani Skills and Training for Employment Partnership
<b>RSA</b>	Regional Study Area
<b>SEMWG</b>	Mary River Socio-Economic Monitoring Working Group
<b>VC</b>	Valued Component
<b>VEC</b>	Valued Ecosystem Component
<b>VSEC</b>	Valued Socio-Economic Component

## **1. INTRODUCTION**

### **1.1 MARY RIVER PROJECT OVERVIEW**

The Mary River Project (the Project) is an operating open pit iron ore mine with associated project components that is owned and operated by Baffinland Iron Mines Corporation (Baffinland or the Company). The Project is located in the Qikiqtaaluk Region of Nunavut on northern Baffin Island. The mine site is located approximately 160 km south of Pond Inlet (Mittimatalik) and 1,000 km north of the territorial capital of Iqaluit.

The Project consists of three currently active main project locations - the Mine Site, the 100-km long Milne Inlet Tote Road, and Milne Port. The Project also includes a proposed railway and Steensby Port, both located to the south of the mine site. At the end of 2012, the Nunavut Impact Review Board (NIRB) issued Project Certificate No. 005 authorizing the construction, operation, and closure of an 18 million tonne per annum (Mt/a) operation which included a 149-km railway and year-round shipping of iron ore from a port facility at Steensby Inlet (Steensby Port). Mine construction began in 2013.

In 2013, Baffinland applied to the NIRB to amend its Project Certificate to allow for an Early Revenue Phase (ERP) operation, which included the additional production of up to 4.2 Mt/a of iron ore, ore haulage over the Milne Inlet Tote Road, and open water shipping of ore from Milne Port. On May 28, 2014, the NIRB issued an amended Project Certificate No. 005 approving the ERP. Mining of ore began in the last quarter of 2014 and the first shipment of ore occurred in the summer of 2015. The amended Project Certificate allows for the future development of the 18 Mt/a railway operation, for a total combined production rate of 22.2 Mt/a. However, the mine is currently working toward the 4.2 Mt/a production rate via Milne Port associated with the ERP.

In the fall of 2014, Baffinland announced its intention to seek approval for a second phase of the ERP. The 'Phase 2 Proposal' consists of an expansion of the 4.2 Mt/a ERP operation by 7.8 Mt/a to 12 Mt/a of ore. This ore will be transported to Milne Port by rail and then delivered to market over an expanded shipping season. The Phase 2 proposal is part of Baffinland's approach to develop the Mary River Project in a phased and economically feasible manner. A Phase 2 Proposal Project Description was submitted to the NIRB on October 29, 2014, and on November 30, 2016 a Project Update on the Phase 2 Proposal was provided. Pending the necessary regulatory approvals, Baffinland expects to submit a Draft Environmental Impact Statement Addendum for the Phase 2 Proposal in 2018. Additional information on Baffinland's regulatory submissions and approvals can be found on the NIRB public registry: <http://www.nirb.ca/>.

### **1.2 SOCIO-ECONOMIC MONITORING REQUIREMENTS**

Project-related socio-economic monitoring requirements originate from the Nunavut Agreement and NIRB Project Certificate No. 005. The Nunavut Agreement is a comprehensive land claims agreement signed in 1993 between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada. As a result of signing the Nunavut Agreement, Inuit exchanged Aboriginal title to all their traditional land in the Nunavut Settlement Area for a series of rights and benefits. The Nunavut Agreement also created various 'institutions of public government' such as the NIRB and Nunavut Water Board and established conditions for the review and oversight of resource development projects. Article 12, Part 7 of the Nunavut Agreement provides details on monitoring programs which may be required under a NIRB project certificate and notes the purpose of these programs shall be:

- (a) *to measure the relevant effects of projects on the ecosystemic and socio-economic environments of the Nunavut Settlement Area;*
- (b) *to determine whether and to what extent the land or resource use in question is carried out within the predetermined terms and conditions;*
- (c) *to provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and*
- (d) *to assess the accuracy of the predictions contained in the project impact statements.*

As noted previously, NIRB issued an amended Project Certificate No. 005 (i.e. NIRB 2014) approving the ERP on May 28, 2014. NIRB (2014) and Section 12.4 of this report should be consulted for further information on the terms and conditions specific to socio-economic monitoring that were included in the Project Certificate.

Several terms and conditions included in Project Certificate No. 005 relate to Baffinland's engagement with the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC). The QSEMC is one of three regional socio-economic monitoring committees in Nunavut. These committees were established in 2007 to address project certificate requirements for project-specific monitoring programs and to create a discussion forum and information sharing hub that supports impacted communities and interested stakeholders to take part in monitoring efforts (SEMCs 2017a). Baffinland is actively involved in the QSEMC and regularly participates in its meetings. Most recently, Baffinland participated in the QSEMC's July 2017 meeting in Arctic Bay. A summary of this meeting can be found in SEMCs (2017b) and in Appendix B. Baffinland's responses to two Project-specific action items/recommendations issued by the QSEMC can also be found in Appendix B.

The Mary River Socio-Economic Monitoring Working Group (SEMWG or Working Group) Terms of Reference also provides guidance on Baffinland's socio-economic monitoring program. Baffinland, in addition to the Government of Nunavut, the Government of Canada, and the Qikiqtani Inuit Association (QIA), is a member of the SEMWG. The SEMWG is intended to support the QSEMC's regional monitoring initiatives through Project-specific socio-economic monitoring. The SEMWG also supports the fulfillment of terms and conditions set out in Project Certificate No. 005 that relate to socio-economic monitoring. A Terms of Reference for the SEMWG can be found in Appendix A.<sup>1</sup> It describes the Working Group's purpose; membership and member roles; objectives; and reporting, communication, and meeting requirements. Furthermore, Section 4.1 of the Terms of Reference notes that Baffinland:

*"...will prepare an annual socio-economic report, presenting performance data, to the Nunavut Impact Review Board for review...containing data on the indicators selected by the Working Group for the previous calendar year (January to December). These reports will further describe the Company's participation in the [QSEMC], other collaborative monitoring processes and any activities related to better understanding of socio-economic processes."*

As established in the SEMWG Terms of Reference, the Working Group members agreed that collaboration is required to effectively monitor the socio-economic performance of the Mary River

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<sup>1</sup> Baffinland anticipates updating the SEMWG Terms of Reference in 2018. The existing Terms of Reference is somewhat dated (December 2012) and does not fully reflect the current scope of working group activities. Baffinland will work with SEMWG members in 2018 to complete revisions to the Terms of Reference. Baffinland anticipates including a revised Terms of Reference in its 2018 Socio-Economic Monitoring Report.

Project. It was acknowledged that Baffinland is best able to collect and provide data concerning employment and training in relation to the Project, and the Government of Nunavut and the Government of Canada are best able to report public statistics on general health and well-being, food security, demographics, and other socio-economic indicators at the community and territorial level. The QIA was noted to be best able to provide information and data relating to Inuit land use and culture at the community and regional level.

Baffinland is actively involved in the SEMWG and regularly participates in its meetings. Most recently, Baffinland met with the SEMWG by teleconference in February 2017 and in-person in September 2017 in Iqaluit. A summary of these meetings, including Baffinland's responses to SEMWG action items/recommendations, can be found in Appendix B.

This 2017 Socio-Economic Monitoring Report helps fulfill Project-related socio-economic monitoring requirements associated with the Nunavut Agreement and NIRB Project Certificate No. 005, and follows the guidance provided by the SEMWG Terms of Reference, described above. Baffinland will continue to review and address its socio-economic monitoring requirements moving forward.

### 1.3 REPORT OBJECTIVES AND ORGANIZATION

This is the fifth annual socio-economic monitoring report prepared by Baffinland for the Mary River Project. Project-specific socio-economic monitoring programs in Nunavut are generally expected to focus on two areas: 'effects monitoring' and 'compliance monitoring'. Effects monitoring keeps track of the socio-economic effects of a project to see if management plans are working or if any unexpected effects are occurring. Compliance monitoring occurs to make sure proponents follow the terms and conditions of the licences, decisions, and certificates issued by authorizing agencies (NIRB 2013). This focus is commensurate with socio-economic monitoring best-practice (e.g. Noble 2015; Vanclay et al. 2015) and can assist companies with achieving their sustainable development goals.

Socio-economic monitoring also supports adaptive management, as findings can alert project proponents to the emergence of unanticipated effects and help initiate a management response. Furthermore, regular review of monitoring plans will help determine whether existing socio-economic indicators and monitoring methods remain appropriate (Vanclay et al. 2015).

In consideration of the above, this report aims to meet the following objectives:

1. Evaluate the accuracy of selected socio-economic effect predictions presented in the Mary River Project Final Environmental Impact Statement (FEIS)<sup>2</sup> and identify any unanticipated effects.
2. Help identify areas where Baffinland's existing socio-economic mitigation and management programs may not be functioning as anticipated.
3. Assist regulatory and other agencies in evaluating Baffinland's compliance with socio-economic monitoring requirements for the Project.
4. Support adaptive management, by identifying potential areas for improvement in socio-economic monitoring and performance, where appropriate.

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<sup>2</sup> References to the Mary River Project FEIS in this report include any revisions that were made to the FEIS for the original ERP addendum.

This 2017 report presents information related to VSECs assessed in the FEIS. Throughout this report, predicted residual VSEC effects and associated mitigation measures from the FEIS are described. In other cases, socio-economic Project Certificate terms or conditions are described instead of effect predictions. This is followed by a presentation of indicator data (where available) and an analysis of that data. This structure allows Baffinland's reporting to align with the FEIS predictions and Project Certificate terms and conditions, and increases comparability between them and currently available data.

This report is organized in the following manner:

- Section 1 (i.e. this section) introduces the report and the scope of its contents.
- Section 2 describes the methods used in this report and how they support the conclusions that are reached.
- Sections 3 to 11 assess the socio-economic performance of VSECs included in the FEIS.
- Section 12 provides a report summary, comments on adaptive management and future monitoring plans, and summarizes how Baffinland has addressed Project Certificate terms and conditions specific to socio-economic monitoring.
- Appendices A through E provide additional information on Baffinland's socio-economic monitoring program. Appendix A includes a copy of the Terms of Reference for the SEMWG. Appendix B includes meeting minutes from 2017 QSEMC and SEMWG meetings. Appendix C summarizes how Baffinland has addressed Project Certificate terms and conditions related to socio-economic monitoring. Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 Socio-Economic Monitoring Report. Appendix E includes a copy of Baffinland's 2018 Inuit Employee Survey.

#### 1.4 SOCIO-ECONOMIC MONITORING PLAN

Baffinland will continue to conduct comprehensive socio-economic monitoring for the Project. A long-term socio-economic monitoring plan is presented in Table 1-1 and summarizes indicators and data sources for all VSECs assessed in the FEIS (or notes where monitoring is not required or other forms of issue tracking and monitoring are taking place). More specifically, indicators are proposed for VSEC-related residual effects and information that has been requested through the Project Certificate. Prior to finalizing the Project's socio-economic monitoring plan, Baffinland solicited feedback from members of the SEMWG on a draft version of the plan presented in the 2015 Socio-Economic Monitoring Report (i.e. JPCSL 2016). Baffinland also identified several internal refinements to this plan and in its approach to socio-economic monitoring prior to finalization.

The structure and content of Baffinland's socio-economic monitoring report may benefit from additional refinement in the future; suggestions from reviewers on how indicators and data sources could potentially be improved are welcome. It is further acknowledged that any significant changes to the socio-economic monitoring program require discussion with the SEMWG. Likewise, Table 1-1 includes several instances where indicators haven't been identified by Baffinland for assorted reasons (e.g. sufficient monitoring is already conducted elsewhere, no residual effects were identified in the FEIS, insufficient data availability). In some additional cases, other forms of issue tracking will take place (e.g. through the QSEMC process or Baffinland's community engagement program). Should new indicators be required for these topics in the future, they will be selected in consultation with the SEMWG.

Worthy of note is Baffinland's recent participation in the September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. Primary objectives of this workshop included development of a list of core monitoring indicators for the territory, identification of methods for addressing socio-economic monitoring data gaps, establishing preferred monitoring report compositions and assessment methodologies, and endorsement of the Government of Nunavut's territorial reporting proposal. Baffinland was an active participant in this workshop (in addition to other territorial mineral developers, federal/territorial governmental agencies, and Inuit organizations) and provided feedback throughout the process. The Company received the Government of Nunavut's draft workshop report and recommendations (Government of Nunavut 2017) and provided comments back to the Government of Nunavut. Some modifications to Baffinland's monitoring plan have been made as a result of the draft report (see Section 2.4 for additional details). Baffinland will investigate the possibility of further aligning its monitoring program with the Government of Nunavut's recommendations, where appropriate, following its review of the final workshop report.

Table 1-1: Socio-economic monitoring plan for the Mary River Project

VSEC	Residual Effect or Project Certificate Term or Condition	Topic	Indicator(s)	Data Source	
Population Demographics	Residual Effect	In-migration of non-Inuit Project employees into the North Baffin LSA	Known in-migrations of non-Inuit Project employees and contractors	Baffinland	
			In-migration of non-Inuit to the North Baffin LSA	Limited data currently available	
		Out-migration of Inuit residents from the North Baffin LSA	Known out-migrations of Inuit Project employees and contractors	Baffinland	
			Out-migration of Inuit from the North Baffin LSA	Limited data currently available	
	Project Certificate Term or Condition	Demographic change	Population estimates	NBS (2016)	
			Nunavut net migration	NBS (2017a)	
		Employee changes of address, housing status, and migration intentions	Employee and contractor changes of address, housing status, and migration intentions	Baffinland	
		Employee origin	Employee and contractor origin	Baffinland	
Education and Training	Residual Effect	Improved life skills amongst young adults	Participation in pre-employment training	Baffinland	
			LSA employment and on-the-job training	Baffinland	
		Incentives related to school attendance and success	Number of secondary school graduates	NBS (2016b)	
			Secondary school graduation rate	NBS (2016c)	
			Investments in school-based initiatives	Baffinland	
		Opportunities to gain skills	Hours of training completed by Inuit employees and contractors	Baffinland	
			Types of training provided to Inuit employees and contractors	Baffinland	
			Apprenticeships and other opportunities	Baffinland	
	Project Certificate Term or Condition	Education and employment status prior to Project employment	Education and employment status prior to Project employment	Baffinland	
	Livelihood and Employment	Residual Effect	Creation of jobs in the LSA	Hours of Project labour performed in Nunavut	Baffinland
Employment of LSA residents			Project hours worked by LSA employees and contractors	Baffinland	
New career paths			LSA employment	Baffinland	
			Inuit employee promotions	Baffinland	
			Inuit employee turnover	Baffinland	
Project Certificate Term or Condition		Barriers to employment for women	Hours worked by female employees and contractors	Baffinland	
			Re: childcare availability and costs – Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
Contracting and Business Opportunities	Residual Effect	Expanded market for business services to the Project	Value of procurement with Inuit-owned businesses and joint ventures	Baffinland	
		Expanded market for consumer goods and services	LSA employee payroll amounts	Baffinland	
			Number of registered Inuit firms in the LSA	NTI (2017)	
Human Health and Well-Being	Residual Effect	Changes in parenting	Number of youth charged	Statistics Canada (2017a)	
		Household income and food security	Proportion of taxfilers with employment income and median employment income	NBS (2017d)	
			Percentage of population receiving social assistance	NBS (2014)	
		Transport of substances through Project site	Number of drug and alcohol related contraband infractions at Project sites	Baffinland	
		Affordability of substances	Number of impaired driving violations	NBS (2017e)	
		Attitudes toward substances and addictions	Number of drug violations		
	Project Certificate Term or Condition	Absence from the community during work rotation	Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
		Prevalence of substance abuse	N/A – Monitoring already conducted through other ‘human health and well-being’ indicators		
		Prevalence of gambling issues	Topics will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
		Prevalence of family violence			
		Prevalence of marital problems			
		Rates of sexually transmitted infections and other communicable diseases	Percent of health centre visits related to infectious diseases	NBS (2017f)	
		Rates of teenage pregnancy	Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
		High school completion rates	N/A – Monitoring already conducted through other ‘education and training’ indicators		
		Other	Crime rate	NBS (2017g)	
Number of times Baffinland’s EFAP is accessed	Baffinland				
Community Infrastructure and Public Services	Residual Effect	Competition for skilled workers	Number of Project employees and contractors who left positions in their community	Baffinland	
		Labour force capacity	Training and experience generated by the Project	Baffinland	
			Inuit employee turnover	Baffinland	
	Project Certificate		Number of health centre visits (total and per capita)	NBS (2017f)	

	Term or Condition	Pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees	Number of visits to Project site medic	Baffinland
		Project-related pressures on community infrastructure	Baffinland use of LSA community infrastructure	Baffinland
			Number of Project aircraft movements at LSA community airports	
Cultural Resources	N/A	N/A	N/A – Monitoring already conducted through annual Archaeology Status Update Reports	
Resources and Land Use	Residual Effect	Quantity of caribou harvested per level of effort	N/A – Potential effects on caribou will continue to be tracked through Baffinland’s terrestrial wildlife monitoring program	
		Safe travel around Eclipse Sound and Pond Inlet	Number of recorded land use visitor person-days at Project sites Number of wildlife compensation fund claims	Baffinland QIA
		Safe travel through Milne Port		
		Emissions and noise disruption at camps		
		Sensory disturbances and safety along Milne Inlet Tote Road		
		Detour around mine site for safety and travel		
		Difficulty and safety relating to railway crossing		
		Detour around Steensby Port		
		HTO cabin closures		
		Restriction of camping locations around Steensby Port	N/A – No monitoring required. Effects are permanent for life of Project.	
Cultural Well-Being	N/A	N/A	N/A – No monitoring required. No residual effects identified in the FEIS.	
Economic Development and Self-Reliance	Residual Effect	N/A	N/A – As noted in the FEIS, an integrated assessment of other VECs/VSECs was conducted for the Economic Development and Self-Reliance VSEC. No new residual effects specific to this VSEC were identified. Relevant monitoring of residual effects is conducted through other VECs/VSECs.	
	Project Certificate Term or Condition	Project harvesting interactions and food security, which includes broad indicators of dietary habits	Topic will continue to be tracked through the QSEMC process, Baffinland’s community engagement program, and related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.	
Benefits, Royalty, and Taxation	Residual Effect	Payments of payroll and corporate taxes to the territorial government	Payroll and corporate taxes paid by Baffinland to the territorial government	Baffinland
Governance and Leadership	N/A	N/A	N/A – No monitoring required. No residual effects identified in the FEIS.	



## 2. METHODS

### 2.1 ANALYSIS OF PROJECT EFFECTS

This report assesses the socio-economic performance of the Mary River Project in 2017. It does so primarily through an analysis of Project-related socio-economic effects that were originally predicted to occur in the FEIS. To help focus this analysis, only residual effects that underwent detailed significance assessments in the FEIS are evaluated; key indicators, subjects of note, and other potential effects are not reviewed. Furthermore, only the direction (e.g. positive, negative) and magnitude (where appropriate)<sup>3</sup> of these residual effects are evaluated.

One or more monitoring indicators are then identified for each of these residual effects and recent indicator data is presented for consideration against the original effect predictions that were made. Structuring the report in this manner allows the effect predictions to be more readily verified (or refuted) and provides insight into the effectiveness of existing mitigation measures. This report also presents information that was requested through the Project Certificate. This information is evaluated in a similar manner to the residual effects mentioned above, although comparisons against FEIS predictions were not required.

‘Indicators’ are an important aspect of socio-economic monitoring. Indicators are metrics used to measure and report on the condition and trend of a Valued Component (VC)<sup>4</sup>, and help facilitate the analysis of interactions between a project and a selected VC (BCEAO 2013). Indicators can also provide an early warning of potential adverse effects and are considered the most basic tools for analyzing change (Noble 2015). Noble (2015) suggests good indicators are:

- *Measurable, either in a qualitative or quantitative fashion*
- *Indicative of the VC of concern*
- *Sensitive and detectable in terms of project-induced stress*
- *Appropriate to the spatial scale of the VC of concern*
- *Temporally reliable*
- *Diagnostic to change*
- *Applicable across different types of development projects*
- *Cost-effective to collect, measure, or analyze*
- *Predictable and accurate with an acceptable range of variability*
- *Understandable by non-scientists*
- *Useful for informing management actions or decisions*

The socio-economic monitoring indicators presented in this report were selected with this guidance in mind. Annually produced, community-level statistics have been obtained in support of these indicators where they are readily available. The analyses presented in this report generally also focus on one of two spatial scales: The Local Study Area (LSA) or Regional Study Area (RSA). As identified in the FEIS, the LSA includes the North Baffin point-of-hire communities of Arctic Bay, Clyde River, Hall Beach, Igloodik, and Pond Inlet, in addition to the City of Iqaluit (which is also a point-of-hire). References to the ‘North Baffin LSA’ include all these communities but Iqaluit. In some cases, data

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<sup>3</sup> Effect magnitude is typically only assessed where quantitative metrics were provided in the FEIS.

<sup>4</sup> Valued Components are typically referred to as Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs) in Nunavut.

for the North Baffin LSA communities have been aggregated to facilitate trend analyses in this report. The RSA includes the entire territory of Nunavut.

Indicator ‘trends’ are discussed throughout this report and describe whether an indicator has exhibited change (and the direction of that change). A ‘pre-development’ trend in this report refers to the five-year period preceding Project construction (i.e. 2008 to 2012). In some cases, averaged data from this period have been compared against averaged data from previous years (i.e. 2003-2007, where available) to determine a trend. Likewise, a ‘post-development’ trend refers to the period after Project construction commenced (i.e. 2013 onwards). Averaged data from this period may have also been compared against averaged data from the pre-development period to determine a trend. A trend ‘since previous year’ refers to the two most recent years in which indicator data are available.

Trend magnitude (e.g. using qualifiers such as ‘large’ or ‘small’) is generally not described in this report; trends are often simply referred to as increasing/decreasing. Available data and trends are then assessed in the context of potential Project influences on the indicator(s) in question. However, it is important to note that Project construction only began in 2013 and there is minimal post-development data currently available in some instances. Socio-economic indicators can also be influenced by many different factors. Correlations (if any) between the Project and socio-economic indicators presented in this report may only come to light with the analysis of additional annual data.

## 2.2 DATA SOURCES

Data for this report have been obtained from Company, government, Inuit organization, and other sources. Data are presented in textual, graphical, or tabular formats, with a source identified for each. Company data sources include human resources records, site files, and information obtained from other Company documents and employees. In addition, Baffinland has presented selected results from its Inuit Employee Survey, which is completed annually at Project sites on a voluntary basis. A copy of this survey can be found in Appendix E.<sup>5</sup> Some 2013 and 2014 Project-specific data were also drawn from previous socio-economic monitoring reports prepared for the Project (e.g. BDSI 2015). Results from Baffinland’s community engagement program are also referenced throughout this report and include comments documented in the Company’s StakeTracker database from select public and stakeholder meetings held on the Project in 2017, in addition to comments documented during the 2017 IIBA Annual Project Review Forum (i.e. Dicta Court Reporting Inc. 2017).

Government data have been obtained primarily from the Nunavut Bureau of Statistics, the Government of Nunavut’s central statistical agency. The Nunavut Bureau of Statistics posts current Nunavut population data, economic data, labour force and employment data, social data, census data, and Nunavut Housing Survey data on its website (<http://www.stats.gov.nu.ca/en/home.aspx>) for the public to use. Reports from the QSEMC annual meetings (e.g. SEMCs 2017b) were also reviewed, with the goal of integrating relevant data and insights where appropriate. Some data have also been obtained from

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<sup>5</sup> The Inuit Employee Survey was revised in 2017. Namely, the survey was expanded to include questions that address compliance issues related to *IIBA Article 11 – Workplace Conditions*, in addition to questions that already addressed Project Certificate terms and conditions related to socio-economic monitoring. The survey now contains 11 sections: general, housing, education and work experience, cross-cultural orientation, workplace orientation program, Inuktitut in the workplace, supporting our workforce, counselling and support services, country food, leisure time and traditional activities, and communications. The survey’s target audience was also adjusted to focus on both Inuit employees and contractors.

Nunavut Tunngavik Inc. (e.g. on registered Inuit firms) and other sources (e.g. QIA, federal government agencies, third party groups such as mining associations).

### 2.3 DATA LIMITATIONS

Some data limitations were identified during the preparation of this report. Notably, appropriate indicator data (e.g. annually produced, community-level statistics) are currently unavailable for some topics. As such, these topics continue to be tracked through the QSEMC process, Baffinland's community engagement program, or related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Topics for which data limitations currently exist include:

- In-migration of non-Inuit to the North Baffin LSA
- Out-migration of Inuit from the North Baffin LSA
- Childcare availability and costs
- Absence from the community during work rotation
- Prevalence of gambling issues
- Prevalence of family violence
- Prevalence of marital problems
- Rates of teenage pregnancy
- Project harvesting interactions and food security

Some 2013 and 2014 Company data have also been drawn from previous socio-economic monitoring reports prepared for the Project (e.g. BDSI 2015). However, comparisons against some of this data should be made with a degree of caution. This is because the socio-economic data collection and analysis methods employed by Baffinland have changed in some instances.<sup>6</sup> Furthermore, some historic Company data presented in this report is of a limited nature or reflects information that was only available for certain periods of time (due to ongoing development of Baffinland's data management systems). Community engagement comments are presented from select public and stakeholder meetings held on the Project in 2017 (i.e. a January procurement and contracting workshop held in Pond Inlet and a May/June North Baffin community tour); StakeTracker records for other community engagement meetings held in 2017 were unavailable.

Baffinland continues to refine its socio-economic data management and reporting systems. For example, improvements to the methods used for tracking employee attendance and hours worked continue to be investigated, as some inconsistencies in Baffinland's existing systems have been identified (e.g. some Inuit employees/contractors have been erroneously identified as non-Inuit). However, Baffinland has attempted to present conservative employment data and/or identify data limitations wherever possible in this report. Data in this report are also presented for the most recent years that are currently available. Lag times in data availability exist for some data sources and 2017 data were not available in all cases.

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<sup>6</sup> Tables 5-1, 5-2, and 5-5 present 2013 and 2014 data from BDSI (2015). However, comparisons against this data should be made with a degree of caution. This is because some calculation methods used by Baffinland have changed and some historic data makes assumptions with regards to hours worked at the Project. Hours worked by non-Inuit in 2013 in Table 5-5 also do not add up completely (i.e. 144 hours are unaccounted for), for unknown reasons.

Finally, some limitations were identified in the 2018 Inuit Employee Survey data. While efforts were made to capture major rotations of current site-based employees, individuals on vacation, medical, or other types of leave at the time of the survey would not have been captured in the survey recruitment efforts. Furthermore, some returned surveys contained unanswered questions or unclear responses. Where survey answers were not provided or were unclear, results are presented in this report as 'unknown'. A modified approach to calculating a survey response rate has also been used. Namely, the number of completed surveys (71) was divided by the total number of Inuit employees/contractors on staff in Q4 2017 (244), as reported in Section 3.5. This is a general, but likely conservative approximation of the survey response rate. This is because the calculation includes all Inuit employees/contractors who worked on the Project during all of Q4 2017 (including community-based positions and individuals who may no longer be working for the Company), rather than only those who were present on site during the much shorter survey administration period. Using this method, a 29% response rate to the 2018 Inuit Employee Survey was achieved.

Baffinland has experienced certain planning challenges when implementing its recent employee surveys. For this reason, the survey discussed in this 2017 Socio-Economic Monitoring Report was completed in January 2018, while the survey discussed in the 2016 Socio-Economic Monitoring Report was completed in February/March 2017. Baffinland is working to address this timing discrepancy moving forward.

#### 2.4 KEY CHANGES SINCE PREVIOUS YEAR'S REPORT

Several changes have been made to this report since the previous year. Many of these changes reflect incremental monitoring program improvements identified by Baffinland or its stakeholders. A description of key changes, reasons for them, and associated report references are summarized in Table 2-1.

**Table 2-1: Key changes since previous year's report**

Description of Change	Reason for Change	Report Reference
Table 1-1, removal of 'overall effects on children' as a residual effect for the Human Health and Well-Being VSEC	This was erroneously listed as a residual effect; the FEIS identifies this as a key indicator instead. Relevant monitoring continues to be conducted through other indicators (as it was previously).	Section 1.4
Table 1-1, removal of 'increased pressure on the land', 'changes to land-based economy', 'increased opportunities for youth', 'education and training opportunities', 'increased wealth and well-being', 'increased wealth in community', 'rotational absence of residents', 'increased local business opportunities', and 'expanded economic activity, flows, and opportunities' as residual effects for the Economic Development and Self-Reliance VSEC	These were erroneously listed as residual effects. As noted in the FEIS, an integrated assessment of other VECs/VSECs was conducted for the Economic Development and Self-Reliance VSEC. No new residual effects specific to this VSEC were identified. Relevant monitoring of residual effects continues to be conducted through other VECs/VSECs (as it was previously).	Section 1.4
Selected indicators have been re-worded to more explicitly include contractor data in addition to employee data	Provides greater clarity on the types of data reported through selected indicators.	Section 1.4
Indicator trends previously assessed using a trendline are now assessed using average values calculated from available data	Average values provide additional quantitative insight into trend direction and magnitude.	Section 2.1 (Methods) Various sections (Analysis)
Addition of a report section summarizing key changes since previous year's report	Provides clarity on major report changes, year-to-year.	Section 2.4
Addition of the indicator 'investments in school-based initiatives'	Indicator recommended by Government of Nunavut (Government of Nunavut 2017).	Section 4.2
Addition of non-Inuit employee turnover data	Recommended by Government of Nunavut (Government of Nunavut 2017) and QIA.	Section 5.3
Addition of indicator 'number of times Baffinland's Employee and Family Assistance Program is accessed'	Indicator recommended by Government of Nunavut (Government of Nunavut 2017) and QIA.	Section 7.12
Graphical addition of pre-development/post-development periods to selected figures	Inclusion of these periods provides additional context to the indicator data that is presented.	Various figures
Addition of appendix including meeting minutes from annual QSEMC and SEMWG meetings, including Baffinland's responses to Project-specific action items/recommendations issued by the QSEMC in 2017.	Meeting minutes summarize inputs received from the QSEMC and SEMWG regarding socio-economic monitoring and performance of the Project, and its compliance with various Project Certificate terms and conditions.	Appendix B
Addition of appendix summarizing Baffinland's responses to NIRB recommendations on the previous year's socio-economic monitoring report	Appendix clearly summarizes Baffinland's responses to NIRB recommendations on the previous year's socio-economic monitoring report.	Appendix D
Inuit Employee Survey was revised	Survey was revised to address several IIBA compliance issues. Survey target audience was also adjusted to focus on both Inuit employees and contractors.	Appendix E

### 3. POPULATION DEMOGRAPHICS

Two residual effects for the VSEC Population Demographics were assessed in the FEIS. These include in-migration of non-Inuit Project employees into the North Baffin LSA and out-migration of Inuit residents from the North Baffin LSA. These are reviewed more fully below, in addition to information on three other topics requested through the Project Certificate. However, community and territorial demographic change data are first reviewed for greater context.

#### 3.1 DEMOGRAPHIC CHANGE

##### 3.1.1 Project Certificate Term or Condition

Project Certificate term and condition no. 131 requests that monitoring occur on:

*...demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole.*

Population estimates and other demographic change measures are included in many socio-economic monitoring initiatives. This is because of their importance to understanding broad socio-economic trends. As such, this section provides an overview of some major demographic changes that are occurring in Nunavut and the LSA communities. Sections 3.2 and 3.3, however, review the FEIS predictions made regarding in-migration and out-migration in the North Baffin LSA in more detail.

##### 3.1.2 Indicator Data

###### *Population Estimates*

Population estimates for Nunavut and the LSA communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, Pond Inlet, and Iqaluit are provided by the Nunavut Bureau of Statistics (2016)<sup>7</sup> and presented in Table 3-1. 2016 was the most recent year population estimates were available. In 2016, the North Baffin LSA communities had a population of 6,608. Approximately 94.5% of this population were Inuit and 5.5% were non-Inuit. Iqaluit had a population of 7,590. Approximately 55.4% of this population were Inuit and 44.6% were non-Inuit. Nunavut had a population of 37,082. Approximately 84.2% of this population were Inuit and 15.8% were non-Inuit.

Between 2012 and 2016, the North Baffin LSA communities grew from a population of 6,050 to 6,608 (or 9.2%). Iqaluit grew from a population of 7,013 to 7,590 (or 8.2%), while Nunavut grew from a population of 34,707 to 37,082 (or 6.8%). Average annual growth rates over this period for the North Baffin LSA communities (2.3%), Iqaluit (2.1%), and Nunavut (1.7%) were considerably higher than the Canadian average (1.1%) (Statistics Canada 2017b). Figure 3-1 displays the population in these locations from 2008 to 2016.

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<sup>7</sup> The Nunavut Bureau of Statistics (2016) notes that community population estimates are preliminary and subject to revision. 2016 estimates, in particular, are suggested to be viewed with some caution, as these are in early preliminary stages.

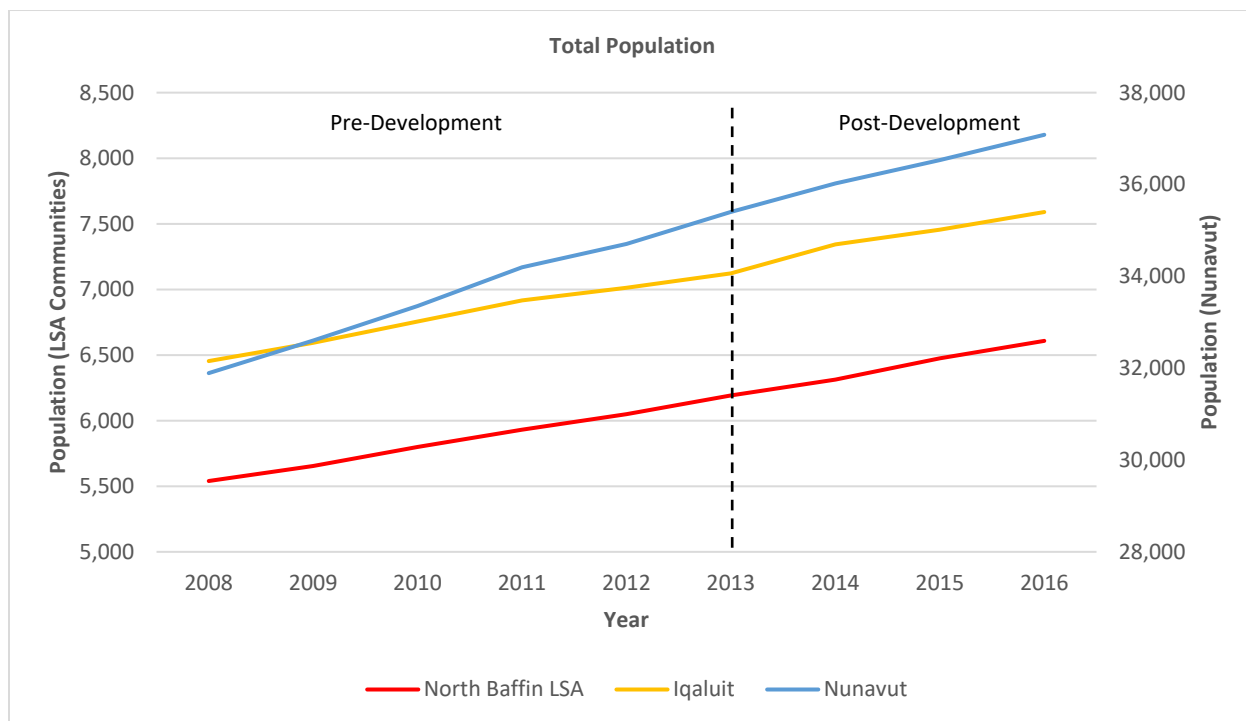
**Table 3-1: 2016 population estimates**

2016 Population Estimates			
Community	Total Population	Inuit	Non-Inuit
North Baffin LSA	6,608	6,247	361
· Arctic Bay	876	828	48
· Clyde River	1,127	1,085	42
· Hall Beach	956	915	41
· Igloolik	1,986	1,850	136
· Pond Inlet	1,663	1,569	94
Iqaluit	7,590	4,208	3,382
Nunavut	37,082	31,234	5,848

Source: Nunavut Bureau of Statistics (2016)

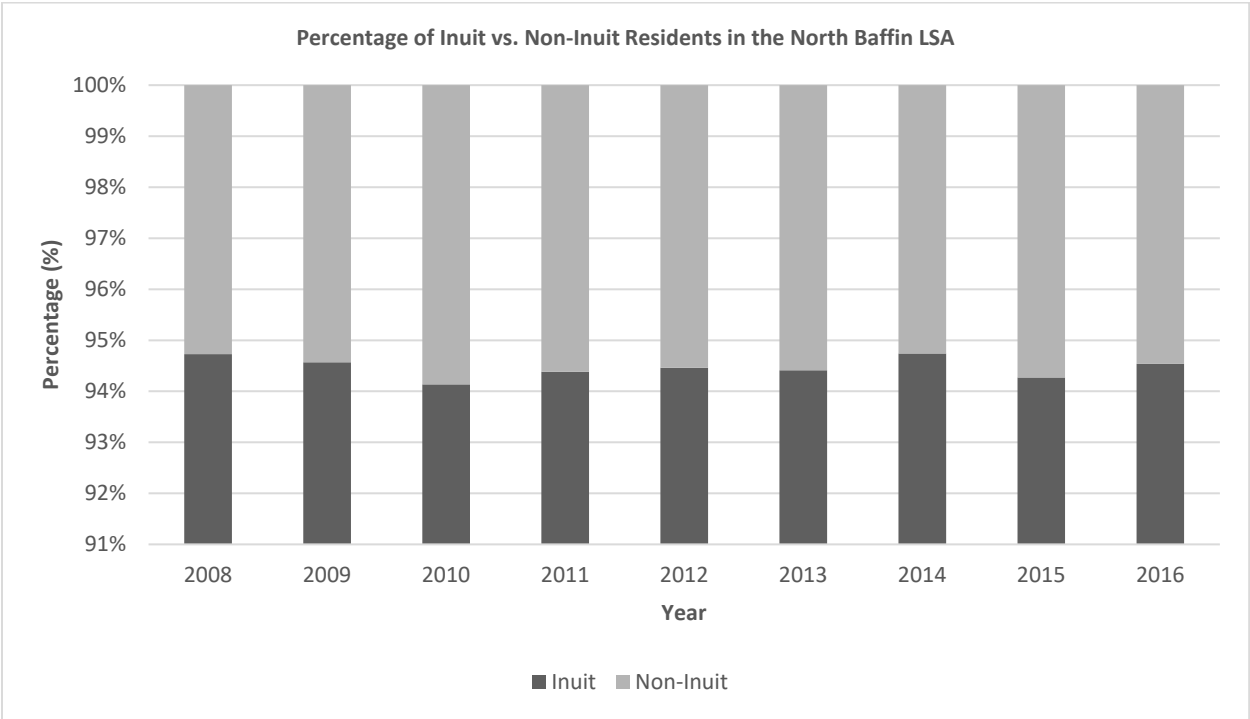
The percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities remains high. An average 94.5% of North Baffin LSA residents were Inuit in the pre-development period, while an equal 94.5% were Inuit in the post-development period. Figure 3-2 displays the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities from 2008 to 2016.

**Figure 3-1: Total population (2008 to 2016)**



Source: Nunavut Bureau of Statistics (2016)

**Figure 3-2: Percentage of Inuit versus non-Inuit residents in the North Baffin LSA (2008 to 2016)**



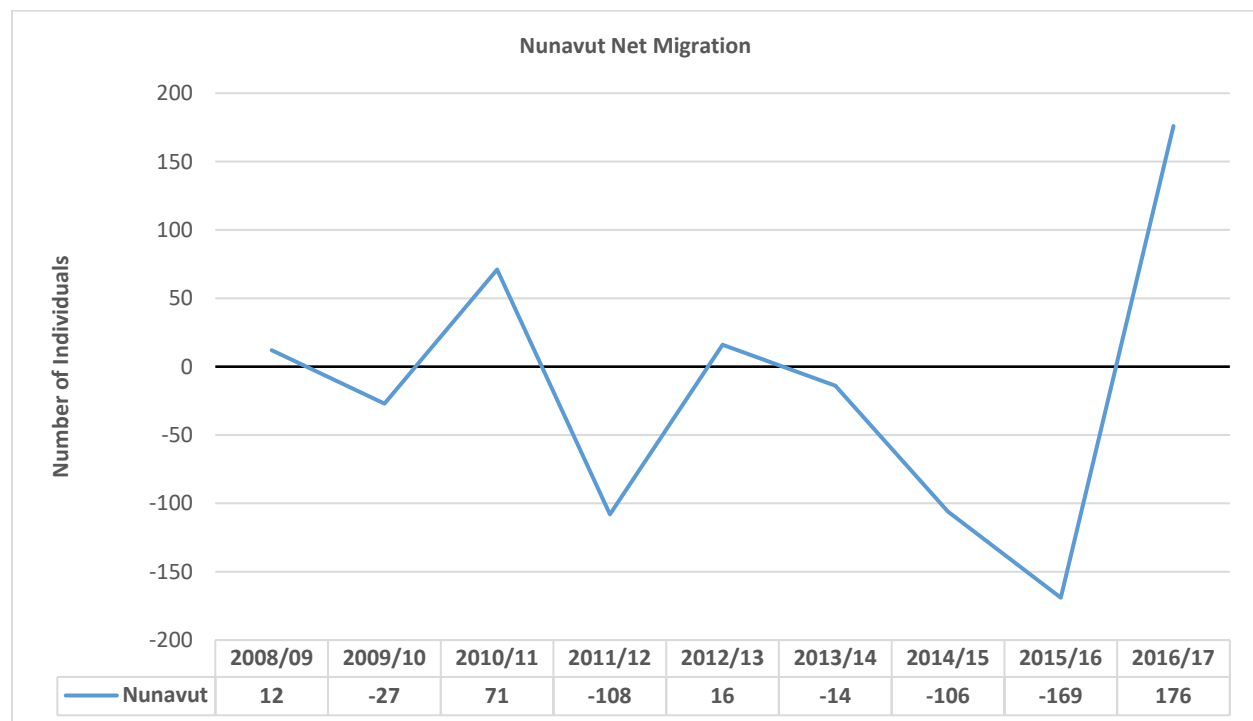
Source: Nunavut Bureau of Statistics (2016)

### *Nunavut Net Migration*

Territorial annual net migration estimates provide insight into broad migration patterns that are occurring in Nunavut. Figure 3-3 displays annual net migration estimates for Nunavut from 2008/09 to 2016/17, which have been obtained from the Nunavut Bureau of Statistics (2017a). A net of 176 individuals were estimated to have migrated into Nunavut in 2016/17. Estimates for preceding years have been variable, from a net of 71 individuals migrating into Nunavut in 2010/2011, to a net of -169 individuals migrating into the territory in 2015/16. Compared to the pre-development period average, an decreasing trend in average Nunavut annual net migration has occurred in the post-development period (from -7 to -28).



**Figure 3-3: Nunavut net migration (2008/09 to 2016/17)**



Source: Nunavut Bureau of Statistics (2017a)

### 3.1.3 Analysis

The populations of the North Baffin LSA communities, Iqaluit, and Nunavut have continued to grow since Project development. The percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities has also remained high (and relatively constant) since that time. A decreasing post-development trend in Nunavut annual net migration has occurred. However, no linkage to Project activities is currently evident with any of these indicators. Population growth was occurring throughout Nunavut prior to Project development, and the average percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities was the same during both the pre- and post-development periods. Likewise, annual net migration estimates are currently conducted at too coarse a scale (i.e. territorial) to ascertain any Project-related influences.

## 3.2 IN-MIGRATION OF NON-INUIT PROJECT EMPLOYEES INTO THE NORTH BAFFIN LSA

### 3.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted some in-migration of non-Inuit employees hired to work at the Project could occur in the North Baffin LSA but would be of low magnitude (i.e. <5% change in the non-Inuit baseline population). Mitigation developed by Baffinland includes the designation of Iqaluit and an additional southern location as ‘points of hire’, with free transportation provided to employees from these points of hire to the mine site.

### 3.2.2 Indicator Data

#### *Known In-Migrations of Non-Inuit Project Employees and Contractors*

Data on the movement of Project employees and contractors provides insight into potential in-migration trends occurring in the North Baffin LSA. Table 3-2 presents data on known in-migrations of Project employees and contractors to the North Baffin LSA. These data were provided by Baffinland Community Liaison Officers (BCLOs) located in each North Baffin LSA community. More specifically, the BCLOs were asked to report on the number of Project employees and contractors they knew who had moved into and out of each of their communities. BCLOs were also asked to identify whether individuals were Inuit or non-Inuit and locations where these individuals had moved to and from, if known.<sup>8</sup>

Table 3-2 indicates one Inuit employee/contractor is known to have moved into the North Baffin LSA in 2017. An additional one Inuit employee/contractor moved between North Baffin LSA communities; this individual has not been counted as a North Baffin LSA in-migrant. Zero non-Inuit employees/contractors hired to work at the Project are known to have moved into the North Baffin LSA communities in 2017.

**Table 3-2: Known in- and out-migration of Project employees and contractors in the North Baffin LSA (2015 to 2017)**

Known In- and Out-Migration of Project Employees and Contractors in the North Baffin LSA						
Year	In-Migration		Out-Migration		Inuit Net Migration	Non-Inuit Net Migration
	Inuit	Non-Inuit	Inuit	Non-Inuit		
2015	3	0	4	0	-1	0
2016	1	0	3	0	-2	0
2017	1	0	3	0	-2	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>-5</b>	<b>0</b>

Source: Baffinland

#### *In-Migration of Non-Inuit to the North Baffin LSA*

Annual in-migration data for non-Inuit North Baffin LSA residents were unavailable from the Nunavut Bureau of Statistics in 2017. However, some insight into this topic can be obtained by assessing changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities since Project development. If substantial non-Inuit in-migration (as per this section) and Inuit out-migration (as per Section 3.3) were occurring because of the Project, the ratio of Inuit to non-Inuit residents in the North Baffin LSA communities would be expected to noticeably decrease. As seen in Figure 3-2, however, the percentage of Inuit residents in the North Baffin LSA communities has remained relatively constant between 2008 and 2016 (ranging between a low of 94.1% Inuit and a high of 94.7% Inuit). In fact, there has been no change in the average percentage of Inuit residents between the pre-and post-development periods (94.5%).

### 3.2.3 Analysis

The FEIS predicted a <5% change in the non-Inuit baseline population could occur in the North Baffin LSA because of Project activities. In 2012 (the baseline year selected for monitoring purposes), 5% of the

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<sup>8</sup> Family members that may have migrated with employees were not accounted for.

North Baffin non-Inuit population would have equaled approximately 28 individuals. Cumulative Baffinland data available since 2015<sup>9</sup> indicates a net of zero non-Inuit employees/contractors have in-migrated to the North Baffin LSA. Data on changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities have also failed to reveal a Project-induced trend at this time.

However, this data presents only a partial assessment of migration trends and more detailed in-migration data for the North Baffin LSA communities are currently unavailable from the Nunavut Bureau of Statistics. Furthermore, the factors involved in deciding to migrate can be complex and specific to an individual. While these limitations are acknowledged, available migration data appears to support the FEIS predictions that were made. Without significant in-migration to the North Baffin LSA occurring because of the Project, negative effects on local housing opportunities are considered negligible. In fact, wages earned through Project-related work may enable individuals in the North Baffin LSA to improve their housing situations over time (e.g. through greater capacity to rent and/or own their residence). Out-migration of residents may also help relieve some local housing strains.

### 3.3 OUT-MIGRATION OF INUIT RESIDENTS FROM THE NORTH BAFFIN LSA

#### 3.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted some out-migration of Inuit residents from the North Baffin LSA could occur but would be of moderate magnitude (i.e. 1% to <5% of the total population). Mitigation developed by Baffinland includes the designation of all North Baffin LSA communities as 'points of hire', with free transportation provided to employees from these points of hire to the mine site.

#### 3.3.2 Indicator Data

##### *Known Out-Migrations of Inuit Project Employees and Contractors*

Data on the movement of Project employees and contractors provides insight into potential out-migration trends occurring in the North Baffin LSA. Table 3-2 presents data on known out-migrations of Project employees and contractors from the North Baffin LSA. As noted previously, these data were provided by BCLOs located in each North Baffin LSA community. More specifically, the BCLOs were asked to report on the number of Project employees and contractors they knew who had moved into and out of each of their communities. BCLOs were also asked to identify whether individuals were Inuit or non-Inuit and locations where these individuals had moved to and from, if known.<sup>8</sup>

Three Inuit employees/contractors are known to have moved out of the North Baffin LSA in 2017. An additional two Inuit employees/contractors moved between North Baffin LSA communities; these

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<sup>9</sup> 2013-2014 Baffinland migration data was presented in BDSI (2015). However, comparisons with this data should be made with some caution as this report did not identify whether its migration calculations included both Inuit and non-Inuit individuals and/or both employees and contractors. Furthermore, the numbers of migrating individuals were rounded and calculated using different methods than subsequent Baffinland socio-economic monitoring reports. From 2013 to 2014, BDSI (2015) notes less than five individuals moved into the North Baffin LSA from other North Baffin LSA communities. This report also notes less than five individuals moved into the North Baffin LSA from Iqaluit during this period, while less than five individuals moved out of the North Baffin LSA to other North Baffin LSA communities. Five to ten individuals also moved from the North Baffin LSA to Iqaluit during this period, while less than five individuals moved from the North Baffin LSA to Ottawa.

individuals have not been counted as North Baffin LSA out-migrants. Zero non-Inuit employees/contractors are known to have moved out of the North Baffin LSA communities in 2017. Table 3-2 also indicates out-migration of the three Inuit employees/contractors was partially offset by the in-migration of one Inuit employee/contractor to the North Baffin LSA in 2017. Thus, a net of two Inuit employees/contractors out-migrated from the North Baffin LSA in 2017.

#### *Out-Migration of Inuit from the North Baffin LSA*

Annual out-migration data for Inuit North Baffin LSA residents were unavailable from the Nunavut Bureau of Statistics in 2017. However, some insight into this topic can be obtained by assessing changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities since Project development. If substantial Inuit out-migration (as per this section) and non-Inuit in-migration (as per Section 3.2) were occurring because of the Project, the ratio of Inuit to non-Inuit residents in the North Baffin LSA communities would be expected to noticeably decrease. As seen in Figure 3-2, however, the percentage of Inuit residents in the North Baffin LSA communities has remained relatively constant between 2008 and 2016 (ranging between a low of 94.1% Inuit and a high of 94.7% Inuit). In fact, there has been no change in the average percentage of Inuit residents between the pre-and post-development periods (94.5%).

#### 3.3.3 Analysis

The FEIS predicted 1% to <5% of the total, primarily Inuit, North Baffin LSA baseline population could migrate out of the North Baffin LSA because of the Project. In 2012 (the baseline year selected for monitoring purposes), 5% of the total North Baffin LSA population would have equaled approximately 306 individuals. As mentioned previously, a net of two known Inuit employees/contractors out-migrated from the North Baffin LSA in 2017. Cumulative Baffinland data available since 2015<sup>9</sup> indicates there have been a net of five Inuit employees/contractors who have out-migrated from the North Baffin LSA. Results from the 2018 Inuit Employee Survey also complement this assessment, as no respondents indicated they had moved into or out of the North Baffin LSA in the past 12 months (see Section 3.4). Data on changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities have also failed to reveal a Project-induced trend at this time.

However, this data presents only a partial assessment of migration trends and more detailed out-migration data for the North Baffin LSA communities are currently unavailable from the Nunavut Bureau of Statistics. Furthermore, the factors involved in deciding to migrate can be complex and specific to an individual. While these limitations are acknowledged, available migration data appears to support the FEIS predictions that were made. Without significant in-migration to the North Baffin LSA occurring because of the Project, negative effects on local housing opportunities are considered negligible. In fact, wages earned through Project-related work may enable individuals in the North Baffin LSA to improve their housing situations over time (e.g. through greater capacity to rent and/or own their residence). Out-migration of residents may also help relieve some local housing strains.

### 3.4 EMPLOYEE CHANGES OF ADDRESS, HOUSING STATUS, AND MIGRATION INTENTIONS

#### 3.4.1 Project Certificate Term or Condition

No specific predictions related to employee changes of address, housing status, and migration intentions were presented in the FEIS. However, Project Certificate term and condition no. 133 states:

*“The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders, design and implement a voluntary survey to be completed by its employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.*

#### 3.4.2 Indicator Data

##### *Employee and Contractor Changes of Address, Housing Status, and Migration Intentions*

Baffinland has developed a voluntary Inuit Employee Survey (Appendix E) to address Project Certificate term and condition no. 133. The latest version of this survey was administered by a team consisting of Baffinland and QIA representatives at Project sites in January 2018. A total of 71 surveys were completed by Inuit employees and contractors.

Table 3-3 summarizes results pertaining to changes in employee and contractor housing situation. 18.3% of respondents indicated their housing situation had changed in the past 12 months, 62.0% indicated their housing situation had not changed in the past 12 months, and results were unknown for 19.7% of respondents ( $n=71$ ). When ‘unknown’ results are removed, 22.8% of respondents indicated their housing situation had changed in the past 12 months and 77.2% indicated it had not.

**Table 3-3: Changes in Inuit employee and contractor housing situation (2018 Inuit Employee Survey results)**

Changes in Inuit Employee and Contractor Housing Situation (2018 Inuit Employee Survey Results)		
Type of Change	Number of Respondents	Percentage of Respondents
Housing situation changed in the past 12 months	13	18.3%
Housing situation did not change in the past 12 months	44	62.0%
Unknown	14	19.7%
<b>Total</b>	<b>71</b>	<b>100.0%</b>

Source: Baffinland

Table 3-4 summarizes results pertaining to changes in Inuit employee and contractor community. 9.9% of respondents had moved to a different community in the past 12 months while 90.1% had not ( $n=71$ ). Respondents who had moved to a different community ( $n=7$ ) were then asked which community they had moved from; this result was compared against information provided on their current community of

residence. Of these respondents, 0.0% had moved either into or out of the North Baffin LSA, while 57.1% (or 5.6% of all survey responses) had moved within the North Baffin LSA. 28.6% (or 2.8% of all survey responses) had moves classified as 'other' (i.e. moves that did not involve a North Baffin LSA community) and the type of move was unknown for 14.3% (or 1.4% of all survey responses) (i.e. this individual indicated their current community of residence was in the North Baffin LSA, but later indicated they had moved to outside the North Baffin LSA).

**Table 3-4: Changes in Inuit employee and contractor community (2018 Inuit Employee Survey results)**

<b>Changes in Inuit Employee and Contractor Community (2018 Inuit Employee Survey Results)</b>		
<b>Type of Change</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
<i>All survey respondents (n=71)</i>		
Moved to a different community in the past 12 months	7	9.9%
Did not move to a different community in the past 12 months	64	90.1%
<b>Total</b>	<b>71</b>	<b>100.0%</b>
<i>Moved to a different community in the past 12 months (n=7)</i>		
Moved from North Baffin LSA to outside of North Baffin LSA	0	0.0%
Moved from outside of North Baffin LSA to North Baffin LSA	0	0.0%
Moved within the North Baffin LSA	4	57.1%
Other	2	28.6%
Unknown	1	14.3%
<b>Total</b>	<b>7</b>	<b>100.0%</b>

Source: Baffinland

Table 3-5 summarizes results pertaining to current Inuit employee and contractor housing status. 5.6% of respondents lived in a private dwelling owned by them, 12.7% lived in a private dwelling owned by another individual, 4.2% were renting from a private company, 52.1% lived in public housing, 0.0% lived in other staff housing, 9.9% lived in another type of housing not listed on the survey, and results were unknown for 14.1% of respondents (n=71). When 'unknown' results are removed, 60.7% of respondents lived in public housing.

**Table 3-5: Current Inuit employee and contractor housing status (2018 Inuit Employee Survey results)**

<b>Current Inuit Employee and Contractor Housing Status (2018 Inuit Employee Survey Results)</b>		
<b>Current Housing Status</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
Privately owned – Owned by you	4	5.6%
Privately owned – Owned by another individual	9	12.7%
Renting from a private company	3	4.2%
Public housing	37	52.1%
Government of Nunavut staff housing	1	1.4%
Other staff housing	0	0.0%
Other	7	9.9%
Unknown	10	14.1%
<b>Total</b>	<b>71</b>	<b>100.0%</b>

Source: Baffinland

Table 3-6 summarizes results pertaining to Inuit employee and contractor migration intentions. 16.9% of respondents intended to move to a different community in the next 12 months while 78.9% did not. Migration intentions were unknown for 4.2% of respondents (n=71). When 'unknown' results are removed, 17.7% of respondents intended to move to different community in the next 12 months and

82.4% did not. Respondents who intended to move to a different community in the next 12 months ( $n=12$ ) were then asked which community they intended to move to; this result was compared against information provided on their current community of residence. Of these respondents, 50.0% (or 8.8% of known survey responses) intended to move from the North Baffin LSA to outside of the North Baffin LSA. 0.0% intended to move from outside of the North Baffin LSA to the North Baffin LSA and 8.3% (or 1.5% of known responses) intended to move within the North Baffin LSA. 25.0% (or 4.4% of known responses) had intentions classified as 'other' (i.e. intended moves that did not involve a North Baffin LSA community) and the type of move was unknown for 16.7% (or 2.9% of known responses).

**Table 3-6: Inuit employee and contractor migration intentions (2018 Inuit Employee Survey results)**

<b>Inuit Employee and Contractor Migration Intentions (2018 Inuit Employee Survey Results)</b>		
<b>Migration Intentions</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
<i>All survey respondents (n=71)</i>		
Intend to move to a different community in the next 12 months	12	16.9%
Do not intend to move to a different community in the next 12 months	56	78.9%
Unknown	3	4.2%
<b>Total</b>	<b>71</b>	<b>100.0%</b>
<i>Intend to move to a different community in the next 12 months (n=12)</i>		
Intend to move from North Baffin LSA to outside of North Baffin LSA	6	50.0%
Intend to move from outside of North Baffin LSA to North Baffin LSA	0	0.0%
Intend to move within North Baffin LSA	1	8.3%
Other	3	25.0%
Unknown	2	16.7%
<b>Total</b>	<b>12</b>	<b>100.0%</b>

Source: Baffinland

### 3.4.3 Analysis

Information obtained from Baffinland's Inuit Employee Survey in 2018 indicated some employees and contractors changed their housing situation in the past 12 months or have migration intentions. The survey also provided an overview of respondents' current housing status. More specifically, 22.8% of respondents housing situation changed in the past 12 months. 9.9% moved to a different community in the past 12 months but no one moved into or out of the North Baffin LSA. 17.7% intend to move to a different community in the next 12 months. 8.8% intend to move away from the North Baffin LSA. No individuals intend to move into the North Baffin LSA. 60.7% of respondents currently live in public housing. Surveys conducted in future years are expected to provide additional data to compare these results against.

## 3.5 EMPLOYEE ORIGIN

### 3.5.1 Project Certificate Term or Condition

No specific prediction related to employee origin was presented in the FEIS. However, Project Certificate term and condition no. 134 states:

*The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows:*

- a. The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each;*
- b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each;*
- c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and*
- d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.*

### 3.5.2 Indicator Data

#### *Employee and Contractor Origin*

Data on the origin, number, and ethnicity of Project employees and contractors who worked on the Project in Nunavut-based positions in 2017 are presented in Table 3-7. An average of 1,572 individuals worked on the Project in 2017, of which 219 (13.9%) were Inuit. In 2017, most of the Project's Inuit employees and contractors were based in LSA communities with smaller numbers residing outside of Nunavut. Most of the Project's non-Inuit employees and contractors were based in Canadian locations outside of Nunavut, with Ontario having the greatest number. Small numbers of non-Inuit employees and contractors were based in Nunavut. There were also a small number of non-Inuit international contractors, and various employees and contractors whose origin was unknown. Within the North Baffin LSA, Pond Inlet had the greatest average number of employees and contractors (41), while Igloolik had the fewest (19). Several employees and contractors also resided in Iqaluit (55).

### 3.5.3 Analysis

The Project employed many Inuit from the LSA communities in 2017, which is a likely reflection of the Inuit hiring commitments Baffinland has made in those locations. Most non-Inuit individuals in 2017 came from Canadian provinces and territories other than Nunavut. A mine like Mary River requires many employees with various skill sets. Individuals with advanced mining and/or technical skill sets are in limited supply in Nunavut (e.g. Gregoire 2014, MacDonald 2014, MIHR 2014, Conference Board of Canada 2016). The large number of Baffinland employees from outside of Nunavut would at least partly reflect this skills gap.



**Table 3-7: Mary River Project employees and contractors by origin and ethnicity in 2017**

Mary River Project Employees and Contractors by Origin and Ethnicity in 2017																		
Origin		Baffinland								Contractors								Yearly Average
		Inuit				Non-Inuit				Inuit				Non-Inuit				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Nunavut	Arctic Bay	16	16	18	21	1	2	0	0	5	15	16	15	6	0	0	0	33
	Clyde River	11	11	13	19	4	0	0	0	5	24	29	19	5	0	0	0	35
	Hall Beach	7	12	11	8	1	0	0	0	14	28	26	27	15	1	0	0	38
	Igloolik	4	8	9	6	2	0	0	0	6	10	10	16	6	0	0	0	19
	Pond Inlet	19	18	21	19	1	1	0	0	10	17	36	20	3	0	0	0	41
	Iqaluit	9	12	12	14	2	0	0	1	21	28	31	39	20	17	7	5	55
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Canadian Provinces and Territories	Alberta	0	1	0	0	30	33	34	49	0	0	0	0	50	60	67	63	97
	British Columbia	0	1	1	1	24	30	31	33	1	0	0	0	27	34	59	40	71
	Manitoba	0	0	0	0	10	11	10	13	0	0	0	0	5	5	8	4	17
	New Brunswick	0	0	0	0	23	25	27	37	1	0	1	1	8	21	30	20	49
	Nfld. and Labrador	1	0	1	2	40	56	48	81	0	0	1	1	15	34	48	37	91
	Northwest Territories	0	0	0	0	1	1	1	0	0	0	0	0	3	7	12	9	9
	Nova Scotia	0	0	0	0	45	55	54	78	0	0	0	0	12	20	30	22	79
	Ontario	9	10	12	12	264	280	277	351	3	3	4	2	97	127	224	151	457
	Prince Edward Island	0	0	0	0	4	4	5	11	0	0	0	0	2	2	3	2	8
	Quebec	0	1	0	0	27	32	32	58	0	1	0	0	28	34	51	36	75
	Saskatchewan	0	0	0	0	5	3	4	3	0	0	0	0	5	3	7	4	9
	Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
International	Other	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	4	4
Unknown	Unknown	1	4	2	0	139	153	161	9	1	9	5	2	122	241	337	366	388
Quarterly Totals		77	94	100	102	623	686	684	724	67	135	159	142	433	612	887	763	
Average		93				679				126				674				
AVERAGE TOTAL		1,572																

Source: Baffinland

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors.

## 4. EDUCATION AND TRAINING

Three residual effects for the VSEC Education and Training were assessed in the FEIS. These include improved life skills amongst young adults, incentives related to school attendance and success, and opportunities to gain skills. These are reviewed more fully below, in addition to information on one other topic requested through the Project Certificate.

### 4.1 IMPROVED LIFE SKILLS AMONGST YOUNG ADULTS

#### 4.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted positive effects on life skills development amongst young adults in the LSA would arise from the Project. This would occur primarily through access to industrial work supported by pre-employment preparation and on-the-job training. Mitigation developed by Baffinland includes the provision of job readiness training, creation of a supportive work environment, a 'second chance' hiring policy, and a no drugs/no alcohol policy on site. This is in addition to other measures included in the recently finalized Inuit Human Resources Strategy (IHRS). The IHRS is a key strategic document for Baffinland and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project.

#### 4.1.2 Indicator Data

##### *Participation in Pre-Employment Training*

Participation in pre-employment training is a useful indicator of life skills development because some individuals may have lacked basic employment skills prior to participating. Baffinland successfully carried out a 'Work Ready' pre-employment training program with North Baffin LSA residents in 2012 and 2013. There were 277 graduates of the program and 150 of those graduates went on to be employed at the Project in 2013. The development of a new Work Ready Program took place over the course of 2017. Baffinland is partnering with the Mining Industry Human Resources Council (MIHR) to deliver this program, which will be 360 hours long over a 12-week period (240 hours of classroom training and 120 hours of enrichment activities). The next Work Ready Program will be held in Igloolik in Q1 2018; after this initial course is evaluated, Baffinland expects Work Ready Programs will be delivered in each North Baffin community in 2018/2019.

##### *LSA Employment and On-the-Job Training*

Employment and on-the-job training are also important components of life skills development for young adults, as they provide additional opportunities for gaining valuable experience. In 2017, approximately 313,068 hours were worked by LSA residents at the Project. Likewise, 4,024 hours of on-the-job training were delivered to Inuit in 2017. Sections 4.3 and 5.2 of this report should be reviewed for additional information on Project-related employment and on-the-job training provided in 2017.

#### 4.1.3 Analysis

In 2017, Baffinland continued to provide and/or develop various programs to support the development of life skills amongst LSA residents. These opportunities are notable, especially when considering the

lack of employment and mining-related training opportunities that have historically existed in the North Baffin LSA. Furthermore, Baffinland maintains a healthy and supportive work environment. The Company provides its permanent employees and their dependents with ongoing access to an Employee and Family Assistance Program (EFAP) and established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees.

Definitions of ‘youth’ and ‘elder’ in Inuit culture can be subjective and often based more on personal knowledge and experience rather than an exact age. While not all individuals who received pre-employment training, employment, and on-the-job training from Baffinland can be considered ‘youth’, it can reasonably be assumed that many of these individuals stood to benefit from the life skills development opportunities that were provided. It is further acknowledged that life skills development for some individuals can take time to achieve. However, there are indications positive effects on life skills development amongst young adults in the LSA continue to result from the Project, as predicted in the FEIS.

## 4.2 INCENTIVES RELATED TO SCHOOL ATTENDANCE AND SUCCESS

### 4.2.1 Predicted Effect and Mitigation Measures

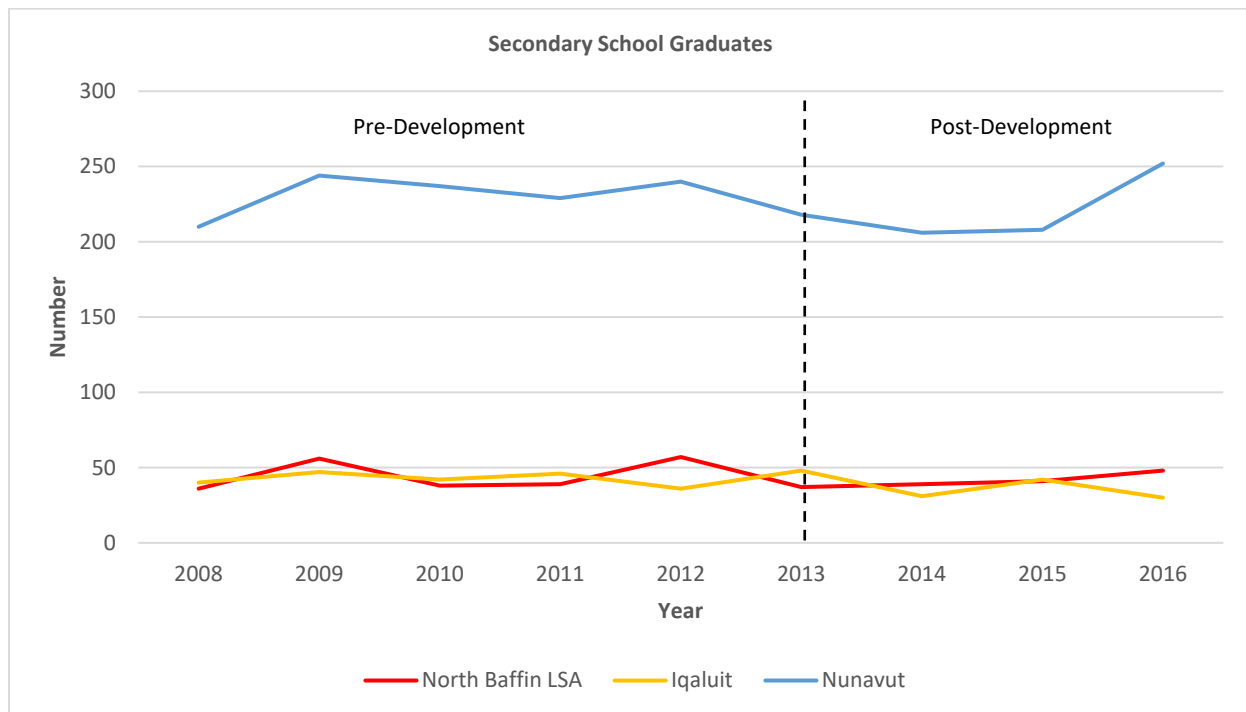
The FEIS predicted the Project would have a positive effect on education and skills development across the LSA by providing incentives related to school attendance and success. While there is some potential that individuals may drop out of school or forego further education to work at the Project, the overall effect of the Project will be to increase the value of education and thereby the ‘opportunity cost’ of dropping out of school. Associated policies or mitigation measures developed by Baffinland include the establishment of a minimum age (i.e. 18) for Project employment, provision of career planning services, and priority hiring for Inuit, in addition to other measures included in the IHRS. Furthermore, Baffinland continues to support a number education and training initiatives through its donations program and Inuit Impact and Benefit Agreement (IIBA) with QIA.

### 4.2.2 Indicator Data

#### *Number of Secondary School Graduates*

The number of secondary school graduates in the LSA is a useful indicator of school attendance and success. 2016 was the most recent year data on secondary school graduates were available from the Nunavut Bureau of Statistics (2017b). Figure 4-1 displays the number of secondary school graduates by community from 2008 to 2016. In the North Baffin LSA communities in 2016, there were 48 total graduates, up from 41 in 2015. There was a low of 2 graduates in Hall Beach and a high of 17 graduates in Igloodik in 2016. In Iqaluit, there were 30 graduates in 2016, down from 42 in 2015. Compared to pre-development period averages, there have been decreasing trends in the average number of graduates in the North Baffin LSA (from 45 to 41) and Iqaluit (from 42 to 38) in the post-development period.

**Figure 4-1: Secondary school graduates (2008 to 2016)**



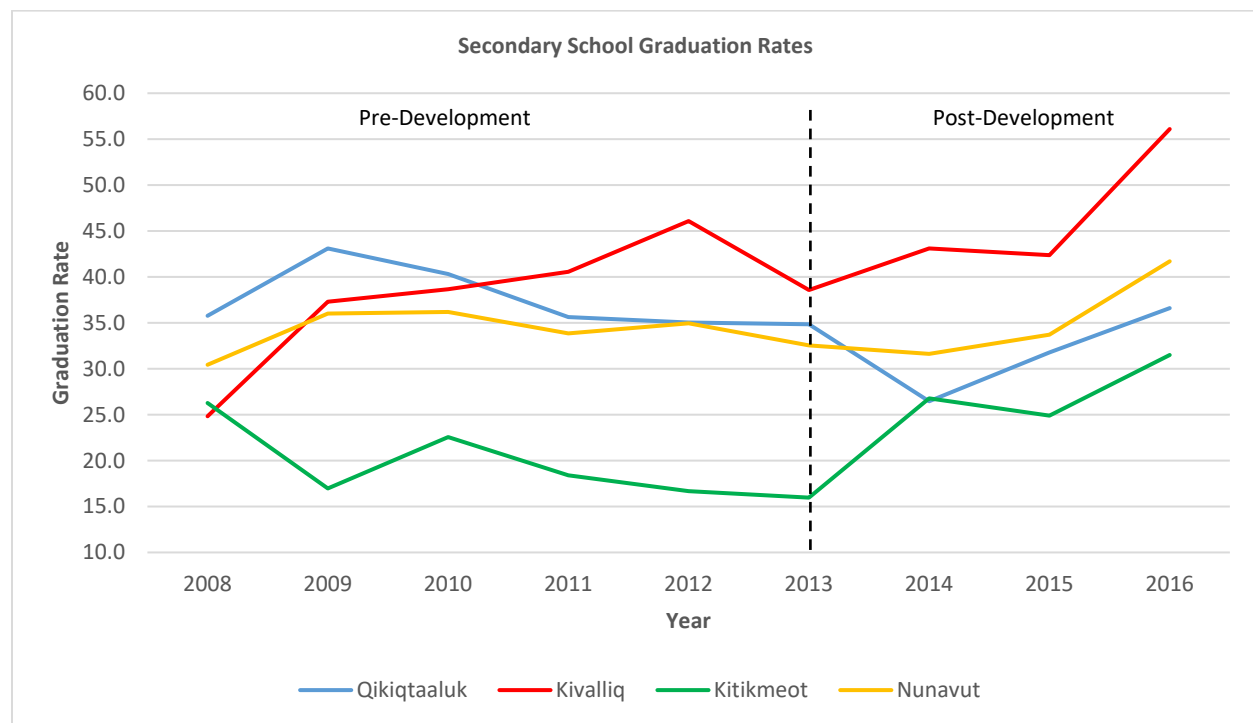
Source: Nunavut Bureau of Statistics (2017b)

### *Secondary School Graduation Rate*

Secondary school graduation rates<sup>10</sup> are another useful indicator of school attendance and success. These have been obtained from the Nunavut Bureau of Statistics (2017c) and are presented in Figure 4-2. However, data are only available for Nunavut and the Qikiqtaaluk, Kivalliq, and Kitikmeot regions. In 2016, the Kivalliq Region had the highest graduation rate in the territory (56.1), followed by the Qikiqtaaluk Region (36.6), and Kitikmeot Region (31.5). Compared to 2015, graduation rates in the Qikiqtaaluk Region were up (by 4.8). Compared to pre-development period averages, there has been a decreasing trend in average graduation rates in the Qikiqtaaluk Region (from 38.0 to 32.4) but increasing trends in the Kivalliq (from 37.5 to 45.0) and Kitikmeot Regions (from 20.2 to 24.8) in the post-development period.

<sup>10</sup> The Nunavut Bureau of Statistics (2017c) notes the 'graduation rate' is calculated by dividing the number of graduates by the average of estimated 17 and 18 year-old populations (the typical ages of graduation). 'Graduates' include students who completed secondary school but excludes those who completed equivalency or upgrading programs. Due to the small population of Nunavut, however, the Nunavut Bureau of Statistics (2017c) notes that graduation rate changes from year to year must be interpreted with caution.

**Figure 4-2: Secondary school graduation rates (2008 to 2016)**



Source: Nunavut Bureau of Statistics (2017c)

#### *Investments in School-Based Initiatives*

Baffinland continued to support several school-based initiatives through its donations program and IIBA in 2017. For example, since 2007 Baffinland has donated laptops to secondary school graduates in the North Baffin LSA communities to motivate youth to complete their high school educations. Baffinland provided 63 laptops to new grade 12 graduates in 2017 and 46 laptops in 2016. As per the IIBA, Baffinland also continues contributing to an annual scholarship fund for Nunavut Inuit (with priority given to applications from the North Baffin LSA communities). Due to certain administrative issues no scholarships were awarded in 2017; however, awards will be made in 2018. In addition, Baffinland launched a Community Literacy Initiative in September 2017. Baffinland representatives, led by CEO Brian Penney, delivered Inuktitut and English books to local schools and libraries in 2017. Baffinland representatives also spoke about the importance of education and the important role education plays in future employment opportunities in the mining industry.

#### **4.2.3 Analysis**

There have been decreasing trends in the number of graduates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. There has also been a decreasing trend in graduation rates in the Qikiqtaaluk Region in the post-development period which was not evident in the pre-development period (it was previously increasing). Conversely, the Kivalliq and Kitikmeot Regions have continued to experience increasing trends during the post-development period. Reasons for the lack of a similar trend in the Qikiqtaaluk Region are currently unknown.

As Project construction only began in 2013, there is minimal post-development data currently available. School attendance and success can also be influenced by many socio-economic factors. Correlations between Project effects and school attendance and success, if any, may only come to light with the analysis of additional yearly data. However, there are positive indications the Project continues to provide incentives for youth to stay in school, as predicted in the FEIS. Foremost, Project employment opportunities can motivate individuals to complete their education to improve their chances at obtaining their desired career. Baffinland also continued to make investments in school-based initiatives through its donations program and IIBA in 2017. These investments included laptop donations to secondary school graduates, ongoing scholarship commitments, and the launch of a community literacy initiative.

### 4.3 OPPORTUNITIES TO GAIN SKILLS

#### 4.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on education and skills development, by providing opportunities for training and skills acquisition amongst LSA residents. Mitigation developed by Baffinland includes the provision of training programs, upgrading opportunities, and career counselling to employees, in addition to other measures included in the IHRS. Furthermore, Baffinland continues to support several educational and training initiatives through its donations program and through compliance with IIBA provisions respecting training and education.

#### 4.3.2 Indicator Data

##### *Hours of Training Completed by Inuit Employees and Contractors*

The number of training hours completed by Project employees and contractors is a useful indicator of the magnitude of Baffinland's annual training efforts. Hours of site-based training completed from 2013 to 2017 by Inuit and non-Inuit are presented in Table 4-1. In 2017 this included any site-based training offered by Baffinland to employees and contractors; it did not include off-site training or training offered by contractors to their staff. In 2017, 43,397 hours of training were completed at the Project site, of which 4,024 hours (or 9.3%) were provided to Inuit. This represents an increase of 1,590 Inuit training hours compared to 2016. A total of 122,950 hours of training have been provided since Project development, of which 15,867 hours (or 12.9%) were provided to Inuit.

**Table 4-1: Hours of training completed (2013 to 2017)**

Hours of Training Completed			
Year	Inuit	Non-Inuit	Total
2013	1,283	4,555	5,838
2014	3,596	20,271	23,867
2015	4,530	17,352	21,882
2016	2,434	25,532	27,966
2017	4,024	39,373	43,397
<b>Total</b>	<b>15,867</b>	<b>107,083</b>	<b>122,950</b>

Source: Baffinland

### *Types of Training Provided to Inuit Employees and Contractors*

The types of training provided by Baffinland better reveal the full scope of learning opportunities available at the Project. Types and hours of training provided to Inuit and non-Inuit employees and contractors in 2017 are displayed in Figure 4-3. In 2017 this included any site-based training offered by Baffinland to employees and contractors; it did not include off-site training or training offered by contractors to their staff. Training programs with the highest levels of Inuit participation in 2017 included heavy equipment operator (1,803 hours), site orientation (923 hours), mobile support equipment (445 hours), and ore haul truck (121 hours). Training programs are expected to continue to evolve at the Project as operations advance, employment increases, and feedback from Inuit employees is considered.

### *Apprenticeships and Other Opportunities*

Baffinland recently began recruiting candidates for a new apprenticeship program for individuals interested in pursuing a career in the skilled trades. Baffinland is currently recruiting 26 candidates, spread across eight positions: carpenter, electrician, heavy duty mechanic, heavy equipment technician, housing maintainer, millwright, plumber, and welder. Recruits will join Baffinland as trades assistants for six months, job shadowing and learning about their prospective trade. Upon successful completion of the six-month term, candidates will write their Trades Entrance exam. Pending a pass mark being received on the exam, candidates will become full-time, permanent apprentices at Baffinland.

Baffinland and QIA were also recently successful in securing funds through Employment and Social Development Canada's (ESDC) Skills and Partnership Fund for their Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program. Q-STEP is a four-year initiative that will be undertaken by QIA in close partnership with Baffinland to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The program will consist of both work readiness measures as well as targeted training programs directed at apprenticeships, skills development, supervisor training, and formal certification in heavy equipment operation. The total value of the program is \$19 million. The Government of Canada will provide \$7.9 million, Baffinland will provide \$9.4 million of in-kind support, and Kakivak Association will provide up to \$1.6 million of in-kind support. The Government of Nunavut will also offer operational support to Q-STEP.

As these programs were just getting underway in late 2017, the number of apprentices employed by Baffinland during the year was limited. In 2017, Baffinland employed one Inuit apprentice and zero non-Inuit apprentices. Likewise, zero apprenticeships were completed by Inuit or non-Inuit during 2017. By comparison, Baffinland also employed one Inuit apprentice in 2016.

#### **4.3.3 Analysis**

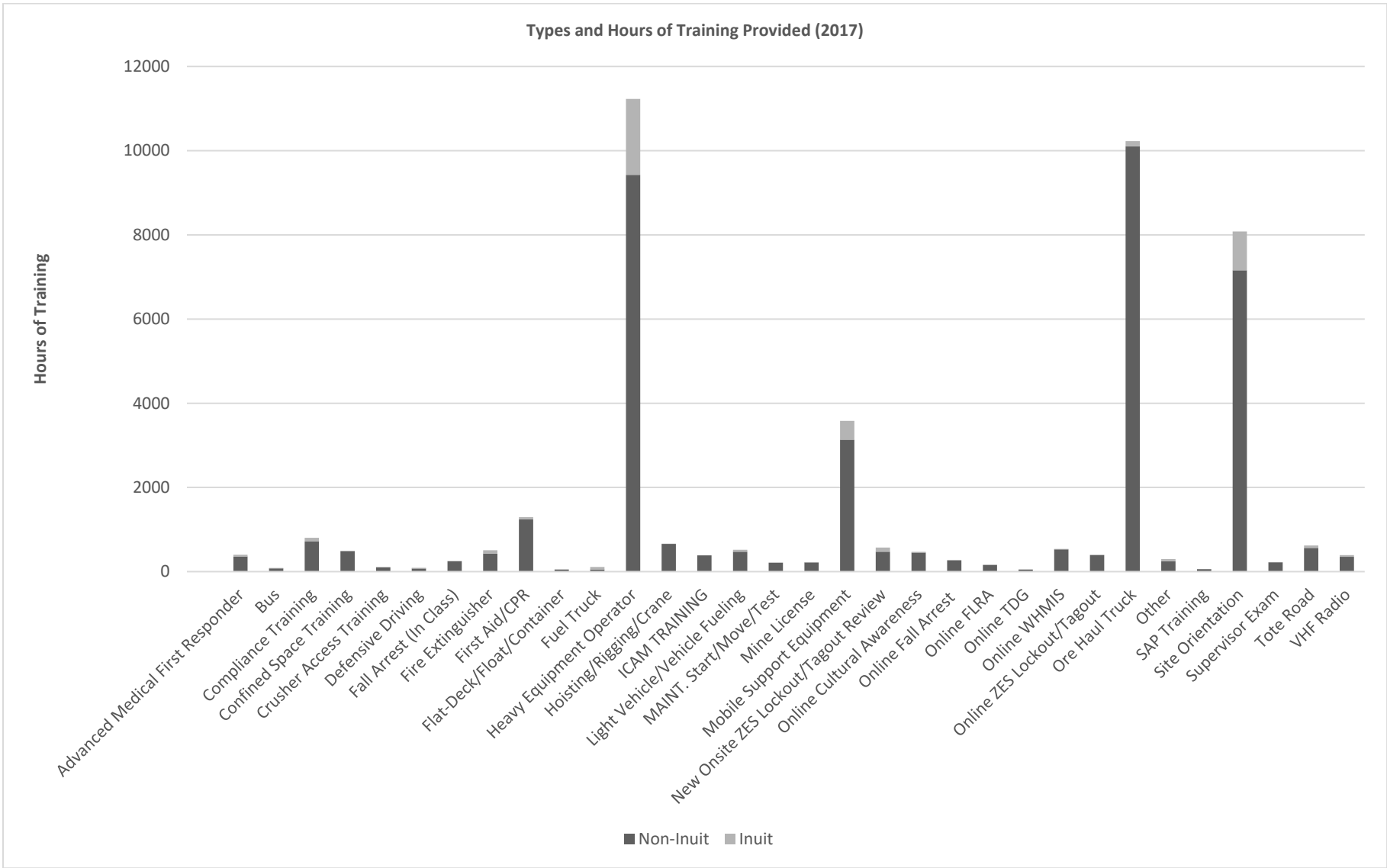
The FEIS predicted positive effects on training and skills acquisition amongst LSA residents would arise from the Project. In 2017, Baffinland continued providing many training and skills development opportunities to its Inuit employees. Furthermore, Baffinland employees are regularly exposed to various 'informal' training and skills development opportunities through contact with more experienced coworkers and the process of everyday work. Several other Baffinland programs and IIBA initiatives have also contributed to the development of a more experienced Inuit workforce. For example, Baffinland delivered a 'Work Ready' pre-employment training program to local residents in 2012 and

2013 and anticipates delivering a revised version of this training in 2018. Baffinland has also committed to providing additional near-term training opportunities to LSA residents through its IHRS and the Q-STEP training program. This includes providing employee skills upgrading courses (e.g. GED, literacy and numeracy), training in apprenticeships and heavy equipment operation, and various career advancement programs for existing employees.

It is evident the Project has had a positive effect on education and skills development amongst LSA residents, as was predicted in the FEIS. The opportunities provided by the Project are notable, particularly when considering the current mining skills 'gap' that exists in Nunavut (e.g. Gregoire 2014, MacDonald 2014, MIHR 2014, Conference Board of Canada 2016).



Figure 4-3: Types and hours of training provided (2017)



Source: Baffinland. Training programs totalling >50 hours have been included under 'Other'.

#### 4.4 EDUCATION AND EMPLOYMENT STATUS PRIOR TO PROJECT EMPLOYMENT

##### 4.4.1 Project Certificate Term or Condition

No specific prediction related to employee education and employment status prior to Project employment was presented in the FEIS. However, Project Certificate term and condition no. 140 states:

*The Proponent is encouraged to survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned from a previous job placement or educational institution in order to take up employment with the Project.*

##### 4.4.2 Indicator Data

###### *Education and Employment Status Prior to Project Employment*

Baffinland has developed a voluntary Inuit Employee Survey (see Appendix E) to address Project Certificate term and condition no. 140. The latest version of this survey was administered by a survey team consisting of Baffinland and QIA representatives at Project sites in January 2018. A total of 71 surveys were completed by Inuit employees and contractors.

Table 4-2 summarizes results on the highest level of education obtained by survey respondents. 38.0% of respondents had no certificate, diploma, or degree. 22.5% had a high school diploma or equivalent, 5.6% had an apprenticeship or trades certificate or diploma, and 4.2% had a college, CEGEP, or other non-university certificate or diploma. 0.0% had any type of university certificate, diploma, or degree, and 29.6% of respondents had unknown educational levels ( $n=71$ ). When 'unknown' results are removed, 54.0% had no certificate, diploma, or degree, 32.0% had a high school diploma or equivalent, and 14.0% had higher than a high school diploma or equivalent.

**Table 4-2: Highest level of education obtained (2018 Inuit Employee Survey results)**

Highest Level of Education Obtained (2018 Inuit Employee Survey Results)		
Highest Level of Education	Number of Respondents	Percentage of Respondents
No certificate, diploma or degree	27	38.0%
High school diploma or equivalent	16	22.5%
Apprenticeship or trades certificate or diploma	4	5.6%
College, CEGEP or other non-university certificate or diploma	3	4.2%
University certificate or diploma below bachelor level	0	0.0%
University certificate, diploma or degree - Bachelor's degree	0	0.0%
University certificate, diploma or degree above bachelor level	0	0.0%
Unknown	21	29.6%
<b>Total</b>	<b>71</b>	<b>99.9%</b>

Source: Baffinland

Notes: Total percentage may not equal 100.0% due to rounding

Table 4-3 summarizes results on the employment status of survey respondents prior to Project employment. 31.0% of respondents resigned from a previous job in order to take up employment with the Project, while 67.6% did not. Results were unknown for 1.4% of respondents ( $n=71$ ). When 'unknown' results are removed, 31.4% resigned from a previous job in order to take up employment

with the Project while 68.6% did not. Of those respondents that resigned from a previous job in order to take up employment with the Project ( $n=22$ ), 22.7% (or 7.1% of known survey responses) had casual employment status, 9.1% (or 2.9% of known responses) had part-time employment status, and 68.2% (or 21.4% of known responses) had full-time employment status.

**Table 4-3: Employment status prior to Project employment (2018 Inuit Employee Survey results)**

Employment Status Prior to Project Employment (2018 Inuit Employee Survey Results)		
Pre-Employment Status	Number of Respondents	Percentage of Respondents
<i>Did you resign from a previous job in order to take up employment with the Mary River Project? (n=71)</i>		
Yes	22	31.0%
No	48	67.6%
Unknown	1	1.4%
<b>Total</b>	<b>71</b>	<b>100.0%</b>
<i>If yes, what was your previous employment status? (n=22)</i>		
Casual	5	22.7%
Part-time	2	9.1%
Full-time	15	68.2%
<b>Total</b>	<b>22</b>	<b>100.0%</b>

Source: Baffinland

Table 4-4 summarizes results on the education status of survey respondents prior to Project employment. 9.9% of respondents were enrolled in an academic or vocational program at the time of their hire at the Project, while 81.7% were not. Results were unknown for 8.5% of respondents ( $n=71$ ). When 'unknown' results are removed, 10.8% of respondents were enrolled in an academic or vocational program at the time of their hire at the Project while 89.2% were not. Of those respondents that were enrolled in an academic or vocational program at the time of their hire at the Project ( $n=7$ ), 28.6% (or 3.1% of known survey responses) suspended or discontinued their education because they were hired to work at the Project while 71.4% (or 7.7% of known responses) did not.

**Table 4-4: Education status prior to Project employment (2018 Inuit Employee Survey results)**

Education Status Prior to Project Employment (2018 Inuit Employee Survey Results)		
Pre-Employment Status	Number of Respondents	Percentage of Respondents
<i>Were you enrolled in an academic or vocational program at the time of your hire at the Mary River Project? (n=71)</i>		
Yes	7	9.9%
No	58	81.7%
Unknown	6	8.5%
<b>Total</b>	<b>71</b>	<b>100.1%</b>
<i>If yes, did you suspend or discontinue your education because you were hired to work at the Mary River Project? (n=7)</i>		
Yes	2	28.6%
No	5	71.4%
<b>Total</b>	<b>7</b>	<b>100.0%</b>

Source: Baffinland

Notes: Total percentages may not equal 100.0% due to rounding

#### 4.4.3 Analysis

The employees who completed Baffinland's Inuit Employee Survey in 2018 had varied educational and pre-employment backgrounds. 54.0% of respondents had no certificate, diploma or degree, 32.0% had

a high school diploma or equivalent, and 14.0% of respondents had higher than a high school diploma or equivalent. By comparison, data from the 2016 Census indicate the proportion of the North Baffin LSA's population (aged 25 to 64 years) with no certificate, diploma or degree was 50.8%; with a secondary school diploma or equivalency certificate was 14.4%; and with a postsecondary certificate, diploma, or degree was 36.0%. Likewise, the proportion of Nunavut's population (aged 25 to 64 years) with no certificate, diploma or degree was 40.9%; with a secondary school diploma or equivalency certificate was 14.6%; and with a postsecondary certificate, diploma, or degree was 44.4% (Statistics Canada 2017c, d, e, f, g, h).

Furthermore, 31.4% of Inuit Employee Survey respondents resigned from a previous job in order to take up employment with the Project. Nunavut's Inuit population employment rate<sup>11</sup> 3 month moving average ending in December 2017, for reference, was 47.3% (Nunavut Bureau of Statistics 2018). 3.1% of respondents also suspended or discontinued their education because they were hired to work at the Project. Baffinland will continue to track the education and employment status of its Inuit employees and contractors prior to Project employment to see if any future trends emerge. Surveys conducted in future years are expected to provide additional data to compare these results against.

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<sup>11</sup> The Nunavut Bureau of Statistics (2009) defines 'employment rate' as the "number of employed persons expressed as a percentage of the population 15 years of age and over". 'Employed persons' are defined as those who "(a) did any work at all at a job or business, that is paid work in the context of an employer-employee relationship, or self-employment; or (b) had a job but were not at work due to factors such as own illness or disability, personal or family responsibilities, vacation, labour dispute or other reasons (excluding persons on layoff, between casual jobs, and those with a job to start at a future date)."

## 5. LIVELIHOOD AND EMPLOYMENT

Three residual effects for the VSEC Livelihood and Employment were assessed in the FEIS. These include creation of jobs in the LSA, employment of LSA residents, and new career paths. These are reviewed more fully below, in addition to information on one other topic requested through the Project Certificate.

### 5.1 CREATION OF JOBS IN THE LSA

#### 5.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. A 5%+ change in baseline labour was predicted to result from the Project. Under baseline conditions, the labour market of the North Baffin LSA was estimated to generate a labour demand of 2.0 million hours per year, while the Iqaluit labour market was estimated to generate a demand of 4.7 million hours per year. 5% of these values would equal 335,000 hours per year (i.e. 100,000 hours per year in the North Baffin LSA and 235,000 hours per year in Iqaluit).

More specifically, the Project was predicted to generate a total labour demand of approximately 0.9 million hours per year during ERP operations. With the addition of the 18 Mt/a phase, annual labour demand would increase to 2.9 million hours. Labour demand during the Construction Phase would average roughly 4.1 million hours per year over a six-year period but reach a peak of approximately 7.3 million hours per year. Closure phase labour demand estimates do not currently exist but will be developed by Baffinland in the future. Mitigation developed by Baffinland includes the designation of all LSA communities as points-of-hire.

#### 5.1.2 Indicator Data

##### *Hours of Project Labour Performed in Nunavut*

Total hours of labour performed each year is a useful indicator of the Project's labour demand. It also helps reveal the extent to which new job opportunities have become available to LSA residents. Table 5-1 presents total hours of Project labour performed by employees and contractors who worked on the Project in Nunavut-based positions from 2013 to 2017. In 2017, 2,380,990 hours of labour were performed, which is equal to approximately 1,181 full time equivalent (FTE) positions.<sup>12</sup> There were 499,484 more hours of labour performed in 2017 than in 2016. A total of 8,837,636 hours of labour have been performed since Project development.

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<sup>12</sup> FTEs are calculated assuming 2,016 hours of employment per person annually, which reflects a typical 2 week on/2 week off rotation (i.e. 24 weeks multiplied by 84 hours per week; this calculation also assumes 2 weeks holidays are taken by each employee).

**Table 5-1: Hours of Project labour performed in Nunavut (2013 to 2017)**

Hours of Project Labour Performed in Nunavut				
2013	2014	2015	2016	2017
863,177	1,867,882	1,844,081	1,881,506	2,380,990

Source: Baffinland<sup>6</sup>

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors.

### 5.1.3 Analysis

The FEIS predicted a positive effect on the creation of jobs in the LSA would occur because of the Project. In 2017, the Project continued to generate a substantial number of employment opportunities and labour hours. The generation of 2,380,990 hours of labour in 2017 is in line with the FEIS prediction of a 5%+ change in baseline labour (i.e. at least 335,000 hours created per year). As such, the positive effect on LSA job creation predicted to occur in the FEIS is confirmed.

## 5.2 EMPLOYMENT OF LSA RESIDENTS

### 5.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. The magnitude of LSA employment creation was estimated to be a 5%+ change in baseline labour. This equates to at least 335,000 hours of new employment being created per year, in a baseline environment that was estimated to create 6.7 million hours of labour per year.

More specifically, the Project was predicted to result in the employment of an estimated 300 LSA residents each year. These residents would supply approximately 342,000 hours of labour per year to the Project, of which 230,000 hours would be provided by North Baffin LSA residents and 112,000 hours would be provided by Iqaluit residents. Mitigation developed by Baffinland includes management commitments and Company policies related to Inuit hiring, and the development of Inuit employee recruitment and retention programs, in addition to other measures contained in the IHRS.

### 5.2.2 Indicator Data

#### *Project Hours Worked by LSA Employees and Contractors*

Data on the number of hours worked on the Project provides insight into the varying labour contributions of LSA and non-LSA employees and contractors. Table 5-2 summarizes the number and percentage of hours worked by individuals on the Project in Nunavut-based positions from 2013 to 2017. Table 5-2 also includes information on the origin and ethnicity of these individuals, where applicable. In 2017, 313,068 hours were worked by LSA residents (both Inuit and non-Inuit), representing 13.1% of total hours worked on the Project (i.e. 2,380,990) or approximately 155 FTEs. Of this, 229,658 hours were worked by North Baffin LSA residents (representing 9.6% of the total) and 83,410 hours were worked by Iqaluit residents (representing 3.5% of the total). Project hours worked by North Baffin LSA residents decreased (by 1,074 hours) from 2016, while Project hours worked by Iqaluit

residents increased (by 8,306 hours) from 2016. Inuit individuals worked 321,026 hours in 2017, representing 13.5% of total hours worked on the Project or approximately 159 FTEs.

### 5.2.3 Analysis

The FEIS predicted a positive effect on the employment of LSA residents would occur because of the Project. In 2017, a total of 313,068 hours were worked by LSA residents, 229,658 of which were worked by North Baffin LSA residents. While these numbers don't fully reflect the FEIS predictions (i.e. at least 335,000 hours of new employment would be created, with LSA residents potentially providing 342,000 hours of work and North Baffin LSA residents potentially providing 230,000 hours of work), Baffinland continues to refine its Inuit human resources programs and remains committed to meeting Inuit employment targets.

LSA employment and Inuit employee turnover are areas Baffinland will continue to address in 2018. This will occur in part through implementation of Baffinland's new Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS). These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time. For example, the IHRS contains eight strategic directions that will assist Baffinland with meeting its Inuit employment objectives: strengthen stakeholder collaboration, engage and develop Inuit employees (current and potential), workforce readiness, Inuit recruitment and hiring, gender balance, students and youth, Inuit employee retention and advancement, and continuing improvement.

The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and implementation of the Q-STEP training program (in conjunction with QIA) and other actions to meet the Minimum Inuit Employment Goal (MIEG, which was 25% in 2017 and will remain at 25% in 2018) should also assist with increasing LSA employment over time. However, it will likely take many years to fully realize the Project's Inuit employment potential.

Comments shared during Baffinland's 2017 community engagement program and 2017 QSEMC meeting provide additional insight into this matter. For example, one participant in a Pond Inlet community engagement meeting noted "I want to thank you Baffinland for giving jobs for jobless people, there are some people who can only be employed by Mary River. Thank you." During the community roundtable portion of the 2017 QSEMC, participants also expressed gratitude for the employment opportunities provided by the Project in LSA communities (SEMCs 2017b). Likewise, the 2016 QSEMC meeting report notes "the economic benefits of employment and contracts to local businesses have been interpreted as largely positive in the LSA" (Government of Nunavut 2016: 9). During the community roundtable portion of the April 2015 QSEMC meeting it was also noted that in Pond Inlet "the benefits of Mary River from increased employment and money in the community have been noticed and appreciated" (Government of Nunavut 2015: 16). In Igloodik it was noted that "residents and businesses have benefited from more money coming into town from Mary River employment" (Government of Nunavut 2015: 17).

Some comments related to the employment of LSA residents at the Project were also captured in a recent report commissioned by Baffinland on the experience of Inuit residents employed at the Project as perceived by employees, their spouses, managers and supervisors at Mary River. The report, *Mary River Experience – The First Three Years* (i.e. BDSI 2016: 6), notes:

*“Individuals spoke about various types of benefits arising from employment. These range from the material rewards that come with increased income, to the mental health benefits of participating on a team and having hope and plans to achieve goals, to the satisfaction associated with learning new things and having an avenue to put one’s skills to good use.”*

Insights such as these, combined with the data presented above, confirm the positive effects the Project has had on the employment of LSA residents. While the hours worked by LSA residents in 2017 don’t fully reflect FEIS predictions, Baffinland views this as a temporary situation that can be addressed through initiatives such as the IHRS, IPCS, and Q-STEP training program. Baffinland will continue to monitor LSA employment for future trends.



**Table 5-2: Hours of Project labour performed in Nunavut (2013 to 2017)**

Employee Ethnicity & Origin	Hours of Project Labour Performed in Nunavut									
	2013		2014		2015		2016		2017	
	Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (1,844,081)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit – North Baffin LSA	125,870	14.6%	281,679	15.1%	208,278	11.3%	198,618	10.6%	217,314	9.1%
Inuit – Iqaluit	38,799	4.5%	80,796	4.3%	85,088	4.6%	51,216	2.7%	65,064	2.7%
Inuit – Other	9,696	1.1%	17,131	0.9%	37,542	2.0%	27,620	1.5%	38,648	1.6%
Inuit (Total)	174,365	20.2%	379,606	20.3%	330,908	17.9%	277,454	14.7%	321,026	13.5%
Non-Inuit – North Baffin LSA	—	—	—	—	5,114	0.3%	32,114	1.7%	12,344	0.5%
Non-Inuit – Iqaluit	—	—	—	—	9,090	0.5%	23,888	1.3%	18,346	0.8%
Non-Inuit – Other	—	—	—	—	1,498,969	81.3%	1,548,050	82.3%	2,032,496	85.4%
Non-Inuit (Total)	688,812	79.8%	1,488,276	79.7%	1,513,173	82.1%	1,604,052	85.3%	2,059,964	86.5%
Total	863,177	—	1,867,882	—	1,844,081	—	1,881,506	—	2,380,990	—

Source: Baffinland<sup>6</sup>

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors. Data for non-Inuit LSA residents were not available for 2013 and 2014 and are included in the non-Inuit total instead.

### 5.3 NEW CAREER PATHS

#### 5.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on the ability of LSA residents to progress in their jobs and careers. This effect would occur because of new career paths introduced to the region, from entry-level through step-by-step advancement to higher level jobs. Mitigation developed by Baffinland includes management commitments and Company policies related to Inuit hiring and promotions, the provision of individual career support programs, and the creation of a 'second chance' hiring policy, in addition to other measures included in the IHRS.

#### 5.3.2 Indicator Data

##### *LSA Employment*

Data on the employment of LSA residents at the Project provides insight into the new career paths made available to LSA residents. This is because some Project jobs may represent an opportunity for individuals to improve their existing employment status (e.g. from unemployed to employed, from part-time to full-time, from lower-skilled to higher-skilled positions) and/or form the basis of future promotion and advancement at the Project. As noted in Section 5.2, a total of 313,068 hours were worked by LSA residents in 2017.

##### *Inuit Employee Promotions*

The number of annual Inuit employee promotions is also an important indicator of career progression at the Project. Data on Baffinland Inuit employee promotions (not including contractors) from 2014 to 2017 are presented in Table 5-3. In 2017, 3 Inuit employee promotions occurred, which is 11 fewer promotions than occurred in 2016.

**Table 5-3: Baffinland Inuit employee promotions (2014 to 2017)**

Baffinland Inuit Employee Promotions	
Year	Number of Promotions
2014	9
2015	14
2016	14
2017	3

Source: Baffinland. Includes temporary promotions. Inuit promotion data were not available for 2013.

##### *Inuit Employee Turnover*

Annual Inuit employee turnover provides additional insight into Inuit career progression. The term 'turnover' is inclusive of many different components including resignation, layoff, termination, end of contract, and retirement. High turnover indicates fewer individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Low turnover, conversely, indicates a greater number of individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Table 5-4 displays information on Baffinland Inuit employee departures from 2013 to 2017 (not including contractors).

**Table 5-4: Baffinland employee departures (2013 to 2017)**

<b>Baffinland Employee Departures</b>				
<b>Year</b>	<b>Inuit Employees</b>		<b>Non-Inuit Employees</b>	
	<b>Number of Departures</b>	<b>Turnover Rate</b>	<b>Number of Departures</b>	<b>Turnover Rate</b>
2013	9	—	—	—
2014	45	—	—	—
2015	41	—	165	—
2016	44	45%	210	39%
2017	42	45%	211	31%

Source: Baffinland

Notes: 2013 and 2014 numbers are for indeterminate employees only and information for non-Inuit employees was unavailable. Comparable employee turnover rates for 2013-2015 are not provided, due to differences in how employee numbers and departures were previously calculated by Baffinland.

In 2017, there were 42 Inuit employees whose employment with Baffinland ended for various reasons (e.g. resignation, layoff, termination, end of contract, retirement). This equates to a 45% Inuit employee turnover rate. This is higher than the 31% non-Inuit employee turnover rate documented for 2017.<sup>13</sup>

Some commonly cited reasons Inuit employees had for resigning in 2017 included family/personal issues, obtaining a job in their home community, finding rotational work difficult (particularly on family life), and the work/camp environment. Some of these reasons were similar to those provided in 2016 (i.e. family-related reasons, obtaining a job in their home community, not being happy with working at site, finding rotational work difficult, and dissatisfaction with position responsibilities). For turnover due to dismissal by Baffinland or for involuntary terminations, commonly cited reasons in 2017 included absenteeism, safety-related occurrences, being unfit for duty/performance, and not passing probation. Some of these reasons were similar to those provided in 2016 (i.e. absenteeism and not passing probation, including not passing equipment training).

### 5.3.3 Analysis

The FEIS predicted the Project would have a positive effect on the ability of LSA residents to progress in their jobs and careers. In 2017, many Inuit were employed by the Project and some were promoted to new positions. The career opportunities introduced to the region represent a positive effect of the Project and are a likely result of the mitigation measures Baffinland has developed regarding local employment.

However, there were several Baffinland Inuit employee departures in 2017. High rates of employee turnover have been an issue for other Nunavut organizations in the past, including the Government of Nunavut and Agnico Eagle Mines Limited (e.g. Bell 2012, Government of Nunavut 2014). Baffinland will continue to monitor employee turnover causes and outcomes and is committed to reducing turnover and increasing Inuit employment where feasible.

<sup>13</sup> The employee turnover rate has been calculated using guidance provided by Taylor (2002). For example, the 2017 Inuit employee turnover rate was calculated by dividing the total number of Inuit employee departures in the calendar year (42) by the average number of Inuit employees employed in the same calendar year (93 – see Table 3-7), multiplied by 100.

Baffinland's recently finalized IHRS contains several initiatives aimed at reducing turnover. The overriding goal of these initiatives is to ensure Inuit employees are provided with the necessary support to acclimate to life at site. For example, Baffinland has committed to reviewing onboarding procedures to ensure that expectations are clearly communicated and that Inuit employees, like all other employees, are made fully aware of workplace conditions and support resources, such as the Inuit Elders on site. In addition, Baffinland has committed to ensuring Inuit culture and values are respected and that use of Inuktitut at site will be supported, subject to considerations of employee safety. Consideration will also be given to modification of work rotation cycles to enable Inuit to participate in traditional activities. To reduce the stress of familial separation, Baffinland has further noted it will expand existing tools of family communication (phone and internet), including the introduction of Skype. Future monitoring will be necessary to track the success of these and other Baffinland programs.

#### 5.4 BARRIERS TO EMPLOYMENT FOR WOMEN

##### 5.4.1 Project Certificate Term or Condition

No specific prediction related to barriers to employment for women was presented in the FEIS. However, Project Certificate term and condition no. 145 states:

*The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs.*

##### 5.4.2 Indicator Data

###### *Hours Worked by Female Employees and Contractors*

The number of hours worked by female employees and contractors at the Project provides insight into potential employment barriers females may face compared to their male counterparts. Table 5-5 displays the hours (and percentage of hours) worked by women and men on the Project in Nunavut-based positions from 2013 to 2017. In 2017, 162,550 hours (or 6.8% of total hours worked on the Project) were worked by women, which is 11,422 hours more than documented for 2016. The percentage of hours worked by Inuit and non-Inuit women in 2017 were similar (3.6% and 3.2%, respectively). However, the percentage of hours worked by Inuit women compared to Inuit males on the Project (approximately 26.8% of this total) was much higher than non-Inuit women compared to non-Inuit males (approximately 3.7% of this total) in 2017. A similar trend was noted from 2013 to 2016.

###### *Childcare Availability and Costs*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

Comments on the lack of childcare in LSA communities and the barriers to employment it creates have been made previously by Project stakeholders (e.g. JPCSL 2017). Some stakeholder comments on childcare were also expressed during the 2017 QSEMC meeting in Arctic Bay. For example, the need for more childcare in local communities was raised by meeting participants during both the community

roundtable and Project-focused portions of the QSEMC. The lack of childcare in local communities was also said to be a cause of employee turnover at the Project (SEMCs 2017b). One comment related to childcare availability and costs was recorded during Baffinland's 2017 community engagement activities:

*...can the community request funding for the community infrastructure, let's say, day care facilities, if it's needed? [2017 IIBA Annual Project Review Forum Participant]*

It's acknowledged that securing access to adequate child care remains an issue in some parts of Nunavut and can act as a barrier to employment for women (e.g. Pauktuutit et al. 2014; Sponagle 2016). The national non-profit organization representing Inuit women in Canada, Pauktuutit (undated), further notes "an additional barrier for [Inuit] women attaining lasting, full-time employment is inadequate childcare facilities for rotational work schedules".

In any case, the Project has helped address some issues associated with childcare costs. Project incomes can provide employees with enhanced financial capacity that may make childcare more affordable. Furthermore, a new parental subsidy for daycare was recently announced by the QIA that is funded in part by the Mary River Project, through the *QIA Legacy Fund* and *QIA Benefits Fund*.<sup>14</sup> This \$5/day subsidy is available to Qikiqtani families registered with the Nunavut Agreement who have a child enrolled in a licenced childcare facility and is a top-up to the existing Kakivak subsidy of up to \$19/day. The subsidy provides assistance for approximately 250 childcare spaces, is worth up to \$1,250/child per year in savings to Qikiqtani parents and represents a total investment of \$312,500/year by QIA. The subsidy will be offered until March 2019 and may be renewed upon QIA board approval (QIA 2017b).

Baffinland also supports two funds established under the IIBA which could potentially be accessed to provide additional supports to community daycares or child care services in the LSA. While Baffinland makes significant financial contributions to these funds, they are administered solely and exclusively by the QIA. The funds include the Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat (INPK) Fund (which provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness) and the Business Capacity and Start-Up Fund (which provides up to \$250,000/year to Designated Baffin Inuit Firms to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management).

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<sup>14</sup> The *QIA Legacy Fund* is designed to invest money for the future and help reduce Inuit reliance on outside funding over time by creating an internal pool of revenue for benefits and programs. It has been designed to ensure that revenues placed in it are never used for QIA operational purposes, thereby protecting long-term benefits for Inuit. Money that QIA will invest into the Legacy Fund includes IIBA payments from major projects such as the Mary River Project, money received from NTI from the mining of Inuit owned minerals, money received from sand and gravel projects on Inuit owned land, dividends from Qikiqtaaluk Corporation and the Nunasi Corporation, money received from any investments of the Legacy Fund, and surplus revenues from the QIA's Economic Development Fund, which is designed to receive money from licenses and leases on Inuit Owned Land. The *QIA Benefits Fund* is used to deliver programs to Inuit. As the Legacy Fund grows, revenues from it go to the Benefits Fund to increase programs for Inuit. The Benefits Fund is designed to receive annual payments from the Legacy Fund so that QIA can ensure a stable base of funding to run programs even if revenues change over time. The fund also allows for programs to expand in the future as the invested money grows (QIA 2017a).

### 5.4.3 Analysis

While Baffinland has continued to encourage the employment of women at the Project, women worked considerably fewer hours on the Project (approximately 6.8% of the total) than their male counterparts in 2017. However, women remain under-represented in the Canadian mining industry as a whole. The Mining Industry Human Resources Council (2016) notes women comprise only 17% of the total Canadian mining workforce, which is significantly lower than the total participation of women in the general Canadian workforce, at 48%. Indigenous women are also less likely than non-Indigenous women to be employed in Canada (Arriagada 2016).

Employment levels can be influenced by many factors, including the existence of barriers faced by certain demographic groups. While Baffinland will continue to track this issue in future socio-economic monitoring reports, it's apparent women continue to face barriers to employment in the Canadian mining industry as a whole. Inadequate access to childcare in the LSA may also be creating some barriers to increased employment of women at the Project. However, the new employment opportunities being created for women in the LSA because of the Project should be acknowledged. Baffinland's financial contributions to various funds and initiatives in the LSA also represent a positive Project effect.

Article 7.15 of the IIBA further obligates Baffinland to implement human resources policies that ensure equal access to employment for both genders. Focused on providing ongoing opportunities to women, the IHRS has established a series of additional priorities for Baffinland over at least the next five years. These include policy review and revision to support the principle of equal access to employment opportunities and to eliminate gender biases, development of recruitment and selection processes to encourage employment applications from Inuit women, development of training programs specifically targeted to Inuit women to prepare them for non-traditional occupations, inclusion of gender sensitivity training as part of employee orientation, and other commitments. Through its annual workplace survey, Baffinland also solicits opinions on workplace conditions for female staff. The results of this survey are reviewed jointly by Baffinland and QIA for potential performance enhancement opportunities in this area.

**Table 5-5: Hours worked by Project employees and contractors in Nunavut, by ethnicity and gender (2013 to 2017)**

Hours Worked by Project Employees and Contractors in Nunavut, by Ethnicity and Gender											
Employee Ethnicity & Gender		2013		2014		Q4 2015 (see notes)		2016		2017	
		Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (430,244)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit	Male	124,754	14.5%	267,169	14.3%	54,794	12.7%	208,592	11.1%	235,038	9.9%
	Female	49,611	5.8%	112,437	6.0%	20,732	4.8%	68,862	3.7%	85,988	3.6%
Non-Inuit	Male	639,468	74.1%	1,394,204	74.6%	336,124	78.1%	1,521,786	80.9%	1,983,402	83.3%
	Female	49,200	5.7%	94,072	5.0%	18,594	4.3%	82,266	4.4%	76,562	3.2%
<b>TOTAL</b>		<b>863,177</b>	—	<b>1,867,882</b>	—	<b>430,244</b>	—	<b>1,881,506</b>	—	<b>2,380,990</b>	—

Source: Baffinland<sup>6</sup>

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors. As Baffinland's human resources data management system was in the process of being developed, some information gaps were unable to be reconciled in 2015. In 2015, gender data related to hours worked was only available for Q4.

## 6. CONTRACTING AND BUSINESS OPPORTUNITIES

Two residual effects for the VSEC Contracting and Business Opportunities were assessed in the FEIS. These include expanded market for business services to the Project and expanded market for consumer goods and services. These are reviewed in more detail below.

### 6.1 EXPANDED MARKET FOR BUSINESS SERVICES TO THE PROJECT

#### 6.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on creating market opportunities for businesses in the LSA and RSA to supply goods and services to the Project. Mitigation designed by Baffinland includes the implementation of several Inuit contracting policies, and the development of the IPCS. These have been designed to give Inuit firms preferential treatment and assistance in the contract bidding process. Baffinland's IIBA with the QIA also includes provisions related to local business development. For example, a Business Capacity and Start-Up Fund has been created (which is administered by Kakivak, a subsidiary of the QIA) to assist Designated Baffin Inuit Firms. This fund provides up to \$500,000 annually to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.

#### 6.1.2 Indicator Data

##### *Value of Procurement with Inuit-Owned Businesses and Joint Ventures*

The value of Project-related procurement with Inuit-owned businesses and joint ventures is a useful indicator of the business opportunities created by the Project. Table 6-1 summarizes the procurement that has occurred with Inuit-owned businesses and joint ventures from 2013 to 2017. Approximately \$387.2 million in contracts were awarded to Inuit-owned businesses and joint ventures in 2017. Of a total 18 contracts awarded to Inuit-owned businesses and joint ventures, all were awarded in the LSA. Procurement values in 2017 were higher than in 2016 by \$322.8 million. Total procurement (with Inuit *and* non-Inuit firms) in 2017 totaled \$1,068.0 million. Since Project development, a total of \$819.1 million worth of contracts has been awarded to Inuit-owned businesses and joint ventures. The differing values in Table 6-1 are at least partly reflective of the construction activities that have occurred during varying periods on site (e.g. 2013 was a major construction year) and the transition to increased operational activities that occurred in 2015.

#### 6.1.3 Analysis

The Project continued to procure substantial goods and services from Inuit-owned businesses and joint ventures in 2017. Likewise, Baffinland procurement data suggests the Project has had an overall positive effect on creating market opportunities for businesses in the LSA and RSA to supply goods and services to the Project, as was predicted in the FEIS. Baffinland also recently finalized its IPCS with the QIA, which is expected to further enable (if not enhance) the provision of these business opportunities.



**Table 6-1: Procurement with Inuit-owned businesses and joint ventures (2013 to 2017)**

Procurement with Inuit-Owned Businesses and Joint Ventures					
Procurement Details	Year				
	2013	2014	2015	2016	2017
Value of Procurement with Inuit-Owned Businesses and JVs	\$200 million	\$64 million	\$103.5 million	\$64.4 million	\$387.2 million
Total Number of Contracts with Inuit-Owned Businesses and JVs	13	19	12	9	18
Number of Contracts with Inuit-Owned Businesses and JVs in the LSA	6	3	5	9	18

Source: Baffinland

## 6.2 EXPANDED MARKET FOR CONSUMER GOODS AND SERVICES

### 6.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would expand the market for consumer (i.e. non-Project related) goods and services across the LSA. While no specific mitigation measures related to this prediction were proposed in the FEIS, Company commitments related to Inuit employment and contracting support the development of an expanded market for consumer goods and services in the LSA. This is because of the increased purchasing power local residents are expected to have due to Project-induced direct and indirect employment income.

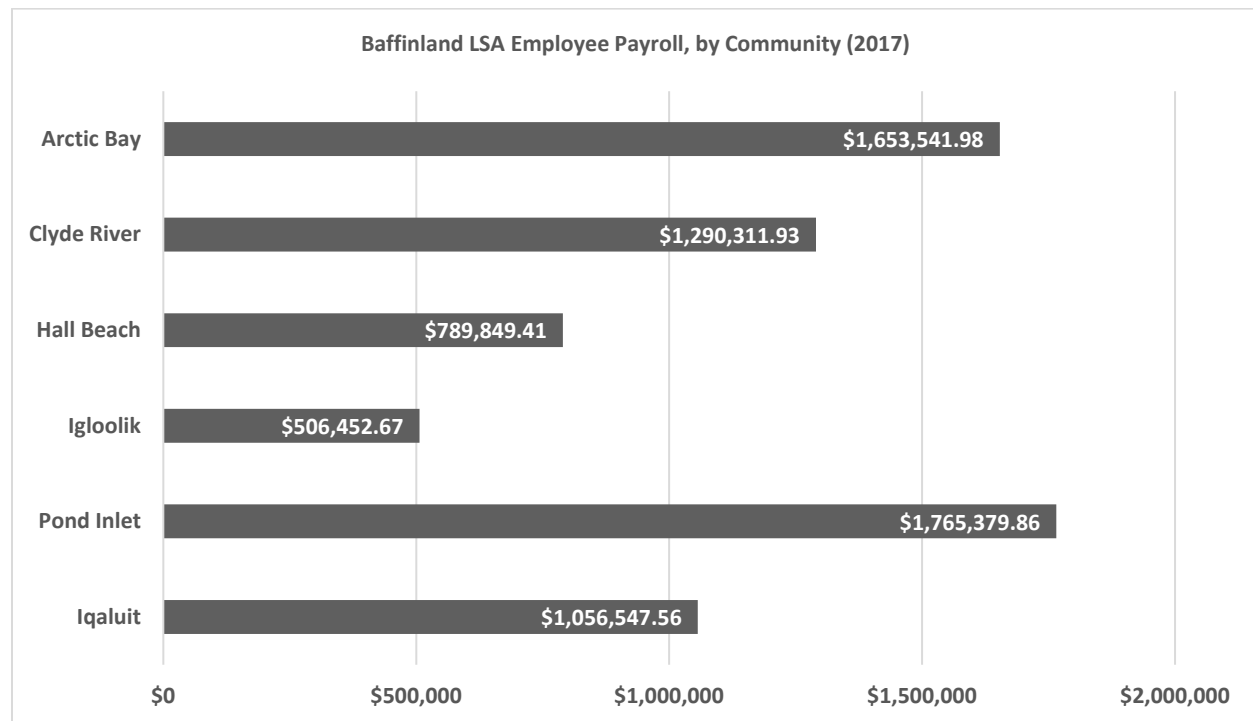
### 6.2.2 Indicator Data

#### *LSA Employee Payroll Amounts*

Yearly payroll expenditures to LSA employees are a useful indicator of the degree to which an expanded market for consumer goods and services has been created by the Project. Through the creation of new jobs in the LSA, the Project has also created a new source of economic wealth for local residents. It is reasonable to expect some of this new wealth will become available for residents to spend on consumer goods and services.

Baffinland's LSA employee payroll expenditures (in Canadian dollars, not including contractors, but including both Inuit and non-Inuit employees) totaled \$7,062,083.41 in 2017. Compared to 2016, this was a decrease of \$524,295.59. While contractor wages are not included in these amounts, the value of procurement with Inuit-owned businesses and joint ventures in 2017 was nevertheless substantial (\$387.2 million, as described in Section 6.1) and represents another important benefit provided by the Project. Figure 6-1 displays the proportion of Baffinland's employee payroll earned by each LSA community in 2017. The top three LSA payroll recipient communities in 2017 were Pond Inlet, Arctic Bay, and Clyde River (in 2016 they were Arctic Bay, Pond Inlet, and Clyde River). The highest earning community (Pond Inlet) received \$1,765,379.86, while the lowest earning community (Igloolik) received \$506,452.67 in 2017. Baffinland's Inuit employee payroll (including LSA and non-LSA communities) is also notable and totaled \$8,313,897.59 in 2017. Since 2014, Baffinland has provided \$33,261,365.59 in payroll to Inuit.

**Figure 6-1: Baffinland LSA employee payroll, by community (2017)**



Source: Baffinland

#### *Number of Registered Inuit Firms in the LSA*

The number of registered Inuit firms in the LSA is another useful indicator of the degree to which an expanded market for consumer goods and services may have been created by the Project. This is because new Project-generated consumer discretionary income would be expected to result in increased demand for (and spending on) local goods and services. Subsequently, the number and offerings of local businesses would be expected to increase to meet this demand.

Nunavut Tunngavik Incorporated (NTI) maintains an Inuit firm<sup>15</sup> registry database for Nunavut. This database (i.e. NTI 2017) provides the name of each registered Inuit firm, describes each firm's area of business operations, and location where the firm is based. The number of registered Inuit firms in the LSA from 2013 to 2017 is summarized in Table 6-2. Information for 2013 to 2015 was obtained directly from NTI personnel (E. Eegeesiak 2016, personal communication), while information for 2016 to 2017 was obtained from the NTI database (i.e. NTI 2017).

In 2017, a total of 153 active Inuit firms were registered with NTI in the LSA. 44 of these firms were based in the North Baffin LSA communities and 109 were based in Iqaluit. The number of active Inuit firms registered in the North Baffin LSA communities has increased by 15 since 2013, while the number of active Inuit firms registered in Iqaluit has increased by 40 since 2013.

<sup>15</sup> As noted by NTI (2017), 'Inuit firm' means an entity which complies with the legal requirements to carry on business in the Nunavut Settlement Area, and which is a limited company with at least 51% of the company's voting shares beneficially owned by Inuit, or a cooperative controlled by Inuit, or an Inuk sole proprietorship or partnership.

**Table 6-2: NTI registered Inuit firms in the LSA (2013 to 2017)**

Location	NTI Registered Inuit Firms in the LSA				
	Number of Firms				
	2013	2014	2015	2016	2017
North Baffin LSA Communities	29	29	31	40	44
Iqaluit	84	108	95	116	109
<b>Total</b>	<b>113</b>	<b>137</b>	<b>126</b>	<b>156</b>	<b>153</b>

Source: Nunavut Tunngavik Incorporated

### 6.2.3 Analysis

The Project continued to expand the market for consumer goods and services across the LSA in 2017. Considerable amounts were spent both on Baffinland's LSA employee payroll (approximately \$7.06 million) and contracting with Inuit-owned businesses and joint ventures (approximately \$387.2 million) in 2017. These new contributions to the Nunavut economy are a direct result of Project development and represent a positive effect. This is because increased income from direct and indirect Project employment provides LSA residents with a greater capacity to purchase local goods and services. Increased income can also stimulate further business growth (e.g. existing businesses may expand to meet increased consumer demand or new businesses may emerge, wealth generated through employment may increase an individual's ability to start new businesses).

The number of active Inuit firms registered in the LSA communities also increased between 2013 and 2017, which suggests a potential positive Project effect. Anecdotal evidence shared with Baffinland by its suppliers indicates at least some new Inuit firms were registered because of Project-related contracting opportunities. However, it's acknowledged that many factors may contribute to the decision to start (or not start) a new business.

As predicted in the FEIS, the positive effect of the Project on creating an expanded market for consumer goods and services across the LSA is confirmed for this reporting period. It is possible that continued monitoring may uncover additional positive Project effects (e.g. it may take an extended period for some businesses to respond to emerging commercial opportunities); this matter will be assessed further in future reports.

## 7. HUMAN HEALTH AND WELL-BEING

Six residual effects for the VSEC Human Health and Well-Being were assessed in the FEIS. These include changes in parenting, household income and food security, transport of substances through Project sites, affordability of substances, attitudes toward substances and addictions, and absence from the community during work rotation. These are reviewed more fully below, in addition to information on seven other topics requested through the Project Certificate.

### 7.1 CHANGES IN PARENTING

#### 7.1.1 Predicted Effect and Mitigation Measures

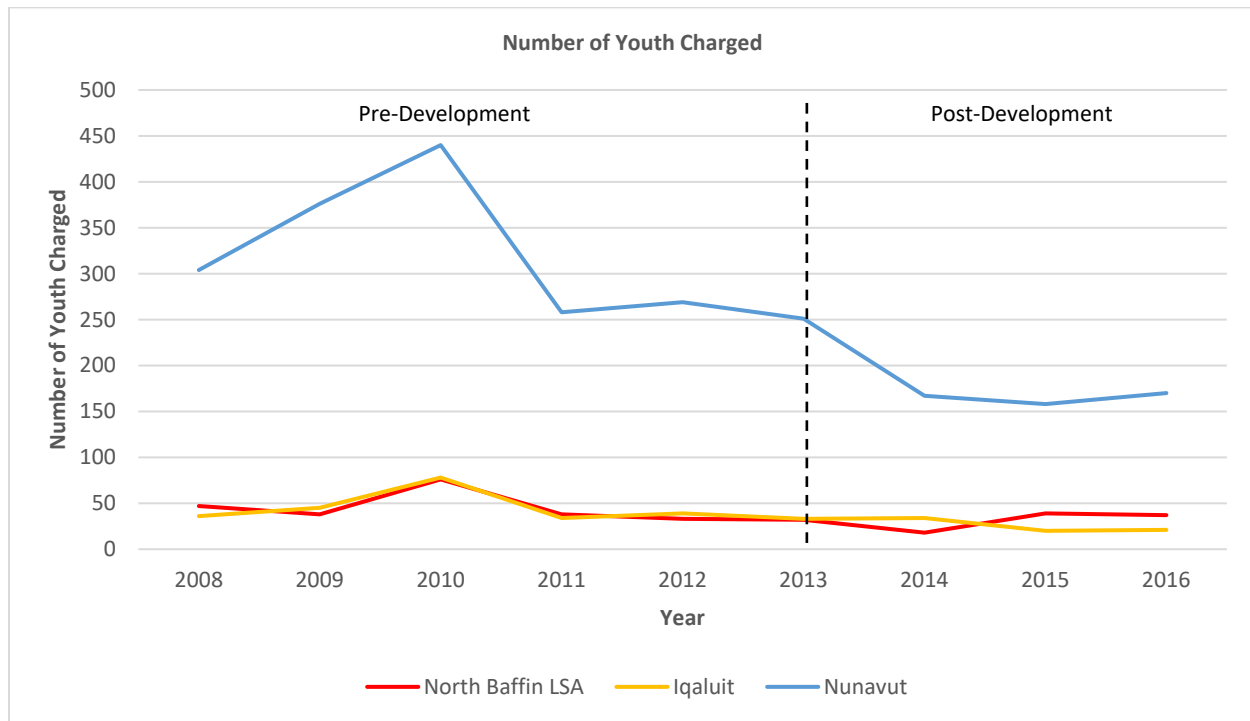
The FEIS predicted the Project would have a positive effect on parenting (particularly as it applies to well-being of children) in the LSA communities (e.g. from increased confidence and financial independence gained through employment, improved mental well-being from having a job and income). The FEIS also predicted the Project could have some negative effects on parenting, but these would be of a non-significant nature. To help mitigate potential adverse effects from fly-in/fly-out employment, Baffinland has provided a predictable rotational schedule, meaningful local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. to familiarize workers and their families with the fly-in/fly-out lifestyle), has implemented an EFAP for permanent employees and their dependents, and contributes to the INPK fund through the IIBA negotiated with QIA (which provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness).

#### 7.1.2 Indicator Data

##### *Number of Youth Charged*

The number of youth charged is a useful indicator of parenting performance in the LSA communities. This is because children with stable homes and effective parents can be expected to have fewer encounters with the law. 2016 was the most recent year data on the number of youth charged were available from Statistics Canada (2017a). In the North Baffin LSA in 2016, Igloodik had the highest number of youth charged (20), while Clyde River had the fewest (0). The average number of youth charged in the North Baffin LSA communities in 2016 was 7.4. Iqaluit had 21 youth charged in 2016 and Nunavut had 170. Compared to the previous year (2015), there has been a decrease in the number youth charged in the North Baffin LSA communities (by 2) but increases in Iqaluit (by 1) and Nunavut (by 12). Compared to pre-development period averages, there have been decreasing trends in the average number of youth charged in the North Baffin LSA (from 46 to 32) and Iqaluit (from 46 to 27), and Nunavut (from 329 to 187) in the post-development period. Figure 7-1 displays the number of youth charged from 2008 to 2016.

**Figure 7-1: Number of youth charged (2008 to 2016)**



Source: Statistics Canada (2017a)

### 7.1.3 Analysis

While there have been decreasing trends in the number of youth charged in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, crime rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and youth crime rates, if any, may only come to light with the analysis of additional annual data. Regardless, there are positive indications the Project is contributing to the enhanced well-being of children, by providing LSA residents (and parents) with opportunities to obtain meaningful employment and incomes. These opportunities can help reduce the various family stresses and uncertainties associated with un- and under-employment. Baffinland has also implemented an EFAP for permanent employees and their dependents who may require family-related or other forms of personal assistance.

## 7.2 HOUSEHOLD INCOME AND FOOD SECURITY

### 7.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on increased household income and food security (particularly as they apply to well-being of children) in the LSA. To help mitigate potential adverse effects, Baffinland has provided meaningful local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. which has included a financial management module), and contributes to the INPK fund through the IIBA negotiated with the QIA.

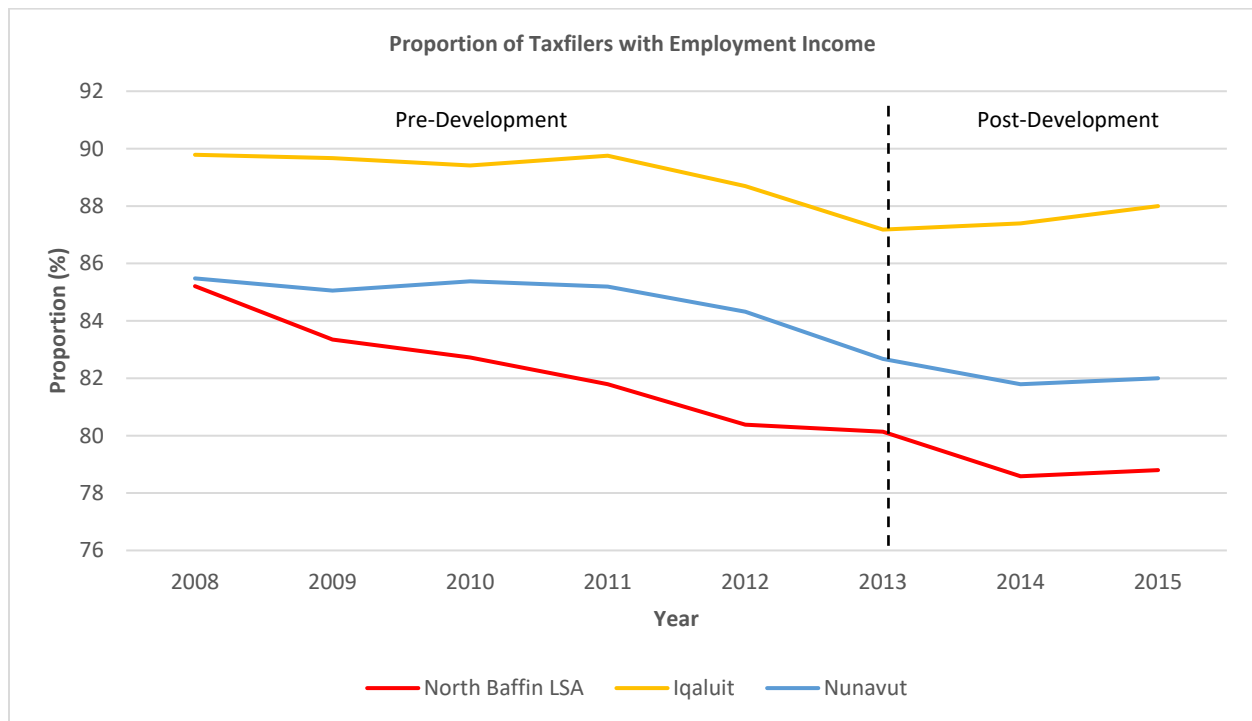
### 7.2.2 Indicator Data

#### *Proportion of Taxfilers with Employment Income and Median Employment Income*

Employment income indicators are useful for tracking household financial performance in the LSA communities. 2015 was the most recent year data on the proportion of taxfilers with employment income were available from the Nunavut Bureau of Statistics (2017d). In the North Baffin LSA in 2015, Arctic Bay had the highest proportion of taxfilers with employment income (82%), while Hall Beach had the lowest (76%). The proportion of taxfilers with employment income in Iqaluit in 2015 was 88%, which was higher than the North Baffin LSA community average (79%) and Nunavut average (82%). Compared to the previous year (2014), there has been no change in the average proportion of taxfilers with employment income in the North Baffin LSA (79%) and Nunavut (82%), while Iqaluit has seen an increase (by 1%). Compared to pre-development period averages, there have been decreasing trends in the average proportion of taxfilers with employment income in the North Baffin LSA (from 83% to 79%), Iqaluit (from 89% to 88%), and Nunavut (from 85% to 82%) in the post-development period. Figure 7-2 displays the proportion of taxfilers with employment income from 2008 to 2015.

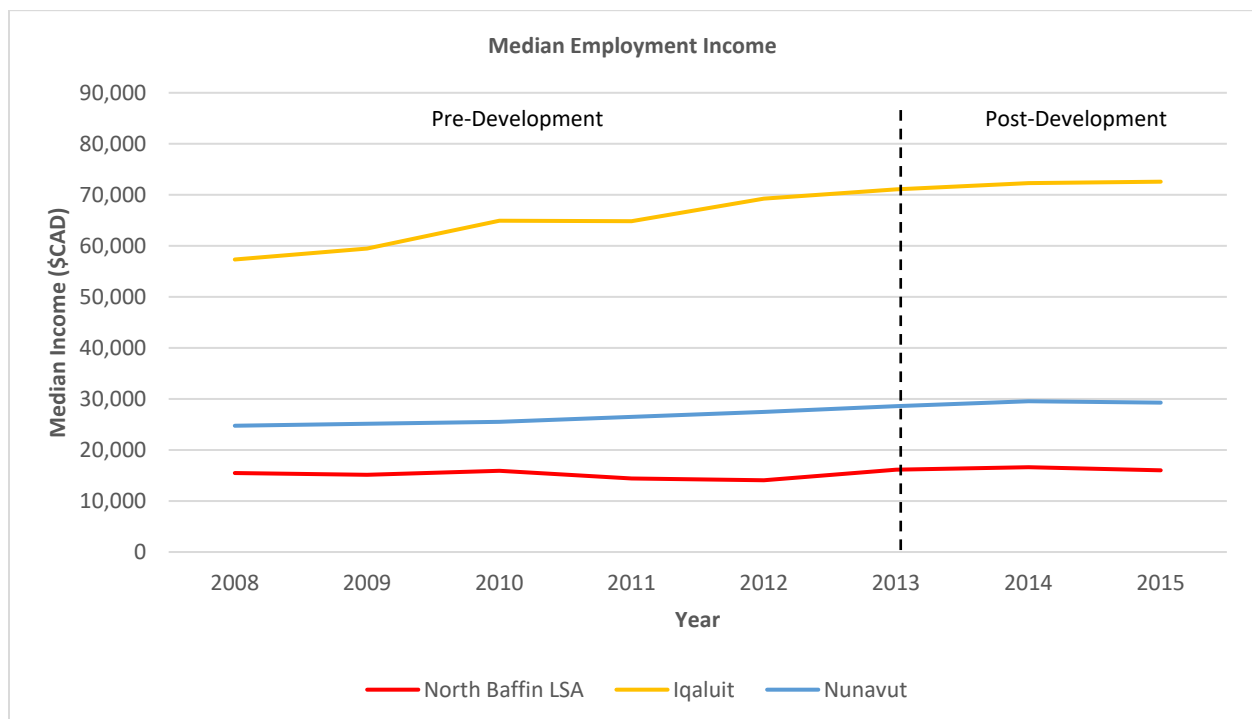
Likewise, 2015 was the most recent year data on median employment income were available from the Nunavut Bureau of Statistics (2017d). In the North Baffin LSA in 2015, Hall Beach had the highest median employment income (\$19,420), while Clyde River had the lowest (\$14,010). Iqaluit's median employment income in 2015 was \$72,580 and was significantly higher than the North Baffin LSA community average (\$15,998) and Nunavut average (\$29,270). Compared to the previous year (2014), there have been decreases in median employment income in the North Baffin LSA (by \$622) and Nunavut (by \$280), but an increase in Iqaluit (by \$270). Compared to pre-development period averages, there have been increasing trends in average median employment income in the North Baffin LSA (from \$15,007 to \$16,251), Iqaluit (from \$63,166 to \$71,990), and Nunavut (from \$25,876 to \$29,133) in the post-development period. Figure 7-3 displays median employment income by community and territory from 2008 to 2015.

**Figure 7-2: Proportion of taxfilers with employment income (2008 to 2015)**



Source: Nunavut Bureau of Statistics (2017d)

**Figure 7-3: Median employment income (2008 to 2015)**

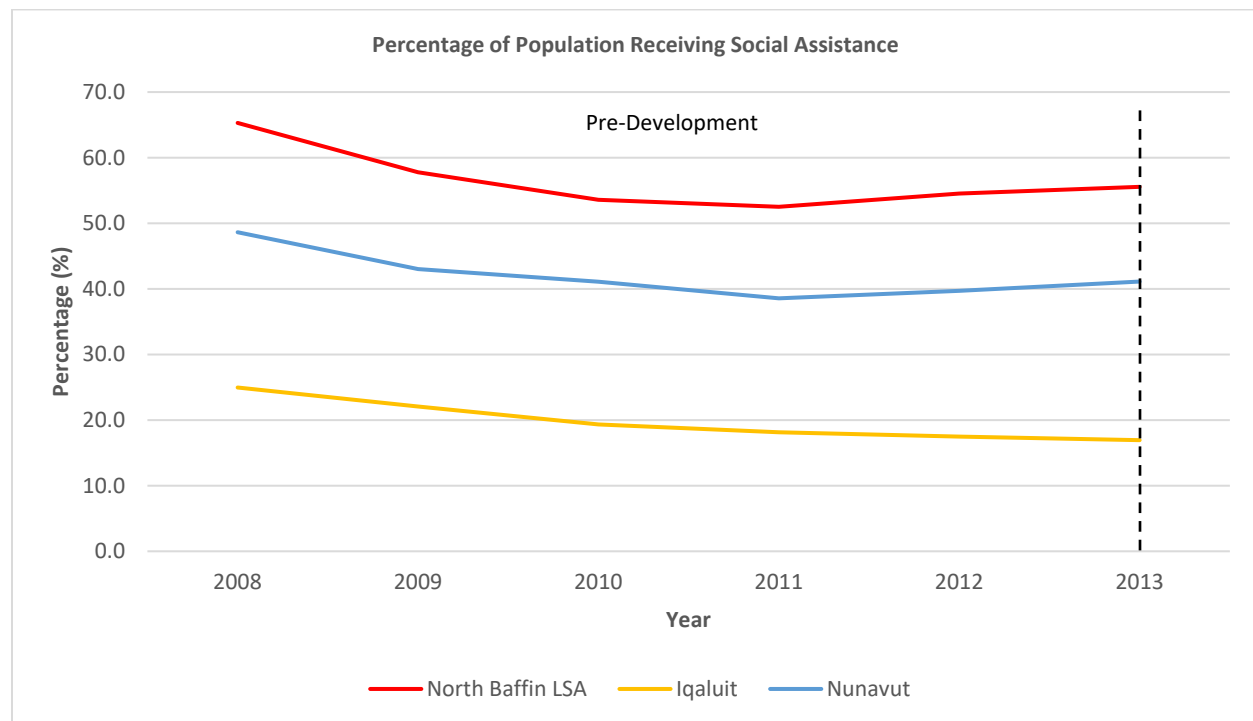


Source: Nunavut Bureau of Statistics (2017d)

### Percentage of Population Receiving Social Assistance

The percentage of the population receiving social assistance is also a useful indicator of household financial performance. 2013 was the most recent year data on the percentage of social assistance recipients were available from the Nunavut Bureau of Statistics (2014). In the North Baffin LSA in 2013, Clyde River had the highest percentage of population receiving social assistance (65.3%), while Hall Beach had the lowest (44.6%). The percentage of individuals receiving social assistance in Iqaluit in 2013 was 16.9%, which was significantly lower than the North Baffin LSA community average (55.6%) and Nunavut average (41.1%). Compared to the previous year (2012), there has been an increase in the percentage of the population receiving social assistance in the North Baffin LSA (by 1.1%) and Nunavut (by 1.4%), but a decrease in Iqaluit (by 0.6%). Compared to pre-development period averages, there have been decreasing trends in the average percentage of the population receiving social assistance in the North Baffin LSA (from 56.7% to 55.6%), Iqaluit (from 20.4% to 16.9%), and Nunavut (from 42.2% to 41.1%) in the post-development period. Figure 7-4 displays the percentage of the population receiving social assistance from 2008 to 2013.

**Figure 7-4: Percentage of population receiving social assistance (2008 to 2013)**



Source: Nunavut Bureau of Statistics (2014)

#### 7.2.3 Analysis

There have been decreasing trends in the proportion of taxfilers with employment income in the North Baffin LSA and Iqaluit in the post-development period. However, a decreasing trend was also noted prior to Project development in the North Baffin LSA. While Iqaluit went from no change (during the pre-development period) to a decreasing trend (during the post-development period), a comparable situation was also noted across Nunavut. This implies factors other than the Project are likely driving these trends.



While there have been increasing trends in median employment income in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends.

Similarly, while there have been decreasing trends in the percentage of the population receiving social assistance in the post-development period in the North Baffin LSA and Iqaluit these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends.

As Project construction only began in 2013, there is minimal post-development data currently available. Employment income and social assistance rates can also be influenced by many socio-economic factors. Direct correlations between the Project and employment income and social assistance rates, if any, may only come to light with the analysis of additional annual data. There is currently no indication the FEIS prediction is not being met. In fact, there are positive indications the Project continues to improve household income and food security in the LSA. This has occurred by providing LSA residents with meaningful employment opportunities and through contributions to community wellness initiatives. Employment income facilitates the purchase of store bought food and other family goods, while also providing a means to participate in harvesting if desired. Some additional discussion on food security is provided in Section 10.1.

### 7.3 TRANSPORT OF SUBSTANCES THROUGH PROJECT SITES

#### 7.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could increase availability of substances such as alcohol and illegal drugs in the North Baffin LSA due to their possible transportation through Project sites. Mitigation developed by Baffinland includes a no drugs/no alcohol policy on site and baggage searches for all employees and contractors arriving at site.

#### 7.3.2 Indicator Data

##### *Number of Drug and Alcohol Related Contraband Infractions at Project Sites*

The number of drug and alcohol related contraband infractions at Project sites is a useful indicator of the degree to which the transport of substances may be occurring at the Project. Table 7-1 displays the total number of drug and alcohol related contraband infractions at Project sites from 2013 to 2017. This includes confiscated drugs, alcohol, or related paraphernalia. In 2017, 15 drug and alcohol-related contraband infractions occurred at Project sites amongst employees and contractors. This was 4 infractions higher than in 2016.

**Table 7-1: Number of drug and alcohol related contraband infractions at Project sites (2013 to 2017)**

Number of Drug and Alcohol Related Contraband Infractions at Project Sites	
Year	Total
2013	5
2014	12
2015	2
2016	11
2017	15

Source: Baffinland. 2013 records are for a partial year.

### 7.3.3 Analysis

While all contraband infractions are of concern and taken seriously by Baffinland, the infractions that occurred in 2017 represent only a small number of individuals from the Project workforce. All individuals who do not comply with Baffinland's no drugs/no alcohol policy are immediately removed from site and disciplinary action (up to and including termination) is commenced. This management response supports Baffinland's goal of 'Safety First, Always' while also preventing further transport of contraband substances through Project sites.

## 7.4 AFFORDABILITY OF SUBSTANCES / ATTITUDES TOWARD SUBSTANCES AND ADDICTIONS

### 7.4.1 Predicted Effect and Mitigation Measures

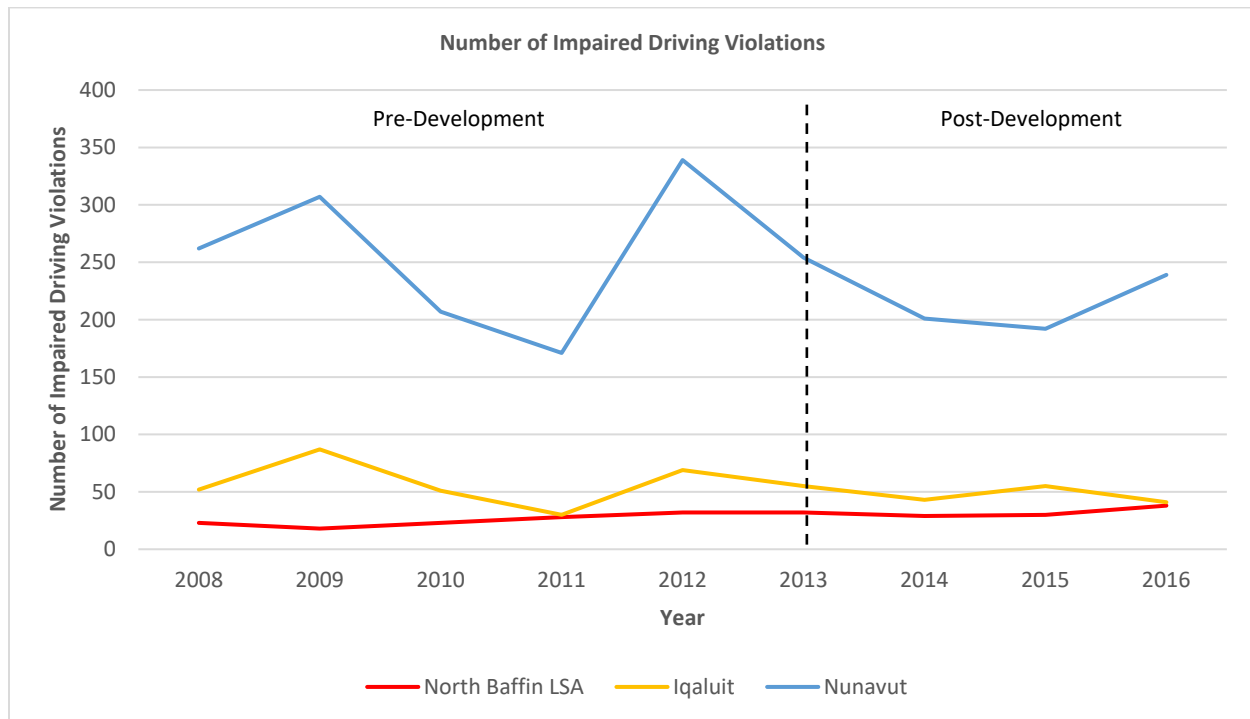
The FEIS predicted increased income from employment at the Project could increase the ability of LSA residents to afford substances such as alcohol and illegal drugs. However, the FEIS also predicted the Project could improve attitudes toward substances and addictions in the LSA (i.e. by providing positive incentives for individuals to reduce substance abuse). Mitigation developed by Baffinland includes a no drugs/no alcohol policy and baggage searches for all employees and contractors arriving at site. Baffinland has also implemented an EFAP for permanent employees and their dependents and contributes to the INPK community wellness fund through the IIBA negotiated with QIA.

### 7.4.2 Indicator Data

#### *Number of Impaired Driving Violations*

The number of impaired driving violations in the LSA provides some insight into whether rates of alcohol abuse are changing. 2016 was the most recent year data on the number of impaired driving violations were available from the Nunavut Bureau of Statistics (2017e). In the North Baffin LSA in 2016, Pond Inlet had the highest number of impaired driving violations (13), while Hall Beach had the fewest (2). The average number of impaired driving violations in the North Baffin LSA communities in 2016 was 7.6. Iqaluit had 41 impaired driving violations in 2016 and Nunavut had 239. Compared to the previous year (2015), there has been an increase in the total number of impaired driving violations in the North Baffin LSA communities (by 8) and Nunavut (by 47), and a decrease in Iqaluit (by 14). Compared to pre-development period averages, there has been an increasing trend in the average number of impaired driving violations in the North Baffin LSA (from 25 to 32) and decreasing trends in Iqaluit (from 58 to 49) and Nunavut (from 257 to 222) in the post-development period. Figure 7-5 displays the number of number of impaired driving violations from 2008 to 2016.

**Figure 7-5: Number of impaired driving violations (2008 to 2016)**

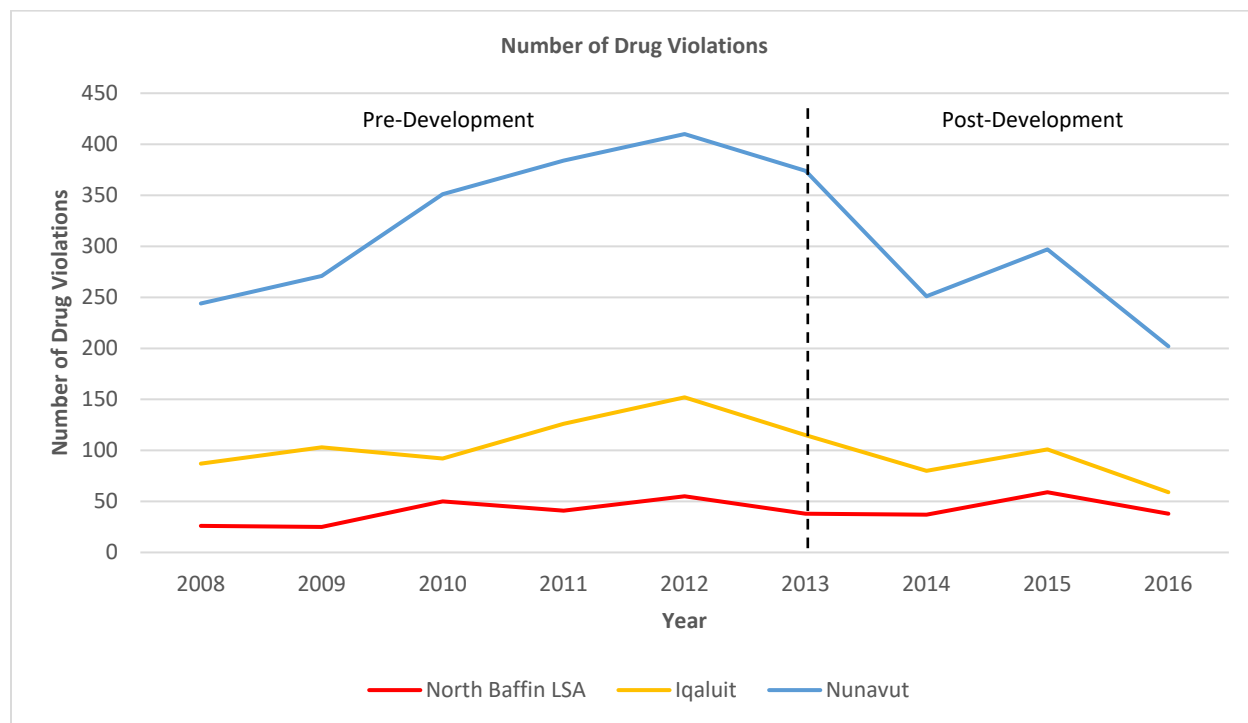


Source: Nunavut Bureau of Statistics (2017e)

### *Number of Drug Violations*

The number of drug violations in the LSA provides some insight into whether rates of drug abuse are changing. 2016 was the most recent year data on the number of drug violations by community were available from the Nunavut Bureau of Statistics (2017e). In the North Baffin LSA in 2016, Igloolik had the highest number of drug violations (19), while Hall Beach had the fewest (2). The average number of drug violations in the North Baffin LSA communities in 2015 was 7.6. Iqaluit had 59 drug violations in 2016 and Nunavut had 202. Compared to the previous year (2015), there has been a decrease in the number of drug violations in the North Baffin LSA communities (by 21), Iqaluit (by 42), and Nunavut (by 95). Compared to pre-development period averages, there has been an increasing trend in the average number of drug violations in the North Baffin LSA (from 39 to 43) and decreasing trends in Iqaluit (from 112 to 89) and Nunavut (from 332 to 281) in the post-development period. Figure 7-6 displays the number of number of drug violations from 2008 to 2016.

**Figure 7-6: Number of drug violations (2008 to 2016)**



Source: Nunavut Bureau of Statistics (2017e)

#### 7.4.3 Analysis

There has been an increasing trend in the number of impaired driving violations in the North Baffin LSA in the post-development period, which was also evident prior to Project development. Conversely, there has been a decreasing trend in Iqaluit in the post-development period, which was not evident prior to Project development (it was previously increasing). A comparable situation has been noted across Nunavut. Reasons for the lack of a similar trend reversal in the North Baffin LSA are currently unknown.

There has been an increasing trend in the number of drug violations in the North Baffin LSA in the post-development period, which was also evident prior to Project development. Conversely, there has been a decreasing trend in Iqaluit in the post-development period, which was not evident prior to Project development (it was previously increasing). A comparable situation has been noted across Nunavut. Reasons for the lack of a similar trend reversal in the North Baffin LSA are currently unknown.

As Project construction only began in 2013, there is minimal post-development data currently available. Drug and alcohol-related violations can also be influenced by many socio-economic factors. Direct correlations between the Project and drug and alcohol violations, if any, may only come to light with the analysis of additional annual data. However, there are positive indications the Project continues to improve attitudes toward substances and addictions in the LSA, by providing LSA residents with meaningful employment opportunities within a drug and alcohol-free environment. Baffinland also provides access to an EFAP for permanent employees and their dependents who may require assistance with drug and alcohol-related issues.

## 7.5 ABSENCE FROM THE COMMUNITY DURING WORK ROTATION

### 7.5.1 Predicted Effect and Mitigation Measures

The FEIS predicted the absence of workers from communities during their work rotations may lead to some moderate negative effects on community processes (e.g. local coaching, politics, and social organizations) in the LSA. However, it was also predicted that organizations and activities would be able to adapt and carry on their functions in light of these effects. Mitigation developed by Baffinland includes a short (two week in / two week out) rotation that allows employees to spend considerable time in their home communities. Baffinland also contributes to the INPK community wellness fund through its IIBA.

### 7.5.2 Indicator Data

#### *Absence from the Community During Work Rotation*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. General stakeholder comments on this topic were expressed during the 2017 QSEMC meeting in Arctic Bay. For example, some challenges were noted to arise for rotational workers with children and some turnover was noted to occur due to reasons including lack of childcare, homesickness, racism, and 12-hour shifts being too long. However, specific effects from worker absence on community processes were not noted (SEMCs 2017b). Some comments were also recorded about modifying the length of employment rotations during Baffinland's 2017 community engagement activities. Absence from the community does not appear to be an issue for at least some individuals:

*Two weeks on/two weeks off rotation, I don't agree with because I would prefer to stay on site, if I'm able to stay there, or longer time. I don't want to go back and forth. [2017 IIBA Annual Project Review Forum Participant]*

*...instead of having two weeks off, to have one week off... right now it's two weeks on, two weeks off. But if – possible for you guys to consider two weeks on and then one week off, because when they've been working for two weeks and then come home for two weeks, that gives them time to get lazy to get back to work? [2017 IIBA Annual Project Review Forum Participant]*

### 7.5.3 Analysis

The potential for negative effects to arise on community processes as a result of workers being absent during their work rotations is acknowledged. However, the Project's overall effect on this indicator, if any, remains unclear. Baffinland will continue to use a short rotation (i.e. two week in/two week out) so that workers are not required to be away from their communities for extended periods of time. Pre-employment training programs will also review strategies for successful rotational work with prospective employees, so they can come better prepared to deal with challenges that may arise. Furthermore, Baffinland's recently finalized IHRS notes the Company will consider adopting alternative rotation schedules that are better aligned with familial and community activities. The INPK fund that

Baffinland contributes to also continues to provide support to various community wellness initiatives across the Qikiqtaaluk Region that may assist in this regard. Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

## 7.6 PREVALENCE OF GAMBLING ISSUES

### 7.6.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of gambling issues was presented in the FEIS. However, Project Certificate term and condition no. 154 states:

*The Proponent shall work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate.*

### 7.6.2 Indicator Data

#### *Prevalence of Gambling Issues*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Gambling issues are an acknowledged concern in the LSA and some stakeholders worry that Project incomes may encourage gambling activities. Some comments on this topic have also been made previously by Project stakeholders (e.g. JPCSL 2017). However, no comments related to the Project and the prevalence of gambling issues were recorded during Baffinland's 2017 community engagement activities or during the 2017 QSEMC meeting.

### 7.6.3 Analysis

Gambling issues remain a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Gambling is a complex issue that can be influenced by several factors and only a limited number of comments on this topic have been recorded through the QSEMC process and Baffinland's community engagement program. Appropriate statistical data is also currently unavailable. It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Gambling-related or other forms of personal assistance can be obtained through these programs, as needed. Considering the available information and mitigation measures in place, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

## 7.7 PREVALENCE OF FAMILY VIOLENCE

### 7.7.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of family violence was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

### 7.7.2 Indicator Data

#### *Prevalence of Family Violence*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. No comments related to the Project and the prevalence of family violence were recorded during Baffinland's 2017 community engagement activities or during the 2017 QSEMC meeting. However, some data on this topic are available at the territorial level. Burczycka and Conroy (2017) note there were 924 incidents of police-reported family violence in Nunavut in 2015, which equates to a rate of 2,504 incidents per 100,000 population. This is substantially higher than the Canadian rate of 241 incidents per 100,000 population.

### 7.7.3 Analysis

Family violence remains a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Family violence is a complex issue that can be influenced by several factors and available statistical data is limited (at the territorial scale only). It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Family-related and other forms of personal assistance can be obtained through these programs, as needed. Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

## 7.8 PREVALENCE OF MARITAL PROBLEMS

### 7.8.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of marital problems was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

### 7.8.2 Indicator Data

#### *Prevalence of Marital Problems*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

Comments on this topic have previously been made by Project stakeholders (e.g. JPCSL 2017). In some cases, Project employment was believed to play a role in marital problems that had developed (e.g. infidelity and/or breakups initiated by the worker or individual at home). No comments related to the Project and the prevalence of marital problems were recorded at the 2017 QSEMC meeting. However, some comments on this topic were recorded during Baffinland's 2017 community engagement activities:

*...as grandmothers and mothers, we're proud of our children when they go – when they are hired. They leave for a week or two. But sometimes they return early, come back early. But we heard that – why our spouse when they – why they don't follow us when we go to work. It turned out that there was a problem with the couple. [2017 IIBA Annual Project Review Forum Participant]*

*So those kinds of problems – and QIL, if you have a spouse – a couple, let's say, the other one worked for Baffinland, the other one for QIL, the one working for Baffinland... or they move them around. But QIL, if they're a couple, will not move them. I don't know if there's a policy to separate the couple in the worksite. Yes, it really needs to be reviewed. [2017 IIBA Annual Project Review Forum Participant]*

Federal Census data on marital status are also available (see Table 7-2). Between 2011 and 2016, for example, the percentage of individuals in the North Baffin LSA who were married or living common law decreased (from 53.9% to 53.3%), while those who were separated or divorced increased (from 2.8% to 3.7%). In Iqaluit, the percentage of individuals who were married or living common law increased (from 53.3% to 53.8%), while those who were separated or divorced decreased (from 5.9% to 5.4%). In Nunavut, the percentage of individuals who were married or living common law decreased (from 53.4% to 53.2%), while those who were separated or divorced remained the same (at 3.5%).

**Table 7-2: Marital status of individuals 15 years and over (2011 and 2016)**

Location	Marital Status of Individuals 15 Years and Over			
	2011		2016	
	% Married or Living with a Common-Law Partner	% Separated or Divorced	% Married or Living with a Common-Law Partner	% Separated or Divorced
North Baffin LSA	53.9%	2.8%	53.3%	3.7%
Iqaluit	53.3%	5.9%	53.8%	5.4%
Nunavut	53.4%	3.5%	53.2%	3.5%
Canada	57.7%	8.6%	57.6%	8.6%

Source: Statistics Canada (2012a, b, c, d, e, f, g); Statistics Canada (2017c, d, e, f, g, h, i)

### 7.8.3 Analysis

Marital problems remain a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Marital problems are a complex issue that can be influenced by several factors and only a limited number of comments on this topic have been recorded through the QSEMC process and Baffinland's community engagement program. Available statistical data is also limited (for limited time periods only). While the percentage of individuals who are separated or divorced increased in the North Baffin LSA between 2011 and 2016, this percentage (conversely) decreased in Iqaluit over the same period for unknown reasons. The five-year data gap between federal



censuses also makes explaining these differences difficult. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and marital problems, if any, may only come to light with the analysis of additional data.

It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Family-related or other forms of personal assistance can be obtained through these programs, as needed. Considering the available information and mitigation measures in place, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

## **7.9 RATES OF SEXUALLY TRANSMITTED INFECTIONS AND OTHER COMMUNICABLE DISEASES**

### **7.9.1 Project Certificate Term or Condition**

No specific prediction related to rates of sexually transmitted infections and other communicable diseases was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

### **7.9.2 Indicator Data**

#### *Percent of Health Centre Visits Related to Infectious Diseases*

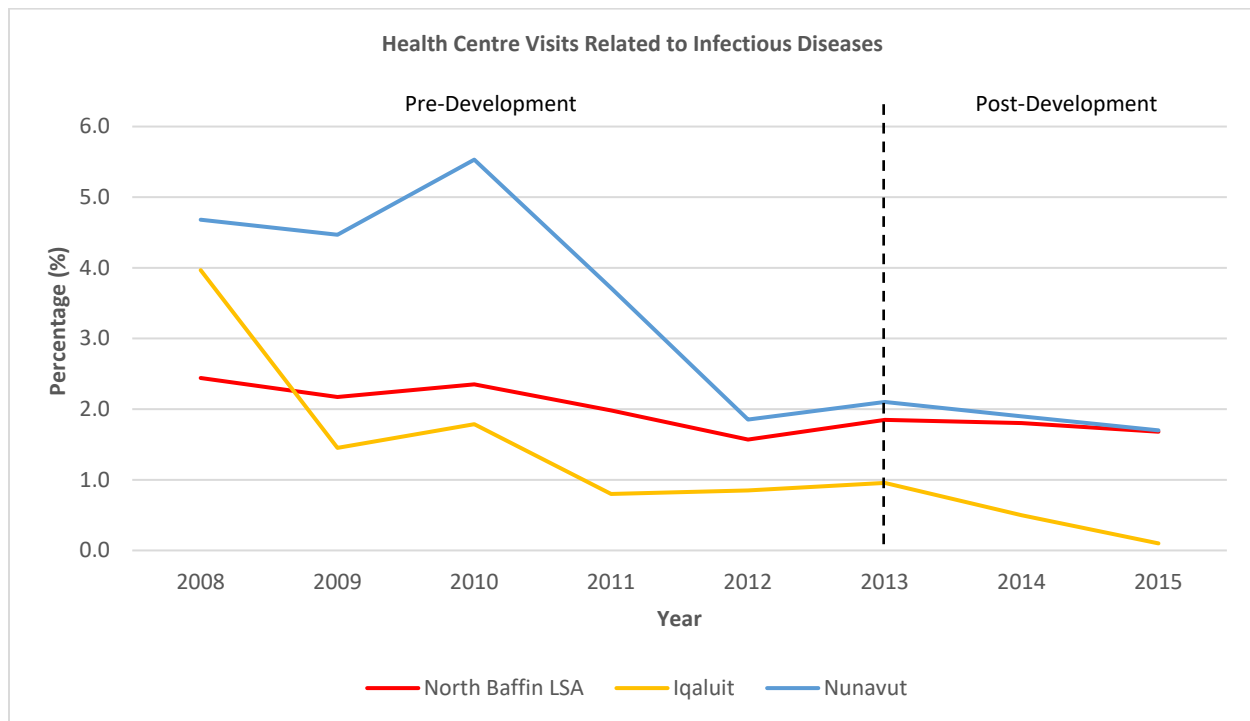
Data on community health centre visits can be used to identify whether health issues are increasing or decreasing in a community. Information on how the Project may affect rates of sexually transmitted infections and other communicable diseases in the LSA has been specifically requested in the Project Certificate. As such, data on the percentage of health centre visits by the diagnostic group 'infectious diseases' is a useful indicator to track.

2015 was the most recent year data on the percentage of health centre visits related to infectious diseases were available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Igloolik had the highest percentage of health centre visits related to infectious diseases (2.2%), while Clyde River had the lowest (0.7%). The average percentage of health centre visits related to infectious diseases in the North Baffin LSA communities in 2015 was 1.7%. Iqaluit had 0.1% of health centre visits related to infectious diseases in 2015, while Nunavut had 1.7%.<sup>16</sup> Compared to the previous year (2014), there was a decrease in the percentage of health centre visits related to infectious diseases in the North Baffin LSA communities (by 0.1%), Iqaluit (by 0.4%), and Nunavut (by 0.2%). Compared to pre-development period averages, there have been decreasing trends in the average percentage of health centre visits related to infectious diseases in the North Baffin LSA (from 2.1 to 1.8), Iqaluit (from 1.8 to 0.5), and Nunavut (from 4.0 to 1.9) in the post-development period. Figure 7-7 displays the percentage of health centre visits related to infectious diseases from 2008 to 2015.

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<sup>16</sup> The Nunavut Bureau of Statistics (2017f) notes that only visits to Iqaluit's community health centre are reported on, while visits to Iqaluit's hospital are not.

**Figure 7-7: Percent of health centre visits related to infectious diseases (2008 to 2015)**



Source: Nunavut Bureau of Statistics (2017f)

### 7.9.3 Analysis

While there have been decreasing trends in the percentage of health centre visits related to infectious diseases in the North Baffin LSA and Iqaluit in the post-development period, decreasing trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, infectious disease rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and infectious disease rates, if any, may only come to light with the analysis of additional annual data. However, it is worth noting the Project continues to provide all workers with regular access to a site medic, to whom they can confidentially visit with health-related (including sexual health) issues.

## 7.10 RATES OF TEENAGE PREGNANCY

### 7.10.1 Project Certificate Term or Condition

No specific prediction related to teenage pregnancy rates was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

### 7.10.2 Indicator Data

#### *Rates of Teenage Pregnancy*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. No comments related to the Project and teenage pregnancy rates were recorded during Baffinland's 2017 community engagement program or during the 2017 QSEMC.

However, some data on this topic are available at the territorial level. Statistics Canada (2017j) notes 17.6% of all Nunavut live births in 2014 (the most recent year data were available) were to mothers under the age of 20. By comparison, only 2.8% of all Canadian live births in 2014 were to mothers under the age of 20. Boulet and Badets (2017) provide additional information on the topic of early motherhood (i.e. having become a mother before the age of 20) among Inuit, off-reserve First Nations, and Métis women, derived primarily from the 2012 Aboriginal Peoples Survey. Boulet and Badets (2017: 2) note:

*"...taking care of a child as a teenager may represent a challenge given the responsibilities associated with motherhood, which can hinder a young woman's progress towards earning a high school diploma and possibly pursuing postsecondary education... among women aged 18 to 44 years, 38% of Inuit women...dropped out of high school due to pregnancy or to take care of a child. Given their lower education level, these young women may be at greater risk for unemployment or dependence on social assistance."*

Boulet and Badets (2017) also note 45% of Inuit women, 28% of First Nations women living off reserve, and 20% of Métis women (aged 20 to 44), became mothers before the age of 20; this compared to 6% of non-Indigenous women in the same age group. Likewise, Indigenous early mothers were less likely to have a high school diploma; among Inuit women, 40% of those who became mothers in their teenage years had a high school diploma, compared with 59% of Inuit women who had children later in life (Boulet and Badets 2017).

### 7.10.3 Analysis

Teenage pregnancy remains a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Teenage pregnancy is a complex issue that can be influenced by several factors and available statistical data is limited (at the territorial scale, for the entire Inuit population, and/or for limited time periods only). Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

## 7.11 CRIME

### 7.11.1 Project Certificate Term or Condition

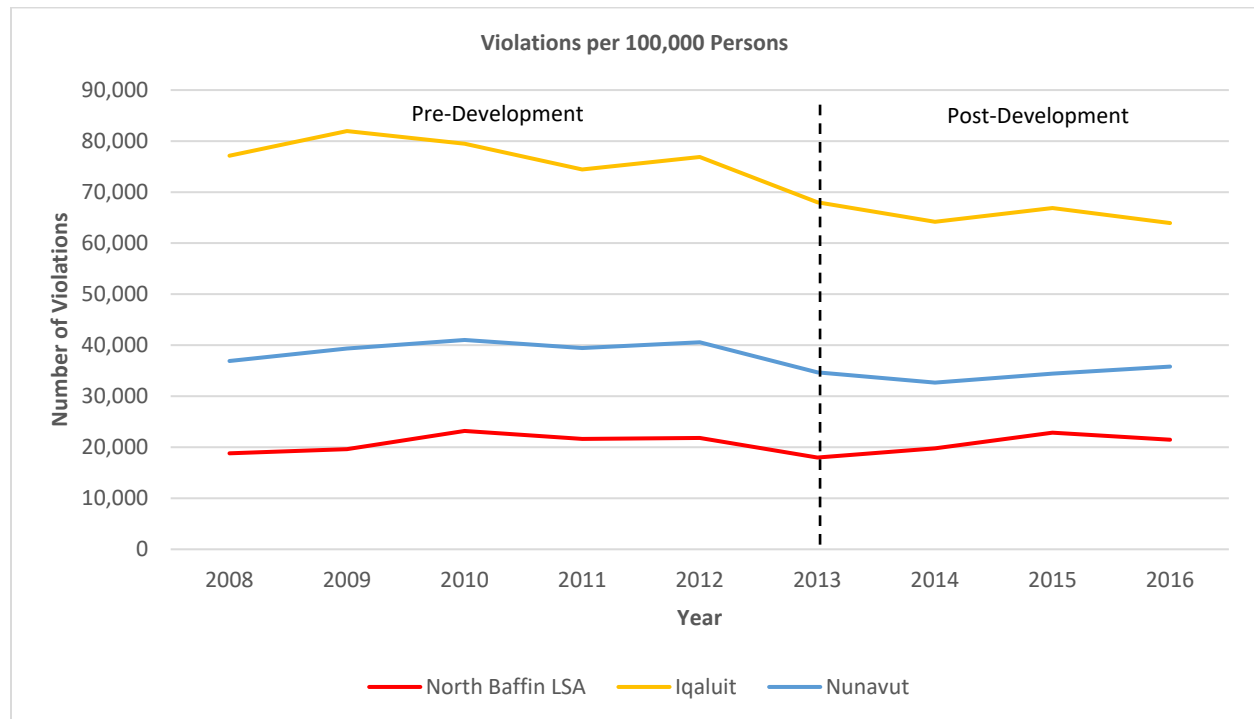
No specific prediction related to crime was presented in the FEIS. However, Project Certificate term and condition no. 154 states other indicators should be monitored "as deemed appropriate". Members of the SEMWG have requested community crime rate data be included in Baffinland's socio-economic monitoring program.

### 7.11.2 Indicator Data

#### Crime Rate

Data on community crime rates are useful for providing an indication of whether crime is increasing or decreasing. 2016 was the most recent year crime rate data were available from the Nunavut Bureau of Statistics (2017g). In the North Baffin LSA in 2016, Pond Inlet had the highest number of violations per 100,000 persons (27,841), while Hall Beach had the fewest (8,787). Iqaluit had 63,939 violations per 100,000 persons in 2016, which was significantly higher than the North Baffin LSA community average (21,462) and for Nunavut (35,791). Compared to the previous year (2015), there was a decrease in the number of violations per 100,000 persons in the North Baffin LSA communities (by 1,385) and Iqaluit (by 2,933), but an increase in Nunavut (by 1,350). Compared to pre-development period averages, there have been decreasing trends in average crime rates in the North Baffin LSA (from 21,016 to 20,516), Iqaluit (from 77,983 to 65,750), and Nunavut (from 39,459 to 34,391) in the post-development period. Figure 7-8 displays the number of violations per 100,000 persons from 2008 to 2016.

**Figure 7-8: Number of violations per 100,000 persons (2008 to 2016)**



Source: Nunavut Bureau of Statistics (2017g)

### 7.11.3 Analysis

There have been decreasing trends in crime rates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, crime rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data

currently available. Correlations between the Project and crime rates, if any, may only come to light with the analysis of additional annual data.

## 7.12 EMPLOYEE AND FAMILY ASSISTANCE PROGRAM

### 7.12.1 Project Certificate Term or Condition

No specific prediction related to the Employee and Family Assistance Program (EFAP) was presented in the FEIS. However, Project Certificate term and condition no. 154 states other indicators should be monitored “as deemed appropriate”. Members of the SEMWG have requested data on the number of times Baffinland’s EFAP is accessed annually be included in Baffinland’s socio-economic monitoring program.

### 7.12.2 Indicator Data

#### *Number of Times Baffinland’s EFAP is Accessed*

Baffinland’s benefit plan includes an EFAP, which offers all permanent employees and their dependents professional short-term counselling on an as-needed basis. Baffinland implemented its EFAP in 2015. The EFAP provider, Homewood Health Solutions (Homewood), provides access to a network of certified professionals who deliver personal and mental health and financial wellness programs. The EFAP is a free and confidential program. Homewood offers counselling and support related to a wide variety of health programs such as depression, addictions, family, and work-life balance. The EFAP provides both telephone and online services.

In 2017 there were a total of 38 EFAP cases, whose distribution in Canada is summarized in Table 7-3. This is 20 cases more than in 2016. As shown in Table 7-3, employees and their families who reside in Nunavut accounted for 31.6% of annual EFAP use in 2017.

**Table 7-3: Number of times Baffinland’s EFAP is accessed annually (2015 to 2017)**

Number of Times Baffinland’s Employee and Family Assistance Program (EFAP) is Accessed Annually			
Year	Nunavut	Other Locations	Total
2015	7	12	19
2016	10	8	18
2017	12	26	38

Source: Baffinland

Notes: Records are only available from 2015 onwards

### 7.12.3 Analysis

The EFAP continues to provide services to Baffinland’s permanent employees and their dependents on an as-needed basis. The number of times Baffinland’s EFAP was accessed were similar in 2015 and 2016 but grew in 2017. Likewise, employees and their families who reside in Nunavut have remained important users of the EFAP throughout this time. On-site Inuit Elders are also available for all Inuit Project employees to meet with and all employees have regular access to an on-site Project medic. This topic will continue to be monitored for emerging trends.

## 8. COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES

Two residual effects for the VSEC Community Infrastructure and Public Services were assessed in the FEIS. These include competition for skilled workers and labour force capacity. These are reviewed more fully below, in addition to information on two other topics requested through the Project Certificate.

### 8.1 COMPETITION FOR SKILLED WORKERS

#### 8.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could negatively affect the ability of hamlets to maintain their staff in the short-term, due to increased competition for skilled workers created because of the Project. Mitigation developed by Baffinland includes the provision of ongoing skills training to local residents, combined with work experience generated by the Project. These measures are expected to increase the pool of skilled workers in the local labour force in the medium- to long-term and negate any short-term, negative Project effects.

#### 8.1.2 Indicator Data

##### *Number of Project Employees and Contractors Who Left Positions in their Community*

Results from the 2018 Inuit Employee Survey presented in Section 4.4 indicate 22 individuals (or 31.4% of known survey responses) resigned from a previous job in order to take up employment with the Project. Of these individuals, 7 were casual/part-time positions and 15 were full-time positions.

#### 8.1.3 Analysis

Some Project employees and contractors have left positions in their communities to pursue employment at the Project. However, some of the community positions departed were of a casual/part-time nature, rather than full-time, permanent employment. At least some of the positions departed were likely also in communities outside the North Baffin LSA; for example, 5 of the 22 individuals in the 2018 Inuit Employee Survey who resigned from a previous job in order to take up employment with the Project listed their current community of residence as being outside of the North Baffin LSA. Community engagement conducted by Baffinland also continues to indicate a high demand for employment opportunities exists in the LSA. The recent *Mary River Experience – The First Three Years* report (i.e. BDSI 2016) provides some additional insight into this topic. For example, the report notes:

*“...the potential that the Mary River Project may draw employees away from other local employers seems evident.” [Page 37]*

However, the report describes the lack of full-time hamlet work (and other job opportunities) in many communities and important role the Project plays in filling this gap:

*“One current Mary River employee spoke about how permanent employment in the community seemed to be out of reach. As more and more people gained drivers’ licenses the practice of sharing hamlet work around a pool of people was leading to slimmer and slimmer employment duration.” [Page 35]*

*“There are no jobs in the hamlets... and if you do get a job it’s part-time, its casual, you can’t get social assistance... and you may get very little work... you might get 40 hours this week and next week you’ll only get 5 hours.” [Key Person Interviewed, Page 35]*

*“For some, the advantage of Mary River is that it offers jobs that simply are not available in the small, local economies of North Baffin LSA communities.” [Page 37]*

Ongoing training and experience generated by the Project, in addition to regular employee turnover (see Section 8.2), is expected to continue increasing the pool of skilled workers in the local labour force and negate any short-term, negative Project effects. However, this topic will continue to be monitored for emerging trends.

## 8.2 LABOUR FORCE CAPACITY

### 8.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could positively affect the ability of hamlets to maintain their staff in the medium- to long-term, due to increased labour force capacity created because of the Project. Mitigation developed by Baffinland includes the provision of ongoing skills training to local residents, combined with work experience generated by the Project. Together, these are expected to increase the overall pool of skilled workers in the local labour force from which hamlets (and other local and regional organizations) can draw upon.

### 8.2.2 Indicator Data

#### *Training and Experience Generated by the Project*

As noted in Sections 4 and 5, the Project continues to generate substantial training and experience opportunities for its employees. Since 2013, the Project has cumulatively generated 122,950 hours of training for employees (this does not include any additional training provided directly by Project contractors). 15,867 of these hours (or 12.9%) were completed by Inuit employees. Likewise, 8,837,636 hours of Project labour (and on-the-job experience) have been cumulatively performed in Nunavut since 2013. 1,483,359 of these hours (or 16.8%) were performed by Inuit employees and contractors.

#### *Inuit Employee Turnover*

As noted in Section 5.3, employee turnover continues to occur at the Project. While high rates of employee turnover are undesirable in most workplaces, some degree of turnover is expected and considered normal. In 2017, there were 42 Inuit employee departures (not including contractors) at the Project. This is equivalent to a 45% Inuit employee turnover rate.

#### 8.2.4 Analysis

The Project continues to generate substantial training and experience opportunities for its employees. Employee turnover also continues to occur at the Project, which ensures at least some previous Project employees become available for employment elsewhere. Together, this helps increase the overall pool of skilled workers in the local labour force from which hamlets (and other local and regional organizations) can draw upon.

### 8.3 PRESSURES ON EXISTING HEALTH AND SOCIAL SERVICES PROVIDED BY THE GN THAT MAY BE IMPACTED BY PROJECT-RELATED IN-MIGRATION OF EMPLOYEES

#### 8.3.1 Project Certificate Term or Condition

No specific prediction related to pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees was presented in the FEIS. However, Project Certificate term and condition no. 158 states:

*The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.*

#### 8.3.2 Indicator Data

##### *Number of Health Centre Visits (Total and Per Capita)*

Health centre utilization data can be used to track changes to demands placed on community health services. 2015 was the most recent year data on the number of health centre visits was available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Pond Inlet had the highest number of health centre visits (15,518), while Hall Beach had the fewest (6,016). The total number of health centre visits in the North Baffin LSA in 2015 was 59,027. Iqaluit had 16,233 health centre visits in 2015 and Nunavut had 241,082.<sup>16</sup> Compared to the previous year (2014), the number of health centre visits have decreased in the North Baffin LSA (by 4,864), Iqaluit (by 3,561), and Nunavut (by 11,932). Compared to pre-development period averages, there have been increasing trends in the average number of health centre visits in the North Baffin LSA (from 46,264 to 61,083), Iqaluit (from 13,020 to 17,184), and Nunavut (from 193,066 to 244,215) in the post-development period. Figure 8-1 displays the number of health centre visits from 2008 to 2015.

2015 was also the most recent year data on per capita number of health centre visits were available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Clyde River had the highest number of per capita health centre visits (13.2), while Hall Beach had the fewest (6.4). The average number of per capita health centre visits in the North Baffin LSA in 2015 was 9.4. Iqaluit had 2.2 per capita health centre visits in 2015 and Nunavut had 6.6.<sup>16</sup> Compared to the previous year (2014), the per capita number of health centre visits have decreased in the North Baffin LSA (by 0.8), Iqaluit (by 0.5), and Nunavut (by 0.4). Compared to pre-development period averages, there have been increasing trends in the average per capita number of health centre visits in the North Baffin LSA (from 8.2 to 9.9),

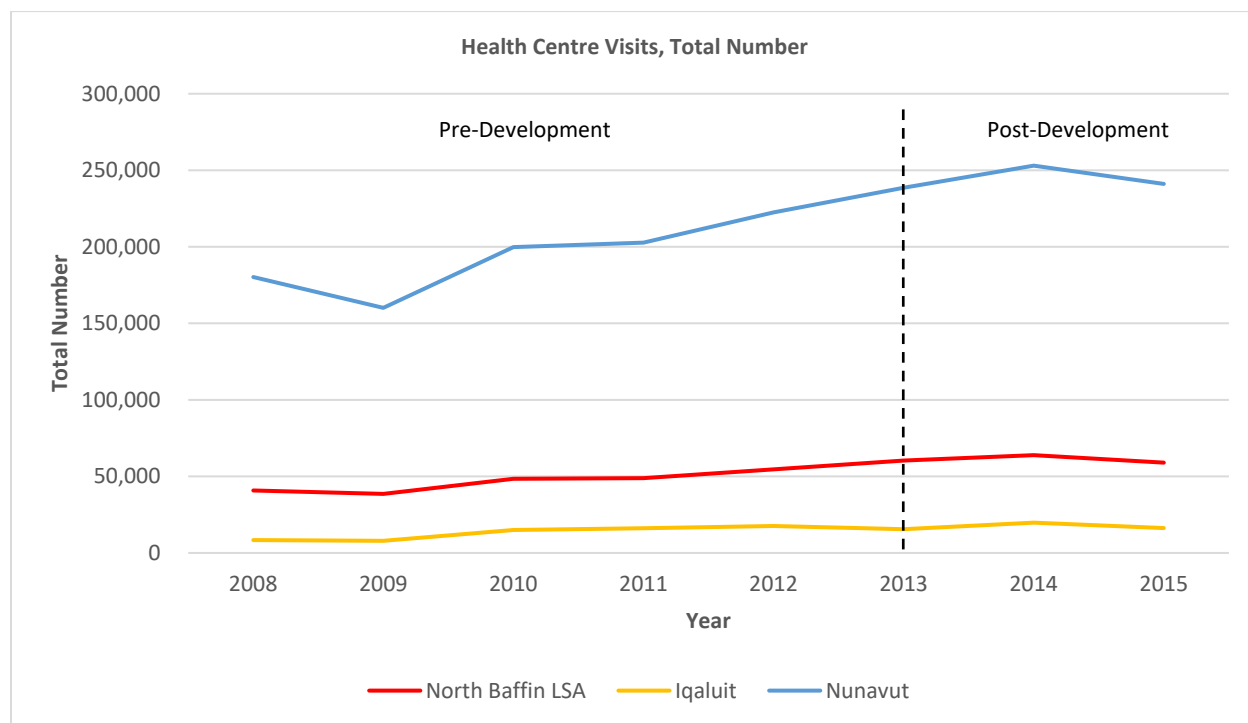


Iqaluit (from 1.9 to 2.4), and Nunavut (from 5.8 to 6.8) in the post-development period. Figure 8-2 displays the per capita number of health centre visits from 2008 to 2015.

#### *Number of Visits to Project Site Medic*

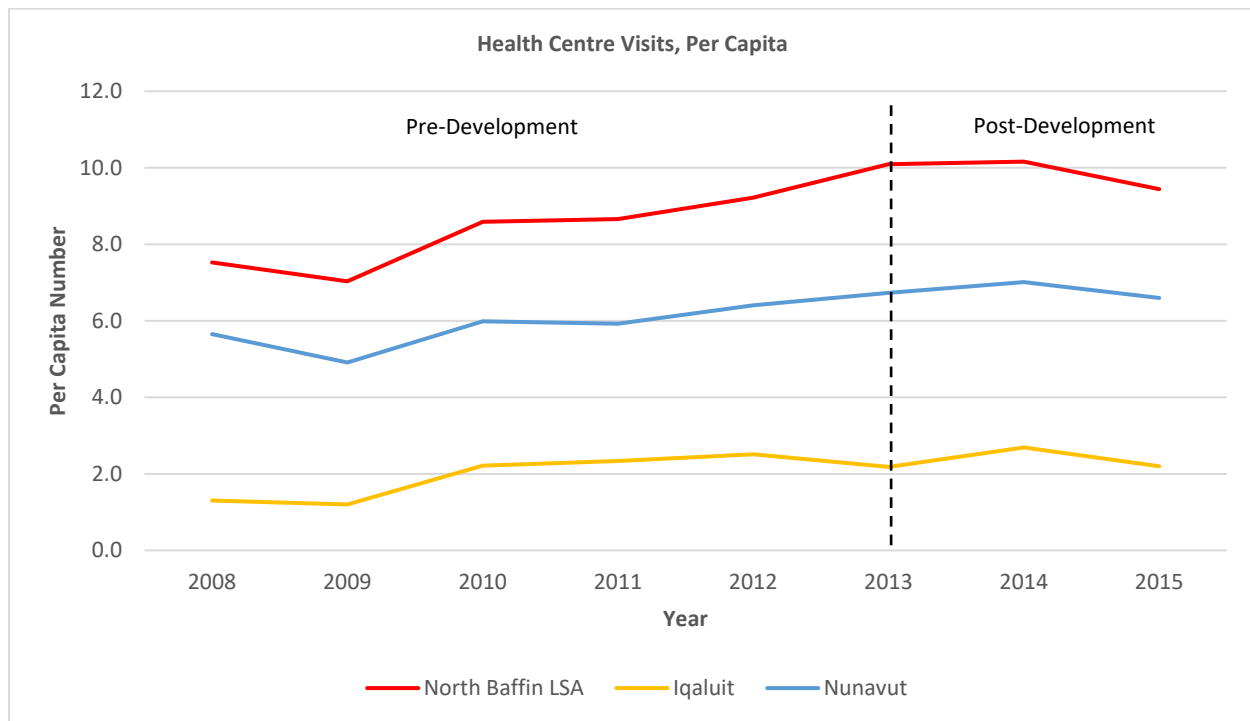
Baffinland provides all employees with regular access to an on-site Project medic. The number of annual Project site medic visits can be used to track demands placed on Project-related health care services. This data also provides insight into the role played by the Project in reducing demands placed on local health care services. In 2017, there were 6,337 recorded visits to the Project site medic, an increase of 2,325 visits from 2016. Table 8-1 displays the number of recorded visits to the Project site medic from 2013 to 2017.

**Figure 8-1: Number of health centre visits (2008 to 2015)**



Source: Nunavut Bureau of Statistics (2017f)

**Figure 8-2: Per capita number of health centre visits (2008 to 2015)**



Source: Nunavut Bureau of Statistics (2017f)

**Table 8-1: Number of visits to Project site medic (2013 to 2017)**

Number of Visits to Project Site Medic					
Ethnicity	2013	2014	2015	2016	2017
Inuit	342	1,158	845	801	1,193
Non-Inuit	870	2,125	2,580	3,211	5,144
<b>Total</b>	<b>1,212</b>	<b>3,283</b>	<b>3,425</b>	<b>4,012</b>	<b>6,337</b>

Source: Baffinland

### 8.3.3 Analysis

While there have been increasing trends in the number of total and per capita health centre visits in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. An increasing trend has also been noted throughout Nunavut in the post-development period, which implies a longer-term and/or territory-wide trend is likely occurring rather than a Project-induced one.

However, health centre utilization rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and health centre utilization, if any, may only come to light with the analysis of additional annual data. Related information on the percentage of the population receiving social assistance can be found in Section 7.2.

One of the primary ways the Project could negatively influence health and social service provision in the North Baffin LSA – in-migration of workers – has been shown (in Section 3.2) not to be occurring in any

significant manner. In fact, the Project may be having a positive effect on LSA health service provision, by providing employees with regular access to an on-site Project medic. Baffinland's benefit plan also includes an EFAP which offers all permanent employees and their dependents professional short-term counselling on an as-needed basis. On-site Inuit Elders are also available for the Project's Inuit employees to meet with. This access allows LSA employees to have at least some of their health needs addressed on-site, thereby reducing demands placed on local health care providers.

Baffinland continues to work with the SEMWG and QSEMC on socio-economic monitoring initiatives; the GN actively participates in both these groups. A Memorandum of Understanding (MOU) was also signed with the GN Department of Health in November 2013 and updated in 2017 regarding site health services and medevac procedures. More specifically, this MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN Department of Health for costs associated with the medical transportation of employees and for conducting pre-employment medical exams.

#### 8.4 PROJECT-RELATED PRESSURES ON COMMUNITY INFRASTRUCTURE

##### 8.4.1 Project Certificate Term or Condition

No specific prediction related to Project-related pressures on community infrastructure was presented in the FEIS. However, Project Certificate term and condition no. 159 states:

*The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and in Iqaluit.*

##### 8.4.2 Indicator Data

#### *Baffinland Use of LSA Community Infrastructure*

Baffinland continued to utilize some community infrastructure in the LSA to support ongoing Project operations in 2017. This included:

- Full-time rental of five offices for Baffinland Community Liaison Officers (BCLOs) in the North Baffin communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet, and one office for Baffinland's Northern Affairs team in Iqaluit
- Short-term use of meeting rooms and other local services for events held in various LSA communities. Examples include:
  - January 2017 – Procurement and contracting workshop (Iqaluit and Pond Inlet)
  - March-April 2017 – Career information tour (North Baffin LSA communities)
  - April 2017 – Baffinland attended the Nunavut Mining Symposium (Iqaluit)
  - May 2017 – Community tour to discuss the Phase 2 Proposal (North Baffin LSA communities)

- May 2017 – Baffinland attended the IIBA Annual Project Review Forum. This was jointly held by Baffinland and QIA and attended by representatives from the North Baffin LSA communities (Arctic Bay).
- June 2017 – Shipping and marine monitoring workshop with the Mittimatalik Hunters and Trappers Organization, QIA, and local and territorial politicians (Pond Inlet)
- July 2017 – Baffinland met with the QSEMC to discuss regional and Project-specific socio-economic monitoring programs (Arctic Bay)
- August 2017 – Recruitment tour by Baffinland and Horizon North (the Phase 2 Proposal camp construction and services contractor). Horizon North introduced themselves to the communities and collected resumes for potential employment at the Project (North Baffin LSA communities).
- September 2017 – Community tour to discuss Baffinland’s employment and training initiatives, with an objective of attracting more Inuit employees to Baffinland’s workforce (North Baffin LSA communities)
- September 2017 – Baffinland met with local officials to discuss Baffinland’s proposed amendment to the North Baffin Regional Land Use Plan (Pond Inlet)
- September 2017 – Baffinland met with local officials about ice management and Project shipping (Pond Inlet)
- September 2017 – Baffinland attended the Nunavut Trade Show and Conference (Iqaluit)
- September 2017 – Baffinland attended the Territorial Socio-Economic Monitoring Workshop hosted by the Government of Nunavut (Iqaluit)
- October 2017 – Joint QIA/Baffinland Community Liaison Officer training (Iqaluit)
- November 2017 – Freshwater workshop (Iqaluit)
- November 2017 – Meetings with the Mittimatalik Hunters and Trappers Organization to discuss 2017 summer monitoring programs (Pond Inlet)
- November 2017 – Environmental working group meetings (Iqaluit)
- December 2017 – Baffinland participated in the Nunavut Planning Commission hearing on the Phase 2 Proposal (Pond Inlet)

Additional details on stakeholder meetings and activities Baffinland participated in can be found in the company’s Annual Report to the NIRB.

#### *Number of Project Aircraft Movements at LSA Community Airports*

To support the movement of workers, freight, and other materials to/from the Project, Baffinland is required to utilize community airport infrastructure in the LSA. This is due to the remote location of the Project and lack of viable alternative transportation methods (aside from seasonal marine re-supply). In 2017, there were 1,628 Project aircraft movements at LSA community airports, which is 374 more aircraft movements than in 2016.<sup>17</sup> This includes fixed-wing aircraft (e.g. passenger, cargo, and ‘combi’ type) and rotary-wing aircraft (e.g. helicopters used for site activities). Table 8-2 provides information on the number of Project aircraft movements at LSA community airports from 2014 to 2017.

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<sup>17</sup> An aircraft movement is defined as a takeoff or landing at an airport. For example, one aircraft arrival and one departure is counted as two movements.

**Table 8-2: Number of Project aircraft movements at LSA community airports (2014 to 2017)**

<b>Number of Project Aircraft Movements at LSA Community Airports</b>				
<b>Community</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Arctic Bay	122	126	120	138
Clyde River	114	112	112	144
Hall Beach	130	122	122	152
Igloolik	118	106	114	122
Pond Inlet	212	136	134	162
Iqaluit	876	708	652	910
<b>Total</b>	<b>1,572</b>	<b>1,310</b>	<b>1,254</b>	<b>1,628</b>

Source: Baffinland

Notes: Records are available from 2014 onwards. 2014-2016 records are for fixed-wing aircraft movements only. 2017 records are for fixed-wing and rotary-wing aircraft.

### 8.4.3 Analysis

Like previous years, Baffinland continued to use some LSA community infrastructure to support ongoing Project operations in 2017. This use is small in comparison to other ongoing community uses and adds only minimal incremental pressure on LSA facilities. For example, Baffinland's rental of office spaces in the LSA is generally limited to small facilities (i.e. to support individual BCLOs and Northern Affairs staff), and the use of local meeting rooms and accommodations is often intermittent and short-term in nature (e.g. community meetings only occur a limited number of times per year). Furthermore, the use of these spaces can be considered a positive economic contribution of the Project to local economies (e.g. through payments of rental fees, purchase of related goods and services).

LSA community airports also regularly accommodate various non-Project passenger, cargo, and other aircraft (both scheduled and charter). Project-related aircraft movements add only minimal incremental pressure on these facilities. In 2016 (the most recent year data were available) there were a total of 22,157 aircraft movements in the LSA. This includes 5,518 aircraft movements at North Baffin LSA airports (Statistics Canada 2017k) and 16,639 aircraft movements at the Iqaluit airport (Statistics Canada 2017l).<sup>18</sup> Project-related aircraft movements at community airports in the LSA in 2016 represent only a small portion (5.7%) of this total.

<sup>18</sup> In 2016, the number of aircraft movements at the Clyde River airport were unavailable. 2015 aircraft movements at the Clyde River airport were used to estimate 2016 aircraft movements instead.

## 9. RESOURCES AND LAND USE

Several residual effects for the VSEC Resources and Land Use were assessed in the FEIS. To help address these a discussion on two indicators (number of recorded land use visitor person-days at Project sites and number of Wildlife Compensation Fund Claims) is provided below. Project harvesting interactions and food security are further discussed in Section 10.1. Other related effects continue to be tracked through Baffinland's terrestrial, marine, and freshwater monitoring programs, or are considered permanent for the life of the Project and are not monitored.

### 9.1 VARIOUS RESIDUAL EFFECTS

#### 9.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could have some negative effects on Inuit travel and camping. These include effects on safe travel around Eclipse Sound and Pond Inlet, safe travel through Milne Port, emission and noise disruption at camps, sensory disturbances and safety along the Milne Inlet Tote Road, detouring around the Mine Site for safety and travel, difficulty and safety relating to railway crossing, and detouring around Steensby Port.

Shipping-related mitigation developed and/or proposed by Baffinland includes the provision of community public safety awareness campaigns (e.g. informing the community of vessel movements, tracking the route and timing of passage, periodic public meetings and information sessions), commitments to placing reflective markers around the ship track, establishing a detour around Steensby Port, and providing food, shelter, and fuel to detouring travellers. In addition, other mitigation measures have been identified for Steensby Port that will be implemented once that component of the Project is constructed.

Road and rail-related mitigation developed and/or proposed by Baffinland includes the development of a Roads Management Plan (e.g. establishing speed control and signage, ensuring truck operator vigilance, reporting of non-Project individuals), public education, and the addition of six railway crossing locations. Mine site-related mitigation developed by Baffinland includes various public safety mechanisms (e.g. establishing signage and access barriers, restrictions on entering industrial sites), and the development of a mine closure plan. Baffinland has also developed a Hunter and Visitor Site Access Procedure as an appendix to the Roads Management Plan (Baffinland 2016), which describes how land users can safely access Project facilities at Milne Port and the Mine Site. It further describes Baffinland's policy prohibiting the public from unescorted travel on the Tote Road. Baffinland will instead transport land users and their equipment on the Tote Road in order to prevent land user-Tote Road traffic interactions.

#### 9.1.2 Indicator Data

##### *Number of Recorded Land Use Visitor Person-Days at Project Sites*

The number of recorded land use visitor 'person-days' at Project sites provides an indication of how often the Project area continues to be accessed for land use activities. Because groups of individuals may travel together and/or utilize Project sites over multiple days, person-days are useful for calculating the extent of site visitations in a year (i.e. one person-day is equal to one person visiting a site during one day, while ten person-days could equal one person visiting a site during ten days or five people

visiting a site during two days). Baffinland maintains a Hunter and Visitor Access Log to track land use parties that pass through or use Project areas. Table 9-1 presents the number of recorded land use visitor person-days at Project sites from 2013 to 2017. In 2017, a total of 154 land use visitor person-days were recorded at Project sites, which is 139 person-days fewer than in 2016.

**Table 9-1: Number of recorded land use visitor person-days at Project sites (2013 to 2017)**

Number of Recorded Land Use Visitor Person-Days at Project Sites			
Year	Mary River	Milne Port	Total
2013	41	0	41
2014	14	57	71
2015	4	212	216
2016	15	278	293
2017	26	128	154

Source: Baffinland

Notes: This table only includes recorded land use visitors at selected Project sites; as such, it may underestimate the total number of land users accessing all Project sites.

### *Number of Wildlife Compensation Fund Claims*

The number of annual Wildlife Compensation Fund claims<sup>19</sup> provides insight into land use and harvesting issues which may be arising because of the Project. In 2017, one claim was submitted to QIA for review and was approved. It resulted in compensation of \$14,200.00 being paid out. By comparison, two claims were submitted to QIA for review in 2016. One claim was approved and resulted in compensation of \$600.00, while the second claim was reviewed and denied.

#### 9.1.3 Analysis

Monitoring data suggests Inuit land use activities coexist with the Project, as local land users continued to access Project sites in 2017. Inuit employee harvesting is also permitted at the Project (subject to certain restrictions) although Baffinland's 2018 Inuit Employee Survey indicates only minimal harvesting is currently conducted (12.1% of respondents indicated they participated in traditional activities (e.g. hunting, fishing, harvesting) during their leisure time on site). However, Baffinland has acknowledged the potential for future wildlife-related impacts from the Project and has contributed \$750,000.00 to a Wildlife Compensation Fund (administered by the QIA under the terms of the IIBA) to address this issue.

Additional discussion on Project harvesting interactions and food security is provided in Section 10.1. Baffinland continues to make positive contributions to the four components of food security identified by the Nunavut Food Security Coalition (2014) through initiatives commensurate with its role as a regional mineral developer (see Table 10-1). This includes providing LSA residents with meaningful incomes (through employment) that enable the purchase of food and support the participation in harvesting activities, and through contributions to various community wellness initiatives. Furthermore, Baffinland has developed mitigation and monitoring programs that aim to avoid adverse effects on terrestrial, freshwater, and marine resources important to LSA residents. Baffinland's Annual Report to the NIRB should be consulted for monitoring results specific to these topics.

<sup>19</sup> The Wildlife Compensation Fund, established under the IIBA, is administered by the QIA and functions to compensate Inuit for incidents where Project activities interfere with or inhibit harvesting activities.

## 10. ECONOMIC DEVELOPMENT AND SELF-RELIANCE

No residual effects specific to the VSEC Economic Development and Self-Reliance were assessed in the FEIS. Rather, an integrated assessment of other VECs/VSECs was conducted for this VSEC. Relevant monitoring of residual effects continues to be conducted through other VECs/VSECs. However, information on one topic requested through the Project Certificate is reviewed below.

### 10.1 PROJECT HARVESTING INTERACTIONS AND FOOD SECURITY

#### 10.1.1 Project Certificate Term or Condition

No specific prediction related to Project harvesting interactions and food security was presented in the FEIS. However, Project Certificate term and condition no. 148 states:

*The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee's monitoring program which addresses Project harvesting interactions and food security and which includes broad indicators of dietary habits.*

#### 10.1.2 Indicator Data

##### *Project Harvesting Interactions and Food Security*

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process, Baffinland's community engagement program, and related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Some data related to Project harvesting interactions and food security have already been presented in this report. For example, Section 7.2 discussed household income and food security and provided indicator data on the proportion of taxfilers with employment income, median employment income, and percentage of population receiving social assistance. Section 9.1 discussed the topic of resources and land use and provided indicator data on the number of recorded land use visitor person-days at Project sites and number of Wildlife Compensation Fund claims. Please refer to those sections for additional details.

Comments on Project harvesting interactions and food security have previously been made by Project stakeholders, with some individuals suggesting adverse effects have been experienced because of the Project (e.g. JPCSL 2017). Comments on harvesting and food security were also recorded through Baffinland's community engagement program in 2017. Example comments on the importance of harvesting and country food include:

*But the Baffinland – I want to tell them that our wildlife, our land are our main concern. You know, with the economic opportunities, we're supportive of that. Just – you know, if there's a minimal change to the environment or the wildlife, then we're – we are very supportive. So we need to be careful on how we operate in the environment. And the indigenous people, like Inuit, will continue to live here with the wildlife and the land and marine life. [2017 IIBA Annual Project Review Forum Participant]*



*I don't know if this has ever been considered, hunter support... I know in Mary River... Inuit go to work there. You know, they crave for meat, country food... HTO has country food to sell. We know that one of the workers can take it on the plane, get it to Mary River. But I don't know about – it's possible to sell country food. But if we're selling country food, we need to be approved by Department of Health inspections and other restrictions, when you're buying food... I don't know if you can include that in the agreement somewhere... or if you can consider to accommodate the -- providing country food to the Inuit workers without consequences like health. [2017 IIBA Annual Project Review Forum Participant]*

*So somehow there needs to be a way, I think, to make things easier to – for the hunters to sell to – or even HTOs to sell to Baffinland so the hunters can gain some income throughout that. [2017 IIBA Annual Project Review Forum Participant]*

*But if there is an impact we will voice our concern. We are very concerned for our hunters. [2017 Igloolik Meeting Participant]*

Comments on potential Project-harvesting interactions were also recorded through Baffinland's community engagement program in 2017. Examples include:

*Pond Inlet has wildlife. The Milne Inlet area is a calving ground for narwhal. And last summer, there were not too much narwhal harvested, very few. So they used to harvest a lot of narwhal in the past. So the ocean used to be turned red from blood... we don't see that anymore. And related to the caribou, we were told this winter that past the Mary River, they saw a herd of about 50,000 going towards Mary River. So we know that they're coming back to the area. And this summer, near Pond Inlet, from July, the aircraft, like helicopters and – will be harassing the area, harassing wildlife in the area. [2017 IIBA Annual Project Review Forum Participant]*

*But the Pond Inlet area, the shipping, we know, will have impact on the marine. So we know that. I think it's even obvious that the shipping – increased shipping will have a negative impact on the number of marine animals. So, you know, that's the only concerns we have, is when it comes to environment and the animals. [2017 IIBA Annual Project Review Forum Participant]*

*...are you going to continue with the current monitoring... because narwhal used to be in great numbers, but every year it seems to be decreasing... they're moving to other areas, it seems like, because – due to the shipping traffic. [2017 IIBA Annual Project Review Forum Participant]*

*And, also, Mary River site, there's a calving ground for caribou. May/June, they'll start – so does that mean the caribou around the area are monitored during the calving season? [2017 IIBA Annual Project Review Forum Participant]*

*I also have a question considering the animals. And we're also impacted by what's happening in that area. [2017 IIBA Annual Project Review Forum Participant]*

*...caribou, our concern when they're migrating either way, down or back – so the roads – and I think it will impact the migrational route. So if the rail line or the road is preventing the*

*caribou from migrating, you should build a tunnel to allow the caribou to go through instead of going over. [2017 IIBA Annual Project Review Forum Participant]*

*...I don't know if it's true or not. But the reason they don't go through Navy Board Inlet, if it's true, that the polar bears should not be disturbed. But human – Inuit hunters will be disturbed. [2017 IIBA Annual Project Review Forum Participant]*

*I am very serious... in regards to railways, and the caribou that move through Mary River. There still are caribou now and they have not arrived from the south yet so the roads seem to be an obstruction to the migration. [2017 Arctic Bay Meeting Participant]*

*... I have observed blasting with no gravel, and the char were impacted even though people say otherwise, and I think that is because of the mine. We as Inuit who live have lived in the Arctic our whole lives, we hear that everything is done according to regulations. But I think more can be done, more should be done to mediate the issue in terms of blasting... The mining company said it would not impact the environment but I have seen significant change. I am not against the Project but I want more solutions. I want to make sure that we don't lose the animals; we need to use a strategy. Let's not concentrate on the negative things but let's get a strategy. [2017 Clyde River Meeting Participant]*

*I can imagine that the dust would rise in the air from the blasting and fly in the wind and then go to the snow and the ocean. Many animals look for food around the shore, so those are my concerns. The animals always eat little vertebrates and what not and the dust will slowly go to the ocean so that's a concern I have. [2017 Clyde River Meeting Participant]*

*We see on television that near mine sites in other provinces, the caribou population declines. It seems that you are not taking responsibility and not taking IQ into consideration. I know that the road and railway line will impact the caribou population. When there is a mine site there is always a negative impact. It's not just based on IQ, there are more impacts. [2017 Igloolik Meeting Participant]*

*We want to be involved more, scientists are not the only ones who can provide information, Inuit have lived here for a long time. We know that the caribou migrations and populations change over the years but if we say that there has been more of an increased decline that should be taken into consideration. [2017 Igloolik Meeting Participant]*

*Inuit need a stronger voice in the company so that the company better understand our concerns. We have been impacted the most compared to other communities. We have the most ships coming through and we haven't had a narwhal migration in two years. We deserve more benefits than the other communities. The scientists say we are not impacted but they don't understand, we have been here longer and understand better that we are being impacted... Money, money, money you act is the most important thing in the world. [2017 Pond Inlet Meeting Participant]*

*... We do not hear about these negative impacts on wildlife but a lot of us are being impacted. In the future, we want to hear all of the concerns not just what Baffinland wants us to hear. Can a report be made by Baffinland when such impacts are found? [2017 Pond Inlet Meeting Participant]*

Likewise, some comments on the adaptability and resilience of wildlife in the Project area were recorded during Baffinland's community engagement program in 2017. Examples include:

*...any wildlife, they can get used to human presence... I know that they're not always afraid of humans, you know. The first initial contact – that they're afraid... the first time they see a human, they're afraid, of course. But then afterwards, you know, they can kind of get used to the humans around. And if they're not a threat, then, you know, they're no longer afraid. So I'm not too concerned about the wildlife, because, you know, there's ways that they will adapt to the conditions... so I'm more grateful that we have the economic opportunities available to us now. And the marine – also, I have firsthand knowledge... when there's a noise that they're not familiar with, yes, they'll stay away from that. But the noise – we used to scrape around the boulder, around the shore, trying to get them used to the noise first, and then they would get closer. So I know that the marine – you know, they would bring objects that can make noise or sound, and then they would attract the marine mammals when they're waiting by the shore... only hands-on experience that they were basing their knowledge on. [2017 IIBA Annual Project Review Forum Participant]*

*All the animals are concerned first, marine, and also on the land, too, because even little, tiny animals are impacted with the action of the marine – the mining in that area. Yes, it is also true that we know the knowledge of how the migrating comes to – migration of the caribou, that they came. And then in a long while, according to the knowledges [sic], that they usually come back... Mary River was also the activity for Inuit when they were migrating from one place to another; it was also a place where they went to. So, yes, even though there's a decline of the population of caribou... it's something that we're not really concerned with because we had heard before that caribou come and then caribou go... and we believe those behaviours will continue even to today's knowledge. But we have to make sure that our concern is – when they're going to be impacted, we have to do a lot more monitor – very close monitoring and very close research on how the wildlife is impacted on that. [2017 IIBA Annual Project Review Forum Participant]*

*Like, Mary River is – you know, it's halfway... are you aware, yes, of that generational migration of caribou, that they might start heading back again? [2017 IIBA Annual Project Review Forum Participant]*

Additional stakeholder comments on country food were expressed during the 2017 QSEMC meeting in Arctic Bay. For example, new infrastructure for local country food processing plants was said to be a priority, in order to provide healthy food locally and create economic development opportunities. A request for Baffinland to develop a program that provides local Elders with country food was also made during the meeting (SEMCs 2017b).

The topic of on-site harvesting activities was addressed in Baffinland's 2018 Inuit Employee Survey. When 'unknown' results were removed, 12.1% of respondents indicated they participated in traditional activities (e.g. hunting, fishing, harvesting) during their leisure time on site, 37.9% respondents did not participate in traditional activities during their leisure time on site, and 50.0% respondents didn't know they could participate in these activities during their leisure time on site. Of note, Article 11 of the IIBA allows for the pursuit of traditional activities by Inuit employees during their leisure hours, subject to certain restrictions.

Some data on harvesting and food security also exists at the territorial level. For example, data from the 2012 Aboriginal Peoples Survey (Statistics Canada 2015a) indicates approximately 66% of Nunavummiut hunted, fished, or trapped in the past year, while approximately 37% of Nunavummiut hunted, fished, or trapped at least once a week during the season. Likewise, approximately 43% of Nunavummiut gathered wild plants in the past year, while approximately 29% of Nunavummiut gathered wild plants at least once a week during the season.

Achieving food security remains a pressing issue in Nunavut (e.g. Nunavut Food Security Coalition 2014, 2016). Wallace (2014) notes food insecurity refers to situations, when, for example, the food that was purchased does not last, and there is not enough money to buy more; a household cannot afford to eat balanced meals; or household members cut the size of their meals or skip meals because there is not enough money for food. Data from the 2012 Aboriginal Peoples Survey (Statistics Canada 2015b) indicates approximately 25% of Nunavummiut have very low food security, 26% have low food security, while 41% have high or marginal food security.

### 10.1.3 Analysis

Harvesting and consumption of country food remains a valued and important part of the Inuit culture and diet. As noted in Section 7.2, there are indications the Project continues to improve household income and food security in the LSA, by providing LSA residents with meaningful incomes (through employment) that enable the purchase of food and support the participation in harvesting activities. Baffinland also contributes to various community wellness initiatives directly (e.g. through the INPK Fund in the IIBA, school meal program, seasonal country food exchange program, community food bank donations) and indirectly (e.g. through the *QIA Legacy Fund* and *QIA Benefits Fund*)<sup>14</sup>, which may assist individuals not directly benefiting from Project employment. The concerns expressed about Project effects on local harvesting and land use are acknowledged. Concerns have also been expressed about declining rates of country food consumption and the lack of food security in Nunavut, generally. However, statistical data on these topics is limited (i.e. available data is from 2012 and is only at the territorial scale).

Monitoring data presented in Section 9.1 suggests Inuit land use activities coexist with the Project, as local land users continued to access Project sites in 2017. Inuit employee harvesting is also permitted at the Project (subject to certain restrictions) although Baffinland's 2018 Inuit Employee Survey indicates only minimal harvesting is currently conducted. However, Baffinland has acknowledged the potential for future wildlife-related impacts from the Project and a Wildlife Compensation Fund has been established to address this issue.

The Nunavut Food Security Coalition (2014) has outlined four components of food security (i.e. availability, accessibility, quality, and use) and factors affecting each component (see Table 10-1). Baffinland has acknowledged it can play a role in each of these food security components. However, the Nunavut Food Security Coalition (2014: 2) also highlights food security components "are influenced by many complex factors" and notes "this critical and complex issue is larger than the mandate of any one organization. A collaborative approach is essential."

Baffinland continues to make positive contributions to the four components of food security through initiatives commensurate with its role as a regional mineral developer (Table 10-1). Baffinland has also developed mitigation and monitoring programs that aim to avoid adverse effects on terrestrial, freshwater, and marine resources important to LSA residents. Baffinland's Annual Report to the NIRB

should be consulted for monitoring results specific to these topics. However, harvesting and food security are complex issues that can be influenced by many factors. For this reason, this topic will continue to be monitored for emerging trends.

**Table 10-1: Food security components and Baffinland's role**

Components of Food Security	Factors Affecting Each Component	Baffinland's Role
<b>Availability</b>	<ul style="list-style-type: none"> <li>• Family size</li> <li>• Human population size</li> <li>• Grocery supplies</li> <li>• Wildlife stocks</li> <li>• Distribution of wildlife</li> <li>• Environmental conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Providing employees with ample and healthy food choices while on site</li> <li>• Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring)</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Cost of food</li> <li>• Income levels</li> <li>• Gambling and substance abuse</li> <li>• Transportation effectiveness</li> <li>• Strength of sharing networks</li> <li>• Access to hunting grounds</li> <li>• Climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Providing LSA residents with meaningful incomes through employment that enable the purchase of food and support participation in harvesting activities</li> <li>• Direct and indirect contributions to community wellness initiatives (e.g. INPK Fund, school meal program, seasonal country food exchange program, community food bank donations)</li> <li>• Employee support through the EFAP</li> <li>• Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring)</li> <li>• Permitting Inuit employee harvesting during leisure hours (subject to certain restrictions)</li> <li>• Permitting Inuit non-employees to access Project sites and participate in harvesting activities (subject to certain restrictions)</li> <li>• Establishment of a Wildlife Compensation Fund to address potential impacts</li> </ul>
<b>Quality</b>	<ul style="list-style-type: none"> <li>• Nutritional knowledge</li> <li>• Health of store-bought food</li> <li>• Wildlife health</li> <li>• Food spoilage</li> <li>• Environmental contaminants</li> </ul>	<ul style="list-style-type: none"> <li>• Providing employees with ample and healthy food choices while on site</li> <li>• Establishment of country food kitchens at the Mary River and Milne Port sites</li> <li>• Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring)</li> </ul>
<b>Use</b>	<ul style="list-style-type: none"> <li>• Traditional knowledge</li> <li>• Food preparation skills</li> <li>• Budgeting skills</li> <li>• Literacy rates</li> <li>• Language barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Completion of a comprehensive Inuit Qaujimajatuqangit study (on several topics, including harvesting), the results of which are publicly available</li> <li>• Commitment to offer financial management training and support to employees</li> <li>• Commitment to offer literacy and numeracy training to employees</li> <li>• Support for the use of Inuktitut at Project sites</li> </ul>

Notes: Food security components and factors affecting each component were sourced from the Nunavut Food Security Coalition (2014)

## 11. BENEFITS, ROYALTY, AND TAXATION

One residual effect for the VSEC Benefits, Royalty, and Taxation was assessed in the FEIS: Payroll and corporate taxes paid by Baffinland to the territorial government. This is reviewed more fully below.

### 11.1 PAYMENTS OF PAYROLL AND CORPORATE TAXES TO THE TERRITORIAL GOVERNMENT

#### 11.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a beneficial effect on revenues (e.g. through taxes) flowing to the territorial government. No specific mitigation measures have been developed to support this prediction.

#### 11.1.2 Indicator Data

##### *Payroll and Corporate Taxes Paid by Baffinland to the Territorial Government*

The value of annual payroll and corporate tax payments by Baffinland to the territorial government helps demonstrate the Project's effect on revenues flowing to the territorial government. In 2017, Baffinland paid \$1,491,098.13 in employee payroll tax to the Government of Nunavut (i.e. a 2% payroll tax levy; other payroll taxes are paid to the federal government). Baffinland did not pay any corporate income tax in 2017 (as the Company is not yet profitable), property tax (as lease payments are made to the QIA and not the Government of Nunavut), or fuel tax (as this is currently being reviewed with the Government of Nunavut).

#### 11.1.3 Analysis

The Project continued to pay taxes to the Government of Nunavut in 2017. As predicted in the FEIS, the positive effect of the Project on revenues flowing to the territorial government is confirmed for this reporting period. Baffinland expects increased tax amounts will be paid once the Company becomes profitable.

## 12. CONCLUDING REMARKS

### 12.1 SUMMARY

#### 12.1.1 Report Summary

This report has assessed the socio-economic performance of the Mary River Project in 2017, as well as Baffinland's compliance with various Project Certificate terms and conditions. Performance was assessed using socio-economic indicators and information for several VSECs included in the FEIS:

- Population demographics
- Education and training
- Livelihood and employment
- Contracting and business opportunities
- Human health and well-being
- Community infrastructure and public services
- Resources and land use
- Economic development and self-reliance
- Benefits, royalty, and taxation

The information presented in this report supports many of the FEIS predictions for these VSECs and identifies positive effects the Project has had. For example, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 FTEs. Of this total, 313,068 hours were worked by residents of the LSA, representing approximately 155 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees (not including contractors) and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017.

Employment in the LSA is one area where Project activities didn't fully match FEIS predictions in 2017, as LSA employment hours in 2017 were somewhat lower than originally predicted. Likewise, there were several Inuit employee departures in 2017. Baffinland continues to take positive steps to address the issue of Inuit employment and recently finalized its Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS) with the QIA. These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time.

Furthermore, Baffinland and the QIA are partners in the \$19 million Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program, which has been designed to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and other actions to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should also assist with increasing LSA employment over time. However, additional monitoring will be necessary to track the success of these and other Baffinland Inuit employment programs. Baffinland will also continue to track employee turnover causes and outcomes, moving forward.

Where appropriate, trends have been described for indicators assessed in this report. These trends (i.e. pre-development, post-development, and since the previous year) demonstrate whether an indicator

has exhibited change and describes the direction of that change. Trend analyses can be useful for assessing potential Project influences on an indicator. In some cases, additional data and monitoring will be necessary before the FEIS predictions presented in this report can be fully verified. In others, direct correlations between the Project and data trends were either unable to be identified or were unclear. The process of socio-economic monitoring often requires many years of data to effectively discern trends and causality. Even then, various factors may be found to influence causality and some of these may not be easy to measure. Successful socio-economic monitoring for the Project will require appropriate long-term data, the regular input of all Project stakeholders, and a focus on continuous improvement.

The objectives of this 2017 report (presented in Section 1.3) have been accomplished in several ways. First, this report provided an analysis (in Sections 3 to 11) of selected socio-economic effects that were predicted to occur in the Project's FEIS. Second, this analysis provided insight into the functioning of Baffinland's existing socio-economic mitigation and management programs (again, in Sections 3 to 11). Third, this report provided information that will assist regulatory and other agencies in evaluating Baffinland's compliance with socio-economic monitoring requirements for the Project (found throughout the report, but Appendix C summarizes how Baffinland has addressed Project Certificate terms and conditions related to socio-economic monitoring and Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 socio-economic monitoring report). Finally, this report supports Baffinland's adaptive management objectives for the Project, as issues identified in this report will continue to be monitored and opportunities for potential performance improvements will be assessed.

#### 12.1.2 Summary of Regional and Cumulative Economic Effects

This section provides a summary of regional and cumulative economic effects related to the Project. This is in relation to Project Certificate term and condition no. 169, which states:

*The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified.*

The Project continued to make positive contributions to the Nunavut economy in 2017. As noted earlier, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017. Since Project development, approximately 8.84 million hours of Project labour have been performed, \$33.3 million in payroll has been provided to Inuit employees, and \$819.1 million has been awarded to Inuit-owned businesses and joint ventures.

When compared to annual economic outputs for Nunavut as a whole, these values are notable. In 2016 (the most recent year for which estimates are available), for example, there were a total of 16,565 jobs held in Nunavut and 30,103,000 total hours worked (Nunavut Bureau of Statistics 2017h), with average weekly earnings of \$1,274.60 per employee (Nunavut Bureau of Statistics 2017i). By comparison, hours worked by Baffinland's employees and contractors in Nunavut in 2016 (i.e. 1,881,506) represent 6.3% of



the Nunavut total. Average weekly earnings of Baffinland's Inuit employees in 2016 were also higher than the Nunavut average, at \$1,538.70.<sup>20</sup>

Mining remains an important contributor to the Nunavut economy. Nunavut's real gross domestic product<sup>21</sup> (GDP) for all industries in 2016 was \$2,039.6 million. Of this amount, '*mining, quarrying, and oil and gas extraction*' was responsible for contributing \$377.8 million (or 18.5%). Mining projects typically also make economic contributions to supporting industries such as '*construction*' (\$207.8 million contribution to the Nunavut economy in 2016), '*transportation and warehousing*' (\$49.1 million contribution to the Nunavut economy in 2016), and '*accommodation and food services*' (\$26.5 million contribution to the Nunavut economy in 2016), amongst others (Nunavut Bureau of Statistics 2017j). The Mary River Project has likely been an important contributor to these amounts, as has Agnico Eagle Mines Limited's Meadowbank Mine (Nunavut's only other operating mine in 2016), and several other Nunavut-based mining projects that are in various stages of development. Mining in Canada, generally, contributed \$55.6 billion to the country's GDP, or 3.4% of total Canadian GDP (in 2015). The industry also directly employs more than 373,000 individuals and remains the largest proportional private sector employer of Indigenous peoples in the country (Mining Association of Canada 2017).

No negative regional or cumulative economic effects associated with the Project were identified in 2017. As such, no mitigation measures are being proposed to mitigate negative effects.

## 12.2 ADAPTIVE MANAGEMENT

This report identifies several positive effects of the Project on VSECs described in the FEIS and supports several of the FEIS predictions that were made. The information contained in this report also suggests many of the mitigation and management measures established by Baffinland are functioning as anticipated. However, LSA employment and Inuit employee turnover are areas Baffinland will continue to address in 2018 and several new initiatives have been undertaken to support these efforts.

The recently finalized IHRS is a key strategic document for Baffinland in this regard and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project. It contains eight strategic directions that will assist Baffinland with meeting its Inuit employment objectives: strengthen stakeholder collaboration, engage and develop Inuit employees (current and potential), workforce readiness, Inuit recruitment and hiring, gender balance, students and youth, Inuit employee retention and advancement, and continuing improvement. Likewise, the recently finalized IPCS is expected to enhance the business opportunities available to Inuit. It addresses several Inuit contracting requirements contained in the IIBA and identifies preferential opportunities and procedures for Inuit Firms to contract with Baffinland.

Furthermore, Baffinland and the QIA were recently successful in securing funds through Employment and Social Development Canada's (ESDC) Skills and Partnership Fund for their Q-STEP training program.

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<sup>20</sup> Baffinland Inuit employee numbers (98) and payroll amounts (\$7,841,203.00) for 2016 were presented in Baffinland's 2016 Socio-Economic Monitoring Report. Inuit employee numbers in 2016 were calculated based on the average of quarterly totals. Weekly employee earnings are thus an estimate and may not fully reflect average amounts for the year.

<sup>21</sup> The Bank of Canada (2016) notes real GDP is "the most common way to measure the economy... GDP is the total value of everything - goods and services - produced in our economy. The word "real" means that the total has been adjusted to remove the effects of inflation." The real GDP amounts by industry presented by the Nunavut Bureau of Statistics (2017j) are in chained 2007 dollars.

Q-STEP is a four-year initiative that will be undertaken by QIA in close partnership with Baffinland to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The program will consist of both work readiness measures as well as targeted training programs directed at apprenticeships, skills development, supervisor training, and formal certification in heavy equipment operation. The total value of the program is \$19 million. The Government of Canada will provide \$7.9 million, Baffinland will provide \$9.4 million of in-kind support, Kakivak Association will provide up to \$1.6 million of in-kind support, and the Government of Nunavut will offer operational support to Q-STEP. Other ongoing efforts to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should further assist with increasing LSA employment over time (e.g. the new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators).

Continued monitoring of LSA employment hours, causes of Inuit employee turnover, and the initiatives described in the IHRS, IPCS, and Q-STEP training program (amongst others) will be necessary to ensure successful socio-economic outcomes. Opportunities for potential performance improvements in these areas will also be assessed by Baffinland throughout 2018. While additional monitoring is required to confirm the findings presented in this report over the long-term, no need has been identified to update any FEIS predictions or to modify Baffinland's existing management approach beyond what has been described above. However, Baffinland will continue to use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

### 12.3 FUTURE MONITORING AND REPORTING

As noted previously, Baffinland has developed a socio-economic monitoring plan for the Project (see Section 1.4) which addresses the VSECs assessed in the FEIS. Using this plan, Baffinland will continue to monitor and report on Project-related socio-economic performance on an annual basis. Regular engagement with the SEMWG and QSEMC on socio-economic matters will also occur.

Effectiveness of the Project's socio-economic monitoring program will be evaluated in an on-going manner. Information obtained through this process may lead to future modifications of the Project's socio-economic monitoring plan, indicators used, and/or methods of analysis employed. Baffinland also anticipates monitoring may cease for some indicators in the future, especially where FEIS predictions have been sufficiently verified over time. Should the need arise to significantly modify the Project's monitoring program, both the SEMWG and QSEMC will be consulted.

Furthermore, Baffinland recently received the Government of Nunavut's draft territorial socio-economic monitoring workshop report and recommendations (Government of Nunavut 2017). Some modifications to Baffinland's socio-economic monitoring plan have been made as a result of the draft report (see Section 2.4 for additional details). Baffinland will investigate the possibility of further aligning its monitoring program with the Government of Nunavut's recommendations, where appropriate, following its review of the final workshop report. In addition, Baffinland anticipates updating the SEMWG Terms of Reference in 2018. The existing Terms of Reference is somewhat dated (December 2012) and no longer fully reflect the scope of working group activities. Baffinland will work with SEMWG members in 2018 to complete revisions to the Terms of Reference. Baffinland anticipates including a revised Terms of Reference in its 2018 Socio-Economic Monitoring Report.

#### 12.4 CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS ON SOCIO-ECONOMIC MONITORING

Submission of this report helps achieve concordance with several Project Certificate terms and conditions related to socio-economic monitoring. A summary of each Project Certificate term or condition related to socio-economic monitoring, a description of how Baffinland has addressed each of these, and 2017 Socio-Economic Monitoring Report references (where applicable) can be found in Appendix C. Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 Socio-Economic Monitoring Report.

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## **APPENDIX A: SEMWG TERMS OF REFERENCE**

**MARY RIVER SOCIO-ECONOMIC MONITORING WORKING GROUP**  
**TERMS OF REFERENCE**

**1. PURPOSE**

1.1 This document sets the Terms of Reference for the Mary River Socio-Economic Monitoring Working Group (the “Working Group”). The Working Group will support the Qikiqtaaluk Socio-Economic Monitoring Committee’s (QiSEMC) regional monitoring initiatives through project-specific socio-economic monitoring. It is intended to provide a forum for Working Group members to engage in the work of the QiSEMC through identification of areas of mutual interest and socio-economic monitoring priorities related to the Mary River project, communities, and the Baffin region as a whole.

1.2 The Working Group will support the fulfillment of Terms and Conditions set out in the Mary River Project Certificate that relate to socio-economic monitoring.

**2. WORKING GROUP MEMBERSHIP AND MEMBER ROLES AND RESPONSIBILITIES**

2.1 The Working Group will include as members:

- a. Baffinland Iron Mines Corporation (BIMC) or the successor owner/operator of the Mary River project;
- b. Government of Nunavut;
- c. Government of Canada; and
- d. Qikiqtani Inuit Association.

2.2 Each organization is responsible for their own costs of participating in activities of the Working Group.

2.3 Role of BIMC or the successor owner/operator of the Mary River project:

- a. Identify indicators and share project-specific data that can contribute to priorities identified by QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Review the effectiveness of socio-economic mitigation measures;
- d. Participate and prepare presentations of project-related data/issues for the QiSEMC.

2.4 Role of the Government of Nunavut:

- a. Identify indicators and share data that can contribute to priorities identified by the QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

2.5 Role of the Government of Canada:

- a. Work with the Working Group to identify and align indicators and share relevant data from the Nunavut General Monitoring Plan (NGMP);
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

## 2.6 Role of the Qikiqtani Inuit Association:

- a. Identify indicators and share data that can contribute to priorities identified by QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

## 2.7 Protection of Personal Information

It is recognized that, in collecting and sharing of any information and data under these Terms of Reference, each of the members of the Working Group is required to comply with any rules governing the collection, use, and disclosure of personal information, applicable to each member respectively, in accordance with the provisions of privacy legislation.

## 2.8 Information

The members acknowledge that:

- a. BIMC is best able to collect and provide data concerning employment and training in relation to the Project;
- b. the Government of Nunavut and the Government of Canada are best able to report public statistics on general health and well-being, food security, demographics and other socio-economic indicators at the community and territorial level; and
- c. the Qikiqtani Inuit Association is best able to provide information and data relating to Inuit land use and culture at the community and regional level.

## 3. OBJECTIVES

3.1 The Working Group has the overall goal of contributing to the ongoing expansion of knowledge related to interactions between communities in Nunavut and the Mary River Project. The priority is on knowledge that will ultimately assist in directing socio-economic benefit from the Project, enhance the accuracy of subsequent predictions related to socio-economic impact assessment, and improve the focus and efficiency of socio-economic monitoring.

3.2 The Working Group aims to undertake collaborative monitoring in order to identify and access priority data that will be useful in improving the socio-economic performance of the Mary River Project. This will involve combining Project-specific performance data with data generated by other member agencies. The resulting insight will be useful in supporting adaptive management measures implemented by member agencies to minimize adverse effects and maximize benefits from the project. The goal will be to analyze the monitoring data in order to assess the effectiveness of current practices; obtain early warning should mitigation measures not be achieving their intended outcome; and provide timely detection of unanticipated outcomes.

3.3 The Working Group aims to improve understanding of priority socio-economic issues in order to increase confidence in socio-economic assessment predictions. The Working Group will identify priority predictions contained in the Mary River Final Environmental Impact Statement (FEIS) and will then work to address how these predictions can be validated or how unanticipated trends/observations can be described.

3.4 The Working Group will provide monitoring data and objective analysis in a manner that is focused, efficient and cost-effective.

3.5 The Working Group will ensure that project-specific monitoring aligns, where appropriate, with QiSEMC priorities, such as, but not limited to:

- a. Health and well-being;
- b. Education, life skills, and training;
- c. Employment and career progression;
- d. Demographics;
- e. Land use, culture, food security; and
- f. Other priorities that may be identified by the QiSEMC.

#### **4. REPORTING AND COMMUNICATION**

4.1 BIMC or the successor owner/operator of the Mary River project will prepare an annual socio-economic report, presenting performance data, to the Nunavut Impact Review Board for review. These annual reports will be due on 30 June of each year, containing data on the indicators selected by the Working Group for the previous calendar year (January to December). These reports will further describe the Company's participation in the QiSEMC, other collaborative monitoring processes and any activities related to better understanding of socio-economic processes.

4.2 Following Project Certificate issuance and BIMC's decision to proceed with the construction of the Mary River project, annual reporting will commence following the start of site activities.

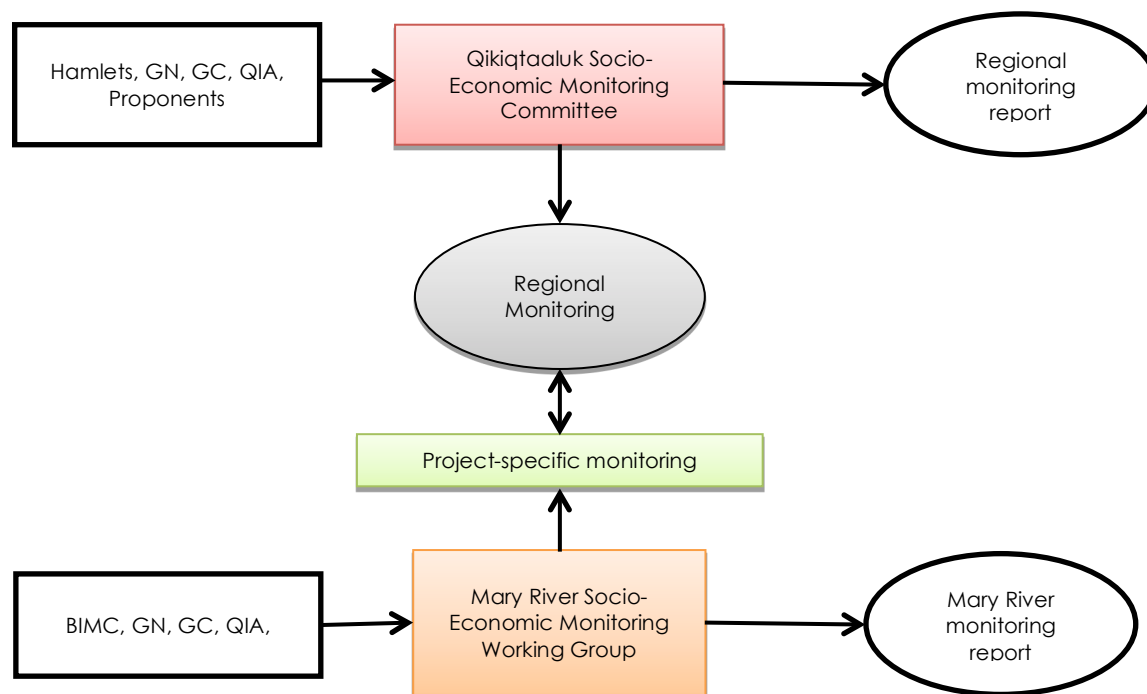
4.3 As appropriate, the Working Group may communicate with, and request data from, other issue-specific working groups that may arise throughout the life of the project.

#### **5. MEETINGS**

5.1 The first official meeting will be held within six (6) months of Certificate issuance or at the next QiSEMC following issuance, whichever is first.

5.2 The Working Group is to initially meet twice a year, preferably immediately prior to or immediately after the QiSEMC meetings. This meeting schedule may be changed at a later date if agreed to by all members.

5.3 BIMC will designate a Chair and optionally a Secretary for these meetings. BIMC's appointment of the Chair (which could include itself) recognises the significance of the weight of responsibility for reporting by the Company.



## 6. RELATION TO IIBA OBLIGATIONS

6.1 The parties recognize that this ToR is separate from any obligations under the Inuit Impact and Benefit Agreement (IIBA) between the proponent and the Qikiqtani Inuit Association and that the mandate of the Working Group shall not include monitoring of the IIBA.

6.2 Any sharing of information with the Working Group related to the IIBA will be solely at the discretion of the Qikiqtani Inuit Association and Baffinland Iron Mines Corporation or successor.

## 7. REVIEW OF TORS

7.1 These Terms of Reference may be reviewed by Working Group members periodically for any required changes that may be applicable as the Project evolves from construction, through operations and closure.

## **APPENDIX B: 2017 QSEMC & SEMWG MEETING MINUTES**

## **Qikiqtaaluk Socio-Economic Monitoring Committee Annual Meeting, July 5 & 6, 2017, Arctic Bay, Nunavut**

The meeting began with participant introductions. The following communities and other stakeholders were represented:

- Arctic Bay
- Cape Dorset
- Pangnirtung
- Sinikiluaq
- Pond Inlet
- Hall Beach
- Iqaluit
- Grise Fiord
- Qikiqtarjuaq
- Igloolik
- GN Department of Health
- GN Department of ED&T
- INAC NGMP
- Nunavut Bureau of Statistics
- Baffinland
- QIA

The community roundtable proceeded with a few items of note including

- The need for community freezers in almost all communities
- The need for more public housing
- Grateful for the employment from Baffinland in the communities in the LSA
- Lots of fishery exploration that has the potential of a positive economic effect in communities
- New infrastructure including hotels, daycares and housing units
- The need for more child care in all communities
- The need for community hall infrastructure in a number of communities especially for youth
- Overall infrastructure maintenance in all communities

Following the community roundtable, the GN department of Health gave a presentation. Discussions that followed included:

- Contaminated sites and how it impacts health
  - QIA steering committees are dealing with contaminated sites with NTI
- Meat studies for walrus and country food takes too long

- NRI just finished construction of a lab for testing – staff are being trained to do testing in Iqaluit which should decrease wait time for results
- Using statistical data, is there strategic planning that the GN is going to use to actually start this upstream planning process?
  - The GN needs to work together in all departments to start working in a systematic way to improve Nunavut as a whole

The meeting continued with a presentation from INAC on the Nunavut General Monitoring Program. Conversations that took place surrounded topics such as:

- Whether the data from projects being funded is shared publicly and how INAC is looking at making this info public
- The Nunavut Association of Municipalities (NAM) and the information they can provide to researchers including what needs to be researched
- The need for data from all institutions at a municipality level

After the lunch break, the presentation that followed was on behalf of the Nunavut Bureau of Statistics. Items of discussion that followed were:

- The many factors that can contribute to data trends
- The difficulty in relating specific trends directly to the Mary River Project since it's been in operation for a short time
- Collecting data for the sake of collecting data vs using this data and doing something with the information to make changes in Nunavut

The day ended with the Baffinland presentation and the discussion that followed. Items discussed included:

- Safety training and emergency response on-site
- Rotational shift issues for staff with children
- How staff can learn to properly manage money for their two weeks off the mine site
- The need to recruit and keep Inuit staff
- Work readiness programs that are successful for other Nunavut projects
- The need for childcare in communities and who plays a role in delivering these resources (QIA/GN/GoC/Proponent)
- The training for heavy equipment operators is great but there needs to be training for mechanics
- Pension planning and financial planning
- Shipping routes for the Project
  - \*\*Baffinland to send the map presented at the meeting\*\*
- The communities outside of the local looking for more hiring and employment opportunities at the project



- It was noted that jobs are open to all Baffin communities so all Qikiqtaaluk communities are equally eligible to apply

The second day of the meeting started with a recap of the previous day. Participants were given a document with the Valued Socio-Economic Components (VSEC's) for the Mary River Project. These VSEC's are:

1. Population Demographics
2. Education and Training
3. Livelihood and Employment
4. Economic Development and Self-Reliance
5. Human Health and Well-Being
6. Community Infrastructure and Public Services
7. Contracting and Business Opportunities
8. Cultural Resources
9. Resources and Land Use
10. Cultural Well-Being
11. Benefits, Royalty and Taxation
12. Governance and Leadership

The committee was asked to decide and order these VSEC's in number of importance to them. Discussions then followed surrounding these VSEC's, as well as any other relevant items according to the Qikiqtaaluk communities and stakeholders. The conversation took up the entire morning, and it proved to be a valuable morning full of discussions surrounding what communities feel are the most important to them, the region and the territory as a whole. These topics covered areas such as:

- Infrastructure for country food processing plants to provide for a local economy and better healthy food opportunities
- Racism resulting in Inuit turnover
- Mental health initiatives on-site and in the communities
- Human health and well-being needs to be a priority
- Conflict management and cultural sensitivity
- Employment leading to an increase in self-esteem
- The need for translations in communities at stores
- Smaller communities (especially farther away from the Mary River Project site) are not benefiting from education and training
- Drop-out rates from schools
- Where community members can find work if they have an education
  - Finding a lack of employment opportunities in the small communities even when people are well educated
- The need for mental health programs in communities and health centres
- Parents need education and guidance on good parenting skills
- The opportunity for role model programs in communities

- The need for cultural and recreational programs on-site at Mary River
- The disincentive in finding employment if you live in social housing
  - The more money you make, the more you pay in rent in social housing so to keep affordable rent people stay unemployed
- The need for recording Traditional Knowledge and IQ so young people can learn and carry on this knowledge
- Issues of racism on-site for local employees
- Stories of employees being demoted instead of promoted
- Turnover due to lack of childcare, homesickness, racism, 12 hour shifts being too long – need some breaks to enjoy recreational time
- The Elder advisor program is a good idea but it doesn't work when the Elder is not from the same community as the staff
- Mental health workers in communities do not keep information confidential – deters community members from using that resource
- Would like to see a program on behalf of Baffinland to see Elders receiving country food
- Royalties need to be better managed so that communities see more money

Overall, most VSEC's were touched on, but some that came up multiple times were:

- Human Health and Well-Being
- Education and Training
- Cultural Well-Being
- Community Infrastructure and Public Services

The meeting concluded with a decision on where the next QSEMC will be held. All members voted, and the decision was to host the next annual meeting in Sanikiluaq. The date will be determined at a later time.

Action items for the next meeting and the time leading up to the meeting are:

- Baffinland to send the map of the Mary River shipping route
- Have the community profiles provided by Department of Health translated
- The possibility of reporting on cultural activities on site at the Mary River Project

### **Project-Specific Action Items/Recommendations Issued at the 2017 QSEMC Meeting**

Two Project-specific action items/recommendations were issued by the QSEMC to Baffinland at the 2017 QSEMC meeting, to which Baffinland has provided the following responses:

**QSEMC Action Item/Recommendation #1:** Baffinland to provide a map of the Project's shipping route.

**Baffinland's Response:** Baffinland will provide a map of the Project's shipping route at the 2018 QSEMC meeting.

**QSEMC Action Item/Recommendation #2:** Baffinland to investigate the possibility of reporting on cultural activities on site at the Project.

**Baffinland's Response:** Baffinland has reported on cultural activities on site in its Annual Report to the NIRB (e.g. through Project Certificate Condition No. 155). Baffinland will also provide a summary of on site cultural activities at the 2018 QSEMC meeting.



**Meeting Notes**  
**Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting**  
**February 2, 2017 (300pm – 445pm)**  
**By Teleconference**

**Attendees:**

*Baffinland Iron Mines Corporation (Baffinland):*

Mary Hatherly  
Adam Grzegorzcyk  
Jason Prno (consultant)  
Richard Cook (consultant)

*Government of Nunavut (GN):*

Lou Kamermans  
Chantelle Masson  
Erika Zell  
Arielle Stockdale

*Qikiqtani Inuit Association (QIA):*

Rebecca Mearns  
Shane Cameron (consultant)

*Indigenous and Northern Affairs Canada (INAC)*

David Abernethy  
Rachel Theoret-Gosselin

**Other Information:**

Jason Prno facilitated the meeting. Richard Cook took meeting notes.

**Meeting Notes:**

- 1. Introductions (All)**
- 2. Update on the 2016 Socio-Economic Monitoring Report (Baffinland)**
  - a. In preparation, to be submitted with NIRB Annual Report
  - b. Similar in structure and content to 2015 report, which was a significant departure from previous reports. Now much more comprehensive, with additional indicators added.

This was done to bring the report better in line with EIS indicators and PC conditions. The report has been improved further for 2016.

- c. 2015 report – Issued in draft to get feedback from the SEMWG, so we’ve taken that feedback and have incorporated it into the 2016 report.
- d. A new addition to the 2016 report – Revamp of employee information survey. This will be an addition to the 2016 report.
- e. Baffinland is considering the inclusion of a trends analysis in the 2016 report; similar to the NWT Communities and Diamonds report and more recently the Meadowbank monitoring report. Looking forward to obtaining SEMWG feedback on the approach, when people review the 2016 report.
- f. Currently have most of the government data we need for the 2016 report, just waiting on company data for 2016.
- g. Inuit employment was lower than Baffinland would like in 2016, and Inuit turnover was higher than they would like. Baffinland is taking active steps to address this. An Inuit HR Strategy and Inuit Procurement Strategy are in the final stages of preparation.
- h. Baffinland will table the draft Inuit HR Strategy with QIA for discussion. It includes high level commitments which are intended to assist Baffinland/contractors in meeting or exceeding the MIEG. First goal is to strengthen stakeholder engagement and collaboration. Second goal is to strengthen data collection processes. Want to see employee skills and match that with upcoming needs, to be able to identify training initiatives required. Want to roll out a revamped Work Readiness Program, which will be run as a pilot in 2017 with the intention to deliver 2x/year in each community in subsequent years.
- i. Want to improve recruitment, and develop a process to catch issues in first 8 weeks following site employment to identify and address employee concerns. A number of initiatives are being looked at with regards to youth fairs, scholarships, and developing programs for youth and women to gain experience/exposure on-site. What has been lacking is a process of monitoring and an evaluation framework. Some initiatives to discuss with QIA in the future include joint training for BCLOs/CLOs, HR career information tour, and an on-site apprenticeship program. New instructions to contractors are also envisioned (want to improve contractor reporting of Inuit employment), with incentive and penalty schemes attached. Baffinland is revising its onboarding and retention programs. Baffinland would like to create a mechanism to track employee concerns, including complaints/grievances. Voluntary employee survey is also being looked at.
- j. Inuit HR Strategy is a companion piece to Inuit Procurement Strategy.
- k. Company takes Inuit employment very seriously, and we acknowledge Baffinland has not met targets. Want to encourage Inuit employment but equally important is retention and advancement of Inuit through the workforce. Baffinland will be developing 3 to 5 year goals to address training, recruitment, advancement and retention.
- l. RE: 2016 monitoring program data - Some data remains only available at the territorial level. Where data is lacking, Baffinland will continue to track issues through the QSEMC process and Baffinland’s community engagement program.

### ***Questions and comments on 2016 Socio-Economic Monitoring Report (All)***

LK – Will we follow the same process as last year of circulating a draft to the SEMWG before the annual report?

JP - Won't be able to get a draft report out before annual report, because of when data becomes available. The purpose of the draft last year was to provide an opportunity to get comments on the new reporting format.

LK – It's a practice we advocate for. Meadowbank has provided early drafts, but has latency in their reporting. TMAC has provided us with a draft before. Maybe we can have communication with Baffinland before the annual report is submitted so we don't have to go through NIRB process with formal comments.

JP – That's what we were looking at, and part of why we wanted to have this call, because one face-to-face meeting a year makes continuity difficult. Perhaps more regular teleconferences with the SEMG would address this concern.

RM – We can be available more often for these types of calls.

JP – Richard is taking notes and we'll circulate them to the SEMWG.

DA – How will the trends analysis be different from what you are already doing?

JP – This is something we looking at for 2016, but wanted to talk to the group before moving too much farther ahead. We haven't done this before, but are considering analyzing trends before/after development and year over year. We're interested in a dashboard approach.

DA - Will this be presented in bar charts, etc.?

JP – To be determined. But, It would be nice to agree on common indicators so we can compare projects across the territory.

DA – We'll wait and see what you produce; we're looking forward to seeing what is done.

AG – We are still a young project and therefore have only ~2 years of operational data. So, we are just now getting to the point where we can do trends analyses. It will depend on available data and length of the dataset.

### **3. Obtain working group feedback on the new Baffinland Employee Information Survey**

JP – Baffinland decided to revamp is survey to achieve PC condition requirements. A draft of the survey documents were distributed to the SEMWG members prior to this call. One PC condition specifically

asked us to work with QSEMC in developing the survey, so this is why we asked this group (which is a subset of the QSEMC) for feedback. Baffinland will issue the survey to all new employees as part of the onboarding process. Survey will be voluntary. Inuit employees living within and outside of Nunavut will be asked to complete the survey, in addition to non-Inuit employees living in Nunavut. Wouldn't be administered to contractors. One of the PC conditions focuses on migration, and we have tailored our questions as such. We are hoping to generate initial data in Q1-2017 for the 2016 monitoring report. Afterward, survey results will be reported by calendar year. Hope to get information out for the 2016 report, but results may need to be presented at a later date if this is not possible. Feedback on the survey from the SEMWG is requested.

AS – We added a number of suggested questions on the survey. Does everyone have them with track changes?

JP – They were only issued to Baffinland.

AS – There were two subsets of questions we added. The first were questions on respondents' current housing situation. Overcrowding is a very important topic. For the people finding employment, what is their current situation, and will employment affect their housing situation? The majority of Nunavummiut live in public housing. With increased income, will different options be available to them? We want to take advantage of employment by bringing people out of public housing, if it is possible. If the survey is for incoming employees only, the data we collect may be more limited. Or is it for outgoing employees too?

JP – The survey is planned to be administered only during the onboarding of new employees.

AS – So it may be premature to ask about home ownership, since new employees might not know what employment will mean for their housing. So maybe asking questions on their current housing situation is sufficient.

LK – The PC condition states an annual survey will be conducted.

JP – Survey results would be reported annually for new hires. Baffinland really struggled with obtaining survey responses before when on-site HR staff tried to survey employees. They received lots of push back. We thought best way to get feedback year after year was by integrating the survey into the new employee onboarding process.

LK – Voluntary surveys are hard to do. But seeing changes over time will be difficult if you're surveying each employee only once.

JP – Good point. We can talk about this further. But the poor reception of survey last year is why we are proposing what we are now.

LK – Getting that information right away is critical, but it needs to be followed up on to see changes over time.

JP – Comparability diminishes if a given employee fills it out once, and then doesn't fill it out, for example, until 5 years later, or never fills it out again. So the GN would prefer to have survey administered voluntarily every year?

LK/AS – From housing perspective, it would be difficult to figure out impact of the project over time otherwise. I like the idea that the survey can be anonymous, but it could be useful to analyze cohorts (e.g. what is the housing situation for new employees vs. employees after 5 years, etc.?). The data is a lot less valuable when it is not collected annually.

AG – From the proponent's perspective it is our preference to collect this data, but we had a strong pushback from our employees when we last tried. We can't make people do the survey, so that's why we proposed the approach we did.

JP – There is another point that we want to discuss – There are a number of housing questions added by the GN that divert from the essence of the PC condition. We want a survey that is focused on what is required to be collected, is simple and easy to complete, and reduces barrier to having people complete it.

LK – We took the approach that we weren't necessarily limited to what was specified in the PC. NIRB doesn't always incorporate all comments made by reviewing parties into their PCs. We ultimately want to know if the projects provide a benefit. I don't think the questions we added change the direction of the survey. The GN can provide more information / comments on why the questions are needed, if you like? Or could Baffinland highlight those that are not applicable?

JP – We can send you our comments if you like. Did INAC or QIA have any comments on the survey?

RM – We've looked at the survey and share concerns with the GN re: only conducting the survey on new employees. Is there way to look at trends? We do have some comments/suggestions we can provide in writing. We also have an upcoming JMC meeting in Oakville. One thing on the agenda for some time has been the development of a workplace conditions survey. This would be done with current employees at Baffinland, as a requirement of the IIBA. We have been discussing with Baffinland a survey with employees or employment coordinators. Is there a way to integrate the workplace conditions survey with this survey? And could you use Inuit employment coordinators to get participation? It's not clear how the previous survey was rolled out and communicated – It's worth looking into. Getting respondents to fill out a survey can be difficult. It's important to explain why the survey is being conducted and how it will benefit things.

JP – I wasn't aware of this other survey; it's worth considering combining them both.

MH – It's on the agenda for the JMC for next week, so we can talk about it then?



RM – Yes, combining the surveys would be much better, if possible. We will send comments on re-wording questions or with follow up questions. Is there a need to include the employee's names on the survey? Or can they remain anonymous?

RC – Have other companies conducted such surveys?

LK – Meadowbank conducted a survey several years back, and found it very helpful. I will look into whether or not the Meadowbank survey is shareable.

DA – Re: survey question 9 on community location – Are you trying to see what community they would want to relocate to?

JP – Community employment location would be specific to BCLOs or Baffinland Iqaluit staff.

DA – Regarding the need to complete the survey annually, I agree with the GN's interpretation of the Project Certificate.

[Unrecorded comments]

RTG – My comments on survey were already brought up. Re: confidentiality - Make it clear their name is optional as it currently appears mandatory. We need to read up PC Condition No. 133 and what its actual intention was. You should find a way to monitor change of status. Could you survey 1-year, 3-year, and 5-year employees?

#### **4. Discuss Baffinland's plans for addressing the socio-economic impact assessment portion of the Phase 2 EIS.**

[RC provided an update on the status of the Phase 2 review and EIS]

JP – For the Phase 2 baseline, the goal is to draw on and reference the considerable amount of baseline work that has already been prepared for the Project. The intention is not to present an updated baseline report. Plenty of monitoring data has been generated since the FEIS. We want to focus on what we're already monitoring and what's already been determined to be important to monitor. For the impact assessment, we want to focus only on the residual effects assessed in the FEIS (largely leaving aside subjects of note and other topics and information). We will discuss and provide summary information on how each of the residual effects will or will not change due to the Phase 2 Proposal. If any of these effects are expected to change significantly, a more detailed effects assessment discussion will be provided.

LK – From reviewing the ERP, it was very hard to see what was being studied and what numbers we were working with, because the document was flipping between the FEIS and ERP addendum. Nailing down how we are going to refer to the project, as it now includes the southern rail line, will be important.

[RC – Defined the 4 stages of Phase 2]

EZ – When will the proposal go to NPC?

AG – In the next couple of days.

RTG – Have you discussed with NIRB if there would be a screening phase?

RC – Baffinland already has amended guidelines, so the best case is that they proceed right to review. But we don't know what NIRB will decide in terms of next steps.

AG - Yes, we will be meeting with NIRB next week.

## **5. Other Matters**

LK – The GN is contemplating a territorial socio-economic monitoring workshop, an idea which was borne out of the Kitikmeot SEMC. Realizing we will likely have projects in each region soon, we don't currently get a full perspective of how the industry is affecting the territory. We would like to see aggregated territorial reports. The workshop would bring industry and other players together to discuss indicators, processes, and how to approach socio-economic monitoring in the near future. We also want regional Inuit organization attendance and input, so will send details to you shortly. If we're all on the same page, we will start into the planning, logistics, and development of materials. We were at one point thinking April would be the best time for the workshop, but the earliest now is May.

[Meeting adjourned at 4:45 pm]



## Meeting Notes

### Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting

September 14, 2017 (5:00pm-6:00pm)

Frobisher Inn – Iqaluit, Nunavut

#### **Attendees:**

##### *Baffinland Iron Mines Corporation (Baffinland):*

Mary Hatherly (MH)

Andrew Moore (AM)

Jason Prno (consultant) (JP)

##### *Government of Nunavut (GN):*

Lou Kamermans (LK)

Chantelle Masson (CM)

Rhoda Katsak (RK)

##### *Qikiqtani Inuit Association (QIA):*

Rebecca Mearns (RM)

Shawn Harriman-Byrne (SHB)

##### *Indigenous and Northern Affairs Canada (INAC)*

David Abernethy (DA)

Julia Prokopick (JP-INAC)

#### **Other Information:**

Lou Kamermans chaired the meeting. Andrew Moore took meeting notes.

#### **Meeting Notes:**

##### **1. Introductions (All)**

##### **2. NIRB Draft Appendix A**

LK - Introduced the topic and began discussion. Indicated that the MRSEMWG is largely self-directed and should continue work as such.

MH - Indicated that BIM intends to provide comments to NIRB on Appendix A, but has not yet.

RK - Asked for more information about what is included in NIRB's Appendix A.

JP – Provided some initial comments about Appendix A and indicated that they will be elaborated on in a formal submission. Indicated that BIM has a desire to strengthen the role of this working group as it relates to socio-economic monitoring.

LK - Indicated that that GN has reviewed Appendix A, but not yet in enough detail to provide extensive comments. The GN intends to share their comments with members of the working group prior to submitting them to NIRB.

JP - Should include Megan Lord-Hoyle of Baffinland in conversations about this to ensure she is engaged on this work and all comments related to Appendix A.

LK - Next step is for GN to get in touch with Mary H. and provide comments, and to make a concerted effort to align comments provided by working group members to NIRB.

DA - Wants clarity on reporting/commenting approach.

LK - Provided clarification. Indicated that comments are due October 22

### **3. Role of Socio-Economic Monitoring in NIRB Community Information Sessions**

LK - This was raised by Rhoda. Indicated that SEMC representative should be present at these meetings. Provided some clarity on what the NIRB community visits consist of and why an SEMC representative should attend.

JP - GN would be the SEMC representative on these community visits?

LK - Asked for working group member opinions on this matter.

MH - We would need to discuss this internally first and see who would be the best representative to attend.

RK – NIRB typically talks about territorial and marine monitoring but not socio-economic issues at these meetings.

LK – We will talk to NIRB and see what opportunities exist for SEMC participation.

DA - Has the GN gone in the past? Believes that INAC has had people participate in the past.

LK - Will check with GN internally to see what works.

?? – There are lots of separate community visits, and lots of information is provided to communities. This is lots of duplication. Should we be collaborating?

DA - Thinks INAC does try to collaborate timing. But is not sure. Agrees that duplication is bad.

LK - Will follow-up with NIRB to see about collaboration.

RK - BIM does regular community update sessions. NIRB does it annually, but provides mostly environmental information. We need more socio-economic information in the communities. We need more public reporting.

JP – I've attended scoping sessions held by NIRB in the past. These kinds of sessions are managed and led by NIRB; they may be hesitant to have companies play too big a role in these sessions.

LK - Good point. Someone from the SEMC would good be a good representative to talk objectively.

### **4. Plans for 2017 Socio-Economic Monitoring Report - Incorporation of Workshop Deliverables**

JP - Provided update on plans for 2017 report. Indicated that 2017 report will be similar to last year's layout. Some changes may occur, but they will not be significant.

LK - After the workshop, the working group should have a follow-up chat. Should we meet before a draft workshop report is issued or after?

MH/JP – If we meet following issuance of the draft report it would allow for substantive discussion.

JP – I know other companies have issued their annual socio-economic monitoring reports in draft previously. I'm not sure this is something Baffinland can do, because reports are due March 31<sup>st</sup> and all data may not be received until close to submission time.

LK - AEM submits in December. Allows for a draft report review process. This is not something that GN endorses or would necessarily like to implement elsewhere. Provided an explanation of history of how AEM reporting is structured and why.

JP/MH - Timing remains an issue for us to provide a draft report. However, we're happy to provide an update by phone to the working group like we did last year.

LK – It would be a good idea for a draft report to be issued, to allow for better incorporation of reviewer perspectives. Can Baffinland provide a basic draft report?

JP/BM – Our submission timeline is a NIRB timeline. We don't have much flexibility re: timing.

JP – Baffinland's NIRB Annual Report draws heavily on the Socio-Economic Monitoring Report so it is very important to get done by March 31<sup>st</sup>.

LK - If it's not possible, then Baffinland can expect more feedback on the final report.

JP – BIM is fine with that. However, our preference is to deal with these issues to the greatest degree possible at working group level, as this is the group that contains the monitoring experts.

LK - As a practice, we will work with deadlines given to produce NIRB comments. We can decide whether to address issues at the working group level or formally through NIRB.

JP - We should aim to have a teleconference ahead of formal submission to discuss comments.

DA - Agrees. This is also done in the water licensing process. Allows for a simple discussion to avoid any misconceptions.

## **5. Baffinland Phase 2 Proposal EIS Update**

MH - Provided Phase 2 update. EIS is being worked on but no clear timeline for submission to NIRB yet as there are outside factors to consider such as the NPC review.

LK - How is Baffinland's relationship with NPC?

MH – We're concerned about the lengthy consideration of Phase 2. But our aim is to keep relationships amicable, which is in the best interest of all parties.

JP – I am part of the team working on the Phase 2 Proposal socio-economic impact assessment. BIM would like to use this working group to discuss socio economic issues related to Phase 2 impact assessment issues, if possible.

LK - Agrees. Thinks that is a great approach. GN will be consistent in where its socio-economic priorities are.

DA – Re: monitoring report in April. Can there be a meeting where the monitoring report is initially presented?

## **6. MRSEMWG Follow-up to Reviewer Comments - 2016 Socio-Economic Monitoring Report**

JP - BIM is here to address working group comments/answer questions. We have replied to GN and QIA comments to NIRB already in writing. Would like to deal with future comments in this forum, where possible.

RK – There were lots of comments in the report about employment. Arctic Bay was the highest employment community. This is interesting, as Pond Inlet is a bigger community. What is Baffinland

doing to retain employees? This question was asked at a community meeting in the past. It was not followed-up on at the July meeting this year. Should we as a group proactively bring up these issues? JP - BIM has made new commitments in this area, such as those related to the IHRS, MIEG, and IPCS. They are all part of the response to this concern. We are happy to report back as additional concerns are heard.

MH/RK – We need to come up with a meaningful way to answer these questions.

DA - What about your work ready program? Please provide a summary.

MH – Summarized plans for revised work ready program.

RK/LH - SEMC should be addressing these concerns in its reports. Territorial monitoring may be the best way to address these concerns. This would just be a general good practice.

JP - Detailed records of SEMC meeting minutes are very important to maintain, even in the new territorial monitoring report format.

LK - As proposed, an appendix would contain a summary of meeting minutes.

## **7. Review and Update of SEMWG TOR**

LK - Should the TOR be re-considered?

JP – We'll need to take this back and see where improvements can be made from a BIM perspective.

LK - Shared and explained org. chart that is being worked on with Agnico-Eagle (AEM). Open to looking at this for inclusion in BIM's TOR. Will seek AEM permission to share this with the Mary River working group.

JP - Maybe we should wait until the AEM chart is finalized?

LK - When we review the TOR we should be more explicit about appointing a Chair. Anyone have a different opinion?

Group - No objections.

JP - Asked clarifying questions about Chair responsibilities.

LK - Explained and shared GN's view on responsibilities (i.e. to organize and host working group meetings, facilitate meetings, take notes).

DA - As we go through the TOR it will be beneficial to clarify expectations. Create greater structure related to deliverables, and maybe have quarterly calls?

[Meeting adjourned at 5:54 pm]

APPENDIX C: CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS RELATED TO SOCIO-ECONOMIC MONITORING

Term and Condition No.	Category	Term or Condition	2017 Socio-Economic Monitoring Report Reference	Baffinland Comments
129	Population Demographics – Qikiqtaaluk Socio-Economic Monitoring Committee	The Proponent is strongly encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee along with other agencies and affected communities, and it should endeavour to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic monitoring priorities related to the Project, communities, and the North Baffin region as a whole.	Section 1.2 Section 1.4 Appendix A Appendix B	Baffinland continues to engage with the QSEMC and participates in the Mary River SEMWG, a sub-set of the QSEMC whose members include Baffinland, the Government of Nunavut, the Government of Canada, and QIA. A Terms of Reference for the SEMWG (which identifies socio-economic monitoring priorities and objectives for the Project) has been finalized. Baffinland incorporated feedback from SEMWG members in 2016 to finalize the Project’s socio-economic monitoring plan. Baffinland also continues to refine its socio-economic monitoring program based on feedback received from Project stakeholders.
130	Population Demographics – Project-specific monitoring	The Proponent should consider establishing and coordinating with smaller socio-economic working groups to meet Project specific monitoring requirements throughout the life of the Project.	Section 1.2 Appendix A Appendix B	Baffinland continues to work with the QSEMC and the SEMWG on socio-economic monitoring initiatives. In addition, Baffinland regularly engages other committees which operate under provisions of the IIBA on various socio-economic topics.
131	Population Demographics – Monitoring demographic changes	The Qikiqtaaluk Socio-Economic Monitoring Committee is encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effect the Project has on migration.	Section 3.1 Section 3.2 Section 3.3 Section 3.4 Appendix E	Baffinland has provided demographic change information in the Socio-Economic Monitoring Report. Baffinland has also implemented an Inuit Employee Survey, which collects information related to employee and contractor changes of address, housing status, and migration intentions.
133	Population Demographics – Monitoring demographic changes	The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders, design and implement a voluntary survey to be completed by its employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.	Section 3.4 Appendix E	Baffinland has implemented an Inuit Employee Survey, which collects information related to employee and contractor changes of address, housing status, and migration intentions. Baffinland continues to discuss the content and results of the survey with members of the SEMWG and will continue to solicit feedback on potential improvements to the survey.
134	Population Demographics – Employee origin	The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows: a. The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each; b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each; c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.	Section 3.5	Baffinland has presented employee and contractor origin information in the Socio-Economic Monitoring Report.
140	Education and Training – Survey of Nunavummiut employees	The Proponent is encouraged to survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned from a previous job placement or educational institution in order to take up employment with the Project.	Section 4.4 Appendix E	Baffinland has implemented an Inuit Employee Survey, which collects information related to employee and contractor education levels, and education and employment status prior to taking up employment with the Project.
145	Livelihood and Employment – Barriers to employment for women	The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs.	Section 5.4	Baffinland has presented information on women employed at the Project and potential barriers they may face in the Socio-Economic Monitoring Report. Furthermore, specific reference is made in the Mary River Project IIBA to women in the workplace and the associated barriers they may face. This topic is addressed by Baffinland and QIA through Article 7.15 of the IIBA.
148	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Food security	The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee’s monitoring program which addresses Project harvesting interactions and food security and which includes broad indicators of dietary habits.	Section 7.2 Section 9.1 Section 10.1	Baffinland has presented information on Project harvesting interactions and food security in the Socio-Economic Monitoring Report. Baffinland has also presented related information on household income and food security, and land user-Project interactions in this report.
154	Human Health and Well-being – Indirect impacts to health and well-being	The Proponent shall work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate.	Section 4.2 Section 7.3 Section 7.4 Section 7.6 Section 7.7 Section 7.8 Section 7.9 Section 7.10	Baffinland has presented information on the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and other topics (e.g. crime rates, EFAP usage) in the Socio-Economic Monitoring Report.

Term and Condition No.	Category	Term or Condition	2017 Socio-Economic Monitoring Report Reference	Baffinland Comments
			Section 7.11 Section 7.12	
158	Community Infrastructure and Public Services – Impacts to health services	The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.	Section 1.2 Section 7.2 Section 7.9 Section 8.3 Appendix A Appendix B	<p>Baffinland continues to work with the QSEMC and the SEMWG on socio-economic monitoring initiatives; the Government of Nunavut (GN) actively participates in both these groups. A Memorandum of Understanding (MOU) was also signed with the GN Department of Health in November 2013 and subsequently updated in 2017 regarding site health services and medevac procedures. More specifically, this MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN Department of Health for costs associated with the medical transportation of employees and for conducting pre-employment medical exams.</p> <p>Baffinland has provided information on potential socio-economic effects of the Project in its Socio-Economic Monitoring Report. This includes indicator data related to pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees (i.e. percentage of the population receiving social assistance, percent of health centre visits related to infectious diseases, total and per capita number of health centre visits in the LSA, number of visits to Project site medic).</p>
159	Community Infrastructure and Public Services – Impacts to infrastructure	The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and in Iqaluit.	Section 8.4	Baffinland has presented information on Project-related pressures on community infrastructure in the Socio-Economic Monitoring Report.
168	Governance and Leadership – Monitoring program	The specific socioeconomic variables as set out in Section 8 of the Board’s Report, including data regarding population movement into and out of the North Baffin communities and Nunavut as a whole, barriers to employment for women, Project harvesting interactions and food security, and indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates that are relevant to the Project, be included in the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring Committee.	Section 3.1 Section 3.2 Section 3.3 Section 3.4 Section 4.2 Section 5.4 Section 7.2 Section 7.3 Section 7.4 Section 7.6 Section 7.7 Section 10.1	Baffinland has presented information on demographic change, barriers to employment for women, Project harvesting interactions and food security, and potential indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates in the Socio-Economic Monitoring Report.
169	Governance and Leadership – Monitoring economic effects	The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified.	Section 12.1.2	Baffinland has provided a summary of regional and cumulative economic effects in the Socio-Economic Monitoring Report.



APPENDIX D: RESPONSES TO NIRB RECOMMENDATIONS ON THE 2016 SOCIO-ECONOMIC MONITORING REPORT

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
14	The Board requests that Baffinland, in consultation with the Qikiqtaaluk Socio-Economic Monitoring Committee, develop robust indicators to measure and survey the in-migration and out-migration of Inuit and non-Inuit residents in the North Baffin LSA and discuss how this may affect local housing opportunities within the LSA. It is requested that Baffinland conduct a survey of the Inuit employee turnover rate on an annual basis and that the results of the survey be included within the 2017 Annual Report to the Nunavut Impact Review Board.	<p>Baffinland has addressed this recommendation in several ways. Foremost, Baffinland already monitors in- and out-migration of Inuit and non-Inuit residents in the North Baffin LSA through various indicators:</p> <ul style="list-style-type: none"><li>Known in-migrations of non-Inuit Project employees and contractors (obtained from an annual survey of Baffinland Community Liaison Officers in each North Baffin LSA community).</li><li>Known out-migrations of Inuit Project employees and contractors (obtained from an annual survey of Baffinland Community Liaison Officers in each North Baffin LSA community).</li><li>Employee changes of address and migration intentions (obtained from an annual survey of Inuit employees and contractors at Project sites).</li><li>Population estimates/changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA (obtained from the Nunavut Bureau of Statistics).</li></ul> <p>Monitoring results provide a relevant overview of in- and out-migration trends in the North Baffin LSA. Potential effects on local housing opportunities within the North Baffin LSA are also described in the socio-economic monitoring report. Baffinland acknowledges additional in- and out-migration data for non-Inuit and Inuit North Baffin LSA residents are currently unavailable from the Nunavut Bureau of Statistics (i.e. annual, community-level data). Baffinland also acknowledges statistical data collection in this area is primarily a government activity. Baffinland will endeavour to include new relevant data should it become available in the future. Baffinland will also continue consulting with the QSEMC and SEMWG on potential improvements to the Project’s monitoring program. Most recently, the issue of Project ‘data gaps’ was discussed during the July 2016 QSEMC in Arctic Bay and September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. For example, the topic of in- and out-migration of employees was discussed during the September 2017 workshop and draft recommendations for monitoring this topic have now been provided by the Government of Nunavut (2017). Baffinland’s monitoring program for the North Baffin LSA conforms to these recommendations. In addition, Baffinland has provided both Inuit and non-Inuit employee turnover rates in its socio-economic monitoring report. Baffinland also understands additional employee survey questions on housing may be recommended by the Government of Nunavut in 2018. An opportunity to discuss potential new and/or reformulated survey questions will be considered in 2018. A draft response to NIRB recommendation no. 14 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members. However, the Government of Nunavut re-iterated it was developing a list of recommended employee survey questions that will be shared with Baffinland in the future.</p>	Section 3.1 Section 3.2 Section 3.3 Section 3.4 Section 5.3
15	The Board requests that Baffinland consult with the Qikiqtani Inuit Association in discussing priorities regarding monitoring of non-Inuit residents and contractor employees in the local study area, and where applicable, provide information regarding Baffinland’s Inuit employee payroll, in order to provide an understanding of the expansion of the local market for consumer goods and services within the local study area. It is requested that this data be included within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland has addressed this recommendation by including detailed employment data in its socio-economic monitoring report. Specifically, quarterly employment data is provided that depicts the origin, number, and Inuit/non-Inuit ethnicity of Project employees and contractors in the LSA. Baffinland also includes payroll data for Inuit and non-Inuit LSA employees (contractor data is unavailable), in addition to the total value of its Inuit employee payroll (which includes Inuit living outside the LSA). Employment-related topics are also regularly discussed between Baffinland and the QIA through various IIBA committees. A draft response to NIRB recommendation no. 15 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members, including QIA.	Section 3.5 Section 6.2
24	The Board requests that Baffinland assess Project-related influences on housing in the North Baffin Local Study Area, as well as to continue developing employee surveys to properly address all socio-economic indicators likely to arise due to migration. It is requested that the results of the survey be provided and incorporated within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland has addressed this recommendation by complying with Project Certificate term and condition no. 133, which requests that Baffinland design and implement an employee survey to identify changes of address, housing status, and migration intentions. The current Inuit Employee Survey addresses all these requirements. Baffinland also discusses potential Project-related influences on housing related to migration in its socio-economic monitoring report. However, Baffinland has made itself available to the SEMWG and QSEMC to discuss potential improvements to the Project’s monitoring program and understands additional employee survey questions may be recommended by the Government of Nunavut in 2018. An opportunity to discuss potential new and/or reformulated survey questions will be considered in 2018. A draft response to NIRB recommendation no. 24 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members. However, the Government of Nunavut re-iterated it was developing a list of recommended employee survey questions that will be shared with Baffinland in the future. The Government of Nunavut also confirmed its final socio-economic monitoring workshop report would be issued soon.	Section 3.2 Section 3.3 Section 3.4 Appendix E
25	The Board requests that Baffinland adhere to the recommendation of the Government of Nunavut to provide examples of negative changes or concerns reported in the community surveys and a description of how Baffinland intends to address these impacts and confirm that proper mitigation measures have been implemented. The positive and negative results associated with the community surveys should be provided and included within the 2017 Annual Report to the NIRB.	<p>Baffinland has addressed this recommendation by providing the following response. The 2016 North Baffin community survey conducted by Baffinland revealed 57% of survey respondents felt the Project provided positive change for their community, 8% felt the Project resulted in negative change, and 35% said they saw no change as a result of the Project. Positive changes noted by respondents included new jobs for local Inuit and youth, income and work-related benefits for families and communities, and new skills development opportunities for local residents. Negative changes included the long separation between families and employees affecting family stability, the ongoing problem of substance abuse in communities, the need for communication improvements between Baffinland and communities, the need for environmental protection of the area, and that not enough Inuit are being hired at the Project. Survey respondents also talked about the need for continued focus on worker safety and equitable community support. Baffinland continues to address these concerns through various means, such as:</p> <ul style="list-style-type: none"><li>Maintaining a relatively short (2 week in/2 week out) employment rotation and a commitment to consider adopting alternative rotation schedules that are better aligned with familial and community activities (e.g. a 7 days in/7 days out pilot project is currently underway).</li><li>Providing permanent employees and their dependents with access to an Employee and Family Assistance Program.</li><li>Providing employees with access to various on-site communications technologies (i.e. phone, internet) so they may regularly communicate with their families.</li></ul>	N/A

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
		<ul style="list-style-type: none"> <li>Maintaining a drug and alcohol-free work environment.</li> <li>Ongoing engagement with North Baffin LSA communities to discuss Project activities (e.g. through public and stakeholder meetings); documentation and tracking of feedback through Baffinland’s StakeTracker database.</li> <li>Ongoing implementation of Baffinland’s Inuit Human Resources Strategy, Inuit Procurement and Contracting Strategy, and the Q-STEP training program in partnership with the QIA.</li> <li>Maintaining a health and safety culture at Project sites, built on Baffinland’s ‘Safety First, Always’ philosophy.</li> <li>Commitment to provide pre-employment and other training opportunities to employees (e.g. Project and/or job-specific, financial management, literacy and numeracy)</li> <li>Ongoing implementation of the Mary River Project IIBA, to ensure community benefits are being delivered by the Project.</li> <li>Annual monitoring of various environmental and socio-economic indicators, to ensure adverse effects are being avoided and positive effects are being delivered.</li> </ul> <p>A draft response to NIRB recommendation no. 25 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members although some suggestions were made and have been incorporated into a final response.</p>	
26	The Board requests that Baffinland follow the recommendation of the Government of Nunavut to address the increase in Inuit turnover rates at the Project by exploring the feasibility of using the Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund to provide additional supports to community daycares or child care services over and above what is available through the Government of Nunavut’s Start-up contribution program. It is requested that updates with respect to providing additional supports to community daycares or child care services for employees or through Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund be included within the 2017 Annual Report to the Nunavut Impact Review Board.	<p>Baffinland has addressed this recommendation by providing the following response. Baffinland supports two funds established under the IIBA which could potentially be accessed to provide additional supports to community daycares or child care services in the LSA. While Baffinland makes significant financial contributions to these funds, <u>they are administered solely and exclusively by the QIA</u>. It is possible these funds could be used to provide additional supports over and above what is available through the Government of Nunavut’s start-up contribution program; however, all decision-making on this matter rests with the QIA. The funds include:</p> <ol style="list-style-type: none"> <li><b>Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat (INPK) Fund</b> <ul style="list-style-type: none"> <li>Fund provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness (equal annual contributions of \$375,000 by QIA and Baffinland).</li> <li>Fund objectives include the creation of opportunities for community capacity building, the fair distribution of impacts and benefits between communities and across generations, maintenance of consistency with community development objectives, and promotion of mutual understanding and learning.</li> <li>Application details can be found at: <a href="http://qia.ca/programs/ilagiiktunut-fund/">http://qia.ca/programs/ilagiiktunut-fund/</a></li> </ul> </li> <li><b>Business Capacity and Start-Up Fund</b> <ul style="list-style-type: none"> <li>Fund provides up to \$250,000/year to Designated Baffin Inuit Firms (solely funded by Baffinland).</li> <li>Fund helps with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.</li> <li>Application details can be found at: <a href="http://qia.ca/programs/business-capacity-start-up-fund/">http://qia.ca/programs/business-capacity-start-up-fund/</a></li> </ul> </li> </ol> <p>A draft response to NIRB recommendation no. 26 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	N/A
27	The Board requests that Baffinland consider working with appropriate stakeholders to develop a measurement tool/indicator for food security and provide information on the impact of the Project on food security, including access to hunting grounds. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.	<p>Baffinland has addressed this recommendation in several ways and does not believe additional monitoring and/or indicators are necessary. Foremost, Baffinland already monitors several topics relevant to food security:</p> <ul style="list-style-type: none"> <li>Proportion of taxfilers with employment income and median employment income (obtained from the Nunavut Bureau of Statistics)</li> <li>Percentage of population receiving social assistance (obtained from the Nunavut Bureau of Statistics)</li> <li>Employee payroll expenditures (Baffinland data)</li> <li>Number of recorded land use visitor person-days at Project sites (Baffinland data)</li> <li>Number of wildlife compensation fund claims (obtained from QIA)</li> <li>On-site employee harvesting activities (obtained from an annual survey of Inuit employees and contractors at Project sites).</li> <li>Territorial harvesting statistics (obtained from Statistics Canada, from the 2012 Aboriginal Peoples Survey)</li> <li>Territorial food security statistics (obtained from Statistics Canada, from the 2012 Aboriginal Peoples Survey)</li> </ul> <p>Section 10.1 (Project Harvesting Interactions and Food Security) of the socio-economic monitoring report discusses all of these topics. However, Baffinland acknowledges additional community-level indicator data are currently unavailable for the topic of food security; as such, this topic also continues to be tracked through the QSEMC process and Baffinland’s community engagement program. Furthermore, the 2017 report now includes a table describing Baffinland’s role in each of the four food security components identified by the Nunavut Food Security Coalition (2014). Taken together, this provides a comprehensive overview of Project-related food security trends in the North Baffin LSA and no additional monitoring is anticipated at this time. However, Baffinland will continue consulting with the SEMWG on potential improvements to all aspects of the Project’s monitoring program. A draft response to NIRB recommendation no. 27 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	Section 10.1
28	The Board requests that Baffinland engage with the Government of Nunavut to discuss possible Project implications on existing health and social services, including strategies for tracking health and social service requests. The	<p>Baffinland has addressed this recommendation in several ways. Foremost, Baffinland already monitors health and social service-related topics through various indicators:</p> <ul style="list-style-type: none"> <li>Percent of health centre visits related to infectious diseases (obtained from the Nunavut Bureau of Statistics)</li> </ul>	Section 7.2 Section 7.9

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
	Proponent should also consider providing information regarding outbreak investigations of communicable diseases, medical assessment or return to work as a requirement of insurance or workplace policies, and treatment of workplace injuries upon returning to the community. It is requested that an update on this engagement and related outcomes be included within the 2017 Annual Report to the Nunavut Impact Review Board.	<ul style="list-style-type: none"> <li>Number of health centre visits, total and per capita (obtained from the Nunavut Bureau of Statistics)</li> <li>Number of visits to Project site medic (Baffinland data)</li> <li>Percentage of the population receiving social assistance (obtained from the Nunavut Bureau of Statistics)</li> </ul> <p>Monitoring results provide a relevant overview of health and social service-related trends in the LSA. Furthermore, Baffinland remains in regular contact with the Government of Nunavut on health matters related to the Project. Baffinland will also continue consulting with the SEMWG on potential improvements to the Project’s monitoring program. Most recently, health-related monitoring was discussed during the September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. As a result, draft recommendations for monitoring this topic have now been provided by the Government of Nunavut (2017) and include the indicators ‘number of lost time incidents’, and ‘number of times GN emergency health services required’. Baffinland continues to investigate the possibility of aligning its monitoring program with these recommendations where appropriate. A draft response to NIRB recommendation no. 28 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	Section 8.3

## **APPENDIX E: 2018 INUIT EMPLOYEE SURVEY**

# Mary River Project Annual Survey - Inuit Employee

## Overview:

**\*\*Please note your participation in this survey is completely voluntary and no negative consequences will result to those who decide not to participate\*\***

This survey is conducted by Baffinland and the Qikiqtani Inuit Association (QIA) on an annual basis to collect information about the employees of the Mary River Project and their opinions on several topics. More specifically, this survey is conducted because:

- Baffinland is required to report on employment, education, and housing information pertaining to Project employees under the terms of its Project Certificate issued by the Nunavut Impact Review Board (NIRB).
- Baffinland is required to report on workplace conditions under the terms of its Inuit Impact and Benefit Agreement (IIBA) with the QIA.

Your thoughts and opinions are important and will be used to improve Baffinland's understanding of Inuit employment and workplace conditions at the Project (including for female employees) such as leisure activities, cross-cultural training programs, and access to counselling services and cultural activities.

You may choose to complete this survey on your own or with the assistance of Baffinland or QIA staff. You can also complete this survey in either English or Inuktitut. If you choose to complete this survey, your responses will remain confidential and your name will not be used. However, the information you provide may be used by Baffinland and QIA publicly (e.g. for reporting purposes). If you have any questions you can contact the Mary River Human Resources Office.

There are two types of questions included in the survey: 1) closed-ended, and 2) open-ended. The closed-ended questions provide a list of answer options that you can choose from. Please mark the appropriate box next to your answer choice with an 'X'. Open-ended questions do not have pre-defined answers. Please provide as many comments as you like in the answer box for the open-ended questions. If you require more space for your answers to the open-ended questions, please feel free to attach additional pages to the survey. You may also skip any questions that you do not want to answer.

Thank you for your participation.

## General

1. Gender:

- ☐ Male      ☐ Female

2. a) Are you:

- ☐ Inuit      ☐ Non-Inuit

b) If you are Inuit, are you enrolled under the Nunavut Agreement?

- ☐ Yes      ☐ No

c) If you are Inuit, is Inuktitut your first language?

- ☐ Yes      ☐ No

3. Please indicate your age:

- ☐ Under 30 years old
- ☐ 30 to 39 years old
- ☐ 40 to 49 years old
- ☐ 50 to 59 years old
- ☐ Over 60 years old

4. Who do you work for?

- ☐ Baffinland
- ☐ Contractor (Please identify): \_\_\_\_\_

5. How long have you worked for your current employer (Baffinland or contractor)?

- ☐ Less than 1 year
- ☐ At least 1 year, but less than 2 years
- ☐ At least 2 years, but less than 3 years
- ☐ 3+ years

6. Which department do you work in?

## Housing

7. What is your current community of residence?

- ☐ Arctic Bay
- ☐ Clyde River
- ☐ Hall Beach
- ☐ Igloolik
- ☐ Pond Inlet
- ☐ Iqaluit
- ☐ Other: \_\_\_\_\_

8. What type of housing do you currently live in?

- ☐ Privately owned – Owned by you
- ☐ Privately owned – Owned by another individual
- ☐ Renting from a private company
- ☐ Public housing
- ☐ Government of Nunavut staff housing
- ☐ Other staff housing
- ☐ Other: \_\_\_\_\_

9. a) Has your housing situation changed in the past 12 months?

☐ Yes ☐ No

b) If yes, please explain (e.g. Have you moved? Has the type of housing you live in changed?).

10. a) Have you moved to a different community in the past 12 months?

☐ Yes ☐ No

b) If yes, which community did you move from?

11. a) Do you intend to move to a different community in the next 12 months?

☐ Yes ☐ No

b) If yes, which community do you intend to move to?

## Education and Work Experience

12. What is the highest education level you have obtained? (Check only one box)

*No certificate, diploma, or degree*

☐ No certificate, diploma or degree

*High school diploma or equivalent*

☐ High school diploma or equivalent

*Postsecondary certificate, diploma, or degree*

☐ Apprenticeship or trades certificate or diploma

☐ College, CEGEP or other non-university certificate or diploma

☐ University certificate or diploma below bachelor level

☐ University certificate, diploma or degree - Bachelor's degree

☐ University certificate, diploma or degree above bachelor level

13. a) Were you enrolled in an academic or vocational program at the time of your hire at the Mary River Project?

☐ Yes ☐ No

b) If yes, what program were you enrolled in and where were you enrolled?

c) If yes, did you suspend or discontinue your education because you were hired to work at the Mary River Project?

☐ Yes      ☐ No

14. a) Did you resign from a previous job in order to take up employment with the Mary River Project?

☐ Yes      ☐ No

b) If yes, what was your previous employment status? (Check only one box)

☐ Casual      ☐ Part-Time      ☐ Full-Time

c) If yes, what was your previous job title?

d) If yes, who was your previous employer?

### Cross-Cultural Orientation

15. Baffinland provides a cross-cultural orientation program to increase non-Inuit employees' knowledge and respect for Inuit employees and culture. How would you rate the effectiveness of this program?

- ☐ Excellent  
☐ Very good  
☐ Good  
☐ Fair  
☐ Poor  
☐ I didn't participate in a cross-cultural orientation program

16. Do you have any suggestions for improving Baffinland's cross-cultural orientation program?



## Workplace Orientation Program

17. Baffinland provides a workplace orientation program to help new Project employees learn about the company's expectations of them. How would you rate the effectiveness of this program?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ I didn't participate in a workplace orientation program

18. Do you have any suggestions for improving Baffinland's workplace orientation program?

## Inuktitut in the Workplace

19. Do you feel comfortable speaking Inuktitut on site?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never
- ☐ I'm not an Inuktitut speaker

20. How often is Inuktitut spoken during work hours by Inuit employees on site?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

21. Is Inuktitut used for work-related documents on site?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

22. Is Inuktitut media (e.g. newspapers, publications, broadcasts, other resources) not related to work available on site?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

23. Do you have any suggestions for improving Inuktitut usage on site?

### Supporting Our Workforce

24. Do you feel supported by supervisors and managers while working at the Mary River Project?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

25. Do you feel supported by on-site elders while working at the Mary River Project?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

26. Do you feel comfortable working at the Mary River Project?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

27. Is respect shown for Inuit and Inuit culture at the Mary River Project?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

28. How would you rate the employee accommodations and living facilities at the Mary River Project?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

29. Do you have any suggestions for improving Inuit employee working and/or living conditions at the Mary River Project?

### Counselling and Support Services

30. Do you know how to access the counselling and support services available to Project employees?

- ☐ Yes
- ☐ No

31. How would you rate the counselling and support services available to Project employees?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

32. Do you have any suggestions for improving Baffinland's counselling and support services?

### Country Food

33. How often is country food available on the menu at the dining hall?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

34. How often do you use the country food kitchen?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never
- ☐ I didn't know there was a country food kitchen

35. How would you rate the quality of the country food kitchen (e.g. Is it a useful space? Is it easily accessible? Is there adequate storage space)?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ I've never been to the country food kitchen

36. Do you have any suggestions for improving country food availability on site?

### Leisure Time and Traditional Activities

37. How would you rate the leisure time activities that are available on site?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

38. Which leisure facilities do you use most regularly on site? (Check up to 3 boxes)

- ☐ Fitness room
- ☐ TV room
- ☐ Music room
- ☐ Computer room
- ☐ Country food kitchen
- ☐ Outdoors/outdoors activities
- ☐ Other (please describe): \_\_\_\_\_

39. How often do you go outdoors for your leisure time activities while on site? (Not including smoking)

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

40. a) Do you participate in traditional activities (e.g. hunting, fishing, harvesting) during your leisure time on site?

- ☐ Yes
- ☐ No
- ☐ I didn't know I could participate in traditional activities during my leisure time on site

b) If yes, how often do you hunt, fish, or harvest during your leisure time on site?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

41. Do you have any suggestions for improving leisure time and/or traditional activities on site?

## Communications

42. How would you rate your ability to communicate with your family while you are on site?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

43. Do you have any suggestions for improving communications between workers and their families while on site?

***Thank you for your participation!***

***Please return this survey to Baffinland or QIA survey staff  
or  
the Mary River Human Resources Office***

# **APPENDIX C**

## **UPDATED SOCIO-ECONOMIC BASELINE INFORMATION**



## Appendix C: Updated Socio-Economic Baseline Report Phase 2 Proposal – Mary River Project

Baffinland Iron Mines Corporation  
Mary River Project  
NIRB File No. 08MN053

August 2018



## TABLE OF CONTENTS

List of Tables.....	ii
Abbreviations .....	iv
<b>1 Introduction.....</b>	<b>1</b>
<b>2 Population Demographics.....</b>	<b>3</b>
<b>2.1 Baseline Information Overview .....</b>	<b>3</b>
<b>2.2 Baseline Information Updates .....</b>	<b>4</b>
2.2.1 Language Characteristics .....	4
<b>3 EDUCATION AND TRAINING .....</b>	<b>6</b>
<b>3.1 Baseline Information Overview .....</b>	<b>6</b>
<b>3.2 Baseline Information Updates .....</b>	<b>6</b>
3.2.1 Trades and Apprenticeships.....	7
<b>4 Livelihood and Employment.....</b>	<b>8</b>
<b>4.1 Baseline Information Overview .....</b>	<b>8</b>
<b>4.2 Baseline Information Updates .....</b>	<b>10</b>
4.2.1 Household Size and Type .....	10
4.2.2 Marital Status and Family Characteristics.....	10
4.2.3 Household and Personal Income .....	11
4.2.4 Income Sources and Composition .....	11
<b>5 Economic Development and Self-Reliance .....</b>	<b>15</b>
<b>5.1 Baseline Information Overview .....</b>	<b>15</b>
<b>5.2 Baseline Information Updates .....</b>	<b>16</b>
5.2.1 Gross Domestic Product.....	16
<b>6 Human Health and Well-Being .....</b>	<b>18</b>
<b>6.1 Baseline Information Overview .....</b>	<b>18</b>
<b>6.2 Baseline Information Updates .....</b>	<b>18</b>
6.2.1 Basic Health Indicators.....	19
6.2.2 Births and Deaths.....	20
6.2.3 Health Centre Visits by Diagnostic Group .....	22
6.2.4 Nunavut Food Price Survey .....	25
<b>7 Community Infrastructure and Public Services.....</b>	<b>28</b>
<b>7.1 Baseline Information Overview .....</b>	<b>28</b>
<b>7.2 Baseline Information Updates .....</b>	<b>29</b>
7.2.1 Housing Characteristics.....	29

7.2.2	Public Housing Availability .....	29
7.2.3	Overcrowding of Housing .....	30
7.2.4	Housing Conditions .....	31
<b>8</b>	<b>Contracting and Business Opportunities .....</b>	<b>32</b>
8.1	Baseline Information Overview .....	32
8.2	Baseline Information Updates .....	32
<b>9</b>	<b>Culture, Resources, and Land Use .....</b>	<b>33</b>
9.1	Baseline Information Overview .....	33
9.2	Baseline Information Updates .....	34
<b>10</b>	<b>Benefits, Taxes, and Royalties .....</b>	<b>35</b>
10.1	Baseline Information Overview .....	35
10.2	Baseline Information Updates .....	35
<b>11</b>	<b>Governance and Leadership .....</b>	<b>36</b>
11.1	Baseline Information Overview .....	36
11.2	Baseline Information Updates .....	36
<b>12</b>	<b>References .....</b>	<b>37</b>

## LIST OF TABLES

Table 2.1	EIS Guidelines for Population Demographics Baseline Information .....	3
Table 2.2	Population with Knowledge of an Inuit Language (2016) .....	4
Table 2.3	Population with Inuit Language as a Mother Tongue (2016) .....	5
Table 2.4	Population with Inuit Language as Language Spoken Most Often at Home (2016) .....	5
Table 3.1	EIS Guidelines for Education and Training Baseline Information .....	6
Table 3.2	Working Age Population with Highest Certificate, Diploma or Degree - Apprenticeship or Trades Certificate or Diploma (2011) .....	7
Table 3.3	Registered Apprentices and Completions, Nunavut and Canada (2011 to 2015) .....	7
Table 4.1	EIS Guidelines for Livelihood and Employment Baseline Information .....	8
Table 4.2	Household Size and Type (2016) .....	10
Table 4.3	Marital Status and Family Characteristics (2016) .....	11
Table 4.4	Median Household and Personal Income (2015) .....	11
Table 4.5	Composition of Total Income in 2015 of the Population Aged 15 Years and Over .....	12
Table 4.6	Nunavut Employment by Selected Characteristics, September 2017 .....	12
Table 4.7	Number of Jobs, Hours Worked on Jobs, and Average Weekly Employee Earnings in Nunavut .....	13
Table 4.8	Total Employment by Industry for Nunavut's 19 Largest Communities (2011 to 2015) .....	13
Table 5.1	EIS Guidelines for Economic Development and Self-Reliance Baseline Information .....	15
Table 5.2	Gross Domestic Product by North American Industry Classification System (All Industries), .....	16
Table 5.3	Nunavut GDP, by North American Industry Classification System .....	17
Table 6.1	EIS Guidelines for Human Health and Well-Being Baseline Information .....	18

Table 6.2	Nunavut Leading Causes of Death (2009 to 2013).....	21
Table 6.3	Nunavut Suicides (2012 to 2016) .....	22
Table 6.4	Percentage of Nunavut Community Health Centre Visits by Diagnostic Group (2011 to 2015).....	23
Table 6.5	Percentage of Iqaluit Community Health Centre Visits by Diagnostic Group (2011 to 2015) .....	24
Table 6.6	Percentage of North Baffin LSA Community Health Centre Visits by Diagnostic Group (2011 to 2015) .....	25
Table 6.7	2017 Nunavut Food Price Survey, Comparison of Nunavut and Canada Consumer Price Index.....	26
Table 7.1	EIS Guidelines for Community Infrastructure and Public Services Baseline Information .....	28
Table 7.2	Household Characteristics (2016) .....	29
Table 7.3	Public Housing Need in Nunavut (2016-2017) .....	30
Table 7.4	Public Housing Need in the LSA (2016-2017).....	30
Table 7.5	Private Households by Number of Persons per Room (2016) .....	31
Table 7.6	Occupied Private Dwellings by Dwelling Condition (2016) .....	31
Table 8.1	EIS Guidelines for Contracting and Business Opportunities Baseline Information .....	32
Table 9.1	EIS Guidelines for Culture, Resources, and Land Use Baseline Information .....	33
Table 11.1	EIS Guidelines for Governance and Leadership Baseline Information .....	36

ABBREVIATIONS

Project..... Mary River Project

Baffinland..... Baffinland Iron Mines Corporation

BDSI..... Brubacher Development Strategies Inc.

CPI ..... Canada Consumer Price Index

DOT ..... Tuberculosis Daily Observed Therapy

FEIS..... Final Environmental Impact Statement

GDP ..... Gross Domestic Product

JPCSL ..... Jason Prno Consulting Services Ltd.

KP ..... Knight Piésold Ltd.

LFS..... Labour Force Survey

LSA ..... Local Study Area

SEMWG..... Socio-Economic Monitoring Working Group

NAICS ..... North American Industry Classification System

NHC..... Nunavut Housing Corporation

NHS ..... National Household Survey

NIRB ..... Nunavut Impact Review Board

RSA..... Regional Study Area

SEPH..... Statistics Canada’s Survey of Employment, Payrolls and Hours

TSD..... Technical Supporting Document

# 1 INTRODUCTION

---

This updated socio-economic baseline report has been prepared by Jason Prno Consulting Services Ltd. (JPCSL) and Knight Piésold Ltd. (KP) in support of Baffinland Iron Mines Corporation's (Baffinland's) Mary River Project. It forms an appendix to a socio-economic assessment technical supporting document (TSD) prepared by the same authors in support of the Addendum to the Final Environmental Impact Statement (FEIS) for the Phase 2 Proposal.

Socio-economic baseline conditions within the local and regional study areas (LSA and RSA) were comprehensively described in a socio-economic baseline report by Brubacher Development Strategies Inc. (BDSI, 2010), presented as Appendix 4A of the FEIS (Baffinland, 2012). Likewise, historic and contemporary land use activities were comprehensively described in a land use report presented as FEIS Appendix 4C (KP, 2010).

The broad socio-economic conditions within the LSA and RSA have not meaningfully changed since the FEIS and supporting documents were issued, with the exception of changes the Project itself have introduced within the LSA in terms of employment, training, economic opportunities, the Project's land use activities, and associated indirect effects. Construction of the Project commenced in 2013, and mining has been underway since late 2014. Project socio-economic monitoring has documented the changing socio-economic conditions since 2013 (BDSI, 2014, 2015 and 2016; JPCSL, 2016, 2017a and 2018). The findings of the above reports have been summarized in and appended to Baffinland's annual reports to the NIRB (Baffinland, 2014, 2015, 2016, 2017 and 2018). The annual socio-economic monitoring reports are reviewed by the Mary River Socio-Economic Monitoring Working Group (SEMWG).

This updated socio-economic baseline report provides updated socio-economic data and references other information sources to meet the socio-economic baseline information requirements of the Amended EIS Guidelines (Nunavut Impact Review Board [NIRB], 2015). Since the FEIS was published, the following statistical data has become available:

- 2011 Census (Statistics Canada, 2011a)
- 2011 National Household Survey (Statistics Canada, 2011b)
- 2012 Aboriginal Peoples Survey (Statistics Canada, 2012a)
- 2016 Census (Statistics Canada, 2016a)

When relevant to socio-economic monitoring of the Project, annual socio-economic monitoring reports have incorporated this data, in addition to more recent data from other sources (e.g. Nunavut Bureau of Statistics). While another federal Census was completed in 2016, not all data from that census has been incorporated into this report. An Aboriginal Peoples Survey was also conducted by Statistics Canada in 2017, but data release is not scheduled to occur until the fall of 2018.

In addition to providing updated socio-economic data, this report identifies other sources of the socio-economic information prescribed by the Amended EIS Guidelines (NIRB, 2015), including the following:

- **FEIS Documents** - The information presented previously by Baffinland (2012 and 2013) in many instances continues to provide accurate and relevant descriptions of the socio-economic environment, for which there is little to no new information to add to improve upon the previously provided descriptions.

- **Socio-economic Monitoring Reports** - A number of monitoring reports are referenced above. Two monitoring reports are particularly important and will be included in the FEIS Addendum for the Phase 2 Proposal:
  - **2017 Socio-economic Monitoring Report** - Provides updated descriptions of socio-economic conditions applicable to most VSECs (JPCSL, 2018). The 2017 socio-economic monitoring report is presented as Appendix B to TSD 25.
  - **Worker Experience Report** - Documents the experiences of Inuit workers over the first three years of the Project: 2013 to 2015 (BDSI, 2016; Appendix E to TSD 25).
- **Updated Census Data** - Updated data from Statistics Canada has become available since publishing the FEIS.
- **Other Relevant Data** - Updated data from other relevant sources has become available since publishing the FEIS, such as from the Nunavut Bureau of Statistics and Nunavut Housing Corporation.
- **Other TSDs** - The following additional socio-economic studies have been prepared by others in support of the Phase 2 Proposal:
  - Updated Economic Impact Model (Appendix A, TSD 25)
  - Updated Labour Market Analysis (TSD-26 )
  - Phase 2 Proposal Community Workshops Report (TSD-3)

Sections 2 to 11 of this report cover the following VSECs:

- |  |  |
|--|--|
| • Population demographics                | • Community infrastructure and public services |
| • Education and training                 | • Contracting and business opportunities       |
| • Livelihood and employment              | • Culture, resources, and land use             |
| • Economic development and self-reliance | • Benefits, taxes, and royalties               |
| • Human health and well-being            | • Governance and leadership                    |

This document builds on, and should not be read in isolation from, previous socio-economic baseline information provided for the Approved Project.

## 2 POPULATION DEMOGRAPHICS

### 2.1 Baseline Information Overview

Table 2.1 lists the baseline information requirements on Population Demographics in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 2.1 EIS Guidelines for Population Demographics Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Description of regional and local community populations, demographics structure, composition, characteristics and population trends	Vol 4 - Sec 2.1	Yes	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>Sec 3.1: population estimates, ethnicity, Nunavut annual net migration</li> <li>Sec 3.2 and 3.3: in- and out- migration of Project employees and contractors</li> <li>Sec 3.4: employee address changes and migration intentions</li> </ul> <p>Labour Market Analysis (TSD 26)</p> <ul style="list-style-type: none"> <li>Sec 4.2: population estimates, age, median age, ethnicity, gender</li> </ul>
Description of cultural, ethnic, religious, and language characteristics and diversities in the RSA	Vol 4 - Sec 2.1	Yes, for selected topics	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>Sec 3.1: population estimates by ethnicity</li> </ul> <p><b><i>Section 2.2.1: language characteristics</i></b></p> <p>Labour Market Analysis (TSD 26)</p> <ul style="list-style-type: none"> <li>Sec 4.2: population estimates by ethnicity</li> </ul>
Discussion of observed variations in education levels, dietary habits, religious characters and other social aspects in different demographics categories in the RSA	Vol 4 - Sec 2.1, 3.1, 6.1	Yes, for selected topics	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>Sec 4.2: number of secondary school graduates; graduation rate</li> <li>Sec 10.1: harvesting and food security</li> </ul> <p>Labour Market Analysis (TSD 26)</p> <ul style="list-style-type: none"> <li>Sec 4.3: secondary school graduates by ethnicity and gender, graduation rates, highest education obtained</li> </ul>
Description of the social life of the potentially affected communities, households, family and community stability. Issues related to substance abuse, crime and violence, and other relevant social factors should also be presented.	Vol 4 - Sec 6.0	Yes, for selected topics	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>Sec 7.1: number of youth charged</li> <li>Sec 7.4: impaired driving violations, drug violations</li> <li>Sec 7.7: family violence</li> <li>Sec 7.11: crime rate</li> </ul>

## 2.2 Baseline Information Updates

As noted in Table 2.1, updated baseline information on language characteristics is provided in Section 2.2.1.

### 2.2.1 Language Characteristics

The Inuit language is a vital component of Inuit culture and identity, and its preservation has been identified as a priority by stakeholders throughout Nunavut. Statistics Canada has released data on Indigenous languages from the 2016 Census. Following Algonquian languages, Inuit languages were the Indigenous language family with the second-largest number of speakers in Canada in 2016 (Statistics Canada, 2017a). The two primary Inuit languages spoken in Nunavut are Inuktitut (spoken in the Qikiqtaaluk Region) and Inuinnaqtun (spoken primarily in western communities). Table 2.2 summarizes the number of individuals and percentage of the population who have knowledge of an Inuit language in the North Baffin LSA, Iqaluit, Nunavut, and Canada. Knowledge of an Inuit language refers to whether a person can conduct a conversation in an Inuit language and includes languages a child is learning to speak at home.

**Table 2.2 Population with Knowledge of an Inuit Language (2016)**

Location	Total		Males		Females	
	Number	% of Total Population	Number	% of Total Population	Number	% of Total Population
North Baffin LSA	5,805	95.7%	2,990	49.3%	2,805	46.2%
Iqaluit	3,885	50.2%	1,835	23.7%	2,050	26.5%
Nunavut	27,320	76.0%	13,805	38.4%	13,520	37.6%
Canada	42,980	0.1%	21,355	0.1%	21,630	0.1%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

Of note, 95.7% of the North Baffin LSA population had knowledge of an Inuit language, compared to 50.2% in Iqaluit, and 76.0% in Nunavut. A higher percentage of males compared to females had knowledge of an Inuit language in the North Baffin LSA (49.3% compared to 46.2%) and Nunavut (38.4% compared to 37.6%). A lower percentage of males compared to females had knowledge of an Inuit language in Iqaluit (23.7% compared to 26.5%).

Table 2.3 summarizes the number of individuals and percentage of the total population who have an Inuit language as a mother tongue in the North Baffin LSA, Iqaluit, Nunavut, and Canada. Mother tongue refers to the first language learned at home in childhood and still understood by the person at the time the data was collected. Of note, 92.6% of the North Baffin LSA population had an Inuit language as a mother tongue, compared to 39.5% in Iqaluit, and 62.9% in Nunavut. A higher percentage of males compared to females had an Inuit language as a mother tongue in the North Baffin LSA (48.0% compared to 44.7%) and Nunavut (31.6% compared to 31.3%). A lower percentage of males compared to females had an Inuit language as a mother tongue in Iqaluit (18.2% compared to 21.3%).

Statistics Canada (2017a) notes a higher percentage of Inuit seniors had an Indigenous language as their mother tongue compared to younger individuals. In 2016, 60.6% of Inuit aged 65 years and older had an Indigenous mother tongue, compared to 55.8% of Inuit aged 0 to 14. However, in all age groups, the percentage of Inuit who could speak an Indigenous language was higher than the percentage with an Indigenous mother tongue; 55.8% of Inuit aged 0 to 14 had an Indigenous mother tongue while 65.2% could converse in an Indigenous language. Statistics Canada (2017a) indicates this may be because many Inuit, particularly younger Inuit, are learning Indigenous languages as second languages.



**Table 2.3 Population with Inuit Language as a Mother Tongue (2016)**

Location	Total		Males		Females	
	Number	% of Total Population	Number	% of Total Population	Number	% of Total Population
North Baffin LSA	5,620	92.6%	2,910	48.0%	2,710	44.7%
Iqaluit	3,055	39.5%	1,405	18.2%	1,650	21.3%
Nunavut	22,600	62.9%	11,355	31.6%	11,245	31.3%
Canada	36,545	0.1%	18,100	0.1%	18,445	0.1%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

Table 2.4 summarizes the number of individuals and percentage of the total population whose language spoken most often at home is an Inuit language in the North Baffin LSA, Iqaluit, Nunavut, and Canada. The language spoken most often at home refers to the language the person spoke most often at home at the time of data collection (2016). A person can report more than one language as spoken most often at home if the languages were spoken equally often. Of note, 92.6% of the North Baffin LSA population spoke an Inuit language most often at home, compared to 22.4% in Iqaluit, and 49.3% in Nunavut. A higher percentage of males compared to females had an Inuit language as the language spoken most often at home in the North Baffin LSA (48.0% compared to 44.7%) and Nunavut (25.2% compared to 24.1%). A lower percentage of males compared to females had an Inuit language as the language spoken most often at home in Iqaluit (10.7% compared to 11.6%).

**Table 2.4 Population with Inuit Language as Language Spoken Most Often at Home (2016)**

Location	Total		Males		Females	
	Number	% of Total Population	Number	% of Total Population	Number	% of Total Population
North Baffin LSA	5,620	92.6%	2,915	48.0%	2,710	44.7%
Iqaluit	1,730	22.4%	830	10.7%	900	11.6%
Nunavut	17,735	49.3%	9,070	25.2%	8,665	24.1%
Canada	29,490	0.1%	14,995	0.0%	14,495	0.0%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

## 3 EDUCATION AND TRAINING

### 3.1 Baseline Information Overview

Table 3.1 lists the baseline information requirements on Education and Training in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 3.1 EIS Guidelines for Education and Training Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Existing education system (early childhood through post-secondary), available training programs for adults and youth, outlook and evolution trends	Vol 4 - Sec 3.1	No	N/A
Local education infrastructure, capacity, funding resources, and administration system	Vol 4 - Sec 3.1	No	N/A
Education and skill levels of the residents in the Project RSA, and experience of the local labour force in different demographic categories based on available data	Vol 4 - Sec 3.1	Yes. However, the Project itself has also affected the baseline, by providing new training and experience opportunities.	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>Sec 4.2: number of secondary school graduates, graduation rate</li> <li>Sec 4.3: training completed by Inuit employees, apprenticeships and other opportunities</li> <li>Sec 4.4: employee education status</li> </ul> <p><b>Sec 3.2.1 (trades and apprenticeships)</b></p> <p>Labour Market Analysis (TSD 26)</p> <ul style="list-style-type: none"> <li>Sec 4.3 (secondary school graduates by ethnicity and gender, graduation rates, highest education obtained)</li> </ul>
Requirements for education levels, skills and experiences of labour force from the Project in short, medium term and foreseeable future, taking account the vision of expansion for the Project lifespan, and regional economy development	Vol 3 - Sec 5.0 Vol 4 - Sec 3.1, 3.5, 5.3	Yes	<p>Socio-economic Assessment (TSD 25)</p> <ul style="list-style-type: none"> <li>Sec 3.6: skill level requirements</li> <li>Sec 4.6.4: requirements for employment</li> </ul> <p>Labour Market Analysis (TSD 26)</p> <ul style="list-style-type: none"> <li>Sec 2.0: Project labour demand by skill level</li> </ul>

For two of the four topics in Table 3.1, the baseline information in the FEIS continues to provide a valid description.

### 3.2 Baseline Information Updates

As noted in Table 3.1, updated baseline information on trades and apprenticeships is provided in Section 3.2.1.

### 3.2.1 Trades and Apprenticeships

Information on trades and apprenticeships in Nunavut provides added insight into the education and skill levels of the local labour force. 125 individuals (or 4.3% of the total population) aged 25 to 64 years in Arctic Bay, Hall Beach, and Pond Inlet possessed an apprenticeship or trades certificate or diploma in 2011, while 290 individuals (or 4.3% of the total population) possessed an apprenticeship or trades certificate or diploma in Iqaluit in 2011.<sup>1</sup> In Nunavut, 1,425 individuals (or 4.5% of the total population) aged 25 to 64 years possessed an apprenticeship or trades certificate or diploma in 2011, compared to 2,218,805 individuals (or 6.6% of the total population) in Canada. Considerably more males than females possessed an apprenticeship or trades certificate or diploma in all locations in 2011 (Table 3.2).

**Table 3.2 Working Age Population with Highest Certificate, Diploma or Degree - Apprenticeship or Trades Certificate or Diploma (2011)**

Location	Total		Males		Females	
	Number	% of Total Population	Number	% of Total Population	Number	% of Total Population
Arctic Bay, Hall Beach, Pond Inlet	125	4.3%	105	3.6%	20	0.7%
Iqaluit	290	4.3%	240	3.6%	50	0.8%
Nunavut	1,425	4.5%	1,130	3.5%	295	0.9%
Canada	2,218,805	6.6%	1,435,395	4.3%	783,410	2.3%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2012B; 2013A, B, C, D, E, F).
2. WORKING AGE POPULATION IS 25 TO 64 YEARS OLD.

Furthermore, in 2015, there were 159 registered apprentices in Nunavut and 9 individuals who completed their apprenticeship program. This compares to 453,543 registered apprentices in Canada and 38,991 who completed their apprenticeship program (Table 3.3).

**Table 3.3 Registered Apprentices and Completions, Nunavut and Canada (2011 to 2015)**

Year	Nunavut		Canada	
	Number of Registered Apprentices	Number of Completions	Number of Registered Apprentices	Number of Completions
2015	159	9	453,543	38,991
2014	159	6	451,140	40,842
2013	177	12	469,680	46,998
2012	159	15	444,672	41,481
2011	168	9	426,285	41,163

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017A).

<sup>1</sup> This data originates from the 2011 National Household Survey, which replaced the long-form Census in 2011. Participation in the survey was voluntary. As such, the number of participants in Igloolik and Clyde River were too low to meet minimum requirements needed to establish reasonable estimates. Results from the 2016 Census will be released later in 2017 and will provide a more current account of education levels in these communities.

## 4 LIVELIHOOD AND EMPLOYMENT

### 4.1 Baseline Information Overview

Table 4.1 lists the baseline information requirements on Livelihood and Employment in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 4.1 EIS Guidelines for Livelihood and Employment Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Description of household social structures within the Project RSA, and where possible, the prevalent representative household social structure, including: the prevalent composition (family/kin-relations co-existing, generations in the household), the gender roles, the prevalent division of household labour based upon existing gender roles, the dominant consumption patterns, access to credit, and how resources are shared/divided within the household as well as how decisions are made in the household	Vol 4 - App 4A, Sec 2.0, 3.0, 4.0, 7.0, 8.0	Yes, for selected topics	<p><b><i>Sec 4.2.1: household size and type</i></b>  <b><i>Sec 4.2.2: marital status and family characteristics</i></b>  Worker Experience Report (TSD 25, Appendix E)</p> <ul style="list-style-type: none"> <li>• Sec 2.1: perceived personal effects of employment</li> <li>• Sec 2.2: effects experienced by family</li> <li>• Sec 2.3: harvesting activities</li> <li>• Sec 2.4: money goals and money management</li> </ul>
Local household incomes, income sources, and compositions of income within the Project RSA	Vol 4 - Sec 4.1 App 4A - Sec 7.3	Yes. However, the Project itself has also affected the baseline, by providing new local incomes.	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>• Sec 6.2: LSA employee payroll amounts</li> <li>• Sec 7.2: proportion of tax filers with employment income and median employment income, percentage of population receiving social assistance</li> </ul> <p><b><i>Sec 4.2.3: household and personal income</i></b>  <b><i>Sec 4.2.4: income sources and composition</i></b></p>
Local and regional economy characteristics in term of relation to traditional land use activities and wage incomes	Vol 4 - Sec 4.1 App 4A - Sec 7.1	Yes, for selected topics	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>• Sec 10.1: harvesting and food security</li> </ul> <p><b><i>Sec 4.2.3: household and personal income</i></b>  <b><i>Sec 4.2.4: income sources and composition</i></b>  Phase 2 Proposal Community Workshops Report (TSD 3)</p> <ul style="list-style-type: none"> <li>• Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> </ul> <p>Worker Experience Report (TSD 25 Appendix E)</p> <ul style="list-style-type: none"> <li>• Sec 2.3: harvesting</li> </ul>

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Descriptions of the significance of, and level of dependence on country food as major nutrients sources by local residents within the Project RSA	Vol 4 - Sec 4.1, 5.1, 6.1 App 4A - Sec 7.1, 4.2	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 10.1: harvesting and food security</li> </ul>
The employment status in terms of relative genders, ages and other demographic categories	Vol 4 - Sec 4.1, 4.2 App 4A - Sec 3.0, 4.0	Yes	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 4.4: employment status prior to Project employment</li> </ul> Labour Market Analysis (TSD 26) <ul style="list-style-type: none"> <li>Sec 4.4: employment status by ethnicity, gender, and age</li> </ul>
Existing local employment opportunities and labour supply status	Vol 4 - Sec 4.1 App 4A - Sec 4.0	Yes. However, the Project itself has also affected the baseline	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 3.5: employee origin</li> <li>Sec 5.1: Project labour performed in Nunavut</li> <li>Sec 5.2: Project hours worked by LSA employees and contractors</li> <li>Sec 5.4: hours worked by female employees and contractors</li> </ul> <b>Sec 4.2.4: income sources and composition</b> Labour Market Analysis (TSD 26) <ul style="list-style-type: none"> <li>Sec 4.5: future labour supply estimates</li> <li>Sec 4.6: summary of labour force estimation</li> </ul>
Expectations and perceptions to the employment at the Project by the residents in the Project RSA	Vol 4 - Sec 4.5 App 4A - Sec 3.0	Yes	Socio-economic Assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 4.2: what our stakeholders have told us - livelihood and employment</li> </ul> Worker Experience Report (TSD 25, Appendix E) <ul style="list-style-type: none"> <li>All: perceived personal effects of employment, effects experienced by family, harvesting activities, money goals and money management, preference to work at Mary River, recruitment, determinants of employment success, workplace and Project culture, career progression, training, supporting success, termination, post-termination follow-up and communication</li> </ul>
Discussion of the potential impacts of project components on livelihood and employment opportunities for Nunavut communities including analyses for points of hire communities as well as those without direct air transportation	N/A -New guideline	Yes	Socio-economic Assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 4.4: employment monitoring results</li> <li>Sec 4.6: LSA job creation and employment, new career paths, other livelihood and employment topics</li> <li>Sec 4.6.4: commuting arrangements</li> </ul>
Clearly delineate between ERP operations employment, additional Phase 2 construction and Phase 2 operations employment, and the construction and operations of the fully Approved Project	N/A - New guideline	Yes	Socio-economic Assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 4.6: employment projections</li> </ul> Appendix C <ul style="list-style-type: none"> <li>Projected workforce table</li> </ul>

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Additional Phase 2 employment should be categorized by skill level in the same fashion as in the ERP Addendum	N/A - New guideline	Yes	Socio-economic Assessment TSD 25 • Sec 3.6: skill level requirements Labour Market Analysis (TSD 26) • Sec 2.0: Project labour demand by skill level
An updated labour market analysis should also be provided for context to evaluate the potential benefits of Phase 2	N/A - New guideline	Yes	Labour Market Analysis (TSD 26)

## 4.2 Baseline Information Updates

The bolded and italicized references in Table 4.1 are provided below.

### 4.2.1 Household Size and Type

In 2016, the average household size in the North Baffin LSA was 4.4 individuals; this was higher than in Iqaluit (2.8 individuals), Nunavut (3.6 individuals), and Canada (2.4 individuals). The percentage of one-census family households in these locations ranged from a low of 62.6% (in the North Baffin LSA) to a high of 65.5% (in Canada) (Table 4.2).

Notable differences in the percentage of multiple-census-family and non-census-family households in the North Baffin LSA and other locations were noted in 2016 (Table 4.2). For example, the percentage of multiple-census-family households was considerably higher in the North Baffin LSA (20.1%) compared to Iqaluit (3.8%), Nunavut (11.6%), and Canada (2.1%). This may be an indication of multiple generations living together in a single household, or of potential overcrowding in the North Baffin LSA. Likewise, the percentage of non-census-family households was considerably lower in the North Baffin LSA (16.5%) compared to Iqaluit (32.7%), Nunavut (23.6%), and Canada (32.3%).

**Table 4.2 Household Size and Type (2016)**

Location	Average Household Size	One-Census-Family Households (% of total private households)	Multiple-Census-Family Households (% of total private households)	Non-Census-Family Households (% of total private households)
North Baffin LSA	4.4	62.6%	20.1%	16.5%
Iqaluit	2.8	63.3%	3.8%	32.7%
Nunavut	3.6	64.7%	11.6%	23.6%
Canada	2.4	65.5%	2.1%	32.3%

#### NOTES:

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

### 4.2.2 Marital Status and Family Characteristics

In 2016, the percentage of individuals who were married or living common law in the North Baffin LSA (53.3%), Iqaluit (53.8%), and Nunavut (53.2%) were similar, but somewhat lower than the Canadian average (57.6%). Likewise, the percentage of census couple of families was lower in the North Baffin LSA (67.4%), compared to Iqaluit (76.7%), Nunavut

(70.9%), and Canada (83.6%) in 2016. The percentage of census lone-parent families in the North Baffin LSA (32.3%) was correspondingly higher than these other locations (Table 4.3).

**Table 4.3 Marital Status and Family Characteristics (2016)**

Location	Marital Status		Family Characteristics	
	Married or Living Common Law (% of population aged 15 and over)	Not Married and Not Living Common Law (% of population aged 15 and over)	Census Couple Families (% of total census families)	Census Lone-Parent Families (% of total census families)
North Baffin LSA	53.3%	46.8%	67.4%	32.3%
Iqaluit	53.8%	46.2%	76.7%	23.0%
Nunavut	53.2%	46.8%	70.9%	29.0%
Canada	57.6%	42.4%	83.6%	16.4%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

#### 4.2.3 Household and Personal Income

Median *household* income in the North Baffin LSA was \$77,619 in 2015. This amount was lower than the median household income in Iqaluit (\$136,119) and Nunavut (\$97,441), but higher than in Canada (\$70,336). Likewise, median *personal* income in the North Baffin LSA was \$21,636 in 2015. This amount was lower than the median personal income in Iqaluit (\$70,695), Nunavut (\$29,743), and Canada (\$34,204). Median personal income was notably lower for males in the North Baffin LSA (\$19,405) compared to females (\$24,006). A similar trend was noted in Nunavut, but the opposite was true in Iqaluit and Canada (i.e. males had a higher median personal income than females in these two locations) (Table 4.4).

**Table 4.4 Median Household and Personal Income (2015)**

Location	Median Total Income of Private Households in 2015	Median Total Income for the Population Aged 15 Years and Over in Private Households in 2015		
	Total	Total	Male	Female
North Baffin LSA	\$77,619	\$21,636	\$19,405	\$24,006
Iqaluit	\$136,119	\$70,695	\$73,184	\$68,288
Nunavut	\$97,441	\$29,743	\$28,817	\$30,326
Canada	\$70,336	\$34,204	\$40,782	\$28,860

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

#### 4.2.4 Income Sources and Composition

Updated baseline information on income sources and composition in Nunavut (and the LSA communities, where available) has been derived from several different data sources. More specifically, this section provides information on income composition (i.e. market income vs. government transfers), types of employment, number of jobs, hours worked on jobs, average weekly employee earnings, and employment by industry in Nunavut.

In the North Baffin LSA, 79.8% of all individual income was 'market income' in 2015. An additional 20.1% was from 'government transfers'.<sup>2</sup> The percentage of income from government transfers was notably higher in the North Baffin LSA than in Iqaluit (4.9%), Nunavut (11.9%), and Canada (11.7%) and reflects the high rates of unemployment and social assistance found in the North Baffin LSA. Males had higher percentages of market income compared to females in all locations (e.g. in the North Baffin LSA this was 86.7% compared to 73.0%), and lower percentages of government transfers compared to females in all locations (e.g. in the North Baffin LSA this was 13.5% compared to 26.9%) (Table 4.5).

**Table 4.5 Composition of Total Income in 2015 of the Population Aged 15 Years and Over in Private Households (%)**

Location	Market Income			Government Transfers		
	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)
North Baffin LSA	79.8	86.7	73.0	20.1	13.5	26.9
Iqaluit	95.1	96.3	93.7	4.9	3.7	6.2
Nunavut	88.1	91.8	84.3	11.9	8.3	15.7
Canada	88.3	91.6	83.7	11.7	8.4	16.3

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

The Nunavut Bureau of Statistics (2017b) provides additional information on employment characteristics in the territory (Table 4.6). Data are presented for September 2017 and are based on a 3-month moving average (i.e. an average of the months of July, August, and September 2017). For example, there were a total of 13,400 employees in Nunavut during this time, 11,500 (85.8%) of which were classified as full-time and 1,800 (13.4%) of which were classified as part-time. Furthermore, 7,400 (55.2%) of these individuals were public employees, 5,600 (41.8%) were private employees, and 400 (3.0%) were self-employed. The large majority (12,000 or 89.6%) of these individuals were involved in service-producing employment. This information was collected by Statistics Canada through the Labour Force Survey (LFS), which is a survey carried out monthly with a sample of Nunavut households (Nunavut Bureau of Statistics, 2009).

**Table 4.6 Nunavut Employment by Selected Characteristics, September 2017**

Total Employment			Type of Employment				Goods or Service Producing		
Total	Full Time	Part Time	Total	Public Employee	Private Employee	Self-Employment	Total	Goods Producing	Service Producing
13,400	11,500	1,800	13,400	7,400	5,600	400	13,400	1,400	12,000

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017B).
2. DATA PRESENTED AS A 3-MONTH MOVING AVERAGE.

<sup>2</sup> Statistics Canada notes that 'market income' is the sum of employment income, investment income, private retirement income and other money income from market sources. It is equivalent to total income minus government transfers. 'Government transfers' are all cash benefits received from federal, provincial, territorial or municipal governments. It includes Old Age Security pension, Guaranteed Income Supplement, Allowance or Allowance for the Survivor; retirement, disability and survivor benefits from Canada Pension Plan and Québec Pension Plan; benefits from Employment Insurance and Québec parental insurance plan; child benefits from federal and provincial programs; social assistance benefits; workers' compensation benefits; Working income tax benefit; Goods and services tax credit and harmonized sales tax credit; and other income from government sources.



The Nunavut Bureau of Statistics (2017c) also provides information on the number of jobs and hours worked on jobs in Nunavut, which is derived from Statistics Canada's Labour Productivity Measures Program (Table 4.7). In 2016, a total of 16,565 jobs were held in Nunavut, of which 98.1% were employee jobs and 1.9% were self-employed jobs. 30,103,000 hours were worked in Nunavut in 2016 and an average of 1,817 hours were worked for all jobs in 2016. Likewise, the Nunavut Bureau of Statistics (2017d) provides information on the average weekly earnings for employees in Nunavut, which is derived from Statistics Canada's Survey of Employment, Payrolls and Hours (SEPH) (Table 4.7). In 2016, average weekly employee earnings in Nunavut were \$1,274.60.

**Table 4.7 Number of Jobs, Hours Worked on Jobs, and Average Weekly Employee Earnings in Nunavut (2012 to 2016)**

Category	2012	2013	2014	2015	2016
<b>Total Number of Jobs</b>	<b>14,005</b>	<b>14,985</b>	<b>14,875</b>	<b>15,665</b>	<b>16,565</b>
Number of Employee Jobs	13,555	14,525	14,590	15,380	16,250
Number of Self-Employed Jobs	450	460	285	285	315
<b>Total Hours Worked for All Jobs (x 1,000)</b>	<b>24,475</b>	<b>26,700</b>	<b>26,291</b>	<b>28,110</b>	<b>30,103</b>
Total Hours Worked for Employee Jobs (x 1,000)	24,011	26,241	25,841	27,646	29,620
Total Hours Worked for Self-Employed Jobs (x 1,000)	464	459	450	464	483
<b>Annual Average Number of Hours Worked for All Jobs</b>	<b>1,748</b>	<b>1,782</b>	<b>1,767</b>	<b>1,794</b>	<b>1,817</b>
Annual Average Number of Hours Worked for Employee Jobs	1,771	1,807	1,771	1,798	1,823
Annual Average Number of Hours Worked for Self-Employed Jobs	1,031	998	1,579	1,628	1,533
<b>Average Weekly Employee Earnings</b>	<b>\$1,125.37</b>	<b>\$1,177.07</b>	<b>\$1,236.90</b>	<b>\$1,255.79</b>	<b>\$1,274.60</b>

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017C, D).

The Nunavut Bureau of Statistics (2016) provides additional information on the industries Nunavummiut are employed in from the territory's 19 largest communities (which includes all LSA communities) (Table 4.8). In 2015, the largest percentage of individuals worked in 'government and education' (54.2%), 'other industries' (18.6%), and 'retail and wholesale trade' (10.3%). A smaller percentage of individuals were employed in 'construction' (6.4%), 'transportation and warehousing' (4.4%), 'accommodation and food services' (3.1%), and 'fishing, hunting, trapping, mining and quarrying' (2.3%). Of note, the Mary River Project continues to utilize employees and services from several different industries (e.g. construction, transportation, food services) to support ongoing operations.

**Table 4.8 Total Employment by Industry for Nunavut's 19 Largest Communities (2011 to 2015)**

Category	2011		2012		2013		2014		2015	
	Total	%	Total	%	Total	%	Total	%	Total	%
Fishing, Hunting, Trapping, Mining and Quarrying	442	3.7	508	4.2	467	3.7	300	2.4	292	2.3
Construction	717	6.1	667	5.5	708	5.6	633	5.1	800	6.4
Retail and Wholesale Trade	1,775	15.0	1,833	15.2	1,658	13.1	1,450	11.7	1,300	10.3
Transportation and Warehousing	700	5.9	892	7.4	975	7.7	592	4.8	558	4.4
Accommodation and Food Services	275	2.3	333	2.8	475	3.8	458	3.7	392	3.1

**Table 4.8 Total Employment by Industry for Nunavut's 19 Largest Communities (2011 to 2015)**

Category	2011		2012		2013		2014		2015	
	Total	%	Total	%	Total	%	Total	%	Total	%
Government and Education	5,433	45.9	5,733	47.5	6,175	48.8	6,592	53.2	6,817	54.2
Other Industries	2,325	19.7	2,100	17.4	2,117	16.7	2,267	18.3	2,342	18.6
<b>Total Employment</b>	<b>11,825</b>	<b>100.0</b>	<b>12,067</b>	<b>100.0</b>	<b>12,658</b>	<b>100.0</b>	<b>12,392</b>	<b>100.0</b>	<b>12,567</b>	<b>100.0</b>

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2016).

## 5 ECONOMIC DEVELOPMENT AND SELF-RELIANCE

### 5.1 Baseline Information Overview

Table 5.1 lists the baseline information requirements on Economic Development and Self-reliance in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section or elsewhere in this report. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 5.1 EIS Guidelines for Economic Development and Self-Reliance Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
The traditional economy, current economic structure and development trends in the Project RSA and variability in potential impacted communities	Vol 4 - Sec 4.3, 5.1 App 4A - Sec 4.0, 8.0	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 7.2: household income and food security</li> <li>Sec 10.1: harvesting and food security</li> </ul> <b><i>Sec 4.2.3: household and personal income</i></b> <b><i>Sec 4.2.4: income sources and composition</i></b> <b><i>Sec 5.2.1: Gross Domestic Product</i></b>  Phase 2 Proposal Community Workshops Report (TSD 03) <ul style="list-style-type: none"> <li>Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> </ul>
The economic development levels in the Project RSA comparing to other regions in Nunavut, advantages and constraints of economy development	Vol 4 - Sec 5.1 App 4A - Sec 4.0, 8.0	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 7.2: household income and food security</li> </ul> <b><i>Sec 4.2.3: household and personal income</i></b> <b><i>Sec 4.2.4: income sources and composition</i></b> <b><i>Sec 5.2.1: Gross Domestic Product</i></b>
The roles of renewable resources exploit (e.g. subsistence and commercial hunting and fishing) plays in economy and its significance for local economy	Vol 4 - Sec 4.3, 5.1 App 4A - Sec 7.1	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 10.1: harvesting and food security</li> </ul> Phase 2 Proposal Community Workshops Report (TSD 03) <ul style="list-style-type: none"> <li>Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> </ul>
Community and resident self-reliance	Vol 4 - Sec 5.4, 6.1 App 4A - Sec 7.0, 8.0	Yes, for selected topics. The Project itself has also affected the baseline, by	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 6.1: value of Project procurement</li> <li>Sec 6.2: LSA employee payroll amounts</li> <li>Sec 7.2: household income and food security</li> </ul>

**Table 5.1 EIS Guidelines for Economic Development and Self-Reliance Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
		providing new economic opportunities.	<ul style="list-style-type: none"> <li>Sec 8.2: labour force capacity</li> </ul> <p><b><i>Sec 4.2.3: household and personal income</i></b> <b><i>Sec 4.2.4: income sources and composition</i></b></p>

## 5.2 Baseline Information Updates

Relevant bolded and italicized references in Table 5.2 are provided below.

### 5.2.1 Gross Domestic Product

Nunavut's real Gross Domestic Product<sup>3</sup> (GDP) for all industries in 2016 was \$2,039.6 million. Nunavut continues to have the smallest GDP of all provinces and territories in Canada. The Canadian locations with the three largest GDP amounts in 2016 were Ontario (\$633,508.5 million), Quebec (\$319,012.0 million), and Alberta (\$288,113.1 million). Nunavut's GDP in 2016 was 0.12% of the Canadian total (\$1,672,835 million) (Table 5.2).

**Table 5.2 Gross Domestic Product by North American Industry Classification System (All Industries), Provinces and Territories (2012 to 2016)**

Province / Territory	2012	2013	2014	2015	2016
Millions of Chained (2007) Dollars					
Newfoundland and Labrador	25,192.6	26,460.9	26,159.1	25,688.1	26,183.9
Prince Edward Island	4,464.2	4,548.4	4,613.8	4,674.5	4,785.9
Nova Scotia	32,116.1	32,019.5	32,242.6	32,559.9	32,845.3
New Brunswick	26,007.4	25,912.2	25,880.8	26,418.8	26,776.1
Quebec	302,369.1	306,154.5	309,851.8	313,675.8	319,012.0
Ontario	578,793.9	586,913.0	602,010.3	617,456.5	633,508.5
Manitoba	51,354.7	52,727.7	53,461.8	54,609.4	55,912.2
Saskatchewan	55,261.6	58,812.8	60,192.3	59,389.3	58,809.9
Alberta	280,280.4	296,431.8	311,083.3	299,602.7	288,113.1
British Columbia	193,667.2	198,223.8	204,555.0	210,909.8	218,755.1
Yukon	2,302.9	2,337.6	2,331.9	2,193.1	2,373.7
Northwest Territories	3,408.1	3,502.2	3,676.6	3,724.3	3,719.7
Nunavut	1,785.3	1,965.6	1,938.8	1,962.5	2,039.6
<b>TOTAL</b>	<b>1,557,003.5</b>	<b>1,596,010</b>	<b>1,637,998.1</b>	<b>1,652,864.7</b>	<b>1,672,835</b>

#### NOTES:

1. SOURCE: STATISTICS CANADA (2017H).

<sup>3</sup> The Bank of Canada (2016) notes real GDP is "the most common way to measure the economy... GDP is the total value of everything - goods and services - produced in our economy. The word "real" means that the total has been adjusted to remove the effects of inflation." The real GDP amounts by industry presented by Statistics Canada (2017h) are in chained 2007 dollars.

Table 5.3 displays the breakdown of Nunavut's GDP by the North American Industry Classification System (NAICS). NAICS is an industry classification system designed to provide common definitions of the industrial sector and a common statistical framework to facilitate analysis of the economy. It has a hierarchical structure; at the highest level, it divides the economy into 20 sectors (Statistics Canada, 2017i). In 2016, the NAICS sectors with the five largest GDP contributions to the Nunavut economy included public administration (\$403.1 million); mining, quarrying, and oil and gas extraction (\$377.8 million); real estate and rental and leasing (\$225.6 million); construction (\$207.8 million); and educational services (\$157.7 million).

The public sector thus continues to play a significant role in Nunavut's economy. However, mining is also an important contributor to the Nunavut economy, representing approximately 18.5% of Nunavut's 2016 GDP for all industries. The Mary River Project has been an important contributor to this amount, as has Agnico Eagle Mines Limited's Meadowbank Mine (Nunavut's only other operating mine in 2016), and several other Nunavut-based mining projects that were in various stages of development. Mining in Canada, generally, contributed \$55.6 billion to the country's GDP, or 3.4% of total Canadian GDP in 2015. The industry also directly employs more than 373,000 individuals and remains the largest proportional private sector employer of Indigenous peoples in the country (Mining Association of Canada, 2017).

**Table 5.3 Nunavut GDP, by North American Industry Classification System (2012 to 2016)**

North American Industry Classification System (NAICS)	2012	2013	2014	2015	2016
	Millions of Chained (2007) Dollars				
Agriculture, forestry, fishing and hunting [11]	5.5	5.1	5	4.9	4.9
Mining, quarrying, and oil and gas extraction [21]	286.7	319.1	335.1	350.2	377.8
Utilities [22]	50.4	48.4	49.3	51.1	51.3
Construction [23]	133.6	252	223.9	196	207.8
Manufacturing [31-33]	6.8	7.2	4.9	4.3	4.4
Wholesale trade [41]	53.8	53.7	21.7	23.3	32
Retail trade [44-45]	71.9	73.3	75.8	80.4	85.4
Transportation and warehousing [48-49]	44.3	44.3	43.9	47.4	49.1
Information and cultural industries [51]	45.8	46.4	46.2	46.2	47
Finance and insurance [52]	37.3	37.3	37.5	38	39.5
Real estate and rental and leasing [53]	209.2	212.4	214.1	221.6	225.6
Professional, scientific and technical services [54]	27.4	27.2	27.9	28.7	28
Management of companies and enterprises [55]	10.9	12.5	10.6	10.2	10.8
Administrative and support, waste management and remediation services [56]	46.2	45.1	44.9	44.8	45.7
Educational services [61]	153.1	153.3	156.2	156.7	157.7
Health care and social assistance [62]	106.7	111.5	113.9	115.1	119.3
Arts, entertainment and recreation [71]	1.9	1.9	1.9	1.9	1.9
Accommodation and food services [72]	24.5	26.4	25	25.7	26.5
Other services (except public administration) [81]	24.5	22.7	23	23.2	23
Public administration [91]	369.3	375.8	383.4	398.7	403.1

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017H).

## 6 HUMAN HEALTH AND WELL-BEING

### 6.1 Baseline Information Overview

Table 6.1 lists the baseline information requirements on Human Health and Well-being in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 6.1 EIS Guidelines for Human Health and Well-Being Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Description of the current status of human health in the RSA, including mental, and psychological health and well-being	Vol 4 - Sec 6.1 App 4A - Sec 6.0	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 7.9: percent of health centre visits related to infectious diseases</li> <li>Sec 7.10: rates of teenage pregnancy</li> <li>Sec 7.12: number of times Baffinland's Employee and Family Assistance Program is accessed</li> <li>Sec 8.3: total and per capita number of health centre visits, number of visits to Project site medic</li> </ul> <b><i>Sec 6.2.1: basic health indicators</i></b> <b><i>Sec 6.2.2: births and deaths</i></b> <b><i>Sec 6.2.3: health centre visits by diagnostic group</i></b>
Description of nutritional requirements and diet habits of residents in the RSA	Vol 4 - Sec 6.1 App 4A - Sec 7.1	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 10.1: harvesting and food security</li> </ul> <b><i>Sec 6.2.3: Nunavut food price survey</i></b>
Description of the existing infrastructure and health services available within the RSA	Vol 4 - Sec 6.1 App 4A - Sec 6.7-6.9	No	N/A
Discussion relating to the local health statistics when compared with other parts of Nunavut and Canada as appropriate	Vol 4 - Sec 6.1 App 4A - Sec 2.5, 6.0	Yes, for selected topics where appropriate	Socio-economic assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 6.3: human health and well-being background</li> </ul> 2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 7.0: human health and well-being</li> </ul> <b><i>Sec 6.2.1: basic health indicators</i></b> <b><i>Sec 6.2.2: births and deaths</i></b>

### 6.2 Baseline Information Updates

The bolded and italicized references in Table 6.1 are provided below.

### 6.2.1 Basic Health Indicators

Basic health indicator data for the Inuit population in Canada aged 15 and older was collected during the 2012 Aboriginal Peoples Survey and have been summarized by Statistics Canada (2014). Compared to the overall population of Canada, Statistics Canada (2014) notes that Inuit face challenges in terms of physical and mental health and well-being, including a shorter life expectancy and higher infant mortality rates. Several conditions were noted to be of specific concern for Inuit health including health care access, food security, housing, culture and language, and income.

Selected highlights from Statistics Canada (2014) include:

- 39% of Nunavut Inuit reported excellent or very good health, compared to 45% of all Inuit, and 63% of all Canadians. Between 2001 and 2012, the percentage of Inuit who reported excellent or very good health fell by 11% (from 56% to 45%).
- 38% of Nunavut Inuit were estimated to have been diagnosed with a chronic condition by a health professional, compared to 43% of all Inuit (47% of women and 39% of men). The chronic conditions most commonly reported by Inuit were high blood pressure (12%), arthritis (12%), asthma (7%), mood disorders (7%), and diabetes (5%).
- 63% of Nunavut Inuit reported they smoked cigarettes daily, compared to 52% of all Inuit, and 16% of all Canadians. The percentages of Inuit men and women who smoked daily, occasionally, or not at all, did not differ significantly.
- 20% of Nunavut Inuit reported heavy drinking (i.e. five or more drinks on a single occasion at least once a month), compared to 26% of all Inuit, and 18% of all Canadians. This 2012 statistic does not vary meaningfully from 2001 statistics, which stated that 26% of all Inuit had reported heavy drinking.
- 46% of Nunavut Inuit had seen or talked to a medical doctor in the previous year and 49% had consulted a nurse in the previous year. This compares to 59% of all Inuit who had seen or talked to a medical doctor and 49% who had consulted a nurse, and 79% of all Canadians who had seen or talked to a medical doctor and 12% who had seen or talked to a nurse. Between 2001 and 2012, the percentage of all Inuit who had seen or talked to a doctor rose from 50% to 59%, while the percentage who had seen or talked to a nurse did not differ significantly.
- 14% of Nunavut Inuit had unmet health care needs, compared to 14% of all Inuit who had unmet health care needs. The most common reasons Inuit had for not receiving health care was that it was not available in the area (25%) and that it was not available at the time required (15%).
- 56% of Nunavut Inuit lived in households that experienced food insecurity over the past year. Statistics Canada (2014) notes that food insecurity refers to situations, when, for example, the food that was purchased does not last, and there is not enough money to buy more; a household cannot afford to eat balanced meals; or household members cut the size of their meals or skip meals because there is not enough money for food. 41% of all Inuit lived in households that experienced food insecurity over the past year, compared to 8% of all Canadians.

Statistics Canada (2016b) used data from the 2012 Aboriginal Peoples Survey to examine relationships between self-reported health and selected social determinants of health. Overall, Statistics Canada (2016b) found three social determinants of health were significantly associated with self-reported health for Inuit aged 15 to 54 years of age: strength of family ties, educational attainment, and obesity. Strong or very strong family ties were associated with higher levels of self-reported excellent or very good health. Those with less than a high school education and those who were obese were associated with lower levels of self-reported excellent or very good health.

For Inuit aged 15 to 24 years, daily smoking and household crowding were associated with lower levels of self-reported excellent or very good health. For Inuit aged 25 to 54 years, those who lived in a dwelling that needed major repairs, had low or very low food security, reported difficulties accessing health care, or were diagnosed with a mood or anxiety disorder were less likely to report excellent or very good health. Inuit women were also noted by Statistics Canada (2016b) to be less likely to report excellent or very good health than men, among individuals aged 25 to 54 years.

Housing conditions and availability have also been linked by others to health outcomes in Inuit communities. For example, the *We Can Do Better: Housing in Inuit Nunangat* Report of the Standing Senate Committee on Aboriginal Peoples (Senate of Canada, 2017: 5) notes:

*The lack of decent and affordable housing continues to have serious public health repercussions throughout the Inuit territories. Tuberculosis, which is rare in southern Canada, occurs among Inuit at a rate over 250 times higher than for non-Indigenous Canadians. Inuit families are at higher risk for mental health problems, including stress and anxiety. High levels of respiratory infections among Inuit children, such as chronic lung disease after lower respiratory tract infections, are also linked to crowding and poorly ventilated homes.*

### 6.2.2 Births and Deaths

Life expectancy at birth in Nunavut was 70.2 years of age in 2011-2013. This was 11.5 years less than the Canadian average life expectancy of 81.7 years of age. Life expectancy for males in Nunavut (68.4 years of age) was also lower than for females in Nunavut (72.9 years of age) (Statistics Canada, 2017j). Life expectancy in the territories continues to be much lower than the rest of Canada, for reasons suggested by the Conference Board of Canada (2015):

*Several factors could be responsible for the lower life expectancy in the territories. First, the territories do poorly on socio-economic indicators considered to be key determinants of health. For example, the territories have higher levels of long-term unemployment and lower proportions of high school and university graduates. The territories also have some of the highest rates of smoking, obesity, and substance abuse in Canada. All of these are associated with poor health... Suicide rates in the territories are among the highest in the nation, particularly in Nunavut, where the suicide rate was more than six times the national average in 2011... The remoteness of the territories may also contribute to the lower life expectancies. Outside of the cities, accidents and injuries in the territories can claim a lot more lives because the distance to care is often much greater than in the provinces. The northern regions of most provinces suffer the same issues related to remoteness; however, the provinces have much larger shares of their populations in the south, masking these issues.*

Fertility levels of women in Nunavut (i.e. the average number of children per woman) in 2016 were 2.9, which is notably higher than the fertility levels of women in Canada at 1.6 (Statistics Canada, 2017k). However, the percentage of healthy birth weight babies in Nunavut (89.2% in 2014) is lower than the Canadian average (92.1% in 2014) (Nunavut Bureau of Statistics, 2017e). The infant mortality rate in Nunavut per 1,000 live births in 2013 (16.4) was also higher than the Canadian average (5.0) in that same year (Statistics Canada, 2017l).

The top three leading causes of death in Nunavut in 2013 were 'external cause of morbidity and mortality' (31.4%, which includes accidents, suicides, and other external causes), 'neoplasms' (20.6%, which includes cancers), and 'diseases of the circulatory system' (15.5%). Leading causes of death in Nunavut for the years 2009 to 2013 are summarized in Table 6.2.



**Table 6.2 Nunavut Leading Causes of Death (2009 to 2013)**

Cause of Death	2009	2010	2011	2012	2013
Certain Infectious and Parasitic Diseases	3	2	4	0	2
Neoplasms	43	26	43	40	40
Diseases of the Blood	2	0	0	0	0
Endocrine, Nutritional and Metabolic Diseases	0	2	1	2	2
Diseases of the Nervous System	0	0	3	0	4
Diseases of the Circulatory System	14	16	19	21	30
Diseases of the Respiratory System	16	14	15	14	13
Diseases of the Digestive System	3	1	0	0	0
Diseases of the Genitourinary System	3	2	0	3	4
Certain Conditions Originating in the Perinatal Period	6	4	9	9	7
Congenital Malformations, Deformations and Chromosomal Abnormalities	4	1	6	3	2
External Cause of Morbidity and Mortality	42	37	42	47	61
Other Causes of Death	26	27	29	22	29
<b>Total, All Causes of Death</b>	<b>162</b>	<b>132</b>	<b>171</b>	<b>161</b>	<b>194</b>

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017F).

Suicide remains a troubling issue in Nunavut and has been called a “tragic epidemic” (Skura, 2016a). Considerable resources have been devoted to addressing the issue, including the recent development of *Inuusivut Anninaqtuq*, a five-year (2017-2022) Nunavut Suicide Prevention Strategy Action Plan by the Government of Nunavut, Nunavut Tunngavik Inc., Royal Canadian Mounted Police, and the Isaksimagit Inuusirmi Katujjiqatigiit Embrace Life Council (United for Life, 2017). There was a total of 32 suicides in Nunavut in 2016, 18 of which took place in the Qikiqtaaluk Region. This equates to a suicide rate of 86.3 per 100,000 individuals in Nunavut and 91.6 per 100,000 individuals in the Qikiqtaaluk Region (Nunavut Bureau of Statistics, 2017g). By comparison, the Canadian suicide rate was 11.5 per 100,000 individuals in 2013 (Statistics Canada, 2017m). Of those Nunavummiut who committed suicide in 2016, the large majority (75.0%) were males; a similar trend has been noted from 2012 to 2015 (Nunavut Bureau of Statistics, 2017g). Table 6.3 summarizes Nunavut suicide statistics for the period 2012 to 2016.

**Table 6.3 Nunavut Suicides (2012 to 2016)**

	2012	2013	2014	2015	2016
<b>Number of Suicides by Region</b>					
Total, Nunavut	27	45	28	32	32
Qikiqtaaluk Region	16	26	18	16	18
Kivalliq Region	8	12	7	9	8
Kitikmeot Region	3	7	3	7	6
<b>Suicide Rate per 100,000 by Region</b>					
Total, Nunavut	77.8	127.1	77.7	87.6	86.3
Qikiqtaaluk Region	87.2	139.2	94.6	82.7	91.6
Kivalliq Region	80.7	118.4	68.1	86.8	76.0
Kitikmeot Region	46.5	106.3	44.7	102.6	87.0
<b>Percentage of Suicides by Sex</b>					
Total, Males and Females	100.0	100.0	100.0	100.0	100.0
Males	77.8	73.3	75.0	87.5	75.0
Females	22.2	26.7	25.0	12.5	25.0

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017G).

### 6.2.3 Health Centre Visits by Diagnostic Group

The Nunavut Bureau of Statistics (2017h) assembles data on community health centre visits by diagnostic group on an annual basis. However, the Nunavut Bureau of Statistics (2017h) notes that community health centre visits are not measures of disease incidence or prevalence; instead, visits may indicate demand on local health care services. Furthermore, 'diagnostic groups' include all diagnoses associated with a single healthcare visit and are not mutually exclusive; for example, a single visit could fall into two or more diagnostic groups if more than one diagnostic code was associated with the visit. In addition, Iqaluit has a hospital as well as a community health centre; hospital visits are not reported on by the Nunavut Bureau of Statistics (2017h).

Table 6.4 displays the percentage of Nunavut community health centre visits by diagnostic group for 2011 to 2015. In 2015, the five most common visitation categories in Nunavut were 'all other diagnoses and factors influencing health status and contact with health services' (32.8%, which commonly includes laboratory exams, counselling, newborn assessments, STI screenings, and wound care/aftercare), 'respiratory system diseases' (7.6%, which commonly includes upper respiratory infection, pharyngitis, lower respiratory infection, COPD, and tonsillitis), 'general medical examination' (6.1%), 'signs and symptoms of illness, cause unknown' (6.0%, which commonly includes abdominal pain, fever, headache, chest pain, and cough), and 'tuberculosis daily observed therapy' (5.6%).

**Table 6.4 Percentage of Nunavut Community Health Centre Visits by Diagnostic Group (2011 to 2015)**

Diagnostic Group	2011	2012	2013	2014	2015
Infectious Diseases	3.7	1.9	2.1	1.9	1.7
Respiratory System Diseases	11.9	11.0	9.0	8.6	7.6
Endocrine, Metabolic Nutritional Disorders	2.4	2.2	2.0	1.5	1.3
Mental and Behavioural Disorders	3.4	5.6	5.5	6.4	4.3
Circulatory System Diseases	4.0	3.6	3.1	2.3	2.1
Digestive System Diseases	4.9	4.6	4.0	3.2	3.0
Skin and Subcutaneous Tissue Diseases	4.2	3.9	3.1	2.5	2.7
Musculoskeletal System Diseases	4.6	4.5	3.6	2.8	3.1
Genitourinary System Diseases	3.6	3.3	2.9	2.5	2.4
Pregnancy, Childbirth and the Puerperium	3.2	2.9	2.8	2.3	1.4
Signs and symptoms of illness, cause unknown	7.2	6.9	6.8	6.3	6.0
Injuries and Poisonings	6.4	5.8	4.8	4.1	4.4
Ear Diseases	3.3	2.9	2.6	2.4	2.3
Nervous System Diseases	1.0	1.1	0.7	0.5	0.5
All Other Diagnoses and Factors Influencing Health Status and Contact with Health Services	11.2	15.9	20.8	20.9	32.8
Immunizations	4.8	4.3	5.0	3.3	4.4
Tuberculosis Daily Observed Therapy (DOT)	8.5	8.1	6.7	7.9	5.6
TB Screening	3.3	2.8	2.3	2.0	1.7
General Medical Examination	2.1	2.2	5.8	12.6	6.1
Family Planning	1.6	1.3	1.4	1.2	1.3
Med Administration/ Refill	0.9	2.0	2.2	2.2	2.6
Well Woman	1.0	0.8	0.7	0.6	0.5
Well Child	2.8	2.5	2.3	2.0	2.2

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017H).

Table 6.5 displays the percentage of Iqaluit community health centre (not hospital) visits by diagnostic group for 2011 to 2015. In 2015, the five most common visitation categories in Iqaluit were ‘all other diagnoses and factors influencing health status and contact with health services’ (52.0%, which commonly includes laboratory exams, counselling, newborn assessments, STI screenings, and wound care/aftercare), ‘tuberculosis daily observed therapy’ (5.6%), ‘immunizations’ (12.5%), ‘mental and behaviours disorders’ (7.6%, which commonly includes schizophrenia, depression, anxiety, acute and transient psychotic disorder, and bipolar affective disorder), and ‘well child’ (5.6%).

**Table 6.5 Percentage of Iqaluit Community Health Centre Visits by Diagnostic Group (2011 to 2015)**

Diagnostic Group	2011	2012	2013	2014	2015
Infectious Diseases	0.8	0.8	1.0	0.5	0.1
Respiratory System Diseases	0.3	0.2	0.0	0.1	0.0
Endocrine, Metabolic Nutritional Disorders	0.1	0.0	0.0	0.0	0.0
Mental and Behavioural Disorders	0.1	2.3	0.2	10.4	7.6
Circulatory System Diseases	0.1	0.1	0.0	0.1	0.0
Digestive System Diseases	0.1	0.1	0.0	0.0	0.0
Skin and Subcutaneous Tissue Diseases	0.0	0.0	0.0	0.0	0.0
Musculoskeletal System Diseases	0.1	0.7	0.0	0.1	0.0
Genitourinary System Diseases	0.1	0.1	0.0	0.0	0.0
Pregnancy, Childbirth and the Puerperium	0.1	0.1	0.0	0.0	0.0
Signs and symptoms of illness, cause unknown	0.1	0.1	0.1	3.0	0.4
Injuries and Poisonings	0.1	0.1	0.0	0.6	0.3
Ear Diseases	0.0	0.0	0.0	0.0	0.0
Nervous System Diseases	0.0	0.0	0.0	0.0	0.0
All Other Diagnoses and Factors Influencing Health Status and Contact with Health Services	10.1	14.9	21.8	42.1	52.0
Immunizations	8.3	9.8	15.6	7.2	12.5
Tuberculosis Daily Observed Therapy (DOT)	57.0	54.7	45.3	26.0	15.9
TB Screening	13.4	9.0	8.7	3.1	4.0
General Medical Examination	0.1	0.2	0.1	0.3	0.1
Family Planning	0.0	0.2	1.4	1.2	1.4
Med Administration/ Refill	0.1	0.0	0.0	0.5	0.2
Well Woman	0.0	0.0	0.0	0.0	0.0
Well Child	9.2	6.6	5.6	4.6	5.6

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017H).

Table 6.6 displays the percentage of North Baffin LSA community health centre visits by diagnostic group for 2011 to 2015. In 2015, the five most common visitation categories in the North Baffin LSA were ‘all other diagnoses and factors influencing health status and contact with health services’ (29.2%, which commonly includes laboratory exams, counselling, newborn assessments, STI screenings, and wound care/aftercare), ‘respiratory system diseases’ (8.1%, which commonly includes upper respiratory infection, pharyngitis, lower respiratory infection, COPD, and tonsillitis), ‘signs and symptoms of illness, cause unknown’ (7.1%, which commonly includes abdominal pain, fever, headache, chest pain, and cough), ‘tuberculosis daily observed therapy’ (5.5%), and ‘injuries and poisonings’ (4.8%, which commonly includes allergy, open wound of finger, open wound of unspecified body region, unspecified injury, and wrist and hand injury).

**Table 6.6 Percentage of North Baffin LSA Community Health Centre Visits by Diagnostic Group (2011 to 2015)**

Diagnostic Group	2011	2012	2013	2014	2015
Infectious Diseases	2.0	1.6	1.8	1.8	1.7
Respiratory System Diseases	13.2	11.6	8.9	9.4	8.1
Endocrine, Metabolic Nutritional Disorders	3.5	2.9	2.6	2.2	2.0
Mental and Behavioural Disorders	4.6	6.9	6.4	6.4	4.3
Circulatory System Diseases	5.3	4.6	3.6	2.6	2.5
Digestive System Diseases	5.3	4.8	3.9	3.6	3.3
Skin and Subcutaneous Tissue Diseases	3.9	3.9	3.0	2.5	3.1
Musculoskeletal System Diseases	4.3	4.3	3.3	3.0	3.2
Genitourinary System Diseases	4.4	3.7	3.0	2.6	3.0
Pregnancy, Childbirth and the Puerperium	3.5	3.3	3.1	2.5	1.7
Signs and symptoms of illness, cause unknown	6.9	7.1	7.4	6.6	7.1
Injuries and Poisonings	6.6	5.6	4.4	4.1	4.8
Ear Diseases	3.1	2.8	2.1	2.2	2.1
Nervous System Diseases	1.3	1.4	0.8	0.7	0.6
All Other Diagnoses and Factors Influencing Health Status and Contact with Health Services	12.3	16.9	21.5	19.6	29.2
Immunizations	4.4	4.0	4.7	2.7	3.7
Tuberculosis Daily Observed Therapy (DOT)	5.1	3.5	4.5	6.7	5.5
TB Screening	1.6	1.6	1.8	1.8	2.0
General Medical Examination	1.8	1.8	4.6	12.1	4.1
Family Planning	2.2	1.8	2.0	1.6	1.7
Med Administration/ Refill	1.3	3.0	4.0	3.2	3.4
Well Woman	1.0	0.7	0.5	0.4	0.6
Well Child	2.6	2.1	2.0	1.7	2.2

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017H).

## 6.2.4 Nunavut Food Price Survey

The Nunavut Bureau of Statistics (2017i) has prepared information on the average cost of food and other items in Nunavut, as compared to regional and Canadian averages. The cost of food has implications for Inuit dietary choices, ability to meet nutritional needs, and utilization rates of store-bought food. In 2017, the total average price of 48 items included in the Canada Consumer Price Index (CPI) food price basket was \$605.88 in the Qikiqtaaluk Region. This was higher than the total average price of these items in the Kivalliq Region (\$555.34), Kitikmeot Region (\$583.46), Nunavut (\$587.74), and Canada (\$326.96). The same 48 items are, on average, 1.80 times more expensive in Nunavut compared to the rest of Canada (Table 6.7).

**Table 6.7 2017 Nunavut Food Price Survey, Comparison of Nunavut and Canada Consumer Price Index Food Price Basket Items**

Item	Size	Qikiqtaaluk Average	Kivalliq Average	Kitikmeot Average	Nunavut Average	Canada Average	Nunavut- Canada
		(\$) Dollars					Ratio
Milk, 3.25%	1L	3.80	2.43	4.00	3.61	2.48	1.45
Milk, 2%	1L	3.59	2.39	3.79	3.29	2.33	1.41
Butter, Salted	454g	8.31	6.84	5.96	7.43	4.90	1.52
Eggs	Dozen, Large	3.85	4.10	5.15	4.20	3.08	1.36
Processed Cheese, Sliced	250g	6.22	6.33	6.63	6.34	2.75	2.31
Frozen French Fries	650g-1kg	6.60	5.72	6.73	6.36	2.56	2.49
Evaporated Milk	385ml	3.57	3.43	3.70	3.55	1.86	1.91
Ground Coffee, Reg.	300g	11.35	10.26	11.40	11.04	6.44	1.72
Instant Coffee, Reg.	200g	14.27	13.00	12.26	13.51	6.85	1.97
Tea Bags	72x227g	9.58	7.80	8.72	8.91	4.53	1.97
Soda Crackers	450g	8.04	6.96	8.05	7.74	3.09	2.50
Peanut Butter, Smooth	500g	6.50	6.24	6.75	6.48	3.43	1.89
Canned Salmon, Sockeye	213g	7.73	6.68	5.65	7.03	4.38	1.61
Canned Baked Beans	398ml	4.09	3.76	4.64	4.11	1.30	3.16
Canned Tomatoes	796ml	5.49	5.27	6.66	5.61	1.54	3.64
Canned Vegetable Soup	284ml	3.08	2.79	2.71	2.92	1.12	2.61
Macaroni	500g	5.37	5.25	4.69	5.19	1.48	3.51
Tomato Ketchup	1L	8.94	8.45	9.54	8.92	3.21	2.78
Cooking Oil	942ml-1L	9.77	9.55	10.36	9.81	3.99	2.46
Corn Flakes	675-680g	9.88	9.29	8.18	9.40	4.61	2.04
Flour, All Purpose White	2.5kg	13.91	12.02	16.05	13.81	4.91	2.81
Sugar, White	2kg	9.01	9.03	9.60	9.14	2.83	3.23
Apple Juice	1.36L	9.28	8.25	8.10	8.76	2.07	4.23
Orange Juice	1L	6.76	5.48	6.24	6.32	4.14	1.53
Tomato Juice	1.36L	10.38	9.26	8.82	9.71	2.44	3.98
Baby Food, In Jars	128ml	1.83	1.58	1.57	1.70	0.99	1.72
White Bread	675g	4.57	4.68	6.68	4.88	2.81	1.74
Whole Wheat Bread	675g	4.60	4.70	6.11	4.92	2.81	1.75
Apples	per kg	6.72	6.57	6.85	6.70	3.85	1.74
Bananas	per kg	4.86	4.68	5.28	4.88	1.58	3.09
Oranges	per kg	7.30	6.26	10.13	7.47	3.32	2.25
Carrots	per kg	5.85	5.09	7.65	5.93	2.03	2.92
Celery	per kg	9.41	8.82	10.34	9.40	2.71	3.47
Onions	per kg	5.36	4.66	4.56	5.01	1.93	2.59
Potatoes	4.54kg	13.65	11.15	13.82	12.85	6.58	1.95
Sirloin Steak	per kg	28.85	27.44	25.89	28.27	22.57	1.25
Round Steak	per kg	30.47	27.67	20.50	28.25	17.70	1.60
Stewing Beef	per kg	25.47	25.92	20.90	24.74	15.70	1.58

Item	Size	Qikiqtaaluk Average	Kivalliq Average	Kitikmeot Average	Nunavut Average	Canada Average	Nunavut- Canada
		(\$) Dollars					Ratio
Ground Beef, Reg.	per kg	15.59	16.01	16.61	15.91	12.21	1.30
Pork Chops	per kg	17.03	18.18	18.39	17.59	11.86	1.48
Whole Chicken	per kg	13.42	11.76	16.56	13.54	7.17	1.89
Sliced Bacon	500g	12.76	12.51	11.70	12.48	6.69	1.87
Hotdog Wieners	450g	6.00	5.47	5.76	5.80	4.26	1.36
Bathroom Tissue	4 Rolls	6.10	5.76	6.39	6.07	2.54	2.39
Toothpaste	100ml	6.60	5.38	5.53	6.04	2.67	2.26
Anti-Perspirant/Deodorant	60-70g	7.36	6.67	7.31	7.14	4.69	1.52
Shampoo	300ml	9.27	8.24	8.20	8.77	4.05	2.17
Cigarettes	Carton	173.42	155.57	162.33	166.20	103.92	1.60
<b>TOTAL</b>		<b>605.88</b>	<b>555.34</b>	<b>583.46</b>	<b>587.74</b>	<b>326.96</b>	<b>1.80</b>

**NOTES:**

1. SOURCE: NUNAVUT BUREAU OF STATISTICS (2017).

## 7 COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES

### 7.1 Baseline Information Overview

Table 7.1 lists the baseline information requirements on Community Infrastructure and Public Services in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 7.1 EIS Guidelines for Community Infrastructure and Public Services Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Description of current conditions of local housing and other infrastructure, and capacity in the RSA	Vol 4 - Sec 6.1 App 4A - Sec 7.2, 8.3	Yes, for selected topics	Socio-economic assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 7.6.3: public housing availability</li> </ul> 2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 3.4: current employee housing status</li> </ul> <b>Sec 7.2.1: housing characteristics</b> <b>Sec 7.2.2: public housing availability</b> <b>Sec 7.2.3: overcrowding of housing</b> <b>Sec 7.2.4: housing conditions</b>
Description of existing public services and associated community facilities in the RSA, including law enforcement, health care (including emergency response), dependency assistance, welfare utilities, temporary accommodation and food services	Vol 4 - Sec 7.1	No	N/A
Description of existing outpost camps and other facilities outside of municipal boundaries which facilitate harvesting and recreation activities in the LSA, particularly within proximity of the Project	Vol 4 - Sec 10.5	Yes, for selected topics	Socio-economic assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 7.6.3: structures that facilitate harvesting in Project areas</li> </ul>
Description of the extent and current capacity of the local transportation systems and associated infrastructure	Vol 4 - App 4A, Sec 8.1	Yes, for selected topics	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 8.4: number of Project aircraft movements at LSA airports, number of non-Project aircraft movements at LSA airports</li> </ul>
Discussion of demand for community infrastructure and public services from the Project directly and indirectly	Vol 4 - Sec 7.1, 7.4	Yes	Socio-economic assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 7.6.3: incremental costs imposed by the Project on public infrastructure and services</li> <li>Sec 7.6.3: effect on public and private services and infrastructure due to potential use by the Project</li> <li>Sec 7.6.3: potential increased demand for health care</li> <li>Sec 7.6.3: public housing availability</li> </ul>



## 7.2 Baseline Information Updates

The bolded and italicized references in Table 7.1 are provided below.

### 7.2.1 Housing Characteristics

Statistics Canada has released data from the 2016 Census on household characteristics in the North Baffin LSA, Iqaluit, Nunavut, and Canada (Table 7.2). Only 16.6% of private households were owner-occupied in the North Baffin LSA in 2016, compared to 23.5% in Iqaluit, and 20.0% in Nunavut; the remaining households were typically renter-occupied. These percentages of owner-occupied private households are substantially lower than the Canadian average of 67.8%. In addition, the percentage of tenant households in subsidized housing (which includes rent geared to income, social housing, public housing, government-assisted housing, non-profit housing, rent supplements, and housing allowances) in the North Baffin LSA (85.9%), Iqaluit (77.0%), and Nunavut (83.5%) is substantially higher than the Canadian average (13.0%).

**Table 7.2 Household Characteristics (2016)**

Location	Owner-Occupied Private Households (%)	Renter-Occupied Private Households (%)	% of Tenant Households in Subsidized Housing
North Baffin LSA	16.6%	84.1%	85.9%
Iqaluit	23.5%	76.5%	77.0%
Nunavut	20.0%	80.0%	83.5%
Canada	67.8%	31.8%	13.0%

#### NOTES:

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

### 7.2.2 Public Housing Availability

Housing-related issues, especially those pertaining to public housing availability, are prominent in Nunavut and have been raised in several recent government and media reports (e.g. Bell, 2017; NHC, 2016 and 2017; Skura, 2016b). The *We Can Do Better: Housing in Inuit Nunangat* Report of the Standing Senate Committee on Aboriginal Peoples (Senate of Canada, 2017: 5) notes:

*Throughout their traditional homelands, Inuit face an acute housing crisis which threatens their health and safety. This persistent and growing housing shortage has been characterized as one of the most significant public health emergencies in this country. Severe overcrowding, substandard homes, and a lack of affordable and suitable housing options has left many Inuit families one step away from homelessness; an unsettling reality in one of the harshest climates in the world.*

Nunavut Housing Corporation (2017) provides information on housing demand in Nunavut, which is measured using each community's public housing need (i.e. public housing waiting list units) as a percentage of its existing public housing stock. Table 7.3 summarizes the percentage of communities in Nunavut with public housing need in 2016-2017, as defined by Nunavut Housing Corporation's relative need classifications. 65% of communities in Nunavut have been classified as in 'critical' need of additional public housing, which is defined as those communities with a relative public housing need above 40%. 14% of communities in Nunavut have been classified as in 'high' need of additional public housing, which is defined as those communities with a relative public housing need >35% to 40%. 16% of communities in Nunavut have been classified as in 'serious' need of additional public housing, which is defined as those communities with a relative public housing need

>30% to 35%. 5% of communities in Nunavut have been classified as in 'less severe' need of additional public housing, which is defined as those communities with a relative public housing need below 30%.

**Table 7.3 Public Housing Need in Nunavut (2016-2017)**

NHC Relative Need Classification	% of Nunavut Communities
Critical	65%
High	14%
Serious	16%
Less Severe	5%
<b>TOTAL</b>	<b>100%</b>

**NOTES:**

1. SOURCE: NUNAVUT HOUSING CORPORATION (2017).

Table 7.4 summarizes the public housing need of communities in the LSA, as defined by Nunavut Housing Corporation's relative need classifications. Arctic Bay, Igloolik, and Pond Inlet all have a public housing need over 40% and are classified as 'critical'. Hall Beach is considered in 'high' need of additional public housing, followed by Clyde River and Iqaluit which are considered in 'serious' need of additional public housing.

**Table 7.4 Public Housing Need in the LSA (2016-2017)**

Location	Public Housing Need as a Percentage of Stock	NHC Relative Need Classification
Arctic Bay	43%	Critical
Clyde River	31%	Serious
Hall Beach	39%	High
Igloolik	41%	Critical
Pond Inlet	41%	Critical
Iqaluit	35%	Serious

**NOTES:**

1. SOURCE: NUNAVUT HOUSING CORPORATION (2017).

### 7.2.3 Overcrowding of Housing

Statistics Canada has released data from the 2016 Census on the number of private households by number of persons per room, which is an indicator of the level of crowding. Table 7.5 summarizes the number and percentage of private households by number of persons per room in the North Baffin LSA, Iqaluit, Nunavut, and Canada. Of note, 37.4% of North Baffin LSA private households had more than one person per room, compared to 6.2% in Iqaluit, 22.1% in Nunavut, and 1.9% in Canada.

**Table 7.5 Private Households by Number of Persons per Room (2016)**

Location	One Person or Fewer per Room		More than One Person per Room	
	Number of Private Households	% of All Private Households	Number of Private Households	% of All Private Households
North Baffin LSA	845	62.6%	505	37.4%
Iqaluit	2,580	93.8%	170	6.2%
Nunavut	7,650	77.9%	2,170	22.1%
Canada	13,802,060	98.1%	270,020	1.9%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

### 7.2.4 Housing Conditions

Statistics Canada has released data from the 2016 Census on housing conditions. Table 7.6 summarizes the number and percentage of occupied private dwellings by condition in the North Baffin LSA, Iqaluit, Nunavut, and Canada. Of note, 29.3% of North Baffin LSA private dwellings required major repairs in 2016, compared to 13.8% in Iqaluit, 26.1% in Nunavut, and 6.5% in Canada.

**Table 7.6 Occupied Private Dwellings by Dwelling Condition (2016)**

Location	Only Regular Maintenance or Minor Repairs Needed		Major Repairs Needed	
	Number of Private Dwellings	% of All Private Dwellings	Number of Private Dwellings	% of All Private Dwellings
North Baffin LSA	970	71.9%	395	29.3%
Iqaluit	2,370	86.2%	380	13.8%
Nunavut	7,255	73.9%	2,560	26.1%
Canada	13,151,600	93.5%	920,480	6.5%

**NOTES:**

1. SOURCE: STATISTICS CANADA (2017A, B, C, D, E, F, G).

## 8 CONTRACTING AND BUSINESS OPPORTUNITIES

### 8.1 Baseline Information Overview

Table 8.1 lists the baseline information requirements on Contracting and Business Opportunities in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is already presented in other sections of this report. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 8.1 EIS Guidelines for Contracting and Business Opportunities Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Most up-to-date statistics and data relating to contracting and business opportunities from socio-economic studies of communities in the Project RSA	Vol 4 - Sec 8.1 App 4A - Sec 8.4	Yes, for selected topics. The Project itself has also affected the baseline, by providing new economic opportunities	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 6.1: value of procurement with Inuit-owned businesses and joint ventures</li> <li>Sec 6.2: LSA employee payroll amounts, number of registered Inuit firms in the LSA</li> </ul> <b><i>Sec 5.2.1: Gross Domestic Product</i></b>
Estimates of goods supply, including country food supply for Inuit workers at the mine, procurement, services contracting, and other business opportunities in the Project RSA from the Project	Vol 4 - Sec 8.1 to 8.3	Yes	Socio-economic Assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 8.6: Phase 2 Proposal contract package titles</li> <li>Sec 8.6.3: economic effects from the Project's contracting and business opportunities</li> <li>Sec 8.6.3: existing country food supply sources and opportunities to supply Inuit workers</li> <li>Sec 8.6.3: Phase 2 Proposal contract package estimated values</li> </ul>
The economy structure and characteristics of local and regional economy, existing business types, scales of the different sectors of economy, and potential capacities to meet the needs from the Project	Vol 4 - Sec 8.1 to 8.3	Yes, for selected topics	Socio-economic Assessment TSD 25 <ul style="list-style-type: none"> <li>Sec 8.6.3: Project-related procurement and potential capacity to meet Project needs</li> </ul> 2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 6.2: number of registered Inuit firms in the LSA</li> </ul> <b><i>Sec 4.2.4: income sources and composition</i></b> <b><i>Sec 5.2.1: Gross Domestic Product</i></b>

### 8.2 Baseline Information Updates

The bolded and italicized references in Table 8.1 are provided in Sections 4 and 5 of this report.

## 9 Culture, Resources, and Land Use

### 9.1 Baseline Information Overview

Table 9.1 lists the baseline information requirements on Culture, Resources and Land Use in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 9.1 EIS Guidelines for Culture, Resources, and Land Use Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Summary description of known archaeological/paleontological, burial, cultural and historic, sacred and spiritual sites within the LSA, based on TK and scientific baseline studies. Each site shall be described on a map with a corresponding scale; large scale maps should be sent to the Government of Nunavut, Department of Culture, Language, Elders and Youth upon request, to assist in its review	Vol 4 - Sec 9.1	Yes, new archaeological sites have been identified as a result of the Phase 2 Proposal activities	Socio-economic Assessment TSD <ul style="list-style-type: none"> <li>Sec 9.0: culture, resources, and land use</li> </ul>
Description of regulatory requirements and procedures for recovery and removal of artifacts and/or fossils in areas of proposed development	Vol 4 - Sec 9.4, 9.5	No	N/A
Description of the relationship between cultural sites and social lives of local communities in the LSA	Vol 4 - Sec 9.3, 11.0	No	N/A
Overview of local and regional land use activities in the LSA, including national parks and similar areas, as well as areas potentially impacted by shipping activities	Vol 4 - App 4C, Sec 3.0, 4.0, 5.0, 6.0, 7.0	No	N/A
Description of current and traditional land use areas and the importance of those areas to Inuit culture and social well beings	Vol 4 - App 4C, Sec 3.0	Yes, Baffinland conducted additional workshops relating to contemporary land use with Pond Inlet and Arctic Bay.	Socio-economic Assessment TSD <ul style="list-style-type: none"> <li>Sec 9.0: culture, resources, and land use</li> </ul> Phase 2 Proposal Community Workshops Report (JPCSL, 2017b) <ul style="list-style-type: none"> <li>Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> <li>Sec 6.3: caribou - contemporary caribou harvesting in the North Baffin region</li> </ul>
Description of known land use activities and relation to the local economy, self-reliance, food supplies and livelihood	Vol 4 - App 4C, Sec 3.4, 4.1, 4.2	Yes	2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25 <ul style="list-style-type: none"> <li>Sec 10.1: harvesting and food security</li> </ul> Phase 2 Proposal Community Workshops Report (TSD 03) <ul style="list-style-type: none"> <li>Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> <li>Sec 6.3: caribou - contemporary caribou harvesting in the North Baffin region</li> </ul>

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
Description of identified and anticipated overlapping zones and/or areas where the land use activities co-exist or interact with project components or/and activities	Vol 4 - App 4C, Sec 3.0, 3.4	Yes	<p>2017 Socio-Economic Monitoring Report for the Mary River Project , Appendix B, TSD 25</p> <ul style="list-style-type: none"> <li>• Sec 9.1: number of recorded land use visitor person-days at Project sites, number of wildlife compensation claims</li> <li>• Sec 10.1: harvesting and food security</li> </ul> <p>Phase 2 Proposal Community Workshops Report (TSD 03)</p> <ul style="list-style-type: none"> <li>• Sec 3.0: contemporary Inuit land use in the Eclipse Sound and Navy Board Inlet areas</li> <li>• Sec 4.2: shipping through ice - seasonal land use interactions and concerns</li> <li>• Sec 5.2: open water shipping - seasonal land use interactions and concerns</li> <li>• Sec 6.3: caribou - contemporary caribou harvesting in the North Baffin region</li> <li>• Sec 6.4: caribou - expressed community issues and concerns</li> </ul>

## 9.2 Baseline Information Updates

Where baseline information updates have been referenced in documents other than this Appendix, the reader should consult those documents directly. There are no remaining baseline updates to present in this section.

## **10 BENEFITS, TAXES, AND ROYALTIES**

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### **10.1 Baseline Information Overview**

No baseline information on benefits, taxes, and royalties was requested by NIRB in the Original or Amended EIS Guidelines.

### **10.2 Baseline Information Updates**

As no baseline information on benefits, taxes, and royalties was requested by NIRB in the Original or Amended EIS Guidelines, no baseline information updates are included in this section. As part of the Phase 2 Proposal submission, Baffinland prepared an updated Economic Impact Model, which details potential benefits, taxes, and royalties to be generated by the Phase 2 Proposal (EcoTec Consultants Inc., 2017).

## 11 GOVERNANCE AND LEADERSHIP

### 11.1 Baseline Information Overview

Table 11.1 lists the baseline information requirements on Governance and Leadership in the Amended EIS Guidelines, reference to the applicable sections of the FEIS where this information was provided previously, and the location of new information (if any) provided in this report or other documents forming part of the FEIS Addendum for the Phase 2 Proposal. Baseline information in ***bold italics*** is provided later in this section. For topics or items where an update is not provided, baseline information presented in the FEIS continues to provide a valid description.

**Table 11.1 EIS Guidelines for Governance and Leadership Baseline Information**

Guideline Content	FEIS Reference	Updated Information Prepared for the Phase 2 Proposal?	Phase 2 Proposal Reference
A description of current social and governmental regime in the Project region, structure and functions of the governments, Inuit organizations, other co-management organizations and interactions among those organizations	Vol 4 - App 4A, Sec 8.2	No	N/A
A description of the Proponent's understanding on the roles of governments play in the process of the Project development, and associated requirements and obligations for proponents by policies and regulations	Vol 2 - Sec 2.0	No	N/A
A description of the roles of the various parties in socio-economic monitoring programs and the Qikiqtani Socio-Economic Monitoring Committee	Vol 4 - Sec 15.0	Yes	Socio-economic assessment TSD • Sec 12.1 to 12.4: socio-economic monitoring
The leadership of GN in policies making responsibilities on contracting, operation and management of community infrastructure, community and regional development planning; mechanism, processes and structures for conflict resolution	Vol 4 - App 4A, Sec 8.2	No	N/A
Other social and economic responsibilities of governments in the Project impacted regions	Vol 4 - App 4A, Sec 8.2	No	N/A

### 11.2 Baseline Information Updates

Where baseline information updates have been referenced in documents other than this Appendix, the reader should consult those documents directly. No other baseline updates relevant to this section are presented.



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# **APPENDIX D**

## **PHASE 2 PROPOSAL WORKFORCE PROJECTIONS**





Table 1 Projected Phase 2 Proposal Workforce

Year		2016	2017	2018	2019	2020
ERP Operations	On-Site Workforce	480	591	680	680	680
	Total Workforce	933	1181	1360	1360	1360
	Inuit Employment	137	159	-	-	-
	% Inuit Employment	14.7%	13.5%	-	-	-
	Total Skill Level B and Higher Workforce	360	456	525	525	525
	Total Skill Level C Workforce	479	606	698	698	698
Total Skill Level D Workforce		94	119	137	137	137

Year		2019	2020	2021
Phase 2 Construction (12 Mtpa)	On-Site Workforce (based on peak estimates)	480	700	640
	Total Workforce (peak estimates)	710	1050	950
	Total Skill Level B and Higher Workforce	220	300	290
	Total Skill Level C Workforce	330	470	390
	Total Skill Level D Workforce	180	310	280

Year		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Phase 2 Operations (12 Mtpa)	On-Site Workforce	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505
	Total Workforce	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010
	Total Skill Level B and Higher Workforce	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505
	Total Skill Level C Workforce	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410
	Total Skill Level D Workforce		95	95	95	95	95	95	95	95	95	95	95	95	95	95

Year		2021	2022	2023	2024
South Rail / Steensby Port Construction	On-Site Workforce (based on peak estimates)	570	1800	1600	900
	Total Workforce (peak estimates)	800	2680	2440	1710
	Total Skill Level B and Higher Workforce	480	1608	1464	1026
	Total Skill Level C Workforce	176	590	537	376
	Total Skill Level D Workforce	144	482	439	308

Year		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
18 Mtpa Operations	On-Site Workforce	475	475	475	475	475	475	475	475	475	475	475	475
	Total Workforce	950	950	950	950	950	950	950	950	950	950	950	950
	Total Skill Level B and Higher Workforce	380	380	380	380	380	380	380	380	380	380	380	380
	Total Skill Level C Workforce	475	475	475	475	475	475	475	475	475	475	475	475
	Total Skill Level D Workforce	95	95	95	95	95	95	95	95	95	95	95	95

Year		2036	2037	2038
Closure	On-Site Workforce	180	180	180
	Total Workforce	300	300	300
	Total Skill Level B and Higher Workforce	150	150	150
	Total Skill Level C Workforce	105	105	105
	Total Skill Level D Workforce	45	45	45

Year		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Totals	Total On-Site Workforce	480	591	680	1160	1380	1715	2305	2105	1880	980	980	980	980	980	980	980	980	980	980	980	180	180	180
	Total Workforce (incl. peak construction workforce)	933	1181	1360	2070	2410	2760	3690	3450	3670	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	300	300	300	
	Skill Level B+	360	456	525	745	825	1275	2113	1969	1911	885	885	885	885	885	885	885	885	885	885	150	150	150	
	Skill Level C	479	606	698	1028	1168	976	1000	947	1261	885	885	885	885	885	885	885	885	885	885	105	105	105	
	Skill Level D	94	119	137	317	447	519	577	534	498	190	190	190	190	190	190	190	190	190	190	45	45	45	
	Total Person-Years	933	1181	1360	1786	1990	2060	2618	2474	2986	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	300	300	300	

**Notes:**

1. The National Occupational Classification (NOC) matrix (HRSDC, 2006) has been used to assign Project job categories to skill levels, similar to the ERP Addendum. The five NOC levels have been condensed into three levels for the purpose of this assessment: Level B or higher (designated as B+), Level C, and Level D:

- Level B and higher occupations are jobs that usually require apprenticeship training or college/university education. This level includes jobs such as industrial trades, train crew operating, drillers, blasters, supervisors, administrative occupations, technical occupations, managers and professional occupations.
- Level C occupations usually require secondary school and/or occupation-specific training. This level includes jobs such as heavy equipment operators, administrative support, scheduling jobs, and occupations in food and beverage services.
- Level D jobs are those where on-the-job training is usually provided. These may include kitchen helpers, cleaners, security guards, trades helpers and labourers.

2. Actual 2017 FTE employment numbers (i.e. 1,181 FTEs) have been projected out for the remaining years of the ERP operations component. This actual number is higher than what was originally predicted for the ERP in the FEIS. A 15% increase in the 2018 to 2020 workforce has also been applied to account for the ramp up to 6 Mtpa transported over the Milne Inlet Tote Road.

3. South Rail construction and operation workforce numbers were obtained from the FEIS.

4. ‘Person-years’ is the term used by Baffinland to describe the Project’s overall employment requirements and is based on the number of full-time positions created. That is, one full-time position created for one year equals one person-year of employment. A ‘full-time position’ does not connote a particular number of hours being worked by each position, as it is acknowledged these can differ for construction and operation phase employees. For planning purposes, however, it can be assumed that one full-time position equals one full-time equivalent (FTE). Baffinland has estimated the full time equivalent of the construction workforce to be 60% of the total peak construction workforce, to account for the temporary/short-term nature of most construction phase labour.



# APPENDIX E

## INUIT WORKER EXPERIENCE REPORT

## **BAFFINLAND IRON MINES CORPORATION**

### **MARY RIVER PROJECT**

#### **MARY RIVER EXPERIENCE – THE FIRST THREE YEARS**

January 18, 2016

**BAFFINLAND IRON MINES CORPORATION**

**MARY RIVER PROJECT**

**SOCIO-ECONOMIC BASELINE**

**TABLE OF CONTENTS**

SECTION 1.0 - INTRODUCTION .....	1
1.1 OBJECTIVES .....	1
1.2 METHODOLOGY .....	1
1.3 THE DATA SET .....	1
1.4 DATA QUALITY .....	3
1.4.1 Professional judgement .....	3
1.4.2 Bias management .....	3
1.5 ORGANISATION OF THE REPORT .....	5
SECTION 2.0 - PERSONAL PERSPECTIVES ON THE EMPLOYMENT EXPERIENCE .....	6
2.1 PERCEIVED PERSONAL EFFECTS OF EMPLOYMENT .....	6
2.1.1 Ability to support oneself and family .....	6
2.1.2 Pride in the work and putting your training to use .....	7
2.1.3 Achieving goals and realising dreams .....	7
2.1.4 Social environment .....	8
2.1.5 Effects on health .....	9
2.1.6 Absence from family .....	13
2.2 EFFECTS EXPERIENCED BY FAMILY .....	14
2.2.1 Effects on children .....	15
2.2.2 Childcare arrangements .....	16
2.2.3 Being away when things happen at home .....	20
2.2.4 Communication and decision-making .....	21
2.2.5 Effects of fly-in/fly-out on relationships .....	24
2.2.6 Migration .....	25
2.3 HARVESTING ACTIVITIES .....	27
2.4 MONEY GOALS AND MONEY MANAGEMENT .....	29
2.5 PREFERENCE TO WORK AT MARY RIVER .....	33
SECTION 3.0 - WORKING AT MARY RIVER .....	39
3.1 RECRUITMENT .....	39
3.1.1 Awareness and Interest in Mary River Employment .....	39
3.1.2 Recruitment from the communities .....	40
3.1.3 Recruitment from on-site contractors .....	41
3.1.4 Implementation of Inuit hiring preference .....	42
3.2 DETERMINANTS OF EMPLOYMENT SUCCESS .....	47
3.2.1 Getting to work on the plane — absenteeism due to missed flights .....	47
3.2.2 Time Management and Living With Rules .....	53
3.2.3 Health and healthy lifestyle .....	55
3.2.4 Expectations and attitude .....	55
3.3 WORKPLACE AND PROJECT CULTURE .....	56

3.3.1	What culture is emerging at Mary River?	56
3.3.2	Challenges	58
3.3.3	Factors supporting development of a supportive workplace culture	62
3.3.4	Building a Labour Force Through Respect and High Expectation	65
3.4	CAREER PROGRESSION	68
3.4.1	Inuit Career Aspirations	68
3.4.2	Understanding of career paths	71
3.4.3	Some typical career paths at Mary River	72
3.4.4	Realistic expectations related to advancement	75
3.5	TRAINING	78
3.5.1	Training Before Employment at Mary River	78
3.5.2	Training employees after they are hired	83
3.5.3	Mentorship, role models, and peer support	89
3.6	SUPPORTING SUCCESS	90
3.7	TERMINATION	96
3.8	POST-TERMINATION FOLLOW-UP AND COMMUNICATION	98

## SECTION 1.0 - INTRODUCTION

This socio-economic study report has been prepared in support of the Phase 2 Addendum to the Mary River Project Environmental Impact Statement (EIS), to be submitted by Baffinland to the Nunavut Impact Review Board (NIRB).

The intent of this study report is to present qualitative data regarding the experience of Inuit residents employed at the Project as perceived by employees, their spouses, managers and supervisors at Mary River.

### 1.1 OBJECTIVES

The overarching objective of the research reported here has been to gain insight into the question, “How is it going?” for individuals and families engaged in employment relationships with the Project. Understanding the experience to date will be a critical part of Phase 2 socio-economic impact assessment.

More specifically, the data presented here will be helpful in assessing the validity of statements regarding Project – VSEC interactions, mitigation efficacy and impact significance that were presented in earlier impact assessments related to the Project. This qualitative data will be particularly useful in interpreting the meaning of the quantitative data that has been collected and presented as part of the on-going Mary River socio-economic monitoring program.

### 1.2 METHODOLOGY

The approach to gathering personal insights and perspectives related to Project employment involved open-ended conversations that took place at the mine site (Mary River complex) with two primary groups—1) managers and supervisors from Baffinland departments and from the major contractor engaged in hiring Inuit employees, QIL; and 2) Inuit employees who had been hired from LSA communities.

In addition to the on-site interviews, a visit to one of the North Baffin LSA communities (Arctic Bay) was arranged to gain some perspectives from spouses of employees, former employees as well as several community residents who were engaged in key positions within the community's social sector.

All interviews were carried out by Mr. Doug Brubacher during the period from October 22, through November 5<sup>th</sup>, 2016. Conversations were taped with consent of participants for the purpose of data consolidation and analysis by Mr. Brubacher.

### 1.3 THE DATA SET

A total of 50 individuals were interviewed. This includes 17 managers and supervisors interviewed at site, 15 Inuit employees interviewed at site, and 18 individuals interviewed in Arctic Bay—comprised of 4 spouses of employees, 4 former employees, 7 community resident “key people”, and 3 current employees who were on their off-rotation. Amongst the current employees who were interviewed, there is a good mix of recent hires with more experienced employees.

Five of the current employees, 2 men and 3 women, were employed by QIL with the remaining 13 employed by Baffinland. In total, interviews with 14 male employees and 4 female employees

were carried out. All 4 spouses who participated in the interviews were women. Three of the 4 former employees were men, with 1 woman participating.

A breakdown of the 18 current employee interviews by community or residency is as follows:

Hall Beach	3
Igloolik	1
Arctic Bay	6
Pond Inlet	3
Clyde River	1
Iqaluit	3
Ottawa	1

During the period of on-site interviews, there were some 45 Inuit at the Mary River site who were employed by Baffinland or one of the contractors. With 15 interviews of Inuit completed at Mary River, this represents a 33% coverage rate.

A summary of the family status and living arrangements of the 18 current employees contributing to this report is provided in the following table. This is intended to provide some context to discussions related to perceptions of the effects of employment on individuals and families.

**Table 1 Gender and family setting of participating employees**

<b>Gender</b>	<b>Family setting</b>
male	Single, no children, living with mother, sister, brother-in-law and their pre-school child and two others in four-bedroom public housing unit.
male	Single, no children, lives in public housing with others (not related)
male	Lives with wife and two young adult children in public housing.
female	Single, no children, lives with parents in public housing.
male	Living with common-law and two teen children in public housing.
male	Lives with common-law, his parents, and three pre-teen children in public housing.
male	Lives with common-law and young child with parents and sister.
male	Lives with common-law and three pre-teen children in public housing.
male	Lives with his common-law, young step son; his mother, step brother and younger sister; another sister and her boyfriend; and an older sister, in four-bedroom public housing unit.
male	Lives with common-law, several young children, an adult daughter with her partner and child, in public housing.
male	Lives with common-law and three young children in public housing.
male	Lives with common-law, their young adopted child, and an adult child, their common-law and children in public housing.
female	Lives with her mother in their own home, with other family members.
male	Single, living with his young child and other family members in public housing.
female	Lives with common-law and three other extended family members in a private rented apartment.
female	Lives in private rental apartment with daughter, son-in-law and their pre-teen child.
male	Lives with common law with five young children in public housing with his in-laws.
male	Lives with common-law and their pre-school child in public housing unit.

Note: The order of presentation of this information has been randomly generated and does not correspond to any other attributes presented elsewhere.

## 1.4 DATA QUALITY

Qualitative data generated by open-ended conversations is highly effective in shedding insight into the question of “how its going” for Inuit employed at the Mary River Project. However, an understanding of the quality and limitations of this data should be sought as part of the process. In particular, aspects of professional judgement and the management of potential bias in the data should be considered.

### 1.4.1 Professional judgement

To support the research aim of gaining insight and understanding into the Inuit employment experience of the first years of the Mary River Project, an open-ended interview technique was used. A series of fifteen core questions served to elicit responses that could then be followed up with further questions as the conversations evolved. This methodology relies on the professional judgement of the researcher.

Mr. Brubacher brings a broad array of professional experience to his work. He has worked over more than two decades to improve understanding of the fly-in/fly-out experience of Inuit and other Indigenous people employed in Canada’s mining sector. This work has been performed for clients that include community and Indigenous organisations, the territorial and federal governments, and for industry as part of the environmental impact assessment process.

As Subject Lead for socio-economic impact assessment for Baffinland’s environmental impact assessment processes, Mr. Brubacher seeks to ensure that the best understanding of Inuit employment experience is brought to the process. He believes that a high standard of objectivity needs to be brought to bear to investigations into the very personal and subjective experiences individuals gain during fly-in/fly-out employment.

### 1.4.2 Bias management

While a commitment to professional objectivity plays an important role in qualitative research, managing bias is always important. The potential for bias to enter into qualitative research was recognised as an important factor in the design and implementation of this research and during the analysis of results. Four forms of bias were considered: 1) interviewee selection bias; 2) response bias; 3) interviewer bias; and, 4) analysis bias. These are each briefly elaborated here, with a discussion of steps taken to manage bias and its effects.

#### *Interviewee selection bias*

As can be seen from the data set discussion above, there were limitations in the selection of interviewees. Specifically, most of the Inuit with Mary River work experience interviewed here were current employees. Only four former employees were interviewed. For this reason, some caution needs to be paid during interpretation of the data. In particular, a lower frequency of a particular comment may not necessarily correspond to a low importance of the observation being raised. This is especially the case when the comment is provided by a “former” rather than “current” employee.

Within the population of current employees, the potential for selection bias in the individuals chosen to participate is also recognised. Due to the logistical demands involved with interviewing individuals on-the-job, selection was carried out by Baffinland managers / supervisors rather than attempting to implement a fully randomised sampling methodology.

The possibility that the selection of these individuals might introduce some selection bias is recognised. To some degree, selection bias has been mitigated by including a substantial proportion, one-third, of all Inuit who were at site at the time of the study. Further management of this potential source of bias was achieved by including a broad range of other respondents—managers, supervisors, spouses and community “key people.” These interviews add further to the diversity of the response profile.

#### *Response bias*

The potential that respondents may mould their comments in order to avoid perceived repercussions from an employer or from other sources was considered. This is particularly important in the context of interviews dealing with perceptions of one’s employment situation.

Response bias can also be introduced when a respondent seeks to please the researcher by offering what s/he believes the researcher is “looking for.”

Several efforts were made to mitigate the potential for response bias. First, as part of the consent process Inuit employees and former employees were assured that their comments would not be attached to their names and that recordings and notes would only be available to the researcher for the purpose of preparing the report. Secondly, the researcher took care to present a “neutral” attitude toward issues being discussed, making it clear that both “positive” and “negative” aspects of the experience were of importance.

#### *Researcher interview bias*

Researcher bias can be introduced during the interview process through the sorts of questions that are posed to the respondents and in the manner that these questions are posed. To help ensure objectivity and balance in the interviews, Mr. Brubacher based the core questions used in this work on the themes and Valued Socio-Economic Components (VSECs) that were addressed in the Final Environmental Impact Statement. These questions are attached as an appendix to this document. A careful review of the FEIS carried out just prior to this research further served to calibrate the open-ended conversations to the FEIS, thereby providing a connection between this research and the extensive process of consultation and critique represented by the impact assessment process.

#### *Researcher analysis bias*

Bias can be introduced by the researcher during the presentation, analysis, and interpretation of qualitative interview data. This can arise when the researcher intentionally or unintentionally picks out some data to present while overlooking or suppressing other data. In some instances, analysis bias may arise inadvertently, as in the case when a comment or observation made by a respondent is not recognised as being important. In other cases, a researcher may feel an observation is too sensitive to be reported—or perhaps is too one-sided and not counterbalanced by other data so that it might be misinterpreted.

During this work, the potential for bias in the presentation of interview findings was mitigated in two ways. First, as noted earlier, conversations were taped. This enables a more full review of all comments to be made than is possible when reliance is placed on notes taken during a conversation. Secondly, once the content of transcripts were mapped onto the emerging report framework, text that was “left over” was reviewed a final time. Comments or observations that had not found their place into the report during the first iteration were picked up at this point. This



iterative process led to some re-working of the report structure ensuring the data presentation drove the report rather than the other way around.

Future analysis of the data contained within this report should be carried out with bias-management in mind. Residual bias in the data set can be managed to some degree by keeping this source of bias in mind during analysis and interpretation. In particular, attention should be paid to the expression of minority experiences, since these may be more prevalent in the overall population of individuals with Mary River experience than suggested in the sample of people interviewed.

## 1.5 ORGANISATION OF THE REPORT

The data is presented in two sections. The first section (Section 2, following this Introduction) presents perspectives on the effects that employment at the Mary River Project has on individuals (Sub-Section 2.1) and on families (Sub-Section 2.2). This section also presents what people had to say about harvesting (Sub-Section 2.3), money management (Sub-Section 2.4), and their preferences related to working in the community or working fly-in/fly-out at the Mary River Project (Sub-Section 2.5).

Section 3 then focuses on topics that pertain more directly to the employment experience at the mine site, presenting data related to recruitment (Sub-Section 3.1), determinants of employee success (Sub-Section 3.2), the workplace culture emerging at the Project (Sub-Section 3.3), observations about career progression (Sub-Section 3.4), and, training ((Sub-Section 3.5). In addition, this section presents comments made in relation to supporting Inuit employment success at the Project (Sub-Section 3.6), voluntary and involuntary termination (Sub-Section 3.7), and post-termination follow-up and communication (Sub-Section 3.8).

No “analysis” or “conclusions” sections have been presented in this document. Rather, the objective of this report is to set out data that will be used to support analysis and impact assessment conclusions that will be developed elsewhere, through the impact assessment process. For this reason an attempt has been made to limit the narrative and analysis presented here.

## SECTION 2.0 - PERSONAL PERSPECTIVES ON THE EMPLOYMENT EXPERIENCE

### 2.1 PERCEIVED PERSONAL EFFECTS OF EMPLOYMENT

Employees and spouses were asked about the challenges and rewards they saw in relation to employment at the fly-in/fly-out Mary River Project. Individuals spoke about various types of benefits arising from employment. These range from the material rewards that come with increased income, to the mental health benefits of participating on a team and having hope and plans to achieve goals, to the satisfaction associated with learning new things and having an avenue to put one's skills to good use.

In addition to these benefits, however, were various challenges. Some of these related to the typical stresses of employment while others are specific to fly-in / fly-out work rotations. Top of the list were challenges associated with being away from family during the two week work rotations.

#### 2.1.1 Ability to support oneself and family

Self-reliance is a core value in many cultures. It is included within Inuit societal values as "Pijitsirniq - The concept of serving and providing for."

One employee, when asked about any changes that employment has made in his / her life spoke of the ability to be more self-reliant:

"Yeah – like I'm not asking for money from family. I can take care of myself more now, and I'm getting what I need like vehicles...snow machine...and we can go camping now in springtime. [Interviewer: How does that feel?] "Much better...its good, a lot better now!" (Mary River Project Employee\_17)

One woman described how she had left her partner and is simply working to support her teenaged children:

"I left my ex years ago. He chose drugs and I didn't. He got me into so much debt that I couldn't take it any more. I finally got [custody of] my son. They are still depending on me. I still have to send money to them. My kids know since they've been grown up that I've always been the main provider for them so they've always been supportive." (Female employee)

Another employee noted how there were few jobs available in the hamlet:

"Its important to me because there's barely jobs back home – most of them are already full so there's no job available... this is my chance...one of the lucky ones! Its very important. I got to take care of my family, my two kids and my sister-in-law." (Mary River Project Employee\_6)

"I find it better, 'cause our income has been a lot better...his income. You know, us young people, we seem a lot happier by making more money. A lot better than when he was working at hamlet." (Spouse\_3)

One community resident summed up the optimism associated with finding employment like this:

"Some mothers go on the radio to say, 'my son got hired at Mary River!' They are so happy." (Community Resident\_4)

### 2.1.2 Pride in the work and putting your training to use

Inuit from LSA communities have been encouraged for many years to pursue education and training in order to improve their prospects. However, in many instances opportunities to follow these efforts with actual employment have been lacking. In this context, several individuals expressed how employment at Mary River has provided a much-sought-after opportunity to put these efforts to good use:

“The best days are driving the truck – 777s and 740s. Since I have Class 3, I have to use that license – I didn’t want to put it away...so I had to apply for that job. Lots of things I’m learning – safety hazards, check equipment all the time, its all good. I really like this job – its fun, driving around... up and down the mountain.” (Mary River Project Employee\_7)

“I don’t want it [previous training] to go to waste. ‘Cause I’m the third generation to be trained and so I want to keep it that way. I might be the first one to work at a mine in my family. ...I take a lot of pride in my name!” (Mary River Project Employee\_2)

“I think another thing the Mary River mine has done is instil hope. People have been taking these airbrakes courses and these pre-trade things and they are finally seeing a value to why they’ve been doing this. They are finally seeing a value to education. There is also the hope that there will be an apprenticeship program that they can follow through with.” [Community Resident\_1]

“This job is much more [than previous jobs in the community]...its like a learning experience for me... A new learning experience for me.” (Mary River Project Employee\_14)

“So far its been always awesome – Its been like living a dream. The place is full of friendly people, the place has awesome choices of food, and then there’s your OWN room. Then the pay’s good...how wrong can it go? Man, I love it here. Nothing wrong can go here – just take it easy, play it safe. Its pretty cool how the company is – even though its pretty young the motive is constant – teamwork is always there. Ever since I started here I’ve learned a lot – there’s always something to learn.” (Mary River Project Employee\_3)

### 2.1.3 Achieving goals and realising dreams

For some individuals, Project opportunities go beyond providing an avenue where previous preparations can be put to use to actually giving people a chance at realising longer term dreams:

“This job here, I love it. Coming here getting to do... I wanted to be an operator. That’s what I always wanted to do...at home you don’t get that opportunity. I didn’t get that opportunity when I was at home. Here, I actually got it... not right away, it took a couple of years. It takes a couple of years for people to get to know you. The other jobs I had before Nuna ...that was all labour work. But as soon as I got on with Nuna I started running equipment. That was part of the job. Within the first two days I started getting training on equipment.” (Mary River Project Employee\_13)

“I always wanted to become a fireman, or a heavy equipment operator... my father was a heavy equipment operator. I used to watch him and wanted to become one of them when I grow up... so now I’m learning that!” (Mary River Project Employee\_14)

For others, the job provides opportunity to set and achieve personal goals in a supported environment:

“I love driving! I just started learning the loader – loading up trucks...and [my supervisor] gives me tips. Even the lead hand gives me tips. Or other guys that have been here longer than I have. I started on the triple 7 then signed off on 998 and the 740 after that. The 992 loader was my second piece. For Operator 2, I need another piece of equipment to get signed off – excavator. Already had a test and now just need seat time. Have done work on the simulator – they are harder than the actual equipment!” (Mary River Project Employee\_5)

“I grew up around equipment but its completely different when you are on the seat operating it. My father used to take us on the equipment and would give us rides to work. But he never used to explain how this worked or how that worked, or what this control does... Here I get full training. From the trainers here – they have all the knowledge on the equipment. I have great respect for them ‘cause I know they have spent so many years on the equipment. Me – I want to get to that point – I want to be as great an operator as my father was. If I'm going to retire here, I want to be learning every piece of equipment there is and I want to be as good as my father was and so I take my time on each equipment for a couple months or a year or so... If there is a breakdown, maintenance has to come over and I try to ask as many questions as I can cause I want to learn everything about the equipment.” (Mary River Project Employee\_2)

The large scale of the Mary River Project means there is a wide variety of positions available to people. While some find satisfaction seeking to advance in their skill as equipment operators, others seek a wider variety of work:

“I can't see myself sitting in one piece of equipment for a rotation, doing one job for a whole rotation. Here, I get to do all sorts of different things everyday – I get to go to work everyday not knowing what I'm going to do. Can't see doing the same thing all day, every day – that's just not me.” (Mary River Project Employee\_13)

#### 2.1.4 Social environment

The social environment of the workplace was also commented on by several Inuit employees. A particular attraction is the teamwork aspect of the crews—people helping each other out to improve their skills:

“For me, I love it... I love working with people. I've got a good crew...the best it can be. We get along fine – that's why I love the crew. We're about 10 or a little more. There's two new Inuit guys. One used to work with hamlet just before he got here. They are keen to learn. I give them tips. I've been teaching other students – newcomers. We work together.” ( (Mary River Project Employee\_5)

“We are all pretty close, easy going. Our supervisor respects us just as much as we respect him. And another thing that I love is I get to run everything.” (Mary River Project Employee\_13)

One employee spoke about how working at Mary River provided the opportunity not only to meet new people, but also to meet relatives from other communities — something that is a challenge given the high transportation costs in North Baffin:

“I get to meet new people, and I get to see my distant family from other communities...and I get to have two weeks off after.” (Mary River Project Employee\_4)

#### 2.1.5 Effects on health

For some individuals, access to full-time, long-term employment positions has had effects on attitudes towards substances such as alcohol and tobacco. Beneficial mental health effects have also been attributed to employment by employees, their spouses, and community members.

##### *Mental health*

Several people commented on how employment has improved people's outlook on life and overall mental health:

“When you have a job, you have hope. You know you need to stay out of trouble or you'll lose that.” Even our ‘regular clients’ ...we don't see them when they are employed.” (Community Resident\_6)

“They get work experience. They seem a lot happier. ... A big difference from before. Many workers ...they were jobless all of a sudden [when Nanisivik closed]. When Mary River opened, they got their jobs back.” (Community Resident\_D)

However, while many have gained motivation by the prospect of employment others have been unsuccessful in their efforts to get work at Mary River:

“It has brought income to a lot of people in communities. It looks like they're happier... more jobs. A lot of those who have applied [and not getting hired] – they are losing hope.” (Former Mary River Project Employee\_2)

A spouse of an employee described the dramatic impact that having a job has had on their lives:

“I'm so happy he's got a job. He grew up where he should be taking care of the family. So it hasn't been too good for him for a nice while...So when we heard about Baffinland he was excited and since he got hired, ...he's a totally different person now. ...he's got his confidence back, and he's able to take care of his family and he's happier. He's not so down. I was working for [many] years and it was very very busy and it took a lot out of me and he felt even more guilty for that, for not having a permanent job. ...Now he's so happy he's working over there...its made so much difference.” (Spouse \_4)

This individual went on to talk about how the change in outlook brought about by employment has improved the relationship between her husband and his sons:

“His life has changed and I notice my boys have changed also. Before, my husband would go into depression mode ..they didn't see their father being motivated at all. It was only up to me ...but now ...its ...he watches himself... the times he gets into depression mode that's when he tries to keep himself busy. ...Now he wants to keep his son busy and so they've been working on [a hunting cabin]. So now my son is really motivated ...and my husband is keen to work with his son... spend more time with his boys. Now they are both trying to help each other out – that's what I've noticed.” (Spouse \_4)

This sense of strong of satisfaction with finally having a real job after previously only having access casual work was expressed by another LSA resident now employed at Mary River:

“Its very good – good experience, good people, good to hang out with – they are open and stuff. Its really good here. Yeah, its really good. Its my first big job. Had done some labour stuff. Water and sewage driver in town for hamlet – that’s about it.” (Mary River Project Employee\_1)

The ability to work in a team environment can help people cope with challenges that might be more difficult to deal with alone. This was described by two individuals who described the value of keeping busy in a job and having other people to talk with:

“My hunting buddy committed suicide so I have nowhere to go now. So I prefer having a job. If he’s still around I wouldn’t be here right now.” (Mary River Project Employee)

[Interviewer: “Any change in your life from this work?”] “For me its going for the better...’cause I have more people to talk to... I was pretty lost when I started working ...in direction in life. But now I’m not so depressed. Once in a while I do, but not all the time. Met a lot of people, learning new cultures and other stuff. So for me it changed for the better. [Even though its stressful work, long days?] That’s just part of the job – there’s always going to be a stress in any workplace. But the friends you meet here, they’re very supportive. It helps you get through it too.” (Mary River Project Employee\_2)

Another employee spoke about how living at the Mary River site has helped to open up and to become more confident:

“I think I’ve opened up more towards people since I’ve moved here. I used to just sit in a corner, by myself when I was in an office job...but working here, I get to meet everybody. Like wow...people from all over the world!” (Mary River Project Employee\_5)

Leaving home for two weeks at a time does present an opportunity for increased stress. One employee described the experience of a ‘panic attack’ on two occasions in anticipation of leaving the community for work:

“Twice before I got here ...only twice... I think I had a panic attack before I got here. But when I got here the panic was gone... Just when I woke up in the morning, just before I was going ... Not at the very beginning. At the beginning it was all a new experience and everything was good. It was after that. Just twice I had that panic attack. The first one was a bit longer...but actually I got over it... I like working here.” (Mary River Project Employee\_1)

### *Smoking*

For a number of individuals, employment in a busy, production environment has affected their outlook on habits and addictions. For example, three employees described how their work experience has been leading them to try to cut down on smoking:

“Some do it [drugs] some don’t — for me it’s the cigarettes. I tried quitting a couple times before...but it didn’t work... but since I started working here I’ve cut down a lot on smoking. Cause they’ve got me busy doing a lot of work so there’s never time to smoke. So it helped me cut down on smoking a lot. I don’t mind that part – when you’re always so busy you don’t have time to smoke. Some day I want to stop and so I don’t mind that at all. Your task is more important that smoking – you’ve got to get this done first – and so it helped me out a lot.” (Mary River Project Employee\_2)

“Everybody’s busy here at the mine. Night shift, day shift ...always moving. Its awesome. I mean, once you get the hang of it you feel...immortal – lots of energy. You’ve got to watch what you eat, watch your sleep. So...everybody’s different. For me I try to take it easy – eat healthy, sleep healthy... I’m a smoker too. Ever since I finished school I’ve been trying to cut down on cigarettes...I don’t drink at all, but mostly cigarettes. I used to be really heavy – a pack a day or a pack and a half a day. I do like three sticks nowadays.... We take our break times...or we don’t get to take them at all. Ever since I got here I’ve been trying to quit smoking which is really hard. But I cut down a lot. A LOT. ...There’s always positive outcomes in working life. [Interviewer: “How about when you are back home?”] “Maybe a little bit more than three sticks, but way less than before... that’s where I try to be more busy at home – with my little ones, clean up, cook something, help my relatives...” (Mary River Project Employee\_3)

“I don’t smoke though... Its been almost a year now. I decided to quit because when I was working up there – 777 – they kept forcing us to work – they said break time only [for smoking] and after work or before work. I decided, well, its not worth it anymore...well, it helps me... I quit smoking because of that ‘triple 7’. I feel a lot better, and save more money!” (Mary River Project Employee\_6)

For this individual, quitting smoking is described as the most recent of a number of lifestyle changes attributed to positive influence of a partner, combined, in the case of smoking, with perspective changes associated with employment:

“I’m not into alcohol ...I’m pretty clean now. I used to be drug addict and all that. ‘Cause my common-law, I asked her if she wanted to go out with me and she said only if you don’t take drugs....so my common-law let me quit drugs, then I stopped drinking. Then when I started working here I quit smoking. (Mary River Employee\_6]

#### *Alcohol and drugs*

Some people express expectations that more income leads to more substance abuse. This concern was raised by a community resident as a potential impact of a Project like Mary River:

“Some of the set-backs of it is...they make a lot of money and some of them spend it on alcohol and drugs. [Interviewer: Is that more common than before?] Even when they were not working they were spending money on alcohol and drugs...but then, in some, way, they are probably spending a bit more for that... [Would some of the kids of these families still be wearing hand-me-down clothes or would they be getting new clothes but their parents still spending more on alcohol and drugs?] They’re getting new stuff, and then the parents have more left over to spend on themselves... When they were on social assistance they’d get a certain amount of cash and they could spend it on whatever they want. But now, making money biweekly, they have money to spend on food, clothes, and then for themselves.” (Community Resident\_4)

Amongst individuals more directly engaged in the Project, the connection between income and increased substance abuse was somewhat diverse. Generally, people were more open to speaking about their own situation than speculating on others:

[Interviewer: Some have concerns the money is all going to go to alcohol and drugs. What do you think?] “I don’t know if that’s true...Back home I support a little over ten people right now – my mother and my siblings, my other family members like uncles and

they all got family too. They know I'm going to be there to help them. So its mainly for the kids. I prefer to go to the store with them and get what the kids need. Not just give them money. I'll go to the store with them 'cause I'd rather they spend my money on food rather than those other things." (Mary River Project Employee\_2)

[Interviewer: During public hearings we heard concern about alcohol and drugs increasing – any thoughts?] "I have nothing to say, except I'm trying to save up to buy a pick-up ...I don't do drugs. I don't want to think about them [those who do] 'cause that's their own business – its none of my business what they spend money on. ...I don't see any difference in community, except that people are getting more vehicles, snow machines, ATVs, trucks, cars..." (Mary River Project Employee\_17)

An employee from one of the North Baffin LSA communities felt that there may be a difference between Iqaluit and other communities in terms of spending and alcohol:

[Interviewer: Do you see any changes in alcohol use for your family or others?] "I see people from Iqaluit...seem to run out of money sooner or later...us in smaller communities don't have a bar." (Mary River Project Employee\_18)

Another North Baffin resident, interviewed in October, spoke about changing his / her consumption of alcohol during the past year:

"I haven't touched any alcohol beverages since February. Before I'd spend at least a couple hundred dollars on it, through alcohol committee. Since February... haven't touched alcohol." (Mary River Project Employee\_10)

This reduction in spending money on substances extended to marijuana as well. The motivation seems to be connected, from the individual's perspective, partly to 'growing up,' and partly to the fact that the Mary River job is a more permanent source of income — not the casual earnings that were previously gained through local jobs:

"Before I got this job I was smoking pot. \$50 a gram or \$20 for a joint. But when I got this job I was like, why spend money that I earn... I'm growing up. [Interviewer: So back then, where did you get the money to afford to buy pot?] From the hamlet work, the coop work, from parents – I'd ask for money and spend it here and there...I was just being a kid, doing my own thing." (Mary River Project Employee\_10)

When asked about substance abuse in the community, this individual identified other changes related to vehicles but felt that the issues with alcohol were essentially the same as they were prior to the Project:

"Well, there's some people who can't control it [alcohol]. But the people that work here?... I don't know much about them cause I'm more focused on my family. There are some issues for some people with alcohol ...can't control the alcohol. There are some in any community. I don't see that changing because of Baffinland starting. I haven't seen much change ...more cars bought, more skidoos bought, more trucks bought." (Mary River Project Employee\_10)

Another employee associated employment in a permanent job with reducing or ending substance abuse. This person spoke about how the money earned is used to purchase major items and that s/he talks with friends about how they could work and save money too:

"Like if my old friends, some of my friends use drugs, if I try to hang out with them I say "no" and they say, O.K. and they just go. ...I always tell them if you save money ...look at



me now, look, I'm saving more money, when I got this job I got the skidoo, I got the 4-wheeler, I got the pick-up....I always tell them if you save money ...look at me now, look, I'm saving more money, when I got this job I got the skidoo, I got the 4-wheeler, I got the pick-up.” (Mary River Project Employee\_6)

However, the transition from unemployment to employment is not easy for some. It is described as taking persistence:

[Interviewer: So what is keeping them from doing this?] “Its because some people are trying to get the job but they never get answered, eh, so... That's where its very hard. So some people don't even try any more because they never get the job. But I was like that before too. No body wanted me working...so I was just doing on the welfare. A lot of people are on welfare because there's no job available. Every time there's a job available they're working pretty hard, eh? Like me, like others who are working hard 'cause we got the job. [Interviewer: So those guys that are still doing the drugs and alcohol thing, if they had the chance some of them...] I know they would, 'cause I've been through it and I've done it before. They could do it too if they got the job. I know, most of them will, stop.” (Mary River Project Employee\_6)

A perspective about substance abuse was also expressed by one of the managers / supervisors:

“Some of my crew have had problems with substances and whatnot. I've had employees come and go on numerous occasions. And some of them have come back now and are clear of all that. 'Cause they realise that its not worth it. The job is worth more, the money's worth more, the happy family is worth more...its not worth it.” (Key Person\_13)

#### 2.1.6 Absence from family

A major challenge of employment at Mary River, as expressed by many employees, relates to being away from family. The effects on the family will be addressed in Section 2.2, below. This section will focus on perceptions of how being away from family affects the employee.

One employee described the challenge of the fly-in/fly-out lifestyle as something that just took some time to adjust to...except for the part of missing family. In particular, a challenge is being away when a young child achieves new milestones such as the first steps:

“Oh it was difficult for the first two months... and then I sort of got used to it. Flying out of home for two weeks. First job away from home. But now it's a piece of cake. Yeah – its nice. Two and two. The hardest part is leaving your [infant] kid for two weeks. You go home and he's running around.” (Mary River Project Employee\_1)

“The only thing I worry about is missing my niece. Sometimes when I call my mom she tells me that she [my niece] is missing me. They'll bring my niece and I can hear her voice. She's started school this year.” (Mary River Project Employee\_9)

“The only thing I don't like is actually leaving my daughter, right. That's the only downside – is having to leave home to come to work. She's right around the age that you want to be around – she's growing up. She's used to it now, me coming and going. There's an upside to my downside is that when I go home I don't have to worry about work. When I go home I don't have to work at all. So, I've got to it but it still sucks leaving home... if it wasn't for my girls I wouldn't mind leaving home. But the fact that I do have girls at home... like she was super bummed out that I wasn't home for Halloween this year. ... I

do everything I possibly can with them – homework, whatever they want to do.” (Mary River Project Employee\_13)

Concerns about how the employee’s partner will cope while s/he is away can also affect the employee. While some employees have extended family at home who will step in to provide assistance, this is not the experience of everyone. For example, one person described how he was the only adult male in the family and felt responsible to look after things:

“Going away from the family is the hardest part. Cause I’m the only man in the house. I don’t have a father. I’m the oldest man right now...I’m practically taking care of everyone right now. All my sisters are currently in school, my mom is employed but not enough money to take care of us...and my girlfriend is pregnant.... that’s a big responsibility right there!” (Mary River Project Employee\_L)

Some feel that the comings and goings of the fly-in/fly-out lifestyle, while challenging, has also brought the family closer together. This was expressed by one employee who talked about how communication with a young child had improved through the efforts made to communicate:

“Ever since I started coming here we’re closer as a family now. Yeah, [my young son] misses me. Whenever I call he needs to hear my voice... he talks to me. (Mary River Project Employee\_5)

A clear understanding of the ways in which one’s work benefits family – in spite of the separation and the challenges this brings – is an important part of coming to terms with the fly-in/fly-out lifestyle. Helping people to work through why it is they are doing this work is one thing that can sometimes be helpful, according to one manager/supervisor:

“Its always going to be an adjustment for any employee. If they’ve never worked away from home its going to be hard. What I say to my guys is...explain to your wife you’re here to make it better for everyone. And they understand that. My guys know it ...its trying to convince their wife, their girlfriend that’s difficult.” (Key Person\_W)

Good support at home can also help to allay concerns and thereby remove a potential source of stress often associated with absence from family. One spouse described how she and her partner communicate around this issue:

“[Interviewer: Does your partner worry about the family at home?] “I encourage him to be more good at work – that I have things here. Sometimes he worries, but I let him know its o.k. We do talk about how it takes a team to make this work. Sometimes if he’s not helping out so much I get pissed off and tell him it takes a team, it takes two to be parents...” (Spouse\_1)

## 2.2 EFFECTS EXPERIENCED BY FAMILY

The effects of employment at the Mary River Project are felt by other family members, not only by the individual directly engaged in the work. This section sets out observations and perspectives that were expressed by employees, family members and others in relation to these broader family effects.

### 2.2.1 Effects on children

#### *Positive role models for children*

The benefits of having a parent engaged in a productive role are widely recognised amongst LSA residents. This was noted as a benefit of employment:

“I always encourage [my children] to find their own path, so I don’t know if they are going to take after me. I’m ok with that as long as they find something they want to do and never give up on that. I try to be a role model to them — never give up no matter what life brings you.” (Mary River Project Employee\_2)

Interest in a parent’s occupation is an important step toward valuing a parent as a role model. One employee talked about how this interest opened the door to communication with his / her children:

“The kids, they are going to school and they always ask what I do...when I’m working up there...curious, yes. I call home at the end of the day.” (Mary River Project Employee\_18)

In another conversation, an employee spoke appreciatively about how their children seemed to be picking up some of the values that are key to success in the world of work:

[Interviewer: Are your children learning about work?] “Still too young to understand... but they love to go to school, they always try to get up in the morning.” (Mary River Project Employee\_17)

Having a parent working to support the family may provide motivation to children to work themselves. In one conversation, though, this motivation did not seem to extend to an appreciation of the importance of education:

“[My children] often say that they’ll work like dad, when they grow up. [Does the oldest work hard at school?] I don’t think so...” (Spouse\_3)

An interesting take on parents serving as role models was offered by a spouse who chose to respond in terms of the model she and her partner were providing their children in terms of their relationship. Making the fly-in/fly-out lifestyle work requires a relationship founded on trust. This does not just happen—it needs someone to model a healthy relationship:

[Interviewer: Is there a positive side to your children seeing you guys working?] “For sure, for sure — they’ll be able to know that if they start being with someone...that they cannot be overly possessive of their partner. Some couples are like, ‘you’re mine, you’re not going anywhere’ – like an invisible chain. You have to be good examples for your children. [Interviewer: Jealousy can be really strong for some...] Yeah, yeah. [Interviewer: So how did you guys figure that out] Lots of work, lots of work...and being taught by our parents and grandparents mentoring this. You need a good mentor to learn this.” (Spouse\_2)

#### *Remove barriers to success at school*

The material benefits that come with good employment were described by one resident engaged in the area of education / social services to have an important psychological effect for some children that may enhance school performance down the road. Removing the association of school with the shame that can come from teasing by others could have important implications for

the future. In the short term, as described by this person, the outcome is described as children being happier to go to school:

“For those children whose mother and father were not working before and are now working at Mary River, this has made them happier because now they have the same kind of clothes as the other kids have – not just hand-me-downs. ...and they’re happier to come to school because they know when they go home for lunch, then they’ll have something to eat.” ...You could tell that a parent is working full time ‘cause their kids are starting to wear new clothes, or they’ll say they got a new pair of shoes and they’re happy about it. ...Because some kids tease because they have to wear hand-me-down clothes.” (Community Resident\_4)

#### *Missing a parent*

Adapting to the absence of a parent can be a challenge for some children — and for the parents as well.

“I try calling them...and toward the end of the rotation they miss me so much they don’t want to talk to me any more. But when I get home they are very happy, they’ll be stuck to me for two weeks.” (Mary River Project Employee\_17)

In some instances this seems to be a temporary issue:

“It’s just when our daughters start whining every few seconds missing their father, it gets hard. ...They are pretty used to it now. Both our kids have grown up used to us working...they know that if we are not working there will be no “toys” for them.” (Spouse\_2)

#### 2.2.2 Childcare arrangements

Childcare support is a big issue for families across the LSA, as it is across Canada. The presence or absence of adequate childcare may be the difference between employment success and failure. If available, it may open doors for employment. Knowing one can get support when needed can also serve as an important stress-reliever for a stay-at-home parent:

“My younger son was accident prone – If I’d had to deal with him alone, I don’t know – I would have lost it... He was sick a lot too. So if they were younger that would have been hard. The day care was open a couple times but mostly not.” (Spouse\_4)

#### *Parents and relatives as care-givers*

One employee spoke of how she and her daughter, who also works at the mine, arrange for the care of her grandchildren:

“My husband is the one looking after the kids. But he works at the hospital all day, so my brother pretty much looks after the apartment and the kids during the day. He’s unemployed. All they have to do is give me a call if something happens.” (Mary River Project Employee\_B)

Others also spoke about drawing on relatives to help out:

“[My partner’s] parents and younger sister can babysit too. Not that big a problem.” (Mary River Project Employee\_A)

“My partner’s niece helps out with the kids. There was daycare before but I think they went bankrupt or something. My partner, she is going to NAC [local college] to get her GED [high school equivalency]. Her niece will help out with the family.” (Mary River Project Employee\_F)

However, while these arrangements can often be helpful, they are also quite often informal and irregular. In many instances arrangements need to be made on each occasion and this can add stress due to uncertainty. A lack of formal childcare options was recognized by one manager/supervisor as adding to the challenge of the fly-in/fly-out style of work:

“It adds to the tension...because usually they’re dumping the kids off on the grandparents and then the grandparents start to get tired of looking after the grandkids all the time...and then its all a big tension... It would be great if the government had a system...” (Key Person\_13)

#### *Lack of childcare as barrier to employment*

The various casual childcare arrangements noted above can take some of the pressure off a partner at home. However, considerable demand for formal day care services is often expressed in relation to a desire of spouses to maintain an existing job or to take on local employment.

One employee who commented that childcare was generally not a problem since relatives were able to help out (see previous section) later noted that his partner would be interested in local employment if regular child care were available:

“She wants to work. But there is no day care or baby sitter that she can rely on. Right now she’s baby sitting a foster kid from 4 to 7pm...but she’s keen to get back to work if we could find a baby sitter. She’d do either full-time or casual. She applied for janitor at hamlet – waiting for response. From 6p to 10p — she could bring the two younger kids with her and the older one could visit the cousins.” (Mary River Project Employee\_A)

Another employee talked about the efforts some go to in order to find childcare and how important local day care services are:

“There is no day care in my community. That’s a big issue back home, trying to find someone. Some will actually hire a baby sitter. Pay them \$500 every pay check or something. But that’s sometimes a big issue ‘cause of taking stuff. There used to be a day care, but that day care got shut down when they found mould.” (Mary River Project Employee\_10)

Similar scenarios were described by others:

[Interviewer: If you were able to have your child in day care would you be going to look for work?] “Yes – right away. No questions asked – ‘bye!’ ... I’d do office work or start my own business. [So lack of childcare is holding you back?] Absolutely. [Is that something you would pay for?] “YES! – Right away – take the kids and take my money! [Are you able to find a babysitter?] I don’t trust a lot of people...some offer to baby sit but, ‘I don’t trust you!’” (Spouse\_1)

“The kids are little right now, but I’m sure when they grow up she [my common law] could work in the office – she has been to the college for office administration. ...Every now and then she talks about getting back to work. ...With the young kids at home, she has support from [my] older daughter there. [Interviewer: How about day care?] No

unfortunately there is no day care here – that used to help out a lot. She used to work as a substitute teacher and our children went there – that helped out and they liked it there. [If there was day care now, would you guys pay to use that?] Definitely yes – that would help a lot!. I don't know why its so tough here – a lot of communities don't have them. It is important for the communities.” (Mary River Project Employee\_W)

Having a partner working away from home has led some women to drop out of the labour force. Part of the reason may involve a lack of appropriate child care in the community:

“My partner is not working at the moment. She used to work...but we didn't have any babysitters or anything so....” (Mary River Project Employee\_11)

“Right now we've got a little one so my partner is not working – she used to be a substitute teacher at the school. IF she wanted to go back to work – its up to her – but I would want to talk then about hiring a babysitter. In [our community] there is one daycare – but its hard to find a sitter. Everyone has a little one so its hard to find a sitter.” (Mary River Project Employee\_3)

Another partner described how her ability to maintain employment with her spouse working away at Mary River was only through the tremendous flexibility of her employer to accommodate absences related to medical travel for her children:

“For me [the challenge] is having two children that have special needs – we go on medical travel every six months. Sometimes almost at the same time. I'm working full-time. [Interviewer: can you arrange the medical for when your partner is at home?] No – they set the date and we need to make it... CHEO in Ottawa. My employer is very flexible. Medical leave, special leave, and then annual leave, and then sick leave and then I could borrow annual leave. Its hamlet union job. [Interviewer: would your partner have flexibility, working at Mary River, to say, “I can't take this rotation – I have to look after a child's medical leave?”] “That's a question mark – we've tried that and we just got word that he might lose his job...so I'm the only one who goes. Because most of the time he isn't notified about what leaves he can take...Since I was already notified that they are not unionised, so I was not willing to take the risk...not willing.” (Spouse \_D)

In other situations, however, access to formal day care is not seen to be a barrier to employment.

“I was able to have support from my mother when I was working when the boys were young. But for the majority of women who want to work, they don't have that option.... So I was very fortunate to have that support.” (Spouse\_4)

Another spouse of a Mary River employee described her interest in also gaining employment at the Project, perhaps on a cross-rotation with her partner:

“I'd love to work there myself. I applied once maybe two years ago... I know I can give my resume but I didn't reapply yet, knowing there have been many resumes that have been submitted. And ...when my daughter is a bit older. [Interviewer: Would you find childcare?] It wouldn't matter – we could find an arrangement. I could be trading alternate rotations... we always thought of that.” (Spouse\_3)

However, this individual did note that there is an unmet need for day care in the community:

[Interviewer: Day care – would you use it?] “Yeah, if there was a day care, many children would go to that.” (Spouse\_3)

*Added work for the spouse at home alone with the children*

For the spouse at home, responsibility for family takes on an added dimension when a partner is working away from home for two weeks.

“I'm not working myself. Have three others and this one-year-old. He's off rotation right now. It a bit of a break. I am busier when he is away and I get well rested when he's here. Since he likes it, I think he'll stay there forever.” (Spouse\_3)

“Him being away all the time and me doing everything – its not fun. The challenging time is mostly when he's not around. When he's here, he's always helping. When he's here, I finally get to go out without the kids. He helps out then. The longer he works, the easier its getting – I get used to it.” (Spouse\_1)

“She wasn't comfortable with it at all from when I started until maybe [after about half a year]. When I started she was pregnant. When the little guy was born it was good timing because I was on my home rotation and she flew back [from the hospital] maybe a week after. But then I was only home for a week and that pissed her off since I had to leave after a week. And she was pissed off maybe about four months – but she's used to it now.” (Mary River Project Employee\_1)

The coming and going of one parent means the family dynamic changes constantly, creating stress in the children and changing parental roles:

“Two weeks is long enough. If it was longer—things would be harder, a lot stressful... By the looks of my children, I'd be more tired. My children, they always listen more to their father than to me, so when he gets back, they get their attention more from him.” (Spouse\_3)

“There was one time my son was really missing his dad. I'm a mother but there are some things I can't really help him with... so that was a bit of hard... That lasted one rotation.” (Spouse\_4)

“[My wife] works a full-time job. The kids are o.k. ...but they like to hang out at the Coop. Its hard to wake them up in the morning...our 17 year-old is still in school. We had to push him hard to get him to stay in school.” (Mary River Project Employee\_7)

The fly-in/fly-out lifestyle is a challenge for the partner left at home as much as it is for the working partner. Perhaps even more so, as the stay-at-home partner does not get the same support, encouragement, and personal growth opportunities as the employee. Possible options to provide support for family members were suggested by one manager/supervisor:

“If they [Nunavut organisations] were able to get together and be more cohesive, then I think they'd have those priorities and put those programs forward to help the families in the communities. When your husband's away at work or your wife is away at work and you're having struggles, your kids aren't behaving and they're not listening to you cause dad's not home...well... have an Elder's office in the communities maybe...” (Key Person\_13)

One community resident felt that the challenges placed on the stay-at-home spouse were generally recognised by the couple and that this has led to a sense of accomplishment for the partner – keeping the household running:

“Self-esteem ...big time... and pride. Self-reliance, independence. It goes into the family, very much so. The spouse is now doing both roles in the home and so is seen as being meaningful too – they are keeping the home front going.” [Community Resident\_1]

This respect and recognition was referred to by one employee who clearly recognised the value and extra effort that his employment placed on his partner at home. This person did not feel he was dealing with any particular challenges doing fly-in/fly-out work. However, when asked how he thought his partner might respond to a question about challenges he spoke about the added work she had to do when he was away:

“The tough part for [my partner] is probably handling the kids alone for two weeks. When I get home I usually take over, taking care of the kids and cleaning up, cooking, for two weeks. Then go back to work.” (Mary River Project Employee\_17)

### 2.2.3 Being away when things happen at home

A hall-mark of the fly-in/fly-out lifestyle is being away from your family and community when things happen. This is an issue that was expressed frequently by Inuit residents of LSA communities as well as by Non-Inuit residents from the south:

“When he first started working, it seems that all the things he used to do at home – like fix the ski doo – started breaking down... it was a bit hard at first.” (Spouse\_4)

“Sometimes when you’re away things happen at home and you’re at work and you’re so helpless ‘cause you are not home for that home support. Say for example for the guys from the north – one flight a week, and for the guys from the south, two flights a week. Sometimes when you’ve got things arrive – you’ve got a family death or a kid is sick or you’ve got two kids and the wife is sick... and now you don’t have support at home ‘cause you are here...you’re helpless. You can’t get home...could be five days or could be seven days...” (Key Person\_12)

“You know its tough on everybody whether you are from the northern communities or the southern communities. It never fails, when something goes wrong – like your furnace quits – its always when you’re getting ready to go out for work.” (Key Person\_7)

“I’m dealing with a thing now – my wife is sick and I’ve had to call my parents in to look after the kids for a week and a half from 3 hours away – so they’ve driven 3, 3 ½ hours ...so sometimes you need to do things. Sometimes being here and not being able to get home that’s when it really hurts. When every thing’s going good that’s fine but when you’ve got problems at home that’s when it gets hard.” ((Key Person\_O)

One manager / supervisor described how this strong attachment to family life has lead to voluntary termination of employment by some North Baffin residents—but that the ability to be away is something that can be learned:

“I’ve seen guys who were working back then who quit and have now come back and they’re sticking with it now. Rather than back then when they were, ‘Argh...I really don’t want to be here I’d rather be with my family.’ ...And its different times of the year that you see a lack of interest in working. Winter months are fine...but when the sun starts to shine again they don’t want to be here...I don’t want to be here either, but...” (Key Person\_13)



#### 2.2.4 Communication and decision-making

##### *Importance of communication*

It is clear from the comments presented in Section 2.2.2 and 2.2.3, above, that taking on employment at Mary River Project affects the entire family. Therefore, communication during the process of deciding whether or not to engage in fly-in/fly-out work is very important:

“I had to talk with my wife and she agreed that its o.k. that I can go to work. ‘Cause when you’re not talking to ...like if the person’s not talking it’s, like, not agreed...So I had to talk, directly, with my wife. She agreed...accepts my work, like going away for two weeks.” (Mary River Project Employee\_7)

“My partner—at first he said, ‘I don’t want you getting a job out of town.’ But then I told him it’s a job...the bills are piling up, and then he says, “OK.” (Mary River Project Employee\_5)

Maintaining good communication during the work rotation was also raised as a central part of making the fly-in/fly-out lifestyle work. This communication encompassed both the spouse as well as with the children:

“We are solid. We trust each other. There have been many posts through Facebook from people complaining they don’t get many posts from their partner – don’t bother to communicate. Couples need to communicate.” (Spouse\_3)

“He talks daily – they can call out long distance free.” (Spouse \_4)

“I call home every day right after my shift.” (Mary River Project Employee\_17)

[Interviewer: Do you guys communicate from the mine site?] “Every day, every day! We always make time for it. [You’ve never been to site?] No, I don’t even know what it looks like.” (Spouse\_2)

“I’ll call my common-law before I go to work or after work. Every day pretty much. (Mary River Project Employee\_6)

“We disagree, we fight – and (laughing) always good timing ...and ‘you’ve got to leave’ ...and by the time he comes back he’ll be happy. [Interviewer: Are you able to keep in touch and resolve issues even after he leaves?] Yes – we communicate, daily, every day, yeah. ...I think he loves his job the way it is, and...he’s happy. If he’s happy, I’m happy with it.” (Spouse\_3)

Shift work affects communication by telephone. A couple people noted that it can be difficult to call home when they are on night-shift since the hours do not mesh well with family schedules:

“Easier to communicate with family on day shift. They are home then. When I’m on nights, she has to take kids to the grandparents so I always miss her.” (Mary River Project Employee\_5)

“When he’s on night shift he calls early in the mornings when the boys are still sleeping. He talks to the boys when he’s on day shift.” (Spouse \_4)

*Access to internet and telephone*

Baffinland has helped to facilitate this communication by providing individual rooms equipped with phone lines, along with Wi-Fi access. One employee described some of the options s/he had for communicating with family members:

“They have phones and internet access. When I go home I feel a lot closer than the last time, to my partner. Keep in touch and then catch up...we can use FaceTime. In my room – with a smartphone - iPhone. Every third day or something like that.” (Mary River Project Employee\_1)

“Pretty nice with phone, TV, washroom, the little closet. (Mary River Project Employee\_6)

The advent of social media has provided alternative means to communicate with family and friends. For households that do not have telephones this can offer a good option. Some comments were also made about how various media and communications systems are used to enable communication in a context where different people use a variety of communication modes:

“We don’t have a phone at our home. My mother has Facebook. We have internet but no phone. So I’ll message them and say to go over to grandpa’s place so I can call there.” (Mary River Project Employee\_9)

[Interviewer: Are you able to stay in touch with friends from here during your off rotation?]  
“Yeah – either by cell phone or Facebook. I avoided cell phones for about six months – thought it was just a hassle...until I had no choice (laughing). My son has no use for cell phone right now – he’s a hunter. Pay-as-you go works for me. I only use my cell phone for texting – I have a landline. At home I never answer my cell phone—my friends either call my landline or they come and visit. Here I communicate with my son by Facebook – they leave me a message to call them and I’ll call.” (Mary River Project Employee\_2)

“We mostly communicate through Facebook so it doesn’t matter what shift he’s on.” (Spouse\_3)

It was pointed out that not all fly-in/fly-out operations in Canada provide internet access to all employees:

“My dad is working at a fly-in/fly-out camp right now – and they don’t have Internet! We depend on that for communicating with family. And down at the weather haven there used to be two phones and you’d sit and wait. Now here we have phones in our rooms.” (Key Person)

Communication at site was not always easy. This was noted by one manager/supervisor who remembered the phone system during the bulk sample era of the Project:

“Most of the struggles are from being away from their families. ... we used to have a bad phone system so, ‘Why didn’t you call home, you’re screwing around on me. I don’t believe you had no internet.’” (Key Person\_W)

*Communicating with children about work at Mary River*

Just as it is hard for some partners to envision what life is like at site, so too do children have trouble imagining what it is that their parent’s are leaving home to do. Some employees talked about how they try to help their children to build an image of what they do when they leave home for a two week rotation.

“I sometimes take pictures of me with the equipment – show him the dozer, the grader – we got him some of those Tonka toys – he’s started to say, ‘loader.’” (Mary River Project Employee\_1)

“They know I go to work at Mary River. They used to always think that I drive the big trucks...but I was a labour worker... But now I’ll be driving.” (Mary River Project Employee\_17)

Equipment operation is most familiar to children since this is something they can see in the community, just on a smaller scale. Another employee who was involved in a job that does not involve operating heavy equipment spoke about how he started communicating with his son by showing pictures of familiar equipment:

“My son, 4 year old, thinks I’m an operator...loader operator. I’ve never explained things to him yet – he thinks the equipment is all loaders – that’s what he asks for, toy loader... So I tried to get pictures of me around the loaders.” (Mary River Project Employee\_W)

More recently though he has begun to gradually building his / her son’s understanding of some of the work that he actually carries out:

“So from now on, recently, I’ve been trying to get pictures of me with the survey stuff...like drones and... chopper drones and one that looks like a jet – with about \$80K worth of equipment... so we have a remote control set and fly the drones to get photos ... They sent four of us down to Guelph for training for about five days...for drone training. ...we use that for the pits, check on the roads – check condition of road... Camera will take maybe 500 shots in a zig-zag pattern. Then they get put together into one photo.” (Mary River Project Employee\_W)

#### *Site visits help with communication*

Several comments were made in relation to how familiarity with the operation helped them to better understand their partner and to reduce the level of anxiety and stress. For example, one person who had previously been at Mary River observed that knowing the level of teamwork and other support available at site has helped to reassure her that her partner is going to be O.K.:

“I can understand for one why he’s so exhausted when he comes home! And I know he’s got lots of support also over there.... He’s got friends and relatives over there. So he’s got lots of support and I’m very happy for that. When they go over there I notice they become a small little community over there and they help each other and are very supportive of each other. ...And now there’s Elders that are available over there. So I know he can get supports.” (Spouse of Mary River Employee)

Some interest in bringing partners to site has been expressed however, this has not happened yet:

“In the past when [the Project] was small they talked about bringing the wives and girlfriends to camp to see the place. That never happened. But they did bring the BCLOs to camp so at least they have a better idea of what its like here and they can talk about that in their communities.” (Key Person\_11)

### 2.2.5 Effects of fly-in/fly-out on relationships

#### *Jealousy and anxiety from being apart*

Being separated every two weeks can put pressure on relationships. Anxiety around a partner being faithful can be heightened by the unknown nature of life at the mine site. One employee described how he allayed the fears of his worried partner:

[Interviewer: Does your partner worry?] “Oh yeah, that was when I first started, yeah... but now, she’s used to it and we’re ok with it... I told her, ‘I work 12 hours a day, I’m not here to cheat on you, I’m here to make our lives better, and I’m doing this for you and our kids and to make our life easier. I’m not here to do anything and I don’t have time, I’m too tired. I usually go to sleep around 8:30.’ And she understood and she’s ok with it now.” (Mary River Project Employee\_17)

One manager / supervisor suggested that younger couples are maybe more prone to struggle with this than those who may be in more established relationships:

[Interviewer: How about jealousy?] “There’s always going to be issues with that – you’re away from your family. It’s the younger set that’s going to have more problems... the relationships aren’t ... Jealousy... we lose some every year ‘cause the guy’s at home and she’s here or visa-versa and they’re imaging the partner’s at home spending all their money having a great time or ... but eventually I think that will settle down a bit. This is all new and they’re not used to having their partner away from home and having all this money.” (Key Person\_6)

“There is a lot of tension around that here. Like one of the guys will call home and its like, ‘So and so, my friend the housekeeper saw you talking to so and so from the kitchen.’ ‘Well, I was just saying hello, good morning.’ — ‘You don’t need to!’ So there’s a jealousy trend. And its big.” (Key Person\_13)

#### *Relationships sometimes fall apart*

Life at site may not be any more conducive to forming relationships than any other environment. But it may also not be any less so. Couples who are apart half the time may not survive. Breakups may arise from the either or both partners:

“It depends on how strong the relationship is between the man and the woman. One I know, when the man started working at Mary River, she found another man [in the community] and ended up breaking up. But others maybe want to stay with them more because they’re making a lot of money.” (Community Resident\_4)

“I’ve noticed when some go to work they find a girl friend or a boy friend – and that has separated some families.” (Former Mary River Project Employee\_3)

Whatever the roots of a relationship breakup may be, they are always hard on children:

“My brother-in-law started working here and now he’s separated from my sister. And he is living with another woman now and moved to Ottawa. And the kids miss their father. They don’t go to school that often any more. They stay up late. It’s a little bit problem. They were together maybe 18 years. Before this happened, I thought they were happy. But when this job started... he met another person from the north... Maybe it had been going on before.” (Mary River Project Employee)

*Relationships sometimes get stronger*

Some couples express that positive effects on their relationship have emerged out of the Mary River Project employment experience. This was suggested during two conversations:

[Interviewer: Any changes in your life or your partner's life?] "Oh – we came closer. Cause we know he's leaving in two weeks ... used to be 'get away' now its 'hug me!' He calls everyday. Even if he has nothing to say he'll still call." (Spouse\_1)

In one instance the benefits arising from having a job may be bringing a long-separated couple back together. This was described by one employee whose father was also employed at the mine:

"My mom and my dad were separated before but now...he's been back home a couple months now. They had been apart for five years." (Mary River Project Employee\_I)

*Relationship issues can lead an employee to quit work*

Volatile relationships are not conducive to employee retention and productivity. Relationship issues are one of the things that can lead people to quit working at site. In some instances this can be in order to attempt to salvage the relationship:

"That's actually one of the reasons we lost a guy. He was fooling around and his wife found out. Mind you she fools around on him back home. ...But he's trying to make it right." (Key Person\_W)

This person went on to describe how he encourages individuals on his crew to "think long and hard" before doing something that might have consequences later on:

"It's a safe environment here, it [harassment] is not tolerated here – if we see something going on its usually shut down pretty quick. I have guys that I know and who have families at home that have been sort of flirting and stuff and I'll go, 'so and so come here. Don't make it so blatantly obvious first of all. Second of all think twice what you're doing – 'cause I know what you're up to – I'm a guy, I'm not stupid – yeah well.... – think about how much grief you will have if it spirals downward and you are found out. You don't know if she's watching you for your wife or girlfriend or if somebody slips up and says, yeah I saw so and so talking with so and so giggling away in the smoke shack...you're going to be the one who's going to have to explain. Are you able to be in that position? Or should you just lay off.' And nine times out of ten they'll agree – 'Yeah, you're right...'" (Key Person\_W)

**2.2.6 Migration**

A number of people spoke about migration. One manager / supervisor spoke about how the fly-in/fly-out nature of employment at Mary River enables choices for residents from the LSA communities:

"And that's the other thing I've noticed is that we've had a couple people we've hired from the north and once they've worked with us for awhile and the realize this 2 and 2 gig is pretty good, then all of a sudden they pack up bags and move down to Ottawa. When they explain to me the reasons I say hey, that's a matter for between you and your spouse and if you think you can get a better living for your kids, hey...that's your call.

That's a personal decision they have to make. It's alright with me as long as [Head Office] don't come back to me and say, 'you're not hiring enough northerners!'" (Key Person\_10)

One manager/supervisor<sup>1</sup> noted that as children of employees begin to pursue higher education there will be more families moving down to Ottawa from North Baffin communities.

In another conversation, an Inuit resident of an LSA community spoke about an interest in moving back south where s/he had once lived and worked:

"I told [my partner] that maybe if we moved down south maybe it would be a lot better. My teen-aged old grandson is starting to go off school. Maybe it would be better in the south. I miss the trees. I miss the stores – everything is cheap. If we moved, [my partner is] thinking closer to Kitchener. S/he's also trying to find a job at Mary River." (Mary River Project Employee\_5)

While access to good schooling and a perception of lower cost of living are two aspects noted as part of the decision-making process, other factors are also noted:

"Housing is ridiculous in [my community]. The cost of living... I can see myself in ten years [moving] south. Not inside the city, but out in the country somewhere...small town." (Mary River Project Employee\_13)

"One of the girls ...she used to live in Iqaluit and she started dating a guy who used to be from [North Baffin]... and they're now both living in Ottawa. Its familiar... I can think of five instances just five off the top of my head — in the last year." (Key Person\_11)

"I'd rather live down south. Less drama. That's why I moved down there. Iqaluit is changing so fast. 'Cause it grew too quickly. When it was smaller everything was simple. Everyone got along well. But when it grew, so suddenly, it was going crazy. It's the people. They're not from there. They're causing all the problems. When it was smaller it was o.k. Now there are people coming in from everywhere. Leading to more trouble." (Mary River Project Employee)

Not all migration related to Mary River is initiated by employment at the project. One instance that was described involved a family where one parent had moved south with the child. It was only after they started work at Mary River that the mother and grandmother made the move:

"My daughter moved here after me. My grandson had moved there 4 or 5 years before, with his father. We were sort of afraid to move down there – not sure if we'd make or not. My daughter and her partner were kind of separated. They are together now. My grandson is doing ok in school. We are in a quiet area of the city." (Mary River Project Employee\_K)

Nor is the assumption of low cost of living supported by all of those who have actually made the move. This employee actually perceived they were taking a financial hit living in Ottawa over Iqaluit:

"Money every day – it wasn't like that back home in Iqaluit. In Ottawa you've got to have money every day. Ottawa's more expensive – you've got to take buses or taxi. My son-in-law takes care of rent. He's not working at the moment. I'm earning less living in Ottawa than when I was working in Iqaluit. There I had Northern Allowance then and now I have

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<sup>1</sup> Key Person\_16

transportation cost [to get to Kitchener to pick up the Nolinor flight]. But we buy more food now because its less money. ...and I took the bus to Montreal to visit a friend.” (Mary River Project Employee\_K)

### 2.3 HARVESTING ACTIVITIES

Many LSA residents commented on how employment at Mary River affected their ability to engage in harvesting activities.

#### *Harvesting as first priority*

In some instances an interest in employment takes a back seat to engaging in a serious hunting lifestyle. This was described by two employees in relation to their sons:

“My son wants to work here [at Mary River Project] ...but he is a real hunter. He loves hunting. He’s out there most of the time. He’s done this since he was maybe ten years old. Used to go out with my Father-In-Law. I help out with gas mostly...” (Mary River Project Employee\_5)

[Interviewer: Do you share food?] “Yes – if I catch animals or seal, I call my friends or family to come to my place to share. I still get out to hunt – and my son always goes hunting – he catches lots of seals and all that. He takes care of my family too. The older one. [Is he interested in working here?] Not really – no... (laughing). I think he’s more into hunting. I tried telling him about here...but he didn’t really listen to me yet, so...” (Mary River Project Employee\_7)

Even for those who take on employment, there are times of the year when the desire to get out on the land becomes very strong. This well-known aspect of Inuit culture was described by a community resident:

“Seasonal changes – spring time – its hard for people to work... when a worker feels they have family issues or its seasonal ...give them some extra time, a week more... for Inuit, we need to go out on the land every so often. Just to get back to nature. Without it we feel trapped. Tense and restless. So every weekend I try to go for a walk – look for Ptarmigan... Two weeks off – that helps, but an extra week for seasonal or family matters – that would make it easier for some. Otherwise for some, its like, ‘It’s not worth it.’ It all depends on personal situations. Family, seasonal, hunting... in the winter – everyone wants to work, in the spring time, nobody wants to work... [Interviewer: Maybe that works for the employee, but maybe not so much for the employer?] ...maybe... but like, narwhal – they only come in for a short time. And the weather affects hunting – we have to go maybe 50 to 100 miles away in summertime.” (Community Resident\_10)

#### *Harvesting is an important part of relationships with family and friends*

Numerous individuals spoke about hunting in relation to the people they hunted with, and who were teaching them the skills they need—or who they themselves were teaching. These were often a parent, a close relative, or a good friend. In some instances these people would be relied upon as a mentor. In some instances they were the one who had the equipment needed to get out.

[Interviewer: Do you go hunting during your time off work?] “No – ever since I lost my father I don’t have anybody to take me out so...” (Mary River Project Employee\_14)

[Interviewer: Do you still get out hunting during your two weeks off?] “Oh yeah...once my relatives agree if they want to go. But this year everybody’s kind of busy – so when you plan something it doesn’t always go accordingly.” (Mary River Project Employee\_3)

This employee compared how the rotational lifestyle was sort of similar to getting out of town to hunt with his grandparents:

“You know there are times, when you’re being raised, you know, when you’re going out with Grandparents ...out hunting for a while. I think that’s where I am. Sometimes I need to get out of town relax, or get out of town and work — I think it’s a cultural thing. My uncles, my aunties, my elders would come by, “You ready to go?” ...”Where?” They’d give me a surprise whether its seal hunting, walrus hunting, caribou hunting, or fishing...or wolf hunting or polar bear hunting... a little enjoyment here and there.” (Mary River Project Employee\_3)

This person went on to describe his pride in how well a relative has been learning things he and his father-in-law have been teaching him:

“When I was off last rotation my in-law caught four walruses. For which I was quite proud of him – it took some work – butcher it, clean it... My little brother-in-law. We were trying to teach — my father-in-law and I were trying to teach him. He is 14 years old. You know its really hard to try to maintain culture in both ways – but we try.” (Mary River Project Employee\_3)

One employee spoke about how both he and his father-in-law were working at the Mary River Project on the same rotational schedule. They hunt together and so they’d make their plans during the work rotation for where they’d go during their time off. The relationship seems to be one of mutual support and mentorship:

“When I’m back home I go hunting and have more plans...when I’m here my father-in-law and I usually plan what we should do when we go back home, when we go out there and we go hunting. And if he has something to do, I’ll help him, and if I have something to do he’ll help me... And when I’m home, too, I plan what I’m going to do better... and oh, he’s teaching me how to do these things, how to fix skidoo or all these little things.” (Mary River Project Employee\_6)

#### *Employment helps to support cost of harvesting*

The high cost of boats, motors, snow machines and other gear needed for getting out on the land is well known. One North Baffin LSA resident described how their family had had to sell their boat due to a lack of funds. Employment has shifted the outlook now however, and he is hoping to learn more of the knowledge required to travel safely:

“I used to hunt with my father, with boat. Seal hunting. But we were kind of getting, poor, and we had to... we sold it. We didn’t have any money to afford gas and food...kind of expensive so we couldn’t afford to... so we sold it. We’re now both working here and I think we can afford that now. So during time off we can visit my big brother and go hunting. In the winter that ice is still but in the fall and maybe In the spring time is kind of ...currents. I still need to learn how to hunt and travel further.” (Mary River Project Employee\_9)



Another individual described how a lack of adequate income had prevented access to the land back in Iqaluit:

“No more hunting when I was in Iqaluit – did not have the equipment. Couldn’t earn enough.” (Mary River Project Employee\_12)

With the prospects of year-round, long-term employment come hopes that expensive gear to travel on the land will become affordable:

“What I’m really thinking about is a snow machine so that I can go out hunting – a hunting machine for this winter. My father used to take our family out a lot.” (Mary River Project Employee\_14)

## 2.4 MONEY GOALS AND MONEY MANAGEMENT

Now that the Mary River Project is an operating mine with permanent, year-round positions, the ability to earn predictable wages has improved for many households. This has changed the stakes of the decisions people make about money. Most of those who participated in conversations had something to say about money — how they spent it, how they shared it with their partner or with extended family, some of the goals they have, and on occasion about how decisions were made about these issues.

### *How wages are being spent*

Many employees spoke about the benefits of having an income to support basic needs with some left for discretionary spending or to save for major purchases.

For many people Mary River wages are being used to catch up on everyday expenses:

“I spend it to support my family – help my mother pay for food, bills.” (Mary River Project Employee\_9)

“Its had a big positive impact – more food on the table...helping out with bills too. I had a job at Coop before [my partner] started working, but the hours sucked and the pay was little – it was like \$200 to \$300 every two weeks – so it was bad. But since he started working its got a lot better financially. I had worked from 5 to 10, twice a week – super crummy pay.” (Spouse \_1)

Some spoke about being able to pay down debts or take care of financial obligations such as child support:

“Since I’ve started working, I’ve been trying to help my in-laws with some debt. ...And I have a little child service to pay... So far I’ve finished off my debt, which I’m proud of. It takes a little time but never give up, keep moving. You know, when you love your family you will do anything for them.” (Mary River Project Employee\_3)

### *Major purchases, savings and consumer debt*

With income has come new opportunities for major capital purchases—snow machines, boats, vehicles. These opportunities also bring the potential for decisions that can have high stakes. Individuals spoke about the range of options for purchasing these expensive items, from saving enough for a full cash payment, to going in with others to share the cost, to taking on debt obligations. Decisions about new versus used vehicles are also on the agenda.

Some have jumped in to undertake major purchases on credit. In some instances, care is being taken to not over-extend by purchasing second hand vehicles.

“We did buy a vehicle, a second hand car. Bought it down south—one of his co-workers—and put it on sea-lift. His next goal would be a boat and then a ski-doo / four-wheeler.” (Spouse\_3)

“We’re getting new stuff like furniture and we got a vehicle now — ATV and a skidoo. I bought them second hand – paid in full. This summer I want to try to get a second hand jeep. I’d get that from the south and ship it up.” (Mary River Project Employee\_17)

Social pressure to consume has existed in LSA communities before the Project came on the scene. The advent of consumer electronics, for example, has created new wants for many youth for example.<sup>2</sup> However several comments were made that suggest the spending power introduced into some households by Project employment may add fuel to these pressures:

“...My son has been bothering me, asking me to get... wheels. My cousin, ...what he’s doing is he’s paying every pay day this amount...for five years. [Interviewer: Do you know the interest rate?] No – I’ve got to talk to him... I’ve got a niece – she has a truck that she wants to sell to me... Lots of little goals, new stuff like a sofa, and things for the kids.” (Mary River Project Employee\_18)

“I have a cousin working here... he’s feeding his family, bought a truck. Before he wasn’t much employed, back then, before he got this job. ...Next year I’m actually going to try to buy a truck.” (Mary River Project Employee\_10)

Others are taking a more modest approach by making contributions toward equipment owned or being acquired by other family members:

[Interviewer: “Do you have hunting equipment?”] “Oh no... but I’ve been helping my relatives, with what they’re trying to buy. For example, I helped my past Grandpa with his skidoo and Honda.” (Mary River Project Employee\_3)

Major investments are also starting to be made in the area of “human capital”—specifically travel that broadens a family’s horizons. This was expressed by one manager/supervisor who described how some employees who have settled into longer-term employment have made major expenditures here:

“The world is getting bigger and broader and more accessible to them. They’re going on vacations. I’ve had guys flying south now – its \$3 500 for a ticket...and now they’re taking their family. I had one guy tell me he spent \$15 000 ‘and it felt great’ – he took his family on a two week vacation.” (Key Person\_13)

#### *New tension between saving and consumption*

For households coming from financial positions where basic needs were not being met and savings were out of the question, a shift to steady income raises a new category of decision-making — to save or to spend more. Comments were frequently made that suggest some tension between spending on everyday consumption and saving for major capital purchases:

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<sup>2</sup> Personal observation of Mr. Brubacher.

“I pretty much spend it all... I've been wanting to get a four-wheeler.” (Mary River Project Employee\_4)

“It's a little bit hard when you try to save some money.. I'm trying to save some money. Like a new boat, and pay my phone bills, housing rent, ...sometimes its hard to catch up. I have an account with [an Iqaluit bank].” (Mary River Project Employee\_7)

“When [my partner] first started, his pay would only last a few days. But then we got used to it and now it lasts the full two weeks. Spending our money better. At the beginning there were lots of “wants!” I want this I want that – get it! ...After Christmas we are planning to save money to get a car or a truck. Get the money first then pick the truck. Not sure how much that might cost.” (Spouse\_1)

One employee described an emerging clash between spending to pay the costs of a modern middle-class lifestyle—internet, cable, and such—and supporting the high costs of smoking for a number of family members:

“So this job – I like it – its actually feeding my family. Buy some toys. Pay some of mom's bills. She's got rent, she's got power, she's got cable, she's got internet, she's got phone bill. I mainly take care of the internet, phone bills, cable. The rest she takes care of. She does groceries if I don't have money. If I do have money its me buying the groceries. I'm earning more than she's getting. I got more hours. ...I'm not going to be stingy with my money with food. Cause they have to buy food. I'm going to be stingy with it with drugs, with alcohol, but not with food. But she doesn't take drugs, she hates drinking but she smokes cigarettes, just like me, I smoke cigarettes...we've all got our habits... cigarettes –I'm supporting myself, my girlfriend, sometimes my mother, most times my sister... I'm coming to a point where I want to quit ...because of all the money...it is a bad habit.” (Mary River Project Employee\_10)

#### *New conversations about benefits and lifestyle*

With the advent of a major private sector employer in the region, new conversations are emerging about work schedules, pay and benefits. For example, one employee commented on how the fly-in/fly-out lifestyle suited his/her lifestyle goals so well:

“I'm doing good financially. I could make this much money if I worked at home...but I'd have to work all year round. Whereas here, I'm really working five and a half months of the year. Two on, two off, plus two weeks' vacation. I want my own house, want my own vehicles.” (Mary River Project Employee\_13)

Another individual spoke about the differences between two employers at the Mary River Project:

“It's the benefits, vacation, all that. I don't get benefits with [the contractor]. From what my co-workers are saying the pay is better with Baffinland. I would get paid every two weeks but with [contractor] its one pay every month.” (Mary River Project Employee\_14)

#### *Leaving money to support family while away at work*

The challenge of a head-of-household or major bread-winner leaving sufficient funds for the family when s/he leaves the community for a period of time has been a concern expressed by some residents. While this is not a new challenge, fly-in/fly-out employment at Mary River raises this prospect, at least in the minds of some residents:

“In the past when someone went out for medical, they essentially left the family to their own resources. If the family had \$50 the person would take that \$50 and leave the family with no cash and the family were on their own in terms of finding food. Is that happening now, I don’t know. I know there are some who work at Mary River who have left their family without money when they are gone... Is there feast and famine – you bet. It’s a question of whether the employee is leaving money for the family.” (Community Resident\_1)

This observer went on to raise the challenge that some households face in relation to addictions and money management:

“...You get into the problems of gambling, drugs, alcohol of the family here. The guy who goes off to work sees his family having a helluva good time drinking and gambling and drugs that he’s working and paying for. So the resentment and jealousy? You bet.” (Community Resident\_1)

These concerns were echoed by another resident:

[Interviewer: Are those who are working at the mine site making proper arrangements for their partner to have money when they are away?] “For some, yes. But sometimes I hear the spouses of the ones working at Mary River... – they’re going on the radio saying they want to borrow money until their spouse gets back from the mine site. ...probably like this because the spouse [at home] might spend all the money on drugs or gambling...” (Community Resident\_4)

Several employees commented on the arrangements they make to ensure their family is set up o.k. during their absence from home. In these instances the employees clearly trust their partners to be making good money decisions in their absence:

“I try to keep up with bills – phone, power, internet, rent... and at same time trying to support your kids – its like a calendar and a plan – you have to do that every day. [Interviewer: How about when you are away?] I always leave my bank card for my partner and leave notes – what needs to be paid, what needs to be bought for the kids...” (Mary River Project Employee\_18)

“I have my account at RBC. I leave my bank cards and everything with [my partner]. If they need cash there’s an ATM at the store.” (Mary River Project Employee\_1)

“I get paid end of the month and middle of the month... When I get home I’ll be there for a week and then I’ll get paid. When I’m away I get it deposited in my bank account. My [partner] has the bank card... ‘cause they have to buy food.” (Mary River Project Employee\_10)

### *Sharing and boundaries*

The influence that sharing can have on decisions around work was expressed by one employee who only recently started working at Mary River:

“When I go out shopping for a month, my sister comes along. And my dad ...I’ll buy something for him. So that’s like three families when I go shopping – its not cheap. Sometimes I get annoyed [with sharing] but I got used to it now. But I’m not saving anything... I’m just keeping things going... if its going to be like this steady, I might quit this job and go hunting.” (Mary River Project Employee\_F)

This tension between sharing with the extended family and working for the benefit of one's immediate family—and being able to save for major items—was noted by a community resident:

“Oh yeah, the resentment and the anger is sky-high. So the way some people have dealt with it is they don't do sealift anymore. Which in turn costs them far more money... and other people have quit their jobs because they want to be working for their family not for all of their relatives. ...Setting limits and boundaries is very difficult here.

This person went on to elaborate on how difficult it can be to realise the goals of the immediate family when living with extended family members:

“Boundaries...When there are 15 people in a two bedroom house, setting boundaries is a little difficult! And to maintain them is even harder. And you have the money to pay rent for another place but, funny, there is no other place to get. So then what do you do? Even if you can afford the housing its not available.” (Community Resident\_1)

With the ability to earn and save substantial sums, new trade-off decisions arise. For some, these involve decisions about major purchases versus supporting addictions of family members. One individual described providing money for cigarettes in the context of a conversation about saving to help a parent make a major purchase. This can be expected to introduce new tensions in spending decisions:

“My father is trying to buy, ...together we are trying to buy, a machine – either a boat or snow machine. I think we're thinking of getting a snow machine. Most of my family are smokers. But me and my mother quit. I've been quit now for more than ten years and my mother quit smoke about four or five years ago. [Interviewer: But some of your pay check still goes to tobacco?] Just for my family... only my family... Before I buy smokes I use my money for useful things... I usually buy them cigarettes but just for my brothers and sisters.” (Mary River Project Employee\_9)

#### *Banking, financial management*

With money comes new levels of responsibility for good stewardship. One of issues that comes up is banking and service fees. While these may apply to social assistance as well, the prospect of being able to “get ahead” raises new stakes for good management over poor management of financial resources.

“Pay goes to bank. We go through the on-line banking...RBC in Iqaluit. Northern Store has an ATM. Charge a fee to take money out. They've got a “WE” card – I don't use that one 'cause every time I use that its \$1.00! We try to keep the money in the bank.” (Mary River Project Employee\_6)

## 2.5 PREFERENCE TO WORK AT MARY RIVER

Employees engaged in fly-in/fly-out work at the Mary River Project were asked about their preference vis-à-vis working in the community or at the mine. These conversations elicited a range of observations that suggest many individuals prefer what is available at the mine over what is available in LSA communities.

#### *Better learning environment / better supervision*

One attraction of employment at Mary River as described by several employees is the opportunity for on-going training and skills improvement. In particular, employees talk about how they like the

supervision and advice received on-the-job by supervisors and sometimes by other, more experienced colleagues:

“I like the people, they are nice. My job is great. My supervisors are excellent – tell me everything that has to be done. They showed me how to do my job properly. I’ve done housekeeping for the GN at the hospital. At the hospital, the supervisors were — how to put it — not really communicative. The housekeeper here did pretty well at training me. Every morning we have a toolbox meeting – they explain safety, what happened, what we are doing today... GN never did that. These are really useful.” (Mary River Project Employee\_B)

“Two months ago [my former supervisor at hamlet] was telling me there’s going to be two openings for HEO. But my schedule here... they needed a full-time operator there and I couldn’t. And they give me more training here than back home...back home they can give me more seat time. But I prefer the training... They don’t give you little advices – well they do, but not the way people here teach you.” (Mary River Project Employee\_2)

“I talk to my supervisor and the superintendents. And that’s a big difference too, ‘cause back home when I was working, my supervisor and like superintendent... they’re never there. ...But when I’m here, ah, its way different. They’re here and they’re here for us. We eat with them and we get to talk to them.” (Mary River Project Employee\_6)

“Its better up there [Mary River] – you can learn more stuff...more than you can learn down here [LSA Community]. And when you learn something you get a paper or sticker or something. Not like here. Lock-out / tag-out; fall protection; light vehicle refuelling; tote road procedures. When you wake up and get ready to work we have a meeting and they tell us what we’re going to do and how to do it. Its organised.” (Mary River Project Employee\_17)

#### *Better pay, more hours, opportunities for advancement*

Another big draw for many employees is the ability to earn a living wage. This is a result both of the hourly wage as well as the number of hours that are worked at site. Many individuals describe having had employment in the communities only as casuals, working few hours for low wages. In other situations local work was also seasonal only:

“[In the community] I worked so hard but got so little pay. Started at \$9 / hr and then \$10 / hr and then little raises... here I make \$17.25 / hr or something like that. ...and LOTS of hours, yes! At [home] it was more like 6 to 7 hours in a day.” (Mary River Project Employee\_4)

“At the hamlet it was just as a casual worker. The hourly rate was o.k. but the hours were a bit low. I didn’t make enough money. I tried talking to the SAO [Senior Administrative Officer] to get a permanent job but s/he never said anything. So I decided to come here. I needed [to earn more] ...to support my family.” (Mary River Project Employee\_7)

“Pay is very good. Its bigger than the other jobs I’ve worked before. Its more hours. Back home I was working maybe 10 hours or less in a week... Plus here its all year round.” (Mary River Project Employee\_9)

“I was unemployed when I applied for this job. But before I worked for Northern Store. Full-time. Similar job in warehouse. But the pay is a lot better here than at Northern Store. More hours and the rate is more.” (Mary River Project Employee\_H)

“Its good pay, better than hamlet. [A local construction contractor] paid more, but that was only seasonal.” (Mary River Project Employee\_16)

“Bigger pay at Mary River. Plus at [local job] it is only during the busy season that I would get daily work. I need to work and need the money.” (Former Mary River Project Employee\_2)

“I like the pay better – the rate is better than back home.” (Mary River Project Employee\_5)

The opportunity for career advancement was also noted by one individual as a factor contributing to a preference for Mary River:

“There are more jobs you can move into and earn more money in... ..it starts with Level 3 and then Level 2 and 1 – yeah, you get paid more in Level 1.” (Mary River Project Employee\_16)

One current Mary River employee spoke about how permanent employment in the community seemed to be out of reach. As more and more people gained drivers' licenses the practice of sharing hamlet work around a pool of people was leading to slimmer and slimmer employment duration:

“I was laid off from hamlet [a few years ago]...by then too many people had their driver's license. Sort of like 1-year in and 5-years out. But I don't think that's working any more 'cause they've called me to go back to work...but I'm not interested in that any more.” (Mary River Project Employee\_16)

This may be associated with an apparent human resources practice that was described during a scoping session held several years ago in a North Baffin LSA community:<sup>3</sup>

[Participant 1]: “For casual workers, the union rule is that the hamlet cannot hire casuals for more than four months at a time—after that they need to be provided with benefits. So casuals are laid off after four months. The hamlet rule, then, is that once a casual worker finishes a four month stint, they can't be rehired within the next four-month period after being laid off. This makes it hard for the hamlet to find the drivers they need.”

[Participant 2]: “...The hamlet may have been thinking, probably, to circulate those jobs around the eligible residents. Give everyone a chance to work.”

Some apparent reasons for preference to work at Mary River were also suggested by a manager/supervisor as well:

“There are no jobs in the hamlets...and if you do get a job its part-time, its casual, you can't get social assistance...and you may get very little work... you might get 40 hours this week and next week you'll only get 5 hours. And I've got guys who work here full time and they go home for their time off and they're working at the hamlet 'cause the full-time guys aren't showing up. So these guys get called up. [Interviewer: What's the policy

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<sup>3</sup> This exchange is presented in Volume 4, FEIS, page 151.

around working during off-rotation?] Its fine – as long as it doesn't affect you showing up for your shift. I remind the guys to watch out for tax time – as a casual you are making top dollar, fewer deductions – watch out for having to pay at tax time.” (Key Person\_13)

#### *Two weeks off*

For some employees, the pay at Mary River is similar to what was earned in the community. However the 84 hour work weeks at site mean these earnings are accumulated in two weeks, not four weeks – leaving time off for other things:

“Back [in North Baffin community] I worked for a contractor. Was making almost the same as here...but worked year-round. I also worked as a fuel truck driver for the airport ...I was on-call 24-7. Whereas here I'm off for two weeks.” (Mary River Project Employee\_5)

An alternative to Mary River, for some, has been to work in the off-shore fishery. One person compared the two – two rotation at Mary River Project to working on the shrimp boats:

“This work is a little different from the shrimp boat — shrimping – Baffin Island, Northern Quebec, Faroese, Greenland. I guess I prefer being on the land. This is closer... less time away too. A little easier I'd say. Both for me and family. With fishing I'd be away about three months – we'd do three trips up to maybe 30 days at sea—depends how much you were catching. Based in Newfoundland and Greenland. The sea is not too bad...a bit of ice...but down around the Flemish Cap a bit of waves.” (Mary River Project Employee)

#### *Bigger equipment*

Exposure to work that is not available seems to be another draw. One equipment operator spoke about the variety of equipment—and the fact that at the mine site they are getting to operate the big pieces!

“I'd rather stay here 'cause they've got more equipment available...and they're bigger! I don't mind driving smaller equipment though...as long as I'm driving!” (Mary River Project Employee\_6)

#### *Safer workplace culture*

Appreciation of the efforts to keep safety 'top-of-mind' was expressed by a couple employees.

“Here it seems like it is a lot safer [compared to hamlet] 'cause we have a meeting every day. Back in the hamlet its just, “go do this, you know your job – just go do it.” But here we have a meeting every time – so that's a good thing.” (Mary River Project Employee\_6)

[Interviewer: How does MR work compare to hamlet?] “It's a lot safer and more organised. Every morning tool box meeting and walk around the truck, report, check this, check that.” (Mary River Project Employee\_16)

#### *Less stressful workplace*

Another employee commented about how a previous workplace had been stressful due to the dynamics between co-workers. This person was finding the position at Mary River to be 'happier:'



“When I was working [in Iqaluit] the money was good. But the people I worked with made me want to drink lots. The money was good but I wasn't happy. Here the money's ok ...and I'm happy.” (Mary River Project Employee)

*Local economy not big enough to support a trades person*

For some, the advantage of Mary River is that it offers jobs that simply are not available in the small, local economies of North Baffin LSA communities:

“[My spouse] is a [trades person] – there's not a lot of jobs in a small community. He had seasonal jobs only. So he was interested to go work there at Baffinland.” (Spouse of Mary River Employee)

*Follow Labour Standards better than some local employers*

Small, remote communities with a labour force that may not be empowered with good knowledge of their rights offer a potential for labour law to be neglected to some degree. One local resident recounted a situation where a local employer had been under-paying a relative:

“The minimum wage in Nunavut is \$10 / hr. But [a local employer] hired my sister at \$5 / hr until she threatened to report them to Labour Standards.” (Community Resident)

*Effects on local labour availability*

Given the sentiments expressed above, the potential that the Mary River project may draw employees away from other local employers seems evident. Some comment along these lines were made:

“[Interviewer: Has the community been affected by Mary River?] “Yeah, I think so, 'cause they are looking for drivers – garbage truck driver and sewage truck driver – they are looking for two new drivers.” (Mary River Project Employee\_17)

“They were even taking away our water truck or garbage drivers – because they had the [Class 3] license – to Nanisivik dock or to Mary River. Nanisivik dock work is shut down for the winter but they'll start again next summer.” (Community Resident\_4)

This community resident noted that some Mary River employees end up working in the community during their off-rotation:

“When a person working at Mary River comes back, they end up working for the hamlet... because here there is not much training... even when lots of men are here [with no work]. And that sometimes makes uneasiness. Or they start talking about how even with the new health centre work—they contractor was hiring guys from Mary River during the 2 weeks off. Because there's no training.” (Community Resident\_4)

One employee was asked if the Mary River Project was drawing skilled operators away from the community:

“I guess there's some truth to that. There's a guy I used to work with back home and he's working here now.” (Mary River Project Employee\_2)

In spite of this, however, this individual did not seem concerned:

[Interviewer: With operators leaving hamlet for Mary River, are the roads being looked after ok?] “Yep, yep – they always have somebody to do it.”

## SECTION 3.0 - WORKING AT MARY RIVER

The previous sections presented perceptions about how employment at the Mary River Project has affected individuals and families. This section looks at the employment experience itself, following through the progression from recruitment, training, settling into the job, career progression, and termination. Attention is paid to the workplace culture that is perceived to be developing at the project, as well as the various initiatives and characteristics that support employment success.

### 3.1 RECRUITMENT

#### 3.1.1 Awareness and Interest in Mary River Employment

Residents of the LSA communities seem to be generally aware of the Mary River Project and the possibility that there may be jobs available. The small size of the communities and regular coming and going of the Mary River charter plane help to promote this awareness.

“People ask about Mary River, always, for sure...I can’t go home without people asking me if I can take their resumes...I tell them it’s a great place to work.” (Mary River Project Employee\_13)

[Buzz around Mary River?] “A few people – not a lot – talk about working up here. I encourage them to apply and see what happens. I don’t know if they are motivated enough to apply... that’s what I’m trying to do with my younger brother... telling him how its fun working with the heavy equipment here. Encourage him to apply, re-apply, just keep at it.” (Mary River Project Employee\_14)

“I tell the people who ask me if I can get them a job at Mary River, I tell them they can go and talk to [the BCLO] and s/he can get them all the information. If you do it properly you can get a job. I just tell them that.” (Mary River Project Employee\_17)

“Some of my friends are starting to think they want to work here. I encourage quite a few people to keep applying, to keep bothering them [Baffinland] and stuff. ‘Cause probably they have a big thick stack of resumes and stuff – there in the main office – so I tell [my friends] to keep bothering them.” (Mary River Project Employee\_1)

Understanding the recruitment process and what recruiters are looking for is important. Some people are said to avoid applying because they believe they are not going to get hired due to a lack of certification:

“[My sons] are saying, ‘They’re not going to want me ‘cause I don’t have a paper to show.’” [Interviewer: Have they applied?] “No, not even... They’re scared to apply ‘cause they don’t have anything to show them [the recruiters].” (Community Resident\_4)

One resident suggested that more communication about human resources might be helpful. This person noted that the local BCLOs avoid playing too much of a role in recruitment and HR issues:

“Need more communication. ...someone else [in addition to BCLO], who can let people know, ‘this is what’s going on, these are the things you have to do in order to get a job,’ or, ‘Mary River is doing training with the hamlet in heavy equipment or trades.’” (Community Resident\_4)

Details about the variety of jobs and careers available and about the recruitment process may not be getting relayed to some residents.

[Interviewer: Has anyone from HR Recruitment been here to talk to people?] “Maybe, [but] I never met with anyone ...not that I know of. ...Yeah – I’d be interested in that.” (Spouse\_3)

Others may be aware of the potential job opportunities but feel they are not eligible due to a past criminal record. A couple community residents wondered about the effect that criminal records have on employability:

“So many people have records and to maintain hope there has to be a way to allow them to move past their records.” (Community Resident\_6)

“The bad part of it ...some have criminal records that are keeping them from getting jobs. If you have criminal record you have to apply for a pardon. And now you have to pay so many hundred dollars just to start the process...and then more to finish it. It's a big barrier. If you are on Income Support and are single, you are only getting \$50 cash<sup>4</sup>... That's not enough to pay for this. There's some men out there who are qualified, who are able, but a criminal record is stopping them. Some of them have applied...but then that form from the police... they say, “this is the only thing keeping us from hiring you.” (Community Resident\_4)

For some residents, getting a job at Mary River is something that becomes a priority when life circumstances change and the need to make a living becomes an important value:

“I had no interest in the mine until my child was born – then I decided I needed a job. I started looking for work just before my son was born.” (Mary River Project Employee\_1)

### 3.1.2 Recruitment from the communities

Each of the five North Baffin communities in the LSA has a Baffinland Community Liaison Officer (BCLO). While the BCLOs are not directly involved with hiring decisions they have a “working relationship” with the Human Resources Department. They collect resumes and if they happen to be aware of an issue, they will bring this to the attention of HR. Human Resources will sometimes ask around to other sources as well to get insight into the suitability of a potential recruit for a particular position. (Key Person\_3).

Recruitment from North Baffin LSA communities is said not to be affected by availability of space on the chartered Dornier aeroplane. The Dornier holds 13 people, meaning a community can supply 26 employees on the current schedule of one flight per week. Flight availability is said not to be a factor in hiring decisions.<sup>5</sup>

Access to employment is often said to be facilitated through some form of relationship with a current employee working at the Project. This arises from the high value placed on work ethic, attitude, and willingness to learn on-the-job. For example, the following comments by a hiring manager/supervisor highlight the importance of having a good character reference:

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<sup>4</sup> Social assistance payments typically comprise an amount transferred directly to a local retail store and a small amount provided to recipients in cash for discretionary expenditures.

<sup>5</sup> Conversation with Baffinland staff.

“I’ve got one example of a fellow – an older fellow who worked at Nanisivik. And he sometimes comes to me with a resume...and the first time he came to me with a resume I said, ‘listen I want this guy to be like you – wake up in the morning, get to work on time—and if he doesn’t I’m going to come to you!’ And the guy worked out. And this fellow has now brought me four guys and each one of them has worked out. I joke to him and tell him, ‘You’re my best recruiter!’” (Key Person\_1)

Some positions, however, require more specific skill sets. In these cases, selection based on a resume followed by interviews may be the approach. For example, one hiring manager/supervisor says s/he personally screened and interviewed two individuals for a job based on their resumes. In one case the applicant’s education stood out. In the other instance the applicant had substantial work experience. During the interview process both applicants indicated a willingness to learn.<sup>6</sup>

“I’ve had a lot of guys e-mail me and send me their resume...because they’ve applied on-line [with no result]... where I see the company failing is the on-line application process. I don’t think its being monitored enough...or even looked at?. I don’t know if they are going by the numbers – we need this percentage of Inuit, this percentage of skill sets... Our goal here is to get as many Inuit hired as possible from the communities.” (Key Person)

One issue for some people is how to respond when an application does not result in a job. Some individuals have applied once and then simply wait for a job offer. Others seem to reapply regularly. One resident indicated an understanding that the human resources management systems used to recruit candidates vary from employer to employer. For example, a contrast was made between one contractor, QIL, and Baffinland:

“With QIL you need to apply every six months. With Baffinland they keep resume’s in the system.” (Community Resident\_3)

### 3.1.3 Recruitment from on-site contractors

Recruitment can also happen from within the broad Project workforce. For example, employees working on a short-term or seasonal basis for a contractor may catch the attention of a hiring manager / supervisor and get moved over to a more permanent position with Baffinland.

“The other thing that works for us is that we use a company who will supply labourers on a temporary basis. And maybe we don’t know them from before but they’ll work for us for 3 or 4 months and we’ll see, this guy’s got a really good attitude and so we’ll key in and the first opportunity we’ve got, that guy’s name will be first on the list for hiring. So we hire the best from the short-term contractors. That has worked well for us.” (Key Person\_C)

In some cases, individuals working for a long-term contractor may also get picked up by Baffinland, where opportunities for career progression may be greater:

“We actually had a fellow quit. And they’re looking to replace him with somebody. Normally when somebody quits—nobody’s ever got fired from our Department as far as I know—when somebody quits they go to the labourers [who are employed] with Sarvaq or QIL and see which one is best suited and then hire them on with BIM.” (Mary River Project Employee\_E)

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<sup>6</sup> Interview with Key Person\_2.

This approach was also commented on by a manager / supervisor of one of the contractors:

“We’re an entry level employer... we’re not going to stop anybody from advancing. So if they’re doing good work [for us] and Baffinland sees that and they want to bring them on full-time and train them...we’re not going to stop them.” (Key Person\_6)

#### 3.1.4 Implementation of Inuit hiring preference

A general expectation that Inuit from LSA communities should be given preference when hiring decisions are made exists at site and within the LSA communities. This expectation aligns with terms of the IIBA.

In preparation for the start of the Project, Inuit residents of the five North Baffin LSA communities were invited to respond to calls for expressions of interest in employment at the Mary River mine. Individuals who applied and who were successful in a follow-up interview were invited to participate in a ten-day “work ready” program. Those who successfully completed this program were placed in a ‘pool’ which contractors and Baffinland departments were encouraged to draw from as they began their hiring processes.

Throughout the Project, a balance between hiring experienced workers and giving preference to Inuit from the LSA has been practiced. This balance has not always been perceived to be perfect. For example, one manager / supervisor spoke about how some LSA residents sometimes feel Inuit priority is not being implemented adequately:

“They’re talking in the smoke shack and they’re making these stories up in their head [that southerners are being hired in preference over Inuit] ...so I just told them straight up that we are hiring Inuit and we plan to hire more. And for these new positions we’ve got, I’m going to try to hire all Inuit people. And that’s what I told them ... I think out of the eight [new positions] I hired six [Inuit]. Me and my cross-shift we have talked and our objective is to bring people in and train them.” (Key Person\_J)

“It was clearly understood from the beginning that we would try to hire as many locals as possible. ...does it affect us? ... finding skilled operators to fill those higher levels ...that is an issue – we can’t always find people from the communities that are that well-rounded. ...But that said, we find enough that can fit into Operator 2 that middle-of-the road level. ...and a lot of the time we’d just as soon, we prefer, for our entry level positions, to bring someone in who is totally green, so we can mould them into the kind of operator we want – they don’t bring bad habits or other ways of doing things from other operations.” (Key Person\_1)

In some cases, hiring priority seems to involve on-the-job mentoring or training of some employees who may not be fully familiar with working under intense conditions where meeting production targets is critical to success. One manager / supervisor spoke of a the tension that can build up when pressure to hire Inuit employees collides with pressure to meet production targets:

“So the pool is very small in the communities, and not everybody can do that and you are told that you have to maintain 30% or 20% or whatever, and you feel the pressure from the company that you need to keep that percent up...so you do everything that you can....

“But at the same time the company is telling me that you need to produce that “x” amount of material for the mine to survive, for us to survive. And then you’ve got to deal with southerners or northerners who are not cut for the job and you’re struggling with this. And

your stress level goes real high. Because you have deadlines to meet or you have your budget to meet...and you're not able to because you have somebody who constantly is not showing up. Or you have somebody who is not picking up the pace – he is there but he is not really productive. And you are told to work with him, which we do and we're more than capable of and we are willing to... but our deadlines are so tight we don't have the time.” (Key Person\_8)

This individual spoke about how southern contractors who are not adequately productive after minimal training can easily be let go. Priority hiring commitments for Inuit from LSA communities, however, means that there has been an expectation that training will be carried out on-the-job in order to bring Inuit up to the needed level of productivity. When pressure to produce become intense, however, this need to nurture is perceived to have led to a hesitancy to hire LSA residents who may not be fully ready to work at a fully productive level and yet who could be difficult to fire due to less-than-satisfactory production.

“Right now at this moment we have contractors in our ...team that we are hiring from the south ...and the reason we're using the contractors... in two or three days, if they don't make the cut they are on the next plane. Because its easier to have contractors removed from site than... we hire them and we train them real quick and we find what they are capable of...if they have lots of experience we catch that right away and they're going to be able to produce. So we hire these drivers and the reason we are doing that is to meet our production ... and they are giving us some guys from down south with 20 years' experience and they are really good. ...and they are giving us some guys with 20 years' experience who are completely mediocre. So, the ones with 20 years' experience who are completely mediocre – he'll last 2 or 3 days and he's gone. We send him on the plane. He has a safety incident. We send him home. Because our targets...we have to produce! So this is the reality right now at the moment that we are dealing with. ...

“So when the local communities were told at the beginning that we'd spend a lot of time in training and coaching...which we did at the beginning...now, its over. Now its time to produce. We don't have time to give you two months to learn a piece of equipment. We need you to be on a piece of equipment and to be able to produce what that piece of equipment is designed for... maximum capacity.” (Key Person\_8)

Still, while production pressures may be having an effect on training efforts, Inuit hiring priority does seem to be enabling some persistence in working with less experienced individuals:

“...We're trying to work with [that person] to help him improve. ...and it's a slow process. I know from other mine sites where we've made a commitment with the communities to have a percentage of locals on site. ...These are small communities, so the pool of potential operators is small. It's not everybody that can be an operator.” (Key Person\_8)

This individual went on to talk about how the employee in question, while lacking some of the education and experience that might be preferable for someone in the position had a great work ethic and was open to learning. The commitment to work with this person seemed to come more from a desire to develop a great employee than to meet Inuit preference targets.

#### *Hire experience then bring in 'green' employees*

One manager/supervisor commented on how there are several steps that needed to be taken to achieve successful Inuit recruitment and hiring on a Project-wide basis. First, the Project had to

get started and that involved hiring immediately available experienced personnel. Secondly, entry level people were hired from the LSA to work with these experienced employees. Thirdly, entry level employees who went on to succeed in the fly-in/fly-out work force gained the experience and training they need to progress in their job responsibilities. Looking toward the future these experienced and trained individuals can, if they are willing, go on to be promoted into higher level jobs as opportunities become available.

“At the start I couldn't hire all Inuit because we needed to have experience. And the Inuit I was hiring from the communities had a little bit of experience – loader experience in their communities, but had never worked in a mine. So we needed to hire some southerners so that I had a blend of experience along with Inuit who had not a lot of experience. And then we've got them trained up. So its been a couple of years. The ones that have stayed with us I view as an essential part of the team. And now...like the guy that I'm going to hire now who has very limited experience on equipment. And I'm quite comfortable with that because he's on [a good crew] and he's got a good work ethic and he wants to learn. He's being put on difference pieces of equipment and he's picking it up quickly and is demonstrating he has the potential to become a very good operator...so it doesn't bother me that he doesn't have a lot of experience. What I look at in that situation is number one, work ethic, and number two that he want's to learn that that he's got potential...that he's able to pick things up quickly enough. ...And now that we've got experience on the crew I can look at hiring people that don't necessarily have a lot of experience because we can look at blending them in. ...On a crew of 10 or 15, I can have a couple of inexperienced people as long as the majority of my crew is what I consider to be experienced.” (Key Person\_10)

Another manager/supervisor from a different department also described how having a fully functioning crew provides the ability to bring an inexperienced person into the group:

“I have enough now that have the skill set that we're trying to achieve, and so now we're able to bring in a greener guy. So let's say I've got 5 guys fully trained, fully capable, Level 2 Operators...I'm able to bring a Level 3 in, get him trained up. Within a year or two he'll be up to that level ...without the department failing or not getting things done. ...and then we'll bring in another... I'm all for training young guys – that's the future. This place is going to be here long after I'm gone. I'd rather see the Inuit get trained.” (Key Person\_13)

This same perspective was expressed by another manager / supervisor as well:

“Basically Baffinland is really just in their infant stages now... promoting and trying to get training for the Inuit staff. It's the same with QIL. They started by bringing in skilled staff from the south and then bring in entry level staff to see how they make out. Now they have a couple supervisors who are Inuit.” (Key Person\_6)

The approach of hiring experienced people from the south to kick-start production and serve as mentors for a northern workforce that generally has less mining experience may be understandable. However, not everyone feels this was always the most successful approach from the point of view of long-term production or meeting Inuit hiring objectives:

“When it was apparent that production levels were low [in ore handling], Baffinland ‘panicked’ and abandoned efforts to train locals as haul truck operators. They outsourced



ore handling to [a contractor] to do haulage. This has not been fully successful – some of these guys are not so good at it and now we are way behind in training Inuit to do this job.” (Key Person)

This same person went on to talk further about this tension between “hiring experience” and “building Inuit capacity.” This tension has been particularly evident during the recent push to enhance productivity and achieve revenue neutrality:

“Some of the young supervisors are also pretty good at training guys up on the equipment. Some of the supervisors are more reluctant – they have their key operators [from the south] and, understandably – they want to keep them there. But I think they’re getting better. Particularly in the “production” departments that are under stress right now.” (Key Person)

In addition to the need to balance experience with local labour force training and development, some positions have specific requirements that prevent local hiring simply either because the specific skill set is not available or because those with the appropriate credentials are already fully employed. For example, one manager / supervisor spoke about the need for certification:

“And there are some jobs ...like water treatment plant... since they require certification and there’s none who have that kind of certification that have ever put in a resume... Another one is Crane Operator – certified Red Seal Crane Operators. And long haul highway operators – for hauling up from Milne Inlet. Along that tote road its sometimes a dangerous situation depending on the weather so I want experienced drivers. (Key Person\_C)

#### *New opportunities for women*

The Mary River Project has opened up new opportunities for women in North Baffin communities. Several people spoke about how they perceived that opportunities for women in the hamlets are sometimes limited by gender role expectations. For example, one female employee described her aspirations to become a heavy equipment operator in her community. She was working as water and sewage truck driver for hamlet:

[Interviewer: “How was that job?”] “Don’t know how to answer that – I went for training for heavy equipment before I started working for hamlet. Then I tried to apply for heavy equipment operator there. And I guess their ego got to them or something and so they put me on something else – water truck. They didn’t want a female working on the heavy equipments.” (Mary River Project Employee\_G)

At Mary River, managers/supervisors sometimes play a role in challenging gender stereotypes or discriminatory perspectives that might be brought to site:

“I’ve heard a few comments going around among some of my guys when the women started driving some of the big trucks. They’re like, what’s up with that? My buddy’s still on the skid steer. How come she’s on the 777. I’m like, ‘Guys – come on. We have a woman working with us too.’ They do understand – she’s been with us a long time – Scottish not Inuk...my guys are starting to understand....I’m like, ‘You got to remember guys, back a long time ago women wanted equal rights. They wanted to do just as much as men could do cause they could. Here’s proof that they can... you’ve got to get your head out of that 1950s stay at home, be pregnant in the kitchen kind of thing. They’re just as capable of doing it as we are.’ ...And they’re like, ‘Yeah, you’re right—but I wouldn’t

want my wife doing it.’ And I’m like, ‘Why not? What if you and your wife worked here and made big money. Where would you be then?’ They start to wrap their head around it. I don’t think any of my guys now have that mentality that women shouldn’t be here...but you do get some from the smaller communities ...and certain settlements still have that old-school mentality that women stay home with the kids and men work, women stay home with the kids and men go hunting.” (Key Person\_W)

Even if non-discrimination is practiced during Project recruitment, women may still be inadvertently disadvantaged as an indirect consequence of employee selection practices. For example, one department is now drawing their new hires from the pool of labourers who are employed on site by a contractor. Since there are few women working as labourers in that context, there have been no women from LSA communities hired into this department.

“I’m pulling people from [the contractor supplying labour workers]. So far we’ve had no women coming through this contractor. Most of them are tending to be young guys willing to take that labourer position. I’ve had people in the kitchen ask me how they can get into [our department]. Well, I have no answer for that. We’re not taking people out of the kitchen and putting them on equipment to see how they do – that’s not the channel we use. ...and I’m not about to tell them to quit their job and go work for [our contractor] as a labourer...so I really don’t have an answer for that. I know there are some very good workers – but I can’t take that chance...and can’t be viewed as robbing all the best employees on site.” (Key Person\_C)

Even if some paths to employment may have the indirect effect of excluding women, the Project as a whole is opening new avenues of work for women from LSA communities. This is attracting some notice amongst residents. For example, one male employee from a North Baffin community was asked about his daughter’s aspirations:

[Interviewer: “What about your daughters, are any of them looking over there and saying, ‘I’m going to work up there, I’m going to be an operator..?’”] “It would be nice, cause there are a few females up there doing that. Its nice to see...back in the day, it always seemed to be men...but nowadays we can see a few females, its ...uplifting... they can do that. Don’t see it in the communities. ...The way I see it, they seem to do a good job, yeah.” (Mary River Project Employee\_18)

### *Youth*

For individuals with little previous work experience, one of the paths leading to permanent positions at Mary River has been to establish one’s credentials as a reliable employee. This can best be done by demonstrating a strong work ethic in entry level positions that are easier to get into with little previous experience. One manager / supervisor suggested that this path toward employment is more likely to be taken by younger people:

“It seems that we are tending lately to get more younger guys. The older guys ...we don’t see a lot of them coming up as labourers. I guess we’ve been hiring more younger guys because we get to try them out...once we see how they are working...good work ethic and able to learn operation of equipment... that’s the one we’ll take. Even over the one whose got experience in the community.” (Key Person\_10)

An interesting hypothesis was provided by another manager / supervisor who suggested some possible differences in outlook between younger and older generations employed at the Project:

“We’ve had two experiences... the people of the younger generation that come with a very good work ethic. They want to learn, want to succeed and have this project continue for employment in the future. Then there are the people in the 25 to 35 year range. Probably have a family at home. Maybe haven’t had a steady job their whole career. Their challenge is to get to work and to get to work on time... and its been a struggle here a little bit.... I feel like the younger generation understands the impact on the company of not showing up for work. The other group – I’m not sure they understand the impact on the group.” (Key Person\_5)

Some rationale for investing in the younger generation was provided by one manager / supervisor who connected the duration of the project with workforce age:

“Here it’s a longer life mine, it’s a generation mine, so ...it would be better to get the younger generation in here and have them here for 25 or 30 years...so their kids will see this and see there is a future here and so they come on...” (Key Person\_12)

### 3.2 DETERMINANTS OF EMPLOYMENT SUCCESS

Managers, supervisors, employees and family members spoke about some of the challenges of fly-in/fly-out employment and the transition from the very flexible time management of community life to the regimented nature of time at a producing mine. Four areas emerge from these conversations as key factors that determine how successfully an individual manages to engage with the Mary River Project as an employee.

These factors of success are: 1, the ability to reliably get to site on each flight day; 2, effective time management at site; 3, maintaining good health and fitness; and, 4, expectations related to work and life at site that support achievement. Each of these factors of success are influenced by a wide range of underlying determinants that play into individual outcomes. These are touched on in the discussion that follows.

#### 3.2.1 Getting to work on the plane — absenteeism due to missed flights

Absenteeism due to employees not making it to their work rotation is a serious issue for fly-in/fly-out projects. The Mary River Project is no exception. An ability to maintain reliable work attendance is an important factor of success for residents of the LSA communities employed at the Project. This ability reflects more than the employee’s attitude and commitment to their job. It is also an outcome of personal, family and social lives that are adequately ‘together’ to support the challenges associated with such reliability.

##### *Impact of absenteeism on crew productivity and morale*

A major step toward acquiring the ability to maintain reliability in getting to site is for employees to internalise the impact of their absence on their crew and on the Project generally. Many managers / supervisors spoke of the consequences that unauthorised absenteeism has on their ability to maintain crew morale and productivity:

“If they don’t show up ...we can ask someone from another community... but that’s tough—‘Do you want to work a week overtime?’—Generally we are short a man for the week in these cases.” (Key Person\_1)

“The only issue that I see in our group – we seem to have a lot of missed planes. ...And we don’t get a lot of notice. I’ll get a call the day of the flight...Sometimes we’ve had as many as two or three call in – and all of a sudden we’re really down. We have to shuffle around.” (Key Person\_10)

“Then we start dealing with people not showing up for work. Not showing up for the plane... Which was affecting production and morale of the team. ‘Cause everyone is trying to work as a team. For example, if a guy doesn’t show up for the plane, and doesn’t give us warning...not showing up for whatever reason... now the team has to pull extra weight...to compensate for this missing person.” (Key Person\_8)

“For me, right now, manpower is terrible. I’ve got guys on medical leave and guys who didn’t show up for work. From south and from north...so I’ve got it from all sides.” (Key Person\_12)

#### *Expectations of commitment and advanced notice*

When some advanced notice is provided, arrangements can be made to back-fill the position and maintain crew productivity. However, unauthorized absenteeism with little or no notice may leave a crew critically short-handed leading to extra pressure on everyone.

Project managers / supervisors, and co-workers as well, understand that things come up in life that may lead to a person missing work. However, in the context of production pressures placed on crews due to absenteeism, it is also understood and expected that substantial commitment to the job and to the crew will be made and that efforts to avoid missing a rotation will be made. While commitment to the job does not guarantee perfect flight records, there is a perceived link. One partner of a Mary River project employee expressed this link between commitment to the job and reliably making the scheduled flights:

“[My partner] has never missed flights... He’s so committed to work.” (Spouse\_1)

When things do come up, it is expected that when a person cannot make the plane, this will be communicated as far in advance as possible so that backup arrangements can be made. In cases where advance notice is not possible, the expectation is that the employee will notify their supervisor as soon as possible that they missed the plane.

[Interviewer: Do people give you any warning or ‘heads up’ when they miss their flight?]  
 “That is it right there, that is probably the biggest issue. They’ll miss the plane and simply ‘no-show’ – we’re expecting them to be on board. We then need to follow-up to see what’s up – we have a certain responsibility to be sure they are o.k. So we follow-up and find that, yeah, they were sick or whatever so they went to the nurse and so they’ll be off for a week. But they just didn’t let us know. Please just call us first. A missed plane generates a paper trail right away – its recorded in a couple ways.” (Key Person\_1)

“If an employee communicates before hand – across the board – they’re not going to get an HR warning. But I’m not lenient when the wheels are up on the plane and I get a call that ‘I’m not coming in.’ What can I do with that?” (Key Person\_5)

This expectation that individuals who have missed a flight and will be absent from their scheduled rotation take the initiative to communicate this with their employer was also reflected by a resident in one of the North Baffin LSA communities. This person noted how difficult it can be to call one’s

boss to say you've missed the plane—and suggested a 'neutral' third party might serve as a work-around:

"If they miss the plane, the employees should be reporting right away that they missed the plane. They need to know if I don't get to the plane I need to call this person – maybe a neutral person – they don't want to be calling their boss. Workers need to understand that if they don't make it they have to report it. Because if you don't go to work they need to find someone to do what you were working on. But most people, they'd rather keep quite. It should be in an informational package...here is somebody you can report to. Make that call right away so the company knows at least not to be expecting them. Its better for your resume – you are reliable, trustworthy." (Community Resident\_10)

#### *Reasons for unauthorised absenteeism and consequence*

To a large degree, the reason a person misses a flight is not relevant to the outcome in terms of workplace productivity and added pressure placed on a crew. However, it may affect morale if a team member is seen to be not committed to the work and does not show up for reasons considered to be avoidable.

Understanding the underlying determinants leading to flight-related absenteeism may also assist individuals, communities, and the company itself in on-going efforts to support success. Several areas were raised during the interviews as associated in some way with unauthorized absenteeism: childcare, transportation to the local airport, harvesting activities, and community conditions.

#### Childcare

As previously noted (see Section 2.2, above), households that function effectively to make mutually supportive decisions related to childcare, money management, and so forth are more likely to succeed in supporting the fly-in/fly-out partner than those that are struggling in these areas. In two-parent families with childcare responsibilities, it takes two to make it work.

The limited access to daycare services was noted above (refer to Section 2.2.2). In some instances this may add to the challenge of arranging adequate child care when a parent is working away from home for two weeks. One manager / supervisor identified childcare as a key issue leading to people not making it for their rotation.<sup>7</sup> This is seen as a challenge for many employees, but seems to get amplified for Inuit from LSA communities. Another manager / supervisor also identified childcare as a key issue associated with unplanned absenteeism:

"[Someone will say] I'm having problems with my wife and we don't have anybody to look after the kids and I can't come in. I understand why – it's a reasonable excuse, you're not going to leave the kids alone. ... We've given a number of employees leave without pay – so it didn't affect their employment status, so they're not getting written up. So – I look at every situation individually." (Key Person\_10)

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<sup>7</sup> Interview with Key Person\_4

A similar perspective was expressed by another manager / supervisor who noted that fly-in/fly-out is a challenge for any parent...and then struggled a bit to empathise with what was perceived to be a somewhat different response to these challenges from LSA residents:

“One thing I have noticed, if they’re not comfortable leaving home they won’t leave. Their first priority is their family. For me, I tell my wife, ‘I have no work...I have to go, I just can’t call in...it just doesn’t seem right to me to call in and say I can’t come in ‘cause I don’t have anyone to take care of my kids...or I can’t come in ‘cause I don’t have anyone to take care of my dog, or I can’t come in ‘cause I’ve got a hot water tank broken...’ Lots of things going on at home... What I have noticed is that if northern people... if they don’t have someone, they’re not coming to work. I don’t know how hard they try, you know, I’m not there. But its like, can’t you have someone take care of your kid? – ‘no’ - ...they’re not coming in. ...But there are times when they don’t have the support.” ((Key Person\_12)

Another manager / supervisor linked the childcare challenge with medical travel. When the stay-at-home parent needs to leave for medical travel sometimes a family can be in a bind to arrange for last-minute care for the other children:

“Missed flights from down south tend to be for medical – never had anyone say, ‘I’ve got to stay home to look after my kids.’ But up here its happened. More than once. I’ve had where I’ve had to send people home as well as where they’ve called and said I can’t come in due to childcare issues.” (Key Person\_11)

#### Access to airport transportation / taxi

Unlike missing a rotation due to a child care emergency, not making it to the airport on time is not generally considered to be an understandable reason for a committed employee to miss a work rotation. Conversations with residents and employees, however, suggests that local transportation is seen to be an important issue.

While local airports are not far from town, they are usually beyond walking distance and many households do not own vehicles. Reliable taxi service is unavailable in some communities. Communication challenges, especially when flights are delayed at the last minute, may add to the challenge that some people experience in catching their flight:

“Before we had the truck, we would be struggling trying to find a ride. Would pay friends or family to drive him. But he never missed a flight.” (Spouse\_3)

“If you don’t have your own vehicle or friends with a vehicle... its too far to walk.... [Interviewer: But it’s a small community...don’t people know everyone, have someone to help them out?] “Its not like that – some are,...lower class, don’t have connections... it works the same here as other places. A ride to the airport – it can be difficult.” (Community Resident\_10)

“As a result of poor communication some guys missed their flights – flight delayed, no one tells them, they miss the flight. Even now ...the workers go on the radio – anyone with transport pick me up – I have to get to airport. There is no taxi, no scheduled pick up... ” (Former Mary River Project Employee\_4)

Some North Baffin communities have no taxi service. Even when a local taxi is available, capacity and reliability may be an issue.

“The local taxi service ended last year. Back then the taxi was not reliable. Sometimes people who had booked it would end up having to try to make desperate last-minute arrangements to get to the airport when the taxi didn’t show up. [A local fellow with a vehicle] will sometimes give people a ride if they are unable to make arrangements.” (Community Resident\_3)

[Interviewer: ...and missing the plane?] “Ah... a big part of that is that for the ones who don’t have any vehicle to go meet the plane it is really hard. Some even go on the radio saying can someone please take me to the airport ‘cause the plane is coming and I have to get on it.” (Community Resident\_4)

[Interviewer: How would you get to the airport] “With our friends – sometimes its really hard to get there. Have to look around the day before. Sometimes not available. I know some people who couldn’t get to airport – no ride available. They miss the flight. It would be great if Baffinland had a vehicle in each community to help people get to airport.” (Former Mary River Project Employee\_1)

“The problem [for the former taxi service] was that people would not bring money with them so they’d tell the taxi they’d pay later...but sometimes they didn’t and so then the taxi has that to worry about. Even with medical taxi runs – government doesn’t pay for some time.” (Community Resident\_10)

It is uncertain whether local transportation challenges are often the primary cause of absenteeism or if they play more of a contributing role when other things come into play. The unambiguous message though is that for some individuals getting to the airport is not a trivial challenge.

In response to perceptions that transportation challenges are a barrier for some, one local resident expressed an opinion that Baffinland should intervene and provide local transportation:

“There is no taxi in [our community]. Mary River has to have someone who has a vehicle to pick them up and take them to the airport. I have a vehicle – If I work for MR I’m not going to be picking up so-and-so... Mary River has to find someone in the community who they can pay to pick people up. Some people – some – very un-deliberately missed the flight. When it was summer they’d be taken to the airport by 4-wheeler but now its too cold. Maybe some are going by skidoo...but some even don’t have a skidoo.” (Community Resident)

#### Northern community life

There is some recognition that life in northern communities may lead to some unique challenges to successfully making every rotation.

“[In North Baffin communities] ...its family demands, or ‘I’ve got to go to court,’ or ‘I have to escort a relative on medical.’ Its always a last minute thing when they get notified [about these things], so then its last minute when they notify us. This year in particular there seemed to be lots of death in the northern communities...and that’s one of the challenges we face, how to be considerate of those things. In the south, you’re not used to that...” (Key Person\_6)

#### Role of substance abuse

Substance abuse and addictions are sometimes identified as a cause of absenteeism in workplace settings. For this reason, managers / supervisors were asked about their perception of

the role that substances might have in people missing their scheduled flight. Generally, this was not something that was identified as a known factor.

[Interviewer: Is alcohol / addictions adding a challenge to this?] “I don’t think so – doesn’t appear to be an issue, at least not in our department.” (Key Person\_1)

One manager / supervisor noted that an individual may indicate they are sick. “You have to take the person at their word or, sometimes, get a medical note. Typically the BCLO will check into the circumstances.”<sup>8</sup>

One manager / supervisor did consider alcohol to play a role in some absenteeism. This person perceived a distinction between Iqaluit and those from North Baffin communities:

“In ...Iqaluit, its mostly alcohol related. In North Baffin its not so much alcohol but other things.” (Key Person\_6)

#### *Consequence of unauthorised absenteeism*

The consequence of missing a rotation due to unauthorised absenteeism is associated with the circumstances around the absence, as well as with the timeliness of communication about the absence.

“No-show is the start of a path leading to termination...it causes substantial issues for scheduling, and for the individual from a North Baffin community, it means they lose a full week.” (Key Person\_3)

“If you have a legitimate reason...a lot of times I’m very lenient with that. If you are sick and you get a doctor’s note – fine. But there’s no excuse that my skidoo ran out of gas and I can’t get to the airport. The communities are not that big – there’s got to be someone who can take you – one of your friends, someone. So If you ran out of gas – that means you left it to the last minute to get to the airport – that’s bad planning. Not an excuse. I’m very lenient when you’re on site and there’s problems, but not making it in to work on the flight – no one gets treated any different.” (Key Person\_5)

An understanding on the part of managers / supervisors of the legitimate reasons someone may have for not making a flight to start a scheduled rotation does not mean consequence is reduced. This was expressed well by one of the contractors:

“One of the issues we have, ...people have to understand, we still have to run an operation. Whereas the culture here is, ‘oh the caribou are running over there, I have to go and hunt.’ We try to get these folks to understand we still have to run the operation. So every time that you phone in when you’re supposed to come in and you say you can’t come in ...that presents a challenge for us and we’ve got to find someone to come in and take your place. The ones that repeatedly do this, we’ll sort of put them on the second shelf and use them as temporary hires.” (Key Person\_6)

This becomes an issue of boundaries.<sup>9</sup> The way people allocate their time is a personal decision. It is their personal decision and can be understood or not understood by an employer, respected

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<sup>8</sup> Interview with Key Person\_3

<sup>9</sup> The area of “boundaries” in family and work relationships is one of the priority topics that was covered during the ten-day Work Ready Program delivered in the five North Baffin LSA Communities during 2012 - 2013.



or not respected by an employer. But regardless, the employer makes decisions based on what is needed to make the Project succeed.

### 3.2.2 Time Management and Living With Rules

A major difference between the life experience of many northern residents coming to live and work at the Mary River Project is the tremendous role that “time” plays. This encompasses the start of shifts with the daily toolbox meetings and continues through expectations that work tasks and break times will be accomplished within established time durations.

“One of the things many struggle with is beginning to work in a very structured work environment, with very set start and finish times and a fairly rigorous schedule – 2 on 2-off; 14 days straight. That seems to be where many struggle the most.” (Key Person\_1)

Those with previous industrial work experience may already have embraced time management attitudes and skills. For example, it is pointed out that some employees who had worked at the former Nanisivik mine “have an understanding of the time budgeting thing.” (Key Person\_1)

“Those employees ...who had Nanisivik experience were able to come into the team no problem...good work ethic. ...And then we also hire people with limited experience, to learn mining and to learn on the truck. Those are the ones we have some challenge with.” (Key Person\_5)

Time management is a skill that is learned:

“Starts with committing to make the plane every two weeks ...and making it to work on time in the morning. Those who have worked here for any length of time have largely overcome the challenge of getting to their shift on time. To a large extent at least. There is still the issue of making it onto the plane for the rotation — you still see a lot of that.” (Key Person\_1)

This perception of time management as a skill that is learned through intentional guidance and discipline on the part of supervisors was echoed by another manager/supervisor:

“It’s a constant issue here. ...Inuit culture, they don’t go by time lines. Don’t understand we have a job to do, need to be on time and get our tasks done in a timely fashion so everything runs and the operation runs smoothly. Basically, it takes quite a bit of training... almost everyone who comes here, the first couple times they’ll come to work 15 minutes late, or they’ll take a break here, or why can’t I be out smoking or chatting with my friends. ...That’s a big part of the training, get people to understand timelines and getting things done in a proper fashion. ‘You need to get to work on time. You can’t just come in to work when you feel like it. We’re depending on you and your co-workers are depending on you and you need to get the job done.’” (Key Person\_6)

This respondent perceived a connection between low expectations of time management, structure, and performance in community settings and the absence of time management skills that people start work with:

“It’s just a skill set that hasn’t been acquired. It’s more of, ‘just let the kids do what they want, train them when you can, keep everybody happy, and there’s no real structure or guidelines given. And it’s the same in the schools too, they don’t force homework on anybody and things like that. And then when people come to work here ..and we’re trying to put a structure in place...it takes a while to teach them. And eventually they’ll come

around or they'll decide they don't want to do that and so... Time management is a big deal." (Key Person\_6)

A major issue of time management relates to getting into a routine that includes adequate sleep to support a 12-hour work shift. As one person described it:

"The first few weeks I'd say, it takes a new employee a while to get used to timing. For them to get up in the morning, its 'I'm tired, tired.' 'Well I know you're tired – its because you do not go to bed!' You walk through in the night and some are still going with the same lifestyle as back home ...but they have to work in the morning. So that is something they have to learn." (Key Person\_9)

"For the newer employees, new to mining, its been a challenge to get people to come in and understand this is a 6-to-6 job, every day. ...its not something that you can just not show up for." (Key Person\_5)

Even when a person is attempting to get to bed at a good time, sleep can be fitful. One person spoke of how s/he'd wake up in the middle of sleep and have a hard time getting back to sleep.

"A problem here for me...sleeping. Some days I'll sleep well and sometimes I don't – sometimes I wake up around 12:00 or 1:00 and can't get to sleep until 3:00 and then have to get up at 5:00...." (Mary River Project Employee)

Another employee spoke about the shift from life at home in the community and the very different demands on time that take place at Mary River:

"The first two days after home are really hard. 'Cause at home you are used to sleeping in and stuff... When you are here you need to get up early and stuff – twelve hours. First two days now for myself. First rotation was hard – I wanted to quit after my first week!" (Mary River Project Employee\_1)

#### *Operating procedures and rules*

Associated with strict time management at site is the focus on rules and operating procedures. A perception of the camp as a place with lots of rules and sort of like a prison was noted by one community resident with a relative working at site:

"Nanisivik and Mary River are very different projects. Nanisivik had much fewer rules. At Mary River there are so many rules. A lot of people are not happy because there are so many rules. There are some people who feel they are in prison when they are at Mary River. Since the accident there are even more rules now than before. ...[I'm] worried its going to be too stressful for the employees over there." (Community Resident\_9)

This notion of the camp as a highly structured environment was also noted by a manager / supervisor who made the observation that a remote work site is not for everyone:

"Its not everybody who is cut for it. Like for myself – I have friends down south and most of them cannot do my job. Its secluded. You are living here – its almost like a jail, like a jail environment. Cause you're stuck here. There's not much activity...so you're focused on your job. So its not everybody who can do that – for southerners too, its not everybody who can do it." (Key Person\_8)

### 3.2.3 Health and healthy lifestyle

Working 12 hours per day, 14 days straight is a challenge for anyone. Good health and maintenance of a healthy lifestyle that includes sleep and a good diet is an important characteristic of success. The challenge faced by some northern residents in this area was noted by one manager / supervisor who highlighted smoking, diet, sleep and underlying medical issues:

“But what I see too is stamina... he will be good for a couple days and then, oh, he's sick... he can not keep it up. ...Health issues, health! The smoking, the smoking – its hurting a lot of the employees. ...If you don't take care of yourself you will not have the proper stamina... If you don't eat the proper food or have the proper sleep. That's one thing I notice too, some get very little sleep during sleep time. ...And then during the day they're groggy. ...and you're telling them you need to sleep 8 hours a night, 6 hours a night – and some of them its like 2 or 3... and there's a lot of medical issues too.” (Key Person\_8)

Underlying addictions can also be a factor affecting employment success:

“My opinion is if the guy comes up and he needs to detox, then he's not ready to work and that's a problem for me. You've got to come ready to work. That's the expectation across the board – no difference between a northerner and a southerner. If you're not ready to work then you need to go home. ...and if there is a problem—alcoholism—then there are programs for that. I know that they offer stuff like that. But I draw the line at not coming ready for work.” (Key Person\_5)

### 3.2.4 Expectations and attitude

Coming to work with a set of expectations that align with the expectations of the workplace is an important factor supporting employment success. For some individuals hired from LSA communities, expectations may have developed in very different settings than those found in the private sector environment of a producing mine. During an interview with a community resident familiar with Mary River, an observation was made that some individuals come to work with expectations very different from those of the Mary River environment—and that these create a barrier to comprehending their supervisors' communication:

“Here when you work for hamlet and you're 10 or 15 minutes late, you can get away with that. But at the worksite you get recorded and the third time you're gone. And here, with your family, there are reasons... taking kids to school or whatever – but at the worksite they are very strict. Some of the workers find that difficult to adjust to... they are used to being kind of laid back at work ...they want to do things on their own way, their own time. But when they are working for someone, their supervisors, they see that like somebody's trying to attack them... The workers here need to understand there are rules you have to follow. Everywhere you work, anywhere in Canada, or anywhere in the worksite there are rules you have to follow. And its not yours to change them. Even if you don't like them, you still have to follow them.” (Community Resident\_10)

An important part of managing expectations is to ensure that employees are fully aware of the expectations placed on them. This is typically a job carried out by the employee's supervisor. Some supervisors, for their part, may bring their own set of expectations that have not been influenced by changing conditions introduced by modern-day “social license to operate”

considerations. A need to train both southern and northern supervisors in how to clearly and consistently set out expectations was noted during one conversation with a manager/supervisor:

“So training the supervisors is a big part of what we do. You have to get the work done but you also have to remember that the way you go about it is completely different than from down south. You have to explain things fully and completely because its all new, many have never been in the workforce before so you can’t assume things. They don’t know what the expectations are. ...So there is training needed on how to set expectations.” (Key Person\_6)

This recognition that southern and northern employees may come to the job with different experiences, knowledge, and expectations was also noted by another manager / supervisor:

“Human nature being what it is, we always think that the person beside us knows what we do. You’re thinking, ‘I don’t know a heck of a lot, so you must know what I know.’ You start taking things for granted and we can’t do that.” (Key Person\_7)

In this context of divergent backgrounds and expectations an important element of success may be flexibility and a willingness to “park” expectations while the new norms and beliefs systems are identified and understood. However, some discourse at the community level may serve to hype up, rather than tone down expectation:

“On the one hand I hear the mine doing this that and the other thing... and on the other hand I hear people saying, ‘Well, why doesn’t the mine do that for us?’ Well why should they? They are an employer... Yet the expectations ...There is a sense of entitlement.” (Community Resident)

### 3.3 WORKPLACE AND PROJECT CULTURE

#### 3.3.1 What culture is emerging at Mary River?

##### *Strong sense of ‘team’*

One recently hired employee described how the work environment seemed to focus on working as a team and looking out for each other:

“It seems like they’re working together – we always talk, like safety hazards, safety meeting. More than 10 people all together.” (Mary River Project Employee\_7)

Others also spoke about how they felt their co-workers were helpful and open to working to support their success on the job:

“Its very good – good experience, good people, good to hang out with – they are open and stuff. Its really good here. Yeah, its really good. Its my first big job.” (Mary River Project Employee\_1)

Later, when asked about the best parts of the job, this employee identified his team and how they all helped each other out by sharing experience:

“The people and the experience with the heavy equipment. They are very good people. They are open – if you are having trouble at home or here... you can talk to them, they help you out. The supervisors, even the people at the office there. Have a good boss and stuff.” (Mary River Project Employee\_1)

Teamwork emerges out of a culture of respect, high expectation, and good communication. This was expressed by one manager/supervisor who described how an attitude of respect can help to trouble-shoot interactions leading to higher productivity:

“There’s not a man or a woman on this site that doesn’t want to do their job. They’re all here to do a good job. I’ll hear an operator, say, make a comment like, “those stupid truck drivers.” Well, I’ll say to that person, ‘The truck drivers will try to do their best to make you happy.’ So I explain to them that you need to make it clear what you need from them.” (Key Person\_L)

A strong sense of dedication to the team and commitment to crew members was expressed by one manager / supervisor:

“I got a 10% cut ... so if I’m here its because I want to be here. I give at least 100% ...150% because I’m passionate about my job. Right now the company needs me. And people depend on me.... Plus, my coworkers, I count them as my family and I don’t want to let them down. So, family at home and family here too. So that’s the attitude you should have when you come into work – you are coming to work with you’re family, not just for yourself.” (Key Person\_8)

#### *Like a family*

The remote, fly-in/fly-out nature of Mary River means that people live closely together both during their working hours as well as during the rest of the time. A number of people spoke about how their crew members become like family.

“Its different here. We’re more of a family than at Nanisivik. Like here, we get along with everybody. Like brothers and sisters. Most of the guys I work with from down south they say that too – they used to work at other mines too – they say this is a better... better...” (Mary River Project Employee\_5)

“And my co-worker – he’s like my brother. Feels like he’s my brother. I’ve been with him and talk to him a lot. Two ‘brothers’ here. I’m pretty close to them. The one I was eating with earlier... and another one, he’s our crew too. We are doing a good team work together. He’s doing this and I’m doing that...pretty good team work. They’ve been asking me to go to their town and meet them.” (Mary River Project Employee\_Y)

“We’re like family – it feels like family here. Same as at the Northern Store where we see our family members. Here its like the same. The people who come to pick up the stuff, its usually the same people who pick up parts. They are from different departments. Mostly from south.” (Mary River Project Employee\_11)

The sense of family within the work setting is helpful in terms of supporting one another through challenging times:

“So as soon as they come into the toolbox meeting I know when someone is feeling down – right off the bat. I don’t pressure them on it. I leave them be...but I’ll take them aside later on in the day and ask what’s going on. ...And its usually something to do with their girlfriend or their wife or their kids....and I just talk them out of it. The more you talk the better you feel. And we get through it...I give them time to go call their families or whatever. ...We all become like family. You’re as much with us as you are with your family. We are tight knit.” (Key Person\_13)

Interestingly, when one individual was asked if s/he had any final comments. The response was one that expressed concern for southern crew members, demonstrating a family-like focus on each others' well-being:

"The only thing I don't like, is when we're on nights, when we're leaving, we don't sleep, eh? When we're going out – that's the only problem ...you come off shift at 6 am and then wait around and fly out. For us here in North Baffin its not so bad... but its worse for the southerners – it's a long flight for them..." (Mary River Project Employee\_5)

#### *Supporting development of norms that promote respect in relationships*

Building a culture of respect is described as taking on-going effort that extends to relationships between men and women at site. One person noted how this can sometimes take active intervention:

"I do know there are some guys here, some of the southerners, who are like, 'Oohh ahh ahh, there are easy women here.' If I hear that I'm like, 'Oh no no, hey guys ...we're here to work, they're here to work. Its no different. Treat them like you'd treat your own girlfriend. Don't talk like they're below you.' That pisses me off. I don't like hearing that... And there's other guys that say the same thing." (Key Person\_W)

#### *Culturally diverse workplace*

Mary River has brought people together from diverse backgrounds across Canada. This multicultural dimension was noted by a few people:

"I'm getting along with all my co-workers – they keep encouraging me to come back, keep coming back. They are from all over. Another guy from Iqaluit and from Newfoundland to Manitoba." (Mary River Project Employee\_J)

"We say we are multicultural – actually we are a unique culture. Each one of us has our own culture and we're not asking anyone to give up their culture. We're asking everyone to help build our own culture here. It's up to us on the ground floor of this mine to build that culture for our kids and our grandkids." (Key Person\_17)

A similar perspective was offered by a manager / supervisor:

"I think it works well. I think it is multicultural and everyone gets along well. But to be honest, there's always going to be a bad apple." (Key Person\_5)

### **3.3.2 Challenges**

#### *Communication styles across cultures*

Employees at Mary River come from a wide range of workplace cultures, each with their own traditions of communication and on-the-job interactions. In their context, these may all be perceived as appropriate, not crossing any line. However, when introduced to the new setting of the Project, some of these styles may be perceived quite differently. This was expressed well by one manager/supervisor:

"So that's a learning curve as well, right, ...to deal with cross-cultural aspects. You have to learn to be very respectful of it. Down south you can be very demanding if, say, you are working as a chef, 'do this right now or you're out the door.' Here its more of a give-and-take thing. You have to learn to treat people with respect. You can't yell at people,

you can't demand things from people. You have to show them, you have to teach them. You have to talk in a calm voice. You can't yell – that's a definite no-no! So staff that we've had from down south have always come out of high pressure jobs like working in hotels or whatever and its one of the things I have to train them about. You have to be very careful about how you deal with people, about their feelings. Know that when you yell at someone – it will get around and pretty soon no one will be doing anything for you.” (Key Person\_X)

Aggressive communication was also noted as a challenge by another manager/supervisor:

“I have had to deal with one supervisor from the south because s/he was aggressive in nature. That aggression can destroy the team. I've had to work with him/her quite a bit. S/he's come a long way.” (Key Person\_10)

Some communication approaches also do not translate well across cultures. One community resident pointed out how the use of sarcasm or irony that may be appropriate amongst southerners may not work with Inuit:

“And you can have things that are misinterpreted – like sarcasm. Sarcasm does not interpret well at all.” (Community Resident\_1)

Supervisors play a key role in employee development, productivity, and retention. Effective communication skills that are appropriate in the multicultural context of Mary River are therefore critically important amongst this group. In this regard, some comment was provided about the value of further supervisor training:

“One of the big areas for training is supervisor training. Some of the supervisors don't have much experience in this [Nunavut] context. You can't get everything done just by yelling at people! Need more “tools” in the supervisor's toolbox.” (Key Person\_16)

“Some of our supervisors are not in tune. What it is is production. I understand that. But we have the opportunity to make this the best, safest place to work in North America. I believe its everybody who works here's responsibility to make this work for our future. Our families, their families... the impact this has on people..., its incredible.” (Key Person\_17)

An important communication challenge involves the building of a culture of mutual respect and trust where all employees feel secure in their role to raise issues in constructive ways:

“The one thing I find frustrating...I like to ask people how its going...and because they consider me a boss they don't want to tell me...so, “its fine”... I know everything isn't “fine” ...I may even know they've just had a confrontation with their supervisor. And so I don't maybe hear what I need to hear. That's the one thing I find...some are not maybe so forthright. Some have learned, but its taken a long time for them to become comfortable talking to me. An employee needs to understand he's not going to get disciplined for standing up to their supervisor – in a respectful way.” (Key Person\_10)

This manager/supervisor spoke about how open communication takes place in a cohesive team environment...and that it takes time to build this sort of a team. The goal is a place where people know and respect each other well enough to be able to both receive and to provide criticism:

“Participation in tail gate meetings [is] difficult for many – need to be able to respect yourself, confidence in yourself...Supervisor needs to nurture this – if you do a good job

I'm going to pat you on the back and tell you it's a good job. If you screw up I'm going to tell you you've screwed up – southern, Inuit, doesn't matter. And I seen a big difference in the ones who've been with us any length of time in developing that self-confidence. At beginning it was almost like they were uncomfortable talking with me...but I make sure I talk to everyone in the room, don't just key into a few people... and now more and more opening up.” (Key Person\_10)

Differences in expectation around casual communication can lead to interpretations that are entirely unintended and yet profound for the recipient. An example was provided by one manager / supervisor:

“I had a local guy come to me one morning and he said to me, “I want to go home.” And I asked him, ‘Why?’ And he just shook his head and said, ‘I hate it here – I’ll say ‘hi’ to somebody and he’s not saying ‘hi’ back to me...’ And I said to him, ‘I understand. I can relate to that.’ ‘Cause I come from a small community and I know everybody where I’m from. I walk down the street and everybody knows me and I know everybody. But when I go to Montreal or to Toronto... nobody says, ‘Hi.’ ‘So do you know why they don’t say hi? Its because they’re from those big communities and they don’t say ‘hi.’ If they say hi to everybody – there’s 10,000 people in a day!’ So for him, if I didn’t explain that to him he’d have quit – and he’s still here today and he’s one of our good employees.” (Key Person\_8)

#### *Perceptions of prejudice, discrimination, racism*

Mary River operates in a context where the potential for prejudice, discrimination and racism is recognised. Perceptions of prejudice, discrimination, and racism can also be damaging. Experiences arising from these sentiments are expressed both by residents of the LSA communities as well as by some from the south.

“Inuit are not believed as much as the southern workers – but when we try talking about those – the workers – they say, ‘No, we never said that, we never did that.’ I’ve heard it happen that this particular person was berated by someone — but they were doing the same job. They do it when no supervisor, no boss can hear them.” (Community Resident\_4)

“There’s a dark side to this too – discrimination, a kind of racial thing going on. And from what I’m hearing from the workers, when they go to Mary River, they immediately sense that they are second class. They are not treated like they are part of the group – they’re second class – that’s how they feel anyway. ‘Cause most of them are from down south... so they’re kind of already a minority there. ...Maybe its not just Inuit, maybe the Qallunat are feeling that way too.” (Community Resident\_10)

“One time s/he mentioned one supervisor that treats Inuit differently.” (Spouse\_3)

Sometimes individuals have been accused of racism in a state of anger and in a manner that can be hurtful to the recipient. One individual spoke about the hurt this can cause:

“For myself, I’m very open minded. It hurts me to hear one of the locals call me a racist to my face. ‘Cause I consider myself one of the least [racist] ones. It hurts my feeling. It really does and it bothers me. I’ve trained people in the past and I’ve put a lot of effort into it. And when I hear that word...against me – and it’s always when somebody would



get mad. ...I understand ...but its still not acceptable. ...Honestly, it bothers me a lot – because I am SO far from being that.” (Key Person\_Y)

A second perspective on how the scenario can be amplified was provided by another manager / supervisor. In this case, the situation was less personal and the point made related to how team unity can be adversely affected:

“One guy told me I’d be speaking Inuktitut in two years or I’d lose my job. ... This can kill the team unity. Its very rare but it is there and whenever somebody with that sense of entitlement comes onto the team I need to find some way to get him to realize he’s part of the team just like everybody else. I’m glad these have that pride, that this is their land and they want to preserve their heritage...but it can destroy team unity when someone feels they are better than everyone else.” (Key Person\_10)

Another manager / supervisor made the connection between anger and these sorts of comments. This person also noted that these perspectives are not the norm amongst Inuit employees and that it is typically these who take the initiative to speak up against it:

“I have had angry people in the past. But the people who are the ones that complain about it are the [individual’s] fellow Inuit... I’ve had people, [other Inuit employees] come to my office to tell me that, ‘I don’t share those views and other people don’t share those views.’ ...but it’s the toughest part of the job, to deal with those issues.” (Key Person\_5)

To one community resident, sentiments of racism and prejudice expressed by some LSA residents are based on past experience and varies amongst individuals and from community to community:

“A lot of it depends on the community they are from as well. In [our community] there is far less racism than some other communities against Qallunat. But having said that, its still here... or you can have Qallunat who are behind-the-scenes racist.” (Community Resident\_1)

Another person spoke about the diversity of people who come together at Mary River, not only from the south but also from communities across North Baffin. A consequence is that “things happen” that can be hard for people to tolerate:

“There’s just so many people over there... so many different people over there. Even people from Arctic Bay, and people from Pond Inlet. Even though we are all from the same arctic, we are different people. I’ve had ...I know pretty much everyone in town, the bad habits they have, or good work ethic... some of those with small families and who want to get ahead. Even them, ...a couple of this younger crowd almost quit. ...[But] there’s no jobs in town. ...And people know this so they stick with their job. And its two weeks and then two weeks off. ...Like [an employee] he doesn’t talk about it but something happened there...he’s not going to complain. ...So, what did he have to face when he was over there?” (Spouse\_4)

While some may manage to ‘stick it out’ when faced with behaviours that are—or are perceived to be—aggressive, bullying, prejudiced, others may not. One employee referred to a situation where many previous employees had resigned over some these sorts of concerns:

“...People who were in that job were quitting, quitting, quitting... maybe because of someone in that team. But I’m ok with it. But (a co-worker) really helped me with that job. The issues for those who were quitting, it might have been [the boss]. Some people are

different. I could deal with people calling me names or all that stuff... but some people can't deal with it. Some of them are really sensitive on that. I would take it...I wouldn't say anything to my supervisors and co-workers. But if I had enough of it, I would just tell them [the person]. [Interviewer: Do you find the mine camp is rougher in this sense than other places you've worked?]" "I find it almost the same...I've always been bullied or something growing up. Its almost the same – some people are friendly, some people are not so good. ...I would talk to one of my good friends here, or [the Elder] and [a manager / supervisor]." (Mary River Project Employee\_P)

#### *Addressing prejudice, building respect*

A suggestion was offered by a community resident that there should be an avenue for employees who feel they have been put down or subjected to prejudice to report these sort of incidents.

"But there needs to be a good communication system. Like a liaison officer – who could welcome people... or a discrimination officer – someone who can be trusted. If you feel that your co-worker is verbally abusing you for instance – who do you talk to? Are you going to tell your boss? No.... So there should be a process...When you are being verbally attacked like that ...and you feel worthless, you feel you want revenge... rather than work together with them." (Community Resident\_10)

To some degree, the Elder-On-Site seems to be available to play this role (see Section 3.6, below).

The possibility that some feelings of prejudice might be allayed through better understanding of the proper role of supervisors is raised by a comment made by one manager / supervisor. This person suggested there is perceived to be a small group "who have hang-ups against southerners." From this perspective, its felt these folks perceive prejudice in instances where the supervisor is simply doing his or her job:

"We explain the supervisor's job—that they are responsible for their crews, legally responsibly, and have to follow up, for example, if someone goes off to their room to sleep..." (Key Person\_4)

### 3.3.3 Factors supporting development of a supportive workplace culture

#### *Takes time to build a culture of respect*

Some change in the climate around racial profiling and prejudice was perceived by one supervisor who had been at the project for many years:

"There was a lot of the racial thing going on in the early stages a couple years ago when the new owner first took over – 'cause we had a lot of new southerners coming up and they had their preconceptions..." (Key Person\_13)

This perception that things are changing seems to be supported by comments made by a community resident:

"I'm hearing less about discrimination now, more complaints about employees coming up from the south and getting work on equipment right away while they are still waiting to get trained up and signed off." (Community Resident\_3)

When asked what leaders need to do to gain confidence that their crew members are all working hard for the project, this person spoke about mutual respect:

“You gain confidence by being respected. There are other [leaders] and you watch them, how they talk to Inuit crew, and they’re belittling them or putting them down...so those employees hold back and don’t go to their full potential.” (Key Person\_13)

*Takes intentional effort*

Recognition was expressed that workplace culture is something that is intentionally created. It doesn’t just happen. As one person put it:

“We’re on the ground floor and we have the ability to set the stage. To create a welcoming culture. To have a company as new as this ...it doesn’t take long to poison it. You’ve got to be on top of it. If you see someone who looks like he needs help, be that person, go up to him and see how you can help out. ‘Hey bud, can I give you a hand?’” (Key Person\_L)

This intentionality was noted by another manager / supervisor who recalled the cultural orientation that was part of the induction process:

“When I first started here the orientation was quite awesome to present the culture that was up here. I found that they spent a lot of time to present to us the culture... it was awesome ...and the one piece that I stands out off the top of my head was the communication, the assumption...”ask questions” they were saying... “stop” ...ask question... This I still remember off the top of my head from two years ago. I don’t know if it is still being done the same now...” (Key Person\_8)

Another suggestion, intended to promote cohesion and respect, was to provide name badges to help people identify others by name:

“We don’t have any name tags here. I’ll say to one of the Inuit guys, “What’s that fellow’s name – he’s from your community?” And they won’t know... So if we had some kind of a design – a badge with a name on it. It just takes a glance and everybody soon gets to know everyone’s name. Its building that culture.” (Key Person\_L)

*Substantial Inuit component*

Inuit make up roughly 20% of the overall Project workforce. The result is described by one manager/supervisor as being an important contributor to building a culture that is welcoming for other northern residents:

“Inuit have a pretty good support group here – there are many Inuit employed so they are not stepping outside their comfort zone too badly.” (Key Person\_1)

This was reflected in a comment made by an Inuit employee as well:

“I have quite a few friends here from Pond Inlet and other towns like Arctic Bay and Hall Beach... Some time to socialize... At the beginning everybody’s working...but after that its pretty good. Meal times are a time to socialize.” (Mary River Project Employee\_D)

One of the consequences of reaching a critical mass of residents from the LSA communities is that you get to a point where the social environment is compatible with the community. For example, having friends and relatives at site means that expectations and norms around social

interactions can be transferred from the community to the mine site. Friends and family at site also provide opportunities for support:

“My father-in-law works here so I talk to him too. I’ve got some family here so I talk to them.” (Mary River Project Employee\_6)

Another employee also talked about how his father had been working on the same rotation as he did. This was nice as he had never had a fly-in/fly-out job before. When they were both on day shift they’d be able to visit after work. His father has now taken on a new job at Mary River and this puts him on the opposite rotation.

#### *Dining hall and other social spaces*

Meal times are considered by many to be an opportunity to socialize...and is often raised as an indicator of how well or how poorly the workforce may be developing as an inclusive environment.

“In the old camp the dining area was made up of long tables – you’d sit wherever and that was conducive to mixing with different departments and different groups. Now the dining area has round tables and these seem to lead to little ‘silos’ where people tend to sit with their immediate co-workers. The northern folks tend to sit together.” (Key Person\_2]

“Dining room – I have a few different tables – other Port and Logistics, or Mine Ops sometimes, or Admin... Some sit at the same table ... or if you come off a shift with your crew you’ll sit together. Different from the big long tables down at old dining hall...” (Key Person\_G)

One manager / supervisor observed, though, that the dining hall seating doesn’t not really reflect the level of integration at camp:

“The only time I really see that segregation – different groups – is at meal times. Myself, if I sit down, the guys who work with me will sit down with me. Northern community crowd is the same – they sit at that table in that corner [at the front]... Really notice at meal times... but that’s the only time. Outside mealtime there really is lots of interaction... in recreation room, music room...” (Key Person\_12)

The potential for the country kitchen to bring people together was also noted:

“Anyone can use the country kitchen – e.g. to bake a cake... some Newfoundlanders have talked about making a jigs diner – they’d do that at the country kitchen.” (Key Person\_G)

This person also noted how opportunities for socialisation have changed between the old weather haven camp and the main camp where everyone has their own room:

“Moving from weather havens to up here – down there we had just one TV and everyone had to watch the same thing, whereas here everyone has their own TV so they just sort of go back to their own rooms... I do that too – go to my room and check e-mail etc... But I do go to the movie every Saturday, and I play Ping-Pong after diner ...so there are opportunities to be social.” (Key Person\_G)

#### *Off to a good start – making the first few days as welcoming as possible*

The first few shifts are often a challenge for people coming to Mary River:

“First week it was like, ‘I’m not going to survive this!’ But I got used to it. First week was hard.” (Mary River Project Employee\_5)

Part of this challenge relates to the physical demands of the job and the adaptation to early mornings or to night shifts. However moving into a new social environment as a newcomer can also be intimidating for many people.

Starting off on a solid footing can be facilitated by providing new comers with good support during their first few hours — Where do I go to eat? Where am I going to sleep? What am I supposed to do now? Who is my boss? Who can I talk to if I need information? Much of this can be found out during the orientation session...but there can be some time between arrival and the orientation.

When individuals arrive to site from Kitchener in the south a general announcement is made on the bus from the Mary River airport asking if there is anyone arriving for the first time. If so, instructions are provided to make their way to the training room located at such a such place at a particular time. This, apparently, is not done for new arrivals from North Baffin communities. Rather this initial orientation seems to be informally left to others arriving from the same community:

“Oh, they don’t do that on the local flights...let’s say if you got hired from [my community]... if you come in with us we’ll tell them they need to do that training...and we kind of give them an orientation of the place... the kitchen is here, the training room is here...” (Mary River Project Employee\_1)

However, this does not always happen and the lack of this information has, in the past at least, led to some initial confusion:

“The first day we got here, we were kind of late for the orientation – we didn’t know, didn’t know we had to do orientation. We just sort of wandered off. And our Superintendent came to us and said, ‘Aren’t you supposed to be doing orientation?’ And we didn’t know. You have to do that in order to work here! (laughing).” (Mary River Project Employee\_1)

Another individual described how the start was initially a bit rough:

“When I got here I was totally lost. Everybody was ignorant. Because I was new I didn’t know where to go, what to do. But when I see a friend from [another community] he showed me where to go and at that point it went pretty well. But when I got here at first, everybody was... they couldn’t look at me. It was unwelcoming for me.” (Mary River Project Employee\_8)

Now this person is stepping up to help other employees in the same boat he had been in:

“Two rotations ago there was a new guy from where I come from. And he was completely lost too. I asked him, ‘what are you going to today?’ and he had absolutely no clue and he didn’t know where to go. I didn’t what to be rude or ignorant like I got here at first, so I showed him where to go. And at that point it was going pretty well.” (Mary River Project Employee\_8)

### 3.3.4 Building a Labour Force Through Respect and High Expectation

Managers/supervisors describe a desire to engage Inuit from LSA communities in the full range of positions in the Project. Success in this objective is described as requiring a level of support to novice employees that will enable them to succeed in meeting the same high performance levels expected of all employees of the Project.

With this objective in mind, a challenge that many manager / supervisors speak about is how to accommodate the particular needs of a unique and developing labour force while maintaining high expectations.

In the context of disciplinary action leading to job termination the same rules are said to apply to all employees. Three years into the Project, employees from northern communities are said to fully understand the expectations. One manager/supervisor noted that in the recent climate of cut-backs and layoffs the rules are having to be equitably applied...suggesting that there has been some leeway in the past.<sup>10</sup>

“We tend to give...the first time is strictly verbal. The real disciplinary action starts after a few times. And that starts a process... [that may lead to termination].” (Key Person\_1)

“We’ve written people up for [missing a flight]. And we continue writing people up for not showing up, for sleeping in and whatnot. And people do make changes at the moment and do show up. But then it seems like they fall off the radar again and then you have to remind them. It’s the same ones generally...” (Key Person\_12)

Setting out predictable consequences for performance and behaviour supports empowerment. In one conversation, an example was provided where missed flights led to a demotion from regular employment to a more casual fill-in position:

“We had a couple young girls who we had to explain they’d be moved as temporary workers – they’re great when they are here but just too unreliable. They understood. They understand how much pressure we’re under. ...and there’s been a few who’ve moved from temporary pool to full-time work. They see over time that its better to be working and earning money. (Key Person\_6)

Balancing an understanding of circumstances and cultural values with a desire to maintain high expectations can be a struggle at times. One manager / supervisor described how the solution may lie in basing application of the standard on an understanding of individual contexts:

“Last year we struggled with an attendance issue. Coming to work. We had a couple guys who we knew were supposed to be coming to work and they didn’t and they didn’t bother to call. Rather than start a disciplinary thing, for myself I tried to understand the situation. This goes back to that thing that in some cases we’re dealing with the first generation of commerce-driven employment. There’s a level of understanding that’s needed, recognising culture... You know its tough on everybody whether you are from the northern communities or the southern communities.... We’ve got some judgement calls we can make. We’ve got some HR policies around missing flights and that. And whether you’re from North Baffin or downtown Toronto you’ve got to realise that there’s an impact to the people that are still here cause it puts pressure on everybody else. But the flexibility comes in terms of understanding. Its real important that we don’t do the broad brush – we realise that there are differences in cultures.” (Key Person\_7)

Stopping to understand why someone has missed the plane – and a week of work as a consequence – is helpful in building a respectful working relationship:

“You have to open up your mind and let’s understand what’s going on... there has to be an expectation and we’ve laid that forward. If you have made a commitment to the

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<sup>10</sup> Interview with Key Person\_4

company then we're looking for that commitment to be upheld. That's not being mean – that's just the way it is. We schedule you to be here...and we'll sit there and we'll talk and I want to understand 'cause there's a reason for, say, somebody to blow a week. Are there difficulties? We find some of the local guys are very open and some are very very private and we have to hear from the side a little bit that there are some serious family issues. And this is why its so very important to understand what's going on before you react...and that's what we try to do as a department." (Key Person\_7)

This tension between understanding circumstances and holding people to high expectations is best resolved when employees see the rules being applied fairly. This may entail approaches that are tailored to different situations, as suggested here:

"We do have to have standards and we do have to have expectations. Some of the guys from down south say there's two sets of rules. I don't believe there are two sets of rules. There are not two sets of applications. But we have to be realistic too. I have a new guy who came on from southern Ontario and I have a new guy from [a North Baffin community]. And they have two entirely different backgrounds. Are they capable of getting to the same point – absolutely...at the end of the day, yeah. But we have to nurture them differently." (Key Person\_7)

The way in which Mary River employers are attempting to implement high expectations on the job has been noticed by some in the LSA communities. One resident commented on the benefits this can have to the individual employees:

"The other thing too, when you are talking about holding the line on stuff is, this is the way things work in the business world and we don't really care if you are Inuk or if you are green...'This is the way things are.' And that also promotes independent thought and less of a victimization and that is very positive." (Community Resident\_1)

Building high expectation into all aspects of performance can be a shift from the previous experience of some employees. This is evident from the approach taken by a trainer who aims to support people in understanding the full range of material—not simply most of it:

"I had a fellow this morning come to me with 91% on a test and he says to me, '91% — Pretty good, eh?' And I say to him, '91! That's fantastic – but that's not what we want, is it? You have the capability of giving me a hundred.' So he went back and worked some more at it ...came back with 100 out of 100." (Mary River Trainer)

Part of holding people to a high expectation of performance is to build a climate where failure and mistakes are treated as normal events on the path toward excellence, rather than opportunities to criticise or demean an employee. This does not mean that errors go without consequence, rather that they are treated as normal events that may lead to fair and even-handed responses that are in everyone's best interest:

"I make accidents here and there ...like equipment accidents. I'm actually on my 'second strike,' so I'm going to be more and more and more aware of what I'm going to do now... I don't think you can work past that – once its on your record I think it stays there... What I would say is work hard, do good... if the boss says you're ready then seems you're ready." (Mary River Project Employee)

A manager/supervisor spoke about the purpose of written notes on an employee's record. S/he spoke about the value of this written note and how there is a limit to the time such a note is maintained on and employee's HR file:

"After a year its cleared. ...I hate writing the guys up and I have written them up and I always tell them, 'This isn't personal. This is to give you an understanding that this can not be tolerated. This is serious. I'm not treating you any differently... by this being in writing you can read it over and over again and you'll realize I'm not messing around. My expectation of you is the same as for anyone else.' And again, you get more respect from them. That's how I build my crew." (Key Person\_13)

Part of the culture that is being developed amongst some crews was described by this manager / supervisor as one where a high level of respect and understanding of an employee is maintained during times when mistakes are made. Rather than berating an employee for making a mistake, the incident becomes a time to learn and to improve performance:

"I treat the guy's equal to everybody. I build their skills so they're confident with themselves. When they're confident with themselves they want to do a better job. They want to do better for themselves. I've seen with the younger guys, they were very nervous. They didn't want to screw up and when they did screw up they thought they were done. They thought they were fired. But I'm like, 'No, no – everyone has incidents, everyone has accidents, everyone makes mistakes. ...But you've got to learn from it. ...you've got to be more careful, this is what you should be watching for.' And then they improve immensely... 'cause you're not screaming at them and yelling at them and telling them they messed up and 'what's wrong with you?' Rather, its like, ...'Well, ok, I don't like this happening, its more paper work for me and I don't like paper work.' ...You just got to hold back. Its, 'You made a mistake, what did you learn from this, what would you do differently?' And then they realize you respect them and they feel much better, they don't feel threatened. Then they're like, 'I screwed up, I know I screwed up, I won't do it again.' And I'll be, 'Let's figure out how you won't do that again.'" (Key Person\_13)

### 3.4 CAREER PROGRESSION

#### 3.4.1 Inuit Career Aspirations

Employees were asked about their current job and what ideas or plans they had about progressing into other positions. Former employees were asked whether they were hoping to get employed again at the Mary River Project. Perspectives on Inuit career progression were also obtained from managers / supervisors interviewed at the mine site.

##### *Trying to hold onto the job*

One employee described a determination to hold onto the job in the face of perceived challenges at work:

"I'm doing my best to keep it [the job]. I like my boss. But one supervisor is always saying 'do it, do it, do it.' He doesn't ask nicely." (Mary River Project Employee\_12)

The challenge of being away from families was noted by a manager / supervisor, who suggested that while some are still struggling with this, there has been progress over the years:



“We’ve come a long ways since the days when I started. The biggest challenges back then was keeping the Inuit here, working. Most of them weren’t accustomed to being away from their families back home. Some had experience at other projects but the younger guys had, and are still having, a difficult time being away from their families. Its come a long way to the point where they’re being more adjusted.” (Key Person\_13)

#### *Hoping to get back to Mary River*

Individuals who previously worked at Mary River express interest in finding their way back to employment at the Project. One individual who had lost his / her job at the Project spoke about a desire to get back to work at Mary River, and a perception that whatever it was that led to termination could perhaps be resolved:

“I was loving my job over there.” [Interviewer: What’s your plan now?] “I have no idea...sometimes I feel I should call there... It was a really fun job—lots and lots of activities. [Interviewer: Is there someone you can talk to?] ...if we have a problem with something we can talk to this guy, he’s the Inuit boss for Mary River project. He has come to each community. I would like to meet him. I used to meet [Baffinland HR]. If I can talk more, they would understand. My supervisor understood.” (Former Mary River Employee\_1)

Another former employee<sup>11</sup> spoke about wanting to train to become a heavy equipment operator—“but there’s no training program for that.” So right now s/he’s applying for labourer jobs but is “just not getting hired.”

One manager / supervisor described how it has taken time for some employees to settle into the fly-in/fly-out style of work. Acceptance that some effective employees may face challenges that affect job retention—and a willingness to provide second opportunities—has been an important part of developing the Inuit component of the Project workforce:

“We’re used to the turnover since we’ve been in this for so long. So we’ll bring someone new in and see how they work out. And the good ones who may have had a few problems at the start, we’ll try them again after they’ve had a bit of time off and see how it goes now. We’re willing for anyone...unless they break the absolute rules that Baffinland has – they have a thing called their ‘no-fly list’ – so if they break a Baffinland rule, like having alcohol or pot or theft... then we can’t bring them back. But all the other ones, like missed flights or late for work or first time they have a bit of an attitude — these are the people in the temporary pool — we’ll let them cool their heels for a bit at home and then let them try again. That’s basically our workforce here – quite a few are long term, but at least half have gone through that transition from working temporary to working full-time.” (Key Person)

#### *Job aspirations – “Happy where I am”*

Several employees expressed a level of comfort in the position they occupied. This was particularly the case amongst some of the equipment operators. Interestingly, some of these individuals specifically expressed a lack of interest in gaining promotion to supervisory roles:

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<sup>11</sup> Former Mary River Employee\_5

“I'm hoping this will be my retirement. I'm happy where I'm at. I can't say I'd want to be a supervisor ever...I'd like to stay a worker bee forever. That's just who I am. I'm happy where I'm at.” (Mary River Project Employee\_E)

“I hope to retire here... I'd rather operate than be a Supervisor. I love operating the equipment. Supervisors – they are too busy going here and there... [Interviewer: But the pay is better, right? Does that matter?] “No – I'd rather operate.” [Interviewer: “Do you see other guys who might become Supervisors?”] Yeah. There's a couple of guys here I used to work with at Nanisivik mine, but they say they'd rather be operators too.” (Mary River Project Employee\_5)

*Job aspirations – “Hoping to progress to other jobs”*

Others expressed interest in progressing on to other jobs at the Mary River Project. In some instances, these aspirations have not been expressed to the supervisor or anyone in human resources. One woman, for example, expressed an interest to become an operator:

[Interviewer: Are there other jobs you see yourself moving into at some point?] “Yeah... maybe... Kind of... I would like to become an equipment operator... I was interested in that too... I didn't mention it... We'll see about that... You have to ask certain people ...like the superintendent over there. They would train you in there. I have never driven anything.” (Mary River Project Employee\_4)

Some individuals expressed an understanding of some of the barriers to be overcome and the steps that would need to be taken in order to realise their aspirations:

“I wouldn't mind doing mechanics apprenticeship. That was my goal since I was a little kid. But I recently dropped out of Grade 10. Mechanics... You start off the apprenticeship with fuel and lube and after you do your two years you start your apprenticeship and start mechanics. I actually told my supervisor before. I don't know if he remembers. I told him I wouldn't mind getting my apprenticeship started. Would have to get some math.... [Interviewer: Could you do upgrading during your off rotation?] That could be difficult, 'cause the course could be six weeks, the course could be two months... Or even [I'd do] geological technician – 'cause I love rocks. Love looking at them. I actually found a few specks of gold once... I actually got certified prospector I did that course this year. When I was home. But I didn't get my license yet. [Interviewer: If academic upgrading was here during off-shift time?] “Yes, I wouldn't mind an hour or two to do that. If I could get a diploma I wouldn't mind that at all.” (Mary River Project Employee\_10)

“I want to be here for a long time – I like this job. Right now I'm Junior Warehouse Tech. The next job would be Senior Tech and after that Supervisor and after that Superintendent. [Interviewer: Do you see yourself following along that path?] Yep. [Interviewer: What sort of training do you need in order to follow along that path?] More computer skills. [Interviewer: Is this something you talk with your supervisor about?] Yeah we do... [How would you get the computer training?] Its on the job – our Supervisors teach us how to do it.” (Mary River Project Employee\_H)

A woman employed with one of the contractors suggested she'd be interested in geology:

[Interviewer: Are there other jobs you see yourself moving into at some point?] “Geology – walking on the tundra looking for rocks... I'd have to look into that – take some courses, research on-line.” (Mary River Project Employee\_B)

Some North Baffin residents who have acquired various certifications in unrelated fields find themselves in jobs that may not be their first preference. For example, an employee in an operator position described how s/he had taken an office administration program as well as heavy equipment training. Having landed a job as an equipment operator, this person expressed a willingness to try it out for a while...but also an interest in putting the office administration training to use:

“I'm just checking it out – there are quite a few jobs, but I'm just checking it out. Just started so I'll stick around here for now... But I was thinking before that I might want to work in the office. Cause I've done the office administration before in college...that was for at least two years and after that I had a certificate. I put it in my resume.” (Mary River Project Employee\_D)

Another individual involved in a job that could lead to a Red Seal trade designation had described an interest in becoming an operator. Part of this interest may be familiarity with the career path and an understanding of what equipment operators do on the part of his / her children.<sup>12</sup>

#### 3.4.2 Understanding of career paths

Residents from LSA communities, particularly North Baffin communities, come from local economies that are very small, with few local career options. This has led to rather limited experience and knowledge of the career paths that are typically associated with various categories of work. A possible absence of clearly set out career paths was suggested during a couple of interviews:

“People start as labourers but they may not see the “big picture” in terms of where the job can lead. We need a good game plan—something that gives an overview to people about career paths.” (Key Person\_16)

“I've had quite a number of young Inuit who've had no experience whatsoever in the workforce...so its discouraging for the younger ones if you don't mentor them [about career options]. ‘I'm just here as a labourer... you're putting me on the garbage, you're putting me on the shovel.’ No – I give them the broad sense of ‘these are the things you could be doing for a living.’” (Key Person\_13)

Another manager/supervisor commented on how the absence of clear career path understanding can lead to loss of motivation in the workplace:

“[An employee may ask] ‘How come I'm an Operator 3 and you're an Operator 1? I know five pieces of equipment. Why is this going on?’ And they'll come to me... A bunch came to me and said “we're not pleased...” and I ended up going in with the Elder and sitting down with them and explaining how the system works.. and why this guy's a number 1 Operator and you're a number 3, and showing them how the system is run and how it's put in place and how it's the same in every other mine. Just to let them understand.” (Key Person\_L)

While career paths for positions at the Mary River Project have not been formally set out, managers and supervisors within the individual departments may work with their employees to identify an employee's job objectives and implement on-the-job training to support progress.

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<sup>12</sup> Interview with Mary River Project Employee\_18.

[Interviewer: Have typical career paths leading to various jobs at site been set out?] “It’s being done from the bottom up... same effect, more hands on. They’d rather hear from their supervisor. (Key Person\_13)

This manager / supervisor went on to explain how when individuals progress from entry-level positions through to higher levels the general labour force gains understanding of the paths that can be taken toward a desired career:

“I have a guy who started as a labourer and now he’s one of the best operators we have. That helps to encourage the younger guys – ‘Listen, I was where you are, look at me today. With Baffinland training me and my supervisors training me and the older guys training me...look what I’m doing.’ And the other guys see that and say, ‘Wow, he’s driving a 988 now. He started at nothing.’ They start to get in their heads, it’s not so bad. It’s starting to be for some of them that it’s not so much a job now as just what they want to be doing.” (Key Person\_13)

Another manager / supervisor spoke about working with their employees to identify candidates for streaming toward higher-level positions that will require Red Seal / apprenticeship training:

“Number one is attitude – do they want to do it? Are they interested? And we have a few like that. And then we look at their skills sets – are they capable of completing the course. Schooling is part of the issue – a lot of people don’t finish school. So if you are going to sign up for college, you’re going to have to get those skills up.” (Key Person\_6)

Understanding the production culture and pressures associated with different jobs may take time to develop. One manager / supervisor commented on the constant pressure to perform that is associated, as one example, with operating the loader and keeping the haul trucks moving:

“He’s good for the short while but then when the pressure gets really hard then, oh, he kind of backs off. Then he calls in sick or asks not to be on it. ... He will come and talk with us and say, “please put me on this, put me on this...[the loader]” And you say, yes, I’ll help you out and you put him on that piece of equipment [the loader]. And after awhile you realize that, I’ve got all these trucks waiting here all the time [for a loader to load them up] – I’ve got to get going here... so then he’ll say, can you put me back on a truck. So I’ve seen this – sometimes they would like to be on this equipment, without fully understanding what it is to be in that position. We spend a lot of effort to bring them there, and they end up going back down...wanting to go back down.” (Key Person\_8)

### 3.4.3 Some typical career paths at Mary River

#### *Contractor employment to permanent work with Baffinland*

A typical employment progression so far for many Inuit residents of LSA communities has been to move from employment with one of the short-term contractors or from one of the longer-term contractors to an indeterminate position with Baffinland. For example, Baffinland has worked with a road construction contractor to transition Inuit from a summer employment project to year-round positions with Baffinland. The best available employees, who were not required by the contractor for other projects, were identified. The company has also drawn good employees from various

site service contractors. These are seen as entry positions. The sense is that if you can make the fly-in/fly-out work style work in these jobs, then you might progress on to Baffinland.<sup>13</sup>

“We have, for example, moved several women into driver positions from security.” (Key Person\_3)

“We do pick them up from other contractors – like the Nuna guys... we do ask Nuna ...we can't just take all their employees, but when their contracts are through its fine. Its good 'cause then we see they are working good.” (Key Person\_5)

#### *Progression within the “operator” designation*

There are some Inuit equipment operators hired from LSA communities who have past experience working in a production mine environment. However many more individuals are now being hired with little or no previous production experience. Building the Inuit workforce in this area is recognized to be something that will take time and patience:

“There's not a lot of experienced people out there who are not already working somewhere. So our goal now is to train new people to be good employees. You come in, you learn how to drive a truck for a couple of years, and then you move up. That's the way everybody learns.... If you are [hired as] a haul truck driver you can be trained ...as a haul truck driver. If you have no experience, that's where you start, on a haul truck. That's it, that's the way she goes. That's for anybody. You start on a haul truck. But we try to hire as many local people as we can.” (Key Person\_5)

The normal path that would lead a heavy equipment operator without previous mine experience from an entry-level Operator 3 position through to the advanced Operator 1 level was described by another manager / supervisor:

“Operator 3 is entry level for us – someone who can run one or two pieces of equipment. Operator 2 is three to five pieces of equipment, and Operator 1 is someone who can run more. So getting that third piece of equipment is important. Plus, though, we are not able to promote until we have openings.” [So that is spending time in the job...]. “If I'm a supervisor with a team of, say, 15 people, ideally I'd want each of those people to be able to run every single piece of equipment — that said, you want them to be able to run it well and safely – that takes time. ...so here, everyone starts with driving a haul truck. And then after a year or so, if they show a good aptitude — mechanically inclined, competent operator – showing that... then they'll get moved part-time onto something else. So they get moved over with a trainer for some classroom time and then simulator time and then the next logical step for a lot of people is on to a piece of support equipment – a road grader, a track dozer, a wheel dozer, or a smaller loader. And this starts with maybe one shift out of a rotation and then they'll progress maybe to where they are running it more often. ...

“[So maybe by year two, someone with those aptitudes would be moving in that direction...] Yeah, still Operator 3 but moving toward Operator 2—but there have to be job openings. Typically there is not a lot of turnover...but we are a growing mine. Recently we purchased some more equipment...so the more gear we buy the more operators we need and that opens up positions. Three trucks need three more drivers per

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<sup>13</sup> Based on interviews with Key Person\_3 and Key Person\_4.

crew [two crews per rotation and two rotations – four new positions per new truck] and when you have more trucks you need more support equipment... . And that opens up a position further up the ladder (higher positions). So we fill from the bottom up – we like to fill all positions from within – promote from the bottom up. In some cases — like drill operators —we need to reach outside...but generally we want to promote from within.” (Key Person\_1)

This progression was noted again during another interview:

“At Mary River everyone starts as haul truck – need training for that and it involves training in the field. You start as a coached operator in the “jump seat.” Then you drive but with close monitoring. Only after that you progress to full operator. Once you’ve got that under your belt, then you can start to move onto additional equipment.” (Key Person\_16)

Some LSA residents are perceived to come into the job with expectations that are not aligned with the typical career path as described above. This is felt sometimes to lead an employee down a path toward termination of the job:

“A lot of the guys go and get the heavy equipment school [training and certificate] and they get 20 hours or whatever on some piece of equipment and so they can operate it. But it doesn’t mean they can operate it in a production site. So expectations sometimes are hard to manage. We’ve had people come in and say, well, I’ve come in to be the truck trainer. What! We hired you to be a truck driver... The people who come in with the highest expectations are the ones who wash out the quickest. Generally the younger guys are coming in with less expectation.” (Key Person\_5)

A similar scenario was described by another manager/supervisor:

“Then the young guy would come along with no experience whatsoever. Very eager to learn. And he’s hired on to do a labour job and right away wants to become an operator. And he’s very eager. And you tell him, yes...you keep on working, you do your job, and down the road we will help you along... and some of them made it and some of them didn’t, ‘cause they couldn’t wait long enough to get to where they need to be. So again there’s issues there again. They came in and were told they were going to be labourers and potentially they could become operators, but they didn’t realize that its going to take experience, its going to take time, and it takes proper coaching, proper training to become efficient, safe... I saw that... the concept [of “paying your dues”] is foreign. ‘I was told I was going to drive a truck – I’m not doing this’....” (Key Person\_8)

### *Supervisor positions*

Managers / supervisors recognize the commitment to, and the benefits of, getting Inuit into supervisory and other higher-level positions.

“Baffinland wants to see Inuit employment as part of their IIBA agreement. [Long term contractors also] have a mandate to train and promote eventually to high skill and upper management. It will make things easier, smoother when you have someone who is Inuit training and talking to someone else who is Inuit.” (Key Person\_6)

Challenges to achievement of this objective are also raised. This was described by one manager / supervisor as a lack of willingness to take on jobs with higher responsibility, supervisory jobs.<sup>14</sup> Several older and more experienced Inuit employees are said to have declined the offer.

Typically, willingness to take on these positions is described to be found most frequently amongst younger employees:

“I'm sure the younger ones will accept the responsibilities and the pressures... the older people just want to go to work. They don't want all the pressures and all the paper work that comes with middle management. But the younger people will eventually want to do that.” (Key Person\_6)

“We have people here that I see that just started mining a year ago that are going to be supervisors in the next couple years. On the Inuit side. They are the younger guys. The Nanisivik-experienced guys – they might have been supervisors in the past – they are not interested in the responsibility. ‘I just want to sit in the dozer, work, you tell me what to do.’ Happy with doing their job. Nanisivik, community, maybe supervised in the past — don't want the responsibility, I'm happy doing what I'm doing. The younger guys, they want to learn more, they want to do more, they want to be leaders — that's what I've seen so far.” (Key Person\_5)

As previously mentioned (refer to Section 3.4.1, above), some Inuit residents of the LSA are considering advancement toward supervisory roles in their long-term thinking.

#### 3.4.4 Realistic expectations related to advancement

While some individuals may have expectations of advancement that may not align with their experience and the way things work, others seem to be firmly grounded. For example, one recently hired individual noted while s/he is starting to think about longer term plans the first step is to settle into the entry job that s/he has been hired into:

“I'm just getting started to think of that – I'm just getting used to this job here.” (Mary River Project Employee\_9)

Sometimes individuals may have career aspirations they'd like to pursue, but they don't advocate strongly to do these. One individual placed responsibility for achieving career aspirations on him / herself:

“Maybe operator, eh, I would try operator... [Interviewer: Do they know you are interested in operator?] I will joke with a co-worker... ‘Can I get on that machine?’ ...just joking... but no, [So, no one has sat down and talked with you about how your jobs might progress or what sorts of things you want to move on to?]. That would be something, yeah, ...someday, ... if I try harder... [You've been there for awhile, 2 years now?] Yeah... I guess I could try a bit harder...but I seem to be doing o.k. [You're easy going, not pushing it too hard saying you want to do this or that?] Yeah... I'm trying to do safety first. [Do you see yourself working there a long time?] ...I don't know... yeah, that would be nice, yes, its always nice to meet new people and do what you love to do. Learning stuff every day.” ( Mary River Project Employee)

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<sup>14</sup> Based on an interview with Key Person\_4.

Another young person set out an expectation that progression to supervisor is a possibility—but that it would be a long-term goal, something that would take many years moving up through the ranks:

“If this mine’s going to keep going I think I’m planning on retiring here. ...Stay in Mine Operations. Like to operate everything. Right now I have the D9, rubber-tire dozer, the two trucks... Operator 3. So I would like to move up ...maybe even Supervisor someday, but not now... maybe by when I’m in my 40s. Would like to learn that shovel too.” (Mary River Project Employee)

Another employee expressed some career goals as well, but noted a need to fill in some gaps in education before these could be pursued:

“I would like to learn new stuff. Move on to other jobs... I would like to work as an Office Admin person... Ummm, I was interested in GED [high school equivalency]... ‘Cause I didn’t graduate from high school, quit when I was in Grade 11. It was ME! ...I was sick for almost two weeks and didn’t want to come back to school after two weeks. ...I have been talking with someone. Could do this during time off...and I’ve been talking with [a Baffinland manager/supervisor] about this too. ... If I get my high school equivalent they are willing to help me apply for an Office Admin job or something...” (Mary River Project Employee\_4)

Some employees have clear objectives for how they want to progress in their positions and understand some of the steps and constraints that will influence their achievement of these objectives. This was expressed well by one LSA resident employed as an operator:

“When I first started I was on contract – not a permanent job. So I stayed with Mine Operations on the mountain hauling with the 777 and 740. After six months I was brought in as full-time and they put me on the Crusher Crew. I got Skid Steer signed off and am now waiting to get 988 Wheel Loader signed off. I’ve done the paper work and all...just waiting for Supervisor to sign me off on that. Its been 8 months... There is no other Skid Steer operator on our crew so they need me there... but they’ve been telling me that next time I will go to the training room again so I will be in training next time I come back – maybe... they say maybe. ...I’m patient but at the same time I want to drive it. I’ve been working real hard just to get the 988... yeah, I told my Supervisor that I’ll work hard for you just to get signed off on the 988. It will happen. [Then what’s next?] Then I’ll go for whatever’s available. I’ve got experience with the 740 (rock truck) and the 777 (haul trucks)...I’m not signed off on those yet. When I first started, at that time, there was no need to get signed off by the training guys – I got signed off by the Supervisor.” (Mary River Project Employee)

Some employees are less certain about their future goals for working at Mary River. One individual expressed his/her expectation that life is too unpredictable to bother making plans for the future:

[Interviewer: Could this be a long-term job for you?] “I don’t know.” [Interviewer: Are there some things that would help you decide to stay?] “I don’t make plans for the future – I just go how the day goes...if I make a plan today, tomorrow its going to be different.” (Mary River Project Employee\_8)



In some instances, individuals may have gained access to a job they were hoping for, only to find themselves on a career path that seems slower than hoped for. This may be partly the scenario playing out for one operator who finds much of the day is spent waiting around, not operating anything. This individual expressed a good understanding of the constraints facing his / her job progression. This did not fully offset a degree of discouragement however:

“If I get signed off [on a current vehicle], I think I'll be trained for another vehicle – I'm supposed to be trained for 988 Loader...and I applied for B-Train Driver. But I think that's not going to happen until someone [leaves] – unless I change my rotation to a different group. Because I'm the only person [on this crew] who drives 740 [haul truck]. There are other people but they are B-Train drivers. They need me in the 740 and 950 [wheel loader]. ...If they don't have choice, I'll just stick to my job. Maybe I'm too easy-going...maybe I don't complain.” (Mary River Project Employee\_x)

The source of this strong desire to move to other equipment was explained. In this particular crew, the role of the wheel loader operator was to wait at one of the points along the haul road where the B-Train ore trucks were sometimes getting stuck. While this was a particular problem earlier in the year, by late fall when the interview was carried out the need for assistance up the hills had declined and the individual found s/he was waiting much of the time:

“I'm ok, yes, but It takes a long time for waiting...if you are climbing up the hill [with a loaded ore truck or “B-Train”] then I'm not going to move unless you are spun out...and there's not many drivers spun out now... if you get stuck I'll go push you. But if you don't then I'll sit here until the end of the day. During the last two rotations I haven't moved for the rest of the shift. Its like having fatigue in the same area, don't move. Its kind of tiring. Sitting in a loader for 11 hours – its kind of tiring.” (Mary River Project Employee\_x)

This individual felt that promotion to a B-Train driver position was slow probably due to an influx of drivers hired from the south:

“I went for a drive-along with B-Train twice. Since two months ago. Like, if there's a guy from the south applied for B-Train Driver, he'll be drive-along for the rest of shift, and next rotation he'll already be driving. But for me, I've been trying to become a B-Train Driver since after I got hired. But its slow progress. Maybe they need me for loader operator or maybe they need me for 740... [Interviewer: Have they explained that to you?] Not really. They just put me where I'm going to be at for the day. [Interviewer: So those guys from the south – is it possible they were hired as drivers?] Maybe they've got better experience than me. And some of them are contractors...maybe that's why. [Interviewer: Triton?] Yes. [Interviewer: Are they going to replace those guys with BIM?] When they come in they are contractors, but since they start driving they get hired as BIM.” (Mary River Project Employee\_x)

The employee expressed concern that the job might not change and s/he had little interest in sitting around in a vehicle waiting for something to happen. The potential value of having a conversation with a manager or supervisor about the bigger picture, what the future path looks like was evident.

“If I don't say anything I'm going to be on the 950 Loader for ever, right? [Interviewer: So it would be nice if somebody sat you down and said that we're not going to leave you on the loader for ever, here's the next step...?] Yes. And if I'm not going to become a B-

Train driver, I'm just going to move on to get a job with Mine Ops. I can drive 740 and they use 740.” (Mary River Project Employee\_x)

A further factor was also playing into this scenario... This individual noted there was a high level of employee turnover amongst the contracted B-Train operators. As such it was difficult to get to know the team members since they were always changing:

“...and I kind of know those people [over at Mine Ops] more than these B-Train drivers. Cause we get new guys every two months or something like that. Other drivers – like once you get to know this guy, he's not on our crew anymore. But for Mine Ops they don't change – they've had the same guys since I got here.” (Mary River Project Employee\_x)

It should be noted that parts of this scenario were also recognised by others within the company to be less than optimal—a consequence of budget and short-term production pressures:

“Yeah – we're hiring drivers, contracted, and they come up here and some of them get almost no training. Maybe a couple of days with a coach – I think we have to spend more time with that.” (Key Person\_16)

### 3.5 TRAINING

#### 3.5.1 Training Before Employment at Mary River

A question that often comes up during discussions with community members and government officials relates to what can be done to prepare people for employment opportunities at a new mine. Some perspectives related to this topic were shared during the interviews. Many of these related to the value of pre-employment heavy equipment operator training. Additional comments related to the Work Ready Program that had been delivered in North Baffin LSA communities during 2012 and 2013, and to the more recent implementation of the Mining Matters program in high schools.

#### *Perspectives on the value of pre-employment heavy equipment operator training*

The value of heavy equipment operator training was raised during several conversations with managers/supervisors and employees. Generally, this sort of training was felt to be better done after someone is hired:

[Interviewer: Is there anything the communities can be doing to improve the ability of their residents to get these jobs? I've heard some say, “we've got to be doing heavy equipment training to get people ready for mine jobs” for example.] “No – because what happens a lot sometimes is the guys go and get all this heavy equipment training and think they can come up and run whatever they want, and that's not the case. And then all these people that came and said they had all these tickets and this is what I should be paid and I should be an Operator 1 and I'm experienced on all this equipment...but the thing is they're not. You've got to get a couple thousand hours on the haul truck then we'll move you to a couple thousand hours on a dozer. That's everybody, no matter what school you went to.” (Key Person\_5)

“That'd be fine and dandy... But from the way I think the best way to be trained is actually here on site. 'Cause you get to actually do the work. I've heard of people going down there and – they not doing actual work – they are getting trained and are in the field but

they aren't doing actual work. The best way to be trained is on site doing actual work right." (Mary River Project Employee\_13)

"The best is to come in... we really can't do any practical skills training off site...it has to be done here. I don't think there's any option." (Key Person\_16)

[Interviewer: Heavy equipment training...maybe this is valuable for hamlets? What's your attitude to that?] "I think it's a complete waste of money. I think you are far better off to come up here with zero and we start out from scratch. They come out of those schools and can do a marvellous pre-operation inspection...but no operating skills whatsoever... and its understandable. We can do it for way less money and have the person we want. ...If I were in charge of everything, I'd train more locals to drive those trucks, 'cause they turn out very well ...they're not spoiled and I have to say our training program is excellent. One of the trainers designed it. Both are really good trainers, and anyone who came through that program are pretty good. They didn't have the experience but they have the tools to do the job." (Key Person\_16)

A more nuanced view of the value of off-site operator training was provided during a conversation with another manager/supervisor:

"I'm not necessarily looking for the most experienced person but the person we can train the best. If he's got that kind of a course, then I know that he's got the basics. So what I'm looking for in the interview is a sense that he's willing to learn. I don't want him to tell me how much experience and that he's the best loader operator out there – because if he tells me that I know I'm going to have a guy that's going to be very hard training. But if he tells me that he's got the basics and that he's willing to learn then I know I've got something I can work with. Those courses I think are valuable – it shows they had the initiative to take the course." (Key Person\_C)

The potential for training to support expectations or attitudes that may not be compatible with an individual's success was well-illustrated by a comment made by a former employee:

"[I] Have HEO certificates from Morrisburg ... A two week course. Backhoe and bulldozer. Best student overall when I was training down there. I got signed off on equipment when I started at Mary River. I think I'm really competent on the Heavy Equipment Operator... I know the pieces. I see some guys who have no certificates – never sitting on HE before they got hired – and they get signed off." (Former Mary River Project Employee\_C)

Comments about the perceived value of a Class 3 license<sup>15</sup> also came up during an interview with a LSA resident employed as an operator at Mary River:

"My Class 3 license was done in the Hamlet. Our CEDO [community economic development officer] had organised that training. That was for two weeks... someone from Pangnirtung. Used hamlet equipment. I had gotten the Class 5 on my own using my sister-in-law's and my father-in-law's vehicles. [Interviewer: Did having the Class 3 license help you get the job?] Maybe...but they said it was not necessary. Before I started working here I was working for hamlet – water truck and sewage truck. Had some experience." (Mary River Project Employee\_Y)

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<sup>15</sup> Class 3 license permits operation of vehicles with 3 or more axles on roads accessible to the public. A Class 5 license permits driving of cars and small two-axle trucks on such roads.

One employee recently hired on as a driver for BIM spoke of his / her own experience working first as a labourer for a contractor and then getting picked up by Baffinland. S/he was doing labour work with the Ore Handling Department:

“I only have a Class 5 license – for pickup truck / vehicle... But they were happy to hire me regardless...they can train me up there. They came to me ...they came to me and said they liked the way I work. I was working with them as their labourer. It feels very good to be moving to BIM. [My old boss] is ok with me moving to BIM.” (Mary River Project Employee\_17)

However, not everyone holds the view that short-term heavy equipment training is not helpful. Some LSA residents expressed views that having an operators license was important in getting hired on by Baffinland. For example, one employee noted how he felt lucky that he had been able to work up to becoming an operator with no previous experience or licence. When asked what advice he'd give friends who were looking for work at Mary River:

“That's the thing though. Right now they're looking for people that have experience. I have buddies that would love to work here but they have no experience operating equipment or anything. I got lucky. Now this is a mining camp...they're mining now. When I started it was more of an exploration camp. I honestly don't see...if I were to start now, I don't know if I would get on... 'cause I was labourer. My buddies would love to come here but they don't operate anything...I suppose they could go down to Morrisburg or something...” (Mary River Project Employee\_E)

A similar perception that those with paper certificates were getting hired over those with no papers was expressed by a community member:

[Interviewer: I hear the hiring managers say that now that they are operating and have their crews together they prefer to hire people who are 'green' and can be trained on-the-job...] “But that's NOT WHAT WE'RE HEARING!” (Community Resident\_4)

This individual was firmly of the impression that only those who had previous experience and a certificate of some sort were getting hired.

Nonetheless, amongst managers / supervisors, the idea that it is preferable to train individuals with no previous training seems to be widely held. This was expressed during another interview:

“When they are trained properly, and given the proper opportunity they can be just as good as any other operator out there. And sometimes better because they're green, they don't have any bad habits... So, yes it's a cost to the company. Is the company going to benefit down the road – absolutely.” (Key Person\_17)

The rationale for this prevalent lack of interest in off-site operator training relates to a perception that the off-site programs relate to a different operating environment than found at site:

“We've had a few experienced operators who we've had to basically re-program...because they came in saying “I'm an experienced operator, I know what I'm doing” ...and that's great, you know how to run that equipment in a totally different environment. But in this environment its not just about running that equipment but its also about looking around and seeing the other equipment that you're working with. ...

...I've just hired someone today [from one of the contractors]. He doesn't have experience but I prefer that... A lot of time you'll get somebody from the communities who considers himself to be a pretty good loader operator— but he's got lots of bad habits

and you've got to unlearn that now. Whereas if you've got someone who doesn't have those bad habits its much easier to train them right the first time." (Key Person\_C)

"A lot of them would come on site with a background in work. They had driven a water truck or building a small house, or whatever...doing some work with some equipment. And they went down south and got some certification on some equipment and they came up here ...very proud of themselves and having the high expectation of themselves. Saying 'I'm capable and I have all that experience behind me...' and we start realizing that, yes, you ran a piece of equipment...but it was not in a production environment, not in a productive manner. You were not pushed to be producing...you were pretty much left on your own to do whatever you want. You were not following rules. ...mining rules. Not as safe as what you should be. Nobody ever told you different.... So then when you came here we have to change your ways...which is hard. And it was hurting feelings...I started to realize that we were hurting people's feelings without wanting to. But it was touchy. So we have a guy who's been running a loader for ten years in the community and suddenly he's told that what you're doing is not right...we need to train you better. ...And in the community he IS a great operator...but in the setting where we are here, with the production [demands] ...lets say his safety or his production is not there." (Key Person\_8)

So, in speaking with hiring managers, recruiters, and supervisors about the value of previous training and work experience a rather mixed message is presented. On the one hand, past experience seems to help an individual to gain access to Project employment. On the other hand, those who come with previous training and experience may have expectations that are not well aligned with those of their supervisors at site. This can lead to frustration and even perceptions of prejudice that can hinder success on the job.

#### *High school programs*

The value of raising awareness of the mining sector in the school system was noted by several residents. Baffinland has supported implementation of the PDAC Mining Matters program in North Baffin LSA high schools.

[Interviewer: Has there been any teaching about Mary River here in the school?] "Maybe in high school. Last year and this year, I think, there were some people here talking about mining and rocks. [Interviewer: Mining Matters?] Yes, yes, that's the one... I think they talked about Mary River too. I would be good for someone to talk to them...'this could be your future.'" (Community Resident\_4)

One community educator spoke of the importance of opportunities for youth.<sup>16</sup> This person noted there is a current lack of opportunity for high school graduates in the communities, and spoke of how local employers—mainly retail stores are not needing graduates. They simply need people who will show up for work and can be shown what they need to do on the job. In this context where a high school diploma is seen as "over-qualified," some graduates come to consider graduation from high school as "the be-all and end-all — they don't understand that high school is just the first step toward higher education."

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<sup>16</sup> Conversation with Community Resident\_7

As a long-term project, this educator felt the Mary River mine could have an impact on local education. “How about setting up a mining institute...a place for high school graduates to advance toward – where they could get a broad exposure to the mining sector and all its various areas of knowledge. It could be very small to start with. This idea could be at other projects or locations—but Mary River has the advantage of being long-term and of being a big project.”

### *Work Readiness*

The importance of building up the fundamental work skills within the labour force of LSA community has been recognised by Baffinland from the start of the Project. This importance was well-expressed by a manager / supervisor:

“What do I think is the most effective training here for Inuit? My personal opinion is its not learning the equipment. Its learning how to be a part of a workforce – responsibility of being part of a workforce. Showing up on time, showing up ready to work, working hard, learning communication, working as a team.” (Key Person\_5)

Later in the conversation this same individual expanded on these ideas:

“I don’t think learning how to drive a haul truck is the best skill that we teach people. I think teaching people that employment is important, work is important. The value of employment. The value of being an employee. ...and what’s expected of being an employee. And then you get the value of employment which is going to pay for your house, for your family and all things you want. Its learning the part of showing up, doing a good job, good communication. Learning teamwork. Learning expectation. ...Like in high school there was an expectation that you’ve got to do something after high school. So you got to go to work. A means to eat... So to me that’s the most important training that we give to anyone here. And you learn all those things here. Driving a haul truck – its just like driving a pickup truck. You do it a few times and you’re pretty good. Same with a loader. But these... these are more like life skills.” (Key Person\_5)

Several comments were made in reference to the Work Ready Program that was delivered in North Baffin LSA communities from November, 2012 through August 2013. Most of those who were aware of the program generally seemed to have positive opinions about its value.

“[My partner] took that work ready program. He loved it a lot... I still see him reading some of those materials.” (Spouse of Mary River Employee\_4)

“Some of what we talked about was, like, the up and downs... the emotional up and downs... Oh yes. ...yes, there were quite a few things [that were useful].” (Mary River Project Employee\_16)

“Best part of that [Work Ready Program] was about talking, speaking, not being shy.” (Mary River Project Employee\_17)

“Its not just the skills training, it the lifestyle training when you come here... all of a sudden you aren’t home every night and don’t see the usual things, so I think that’s a part of it. Just being here.” (Key Person\_16)

“The one thing I want to say is that thing from Ilisaqsivik they had before they started...That was an excellent program – you know, about budgeting and the problems that you’re going to have, working away from home and all. This is a major thing that I

really want continued. I'd really like them to do follow-through too so they can adapt the program.” (Community Resident\_1)

“Work Ready Program? Oh yeah, I did that! Everyone was talking about why they want to work – goals like buy snow machine...” (Mary River Project Employee\_18)

A couple comments were made that criticised the one-off nature of the program. In addition, one person felt that too many of those who took the program did not succeed in progressing to employment:

“That work ready program... it seemed like that happened only once. It was there a very short time and then nothing afterwards. If that could be delivered more... I think that might be good.” (Key Person\_15)

“It seems like that WRP was kind of useless – they promised that those who took that program would get hired...but most of them haven't been hired. It also has to do with the fact that they've only run that program once and they've never bothered to do it again.” (Spouse\_2)

When asked about the sort of further training might be useful, one resident raised concern about the terms for debt that people are taking on:

“I'd want focus on interest rates – people here will go to Northern and buy a skidoo on credit at 27.8% interest – and they are unaware of what they are really paying. If you borrow money on a credit card and you pay 19% interest – what does that mean to you in the future?” (Community Resident\_1)

Another resident also volunteered an opinion that further training in the community would be helpful, and outlined money management and career awareness as key areas:

“There still needs to be more training – about how to deal with your finances; and what jobs can be done besides housekeeping, even for people who don't have any drivers' license or journeyman trades.” (Community Resident\_4)

#### *Other training opportunities for community members*

Some exploration of the possibility to utilize the resources at Mary River — trainers, simulators, equipment, accommodation facilities — to train residents for hamlet equipment operator positions has also been initiated. A cost-sharing model was envisioned. However, budget constraints leading to reduced capacity in the training department have delayed this collaboration.<sup>17</sup>

### **3.5.2 Training employees after they are hired**

#### *Training the right people at the right time*

A perspective was expressed that skills training is most effective when it is provided to individuals who have demonstrated an ability to manage the lifestyle demands of fly-in/fly-out work:

“And the ones that do show a tendency to make all their flights and if they have to miss a flight they give us a call so we can make replacement arrangements... That's the pool

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<sup>17</sup> Conversation with Community Resident\_5

that we focus training on. Dedication to the job. A reason for advancement.” (Key Person\_6)

A weakness of skills training prior to employment is that individuals who are trained may not be ready, willing, or able to gain employment in jobs where these skills are required. The need to match training to the attributes required for the job was also raised by a manager / supervisor recounting some past experience at a different project:

“[Training] is all well and good, but at the end of the day they were quite happy to get their allowances for the training but they weren’t going to leave home [to work fly-in/fly-out].” (Key Person\_16)

An effective way to train the right people, at the right time, has been to focus training on individuals who have demonstrated solid work skills through employment at site. Exposure to other jobs can happen through the normal course of the day. More formal training can then be allocated toward those that show good aptitude:

“We’ll start a guy with no experience at all as a labourer with one of the contractors. Then [if s/he is a good employee], we’ll be like, ‘I want this guy.’ We’ll put him with one of the other operators and any spare time I want him to learn skid steer. So he gets that experience. Then we put him through training and we get him signed off so he can operate the piece of equipment on his own and within 2 or 3 months we’ll know if he’s going to be an operator. Not everybody has that skill set.” (Key Person\_C)

This manager/supervisor spoke about the benefits of starting to train someone from the beginning, rather than training someone who has already had training but from a non-production operating environment:

“The first thing we look for is work ethic. If the person is willing to jump in and do anything – doesn’t complain about it and even if it’s a cold windy day and he’s out there and doesn’t have that complaining spirit – that’s the first thing we notice. Then once we have that, work ethic, then we say, let’s try him out on the skid steer and see if he can become an experienced operator. So we put him on that for a couple of days...Then we bring him up to the training department and they bring him through the classroom, theory, and once that is done they take him out and see if he’s got the basics to run this piece of equipment. By that time he’s had enough seat time that we’re comfortable that he’s going to be able to run that piece of equipment. Then it’s just getting him to do the walk-around check and getting him signed off.” (Key Person\_C)

#### *Providing the right training to meet employee needs*

Some comment was provided that illustrates a second advantage to providing training following employment. This relates to getting to know an individual’s strengths and weaknesses and honing an approach to employee development to the specific needs of the individual in the job:

“We start assigning things and the next thing you know they may not have been ready for that next step ‘cause a lot of times we don’t have the blueprint that’s tailored to each individual person. So [one employee] picks things up extremely quickly so we deal with him a little bit differently from the way you have to deal with [another employee]... and that’s where you have to maintain an objective posture ...what level is everybody at? One guy might be here and the other guy might be here. Not because he’s got less aptitude but because of different background. ...So we really have taken a different approach



...we just realise that we are from different backgrounds. So this is one of the things, its not really an aptitude thing, its just exposure. ...If you're not exposed to it, some of this stuff is quite foreign, and it is quite foreign to a few of the folks. It doesn't mean s/he's going to be driving a haul truck but it means we'll be starting at a different level in terms of training." (Key Person\_7)

#### *Learning by doing on the job*

A common theme heard during conversations with Inuit residents of LSA communities employed at Mary River Project is the high level of enthusiasm to learn new things and acquire new skills.

"I learn a lot about the crusher – oh, I've got lots of experience from the crusher crew – they help me a lot! He's taught me how to do things, how to fix it, where to find the problem...belt ripped, jam, he always asks me, 'what's this called' – he teaches me. He helps me a lot, a lot — he's become a friend." (Mary River Project Employee\_Y)

"I don't mind the job in warehousing. It was an entry level job. It was the only open job that I could actually apply for. The crew's excellent. I love the crew. Just ..sometimes how things go it's a little difficult. But that actually teaches me how to solve a problem...let's say we find a problem, I don't know how to do it. The supervisor walks me through it. Now I know how to do it. So I've learned a lot." (Mary River Project Employee\_L)

[Interviewer: What's the most rewarding part for you?] "There's a lot there... just learning new stuff. I like that...They are teaching me pretty well how to call out to the radio. How to stop for vehicles when an ore truck is coming toward me, or a bus, or those 740 ore trucks, or those emulsion trucks... if they have the red beacon light on I'd have to stop for that. You have to know what to stop for." (Mary River Project Employee\_J)

#### *Mine Rescue Training*

Mine Rescue Training includes Advanced First Aid and Aircraft Rescue and Fire Fighting (ARFF). These skills are seen to be very transferable back to the communities. Northern employees are said to be encouraged to participate in Mine Rescue Training.<sup>18</sup>

The program includes five-days basic training, followed by a further day of training every other rotation to maintain currency. Availability depends on the individual's interest and the supervisor's / department's ability and willingness to allow the individual to take this time away from regular duties.

In order for an individual to gain access to this training s/he must have worked on-site at least six months and must be an employee either of Baffinland or of one of the long-term contractors. The five-day training program has been offered three times per year.

#### *Access to training and perceived gaps*

One employee expressed a perception that they had some degree of empowerment or choice related to training:

"After each training I get a lot of seat time. And if I want to start a new [piece of equipment] I just have to tell my supervisor and he'll get me my training. I'm just going at

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<sup>18</sup> Interview with Key Person\_2

my own pace too. I want to be as good as my father was and so I take my time on each equipment for a couple months or a year or so...” (Mary River Project Employee\_2)

However, this perspective is not shared by all:

“And when I had to go through radio – security told me you should go on this channel and ask...and.. ‘how am I going to say?’ ...it was kind of hard at first. [Interviewer: So you didn’t have radio training?] No – absolutely nothing. ...I’d have to go to a different channel and I didn’t know, absolutely... but right up to now I am pretty confident doing things – how to go to a different channel and all that stuff.” (Mary River Project Employee\_8)

One person suggested that the training program had recently been affected by budget constraints:

“The training picture is a little blurry right now. Originally, the goal was to become a first class training centre for local Inuit people as well as everybody else at the mine. Now with the cut backs, ...training is mostly the certification requirements and safety...polar bear awareness, light vehicle training etc... They really are not doing developmental training or ‘training training.’ For example, we’ve bought this brand new simulator for ore haul trucks but we haven’t put a person through it yet. It’s been here for about two months now.” (Key Person\_D)

The intention to train Inuit residents remains, nonetheless:

“We have talked with the training department that we’d like to see a program put in place so we can train up some of the Inuit to become drivers. And I know there are some who have expressed interest in gaining that skill. So I can see down the road that we’ll be able to start moving some into that position once they get a little bit of experience.” (Key Person\_10)

#### *Pursuit of off-site education or training during employment*

A challenge to advancement is the need for education. In some instances, basic academic upgrading is needed in order for an employee to advance to the next step along their preferred career path. Getting to a point where one can pass a trades entrance exam is one such example that is commonly encountered due to insufficient progress in the public school system amongst many LSA residents.

One community resident commented about how many Inuit have not pursued school and tend not to gain formal credentials that indicate the skill sets they have learned over the years. For these people, it was felt, hands on training on the job would be most helpful.

“There can be hands-on training – some men and even women in Arctic Bay know how to fix things or construct things – but don’t have any piece of paper... so there could be hands-on training. That’s what I always wanted to say. Some have quit school because it was too boring. They wanted to do some creative stuff. Not just paper work. They wanted to make something or do something – in order to motivate themselves. Some have quit school because it wasn’t like that. But they know how to fix a drier, a washing machine...or outboard motors... They know how to do that but they don’t have a piece of paper that says that. And they have stepped back because the ones who have the heavy equipment operator licenses or electrician paper are the ones that are being chosen.

Some who don't have certificates know a bit more than the ones who do have certificates." (Community Resident\_4)

However, the value of formal training that leads to certification was noted by a manager / supervisor at Mary River:

I think there is a lot of aptitude out there but I think formal training is probably the ticket...it does two things...its going to give people the tools maybe to get more of a successful footing under them. But its also a sense of accomplishment – when you can do something – whether it's a six month course maybe in Iqaluit or from one of the southern institutions, there is a sense of achievement and that pride. You can achieve the same things, maybe after a year working here. But at the end of the learning curve, there isn't really any acknowledgement. So as far as success – I don't know that I would ask my supervisors to do anything different. We ask them to think outside of the box, don't stereotype ...and training methodology is going to be different for someone from Ontario from how we're going to treat someone from Arctic Bay. Its just because of the different background. But formal training – have those opportunities available. There's all kinds of certifications out there. There's equipment certification – so that when your finished at Baffinland you have something tangible that you can go to the next guy with. (Key Person\_Z)

From this perspective, there is value in formal certification beyond simply learning the tasks of a job. That can be accomplished through on-the-job training. However certification through off-site programs may generate confidence and build a foundation that can support a broader career path, more options for the future. It will become important, then, to enable individuals to gain this education and certification while they are employed. This question was posed to the manager / supervisor who raised this point:

[Interviewer: And could those kinds of modules be done on the job or during the two-weeks off or how?] "It could be done on the job... there are some excellent programs out there that are home-based. They are personally driven. ...So to really answer that with all truth I think you'd have to really get into that and investigate, but there are lots of on-the-job modules out there. It would mean extra hours..." (Key Person\_Z)

Although the Project is in its early years, Baffinland has already experienced instances where employees have opted to pursue further education. One manager/supervisor noted they have employees from the south who are pursuing university certificate programs while on-the-job. This is encouraged. In at least one instance the company has agreed to pay the tuition cost of each unit provided the employee maintains high marks.<sup>19</sup> In another instance an employee resigned in order to pursue off-site education full time. It is hoped this individual might return to the project in the future.

#### *Apprenticeships and pre-trades upgrading*

Trades apprenticeships are a good example of a formal training approach that encompasses both an on-the-job component and an off-site component.

A challenge for many individuals across the territory who hope to pursue a trade is to find an employer with access to a journeyman trades person to support the on-the-job component. This

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<sup>19</sup> Conversation with Key Person\_S

was raised during an interview with one employee who had hoped to pursue a trade where there was no available journeyman. This North Baffin resident spoke of an interest to become Red Sealed within his / her current area of employment at the Mary River Project if that were possible:

“...it would be nice to be an apprentice, learning and passing...and getting Red Sealed... [Interviewer: How is your math?] I’d say [ok]...I went to college for Oil Burner Mechanic and passed the entrance exam... couldn’t do that though ‘cause there was no one here [in the community] to work under. So they put us with a carpenter – a lot of us did carpenter apprenticeship. You’ve got to go to Iqaluit, or Rankin, or Fort Smith for that sort of thing... [Interviewer: ...Or some day maybe Mary River?] ...That would be nice, eh? Yeah...That would be nice yes!” (Mary River Project Employee\_W)

A challenge for employers such as Baffinland seeking to move Inuit into some of the lower-demand trades can be an absence of trades programs in those areas. One manager / supervisor spoke of the path that might lead toward a crane operator position:

“There is no apprenticeship program for Crane Operator. It would be nice maybe to get something like that down the road so we could look at maybe starting somebody out as a helper, a rigger, and then into the seat – getting them seat time and eventually Red Sealed... but there’s nothing in place here in the north that would allow me to.... For now they would have to get their Red Seal down south and if they did that they’d definitely move to the top of the list.” (Key Person\_10)

Getting apprenticeships set up for LSA residents will take some time. A first step that one manager / supervisor spoke about is finding the right people to take on as apprentices. In this instance the employer has gone the extra step of identifying good employees and encouraging them to take on the program:

“There are not really any chefs...journeymen chefs... in Nunavut, right? That’s one thing. We’re getting people that are entry level – maybe who worked at NorthMart making sandwiches or whatnot... So we’ve tried to train them...we’re going to try to take the top few people and put them through Red Seal... but there’s been a lot of training involved and basically in the north they don’t have that sort of thing. They usually import chefs from the south. Most people don’t want to do it. Lots of paper work.” (Key Person\_6)

It is possible that good employees who are keen to learn a trade may not have the academic base they need to succeed in the program. Upgrading may be needed to gain the math and science skills that are fundamental to the trade and which are tested as part of the trades entrance screening. As one employee noted earlier (see Section 3.4.1) programs offered in the community seem to presume individuals are available for long term training, rather than in modules that can be followed during the off-rotation:

[Interviewer: Could you do upgrading during your off rotation?] “That could be difficult, ‘cause the course could be six weeks, the course could be two months...” (Mary River Employee\_10)

Some positions that typically would be filled by Red Seal trades people can be performed at Mary River by individuals who learned on-the-job training and progressive experience and training. However, one manager / supervisor observed that even in these situations there is value to formal certification:

“...there definitely could be a process in place – we could actually develop a criteria ourselves and say these are the steps ...and get the GN Department ...[to accredit it as a trade] ...yeah... right know we have a criteria, an informal criteria ...[LSA resident] was just promoted to [this position] simply because of attitude – he exhibited a firm understanding of his role and he is very thorough in everything put forward to him. At the end of the day though, when he quits Baffinland, that means absolutely nothing. So... ...if he went for a job in another jurisdiction, wanted to apply for a job, he would have to start in at an entry level position. They just wouldn’t recognize [the experience]...they want to see a piece of paper. Its just like being an electrician. ...‘You’re not an electrician – where’s the paper that says you know anything?’ You need that. So for our northern friends, if we can give them something that will stay with them beyond their Baffinland years...Maybe guys will retire here, who knows... but if they want to go, say, to Meadowbank and maybe Meadowbank only hires accredited people, ... so lets give them the tools to be successful. That would be number one.” (Key Person\_Z)

In some instances where formal trades programs are not available in Nunavut a suggestions was made that other options could be pursued that would have the effect of providing a more formal basis for understanding the fundamentals of some positions at the Project:

“In our particular discipline there was some discussion awhile ago about some courses that could have been offered out of Iqaluit or whatnot. We need to develop that a little bit further, as we are growing as a department [Port and Logistics]. We need to see what there are in terms of outside resources. ...You know – to get some of those basics... Those are the things that we’re trying to mentor them on ourselves, but I believe there are courses out there that the guys could take. Where I’m from it’s a recognised trade and so you have a whole program. Pre-apprenticeship training for 6 weeks, 8 weeks whatever, and then of course every year you would go down for your 3 weeks of school or whatnot. There was discussion but then it sort of fell to the side. ...I think there might be some things out there, perhaps even on a correspondence basis... just to give them a leg up... (Key Person\_Z)

### 3.5.3 Mentorship, role models, and peer support

Development of productive employees does not end with completion of a training regime. On-going mentorship is valued as a means to provide on-going guidance as individuals begin to apply their training in the workplace. A major benefit of on-the-job mentorship is the flexibility it provides in working with a person where they are at.

“In Ore Handling, they have a sort of mentoring or coach / trainer role, where new drivers are paired with an experienced “driver / trainer” until they become proficient.” (notes from interview with Key Person\_4)

“The mentor thing – that’s huge. I think that’s where we need to go.... If I could say anything to you it would be that...figure out a way to mentor people.” (Key Person\_1)

In some instances mentorship is used in a very active sense, sort of like an informal apprentice relationship:

“Our approach to training is basically mentorship within the department. There are always experienced techs — we try to have a minimum of one what we call Senior Techs. What we would call a Senior Techs would be a Journeyman in other jurisdictions. But its not a

recognised trade here. So it would be mentorship from that person, the supervisor, the superintendent...” (Key Person\_Z)

Mentoring can also be very informal – sort of built into the culture of the workplace...to lend a helping hand. This seems to be the experience of at least some employees, as expressed in the following comment:

“The support is really good – I'm just getting started on the dozer – they tell me ‘if you do this, its going to be faster and more efficient, and if you do it this way its going to be safer....’ Efficient, safely, productive. Safety First here in this mine. It could be everybody who give tips. My [relative] is the dozer man in my cross shift. After the two weeks I get to spend time with him ...I kind of ask him how do you do this, how do you do that... He used to work at Nanisivik. If you don't know how to do something just ask around, don't be scared.” (Mary River Project Employee\_L)

“We're really fortunate to have on one particular crew to have two female drivers. And they just bend over backwards to help. They have them in the classroom with one Inuit fellow who couldn't speak English all that well and couldn't read it at all. And this one took him right under her wing and away they went. So on the positive note, there is a lot of camaraderie in the crews and they help each other out a lot.” (Key Person\_16)

Having gender role models on the job was identified as particularly helpful in non-traditional jobs such as equipment operator:

“...As an example we have one particularly good Inuit lady, great attitude, great operator, never misses time. If we find another young female, coming in green...we'll put her on a team with that young lady...just because she's a good role model.” (Key Person\_1)

A more intentional form of mentor support involves peers who actively work with others to identify areas where guidance may be needed. Peer support in the community is recognised as a form of mentoring that might be helpful for some who are trying to adapt to the challenges associated with the fly-in/fly-out lifestyle:

“I don't know how you can approach it in the communities, but they need more of that...when they approach the Baffinland Liaison Officer and say, ‘I want to work with Baffinland’ ...if they had someone then who could work with them and start getting the idea of getting up in the morning and.. managing the money and all that... its probably more important than we realize ..that they do all those things. Learn the value of a pay check. ...the mentoring thing seems to me it's a really important thing that maybe isn't happening.” (Key Person\_1)

Peer networks at work and home have also been noted as a possible way to help people to adapt to the fly-in/fly-out lifestyle:

“We see some peer-to-peer encouragement, positive peer pressure... one Inuit employee encouraging another to stick with the job and succeed.” (Key Person\_3)

### 3.6 SUPPORTING SUCCESS

Challenges associated with work at the Mary River Project relate to family life, being away from the community, adapting to the structure of the workplace, and maintaining good relationships with supervisors and co-workers. This section provides a brief overview of what people said about how employees are supported while on the job at Mary River.

### *Supervisor role*

It is recognised that the employee – supervisor relationship is a major factor in job retention and employment success. One manager / supervisor spoke of how Inuit employment success starts with the supervisors.<sup>20</sup> A supervisor who displays an aggressive communication style may contribute to stress amongst some employees. A supervisor who provides effective instruction and helpful advice may lead to a struggling employee getting over a rough spot and growing into the job. This individual commented that more efforts could be made to get supervisors tuned in to this.

Another manager / supervisor talked about the important role supervisors have in helping employees recognise their state of mind and assess whether they are ready for work:

“I always tell the guys that if they need help about anything to come and talk. I want to be sure that you are ok to work today... Sometimes a person will come and be really thinking about something going on at home. So I'll check that out and if its really weighing on his mind, I might say, this is an issue, I'm going to give you the night off. I might ask other crew about how so and so might be making out...have you talked with so and so recently? ...and they might touch base with the guy.” (Key Person\_12)

One of the challenges supervisors face is to build and maintain a relationship of mutual respect and trust with his / her crew. Employees who learn to understand the business side of the Project may be in a position to better understand the pressures their supervisors are dealing with. Likewise, supervisors who gain an understanding of the LSA communities and cultural practices may be better able to build trust:

“Some employees will have problems with their supervisors...and feel they are not being understood how much they are trying their best to be doing their job.” (Key Person\_15)

“For myself, for my crew, they always remember the understanding I had about that feeling of wanting to get out to hunt or whatever... I'd be like, 'hang in there, you've only got another week, you've got to think about your future.' And I see now, the frame of mind of the younger Inuit now, they're starting to think more of their future more. They see the money coming in, their wives are happy, the bills are being paid. Baffinland's helped big time. We've got training programs now, they're getting paid, ...skill set training.” (Key Person\_13)

Following through from understanding and empathy to appropriate responses that promote success can be hit and miss. One manager / supervisor described the judgement calls that sometimes need to be made when an employee feels they need to get home in the middle of a rotation:

“We've done a lot of flying home for people because of things. We use the plane – get it to do a special trip. Sometimes positive results, some times [not] – I'd say 50:50. Some may have taken advantage, but a lot of times it's a pretty tragic event that this happens. Other times its, 'my girlfriend is going to leave me and I've got to get home...' and those are the times that sometimes really bite us...maybe a little too lenient in those cases. In my experience it hasn't worked out with a positive result [with the employee] coming back to work and, 'My home life is good and we've sorted it out...' It never gets sorted out with

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<sup>20</sup> Conversation with Key Person\_14.

the employee back and family life all good. We end up losing an employee or the person comes back and the issue is still not sorted out and they come back and say I can't work again. ...It's a tough line to find. And some times it burns you." (Key Person\_5)

While supervisors can be a key source of support for an employee seeking to work through a challenging period, other sources are also needed. One person described how they could speak with others in addition to the supervisor:

"I know there is a lot of support here...people you can talk to... Right now our supervisor, he tends to lose interest after about two minutes or so 'cause he's got so much work on his hands. I would tell him anyway, just to let him know, but there is HR here, friends here... The medic here is awesome, both of them, they're both pretty good to talk to." (Mary River Project Employee\_2)

#### *Elder-On-Site*

One of the provisions that Baffinland has implemented explicitly to support Inuit success at Mary River is the hiring of two "Elders-On-Site." During the course of the many conversations carried out during this process, numerous comments were made both by employees as well as by managers / supervisors about the value of this position. The Elders add to the diversity of support that an employee has access to.

One manager / supervisor spoke about how the Elder-On-Site will be drawn upon as sources of knowledge of family relations, what's up in the community, as well as to provide interpretation during key conversations.<sup>21</sup>

The Elders-On-Site have been particularly helpful in supporting employees when there is a death in the community or, as occurred in 2015 a death at site. For example, if someone close to an employee has died, they will often bring the Elder in and s/he may break the news to the person in a manner described as more sensitive to the relationship between the employee and the person who passed away, and in the Inuktitut language.<sup>22</sup> This form of support was noted by others as well:

"There is support here, we got Elders here, eh? Whenever you've got family issues you can talk to them... If you lose a family member...[like me], I talked to them. They already knew before me. I was told to go to the office and [the Elder] talked to me." (Mary River Project Employee\_C)

"Up until the death here I didn't pay much attention to the Elder here. But then I really saw first hand how important this is for the people here. There were people dropping by quite frequently. They were really helpful." (Key Person\_12)

"I have referred people to the Elder. I think the Elder-on-Site is a good resource. They are from the community, so to have someone like that who knows what's going on is helpful. Its good for anyone to know this person is there if you need it." (Key Person\_11)

The role of the Elders as knowledgeable Inuktitut interpreters was noted in the context of conversations related to employee performance:

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<sup>21</sup> Conversation with Key Person\_18.

<sup>22</sup> Conversation with Key Person\_18.



“The couple of times when we’ve had to sit down and have a serious conversation about a performance issue or an attendance issue... And the first thing I’ve said is to ask whether we should have an Elder present because of the language thing.” (Key Person\_7)

Other managers / supervisors spoke about how the Elder-On-Site is helpful in supporting an employee sort through their feelings about being away from home, or in guiding a supervisor in making those difficult decisions about how to respond to employees who want to go home mid-rotation:

“We usually get the Elder-On-Site. We’ll sit down with Human Resources and the Elder and just talk. A lot of times the Elder will help us to make that decision – maybe say this person just doesn’t want to work. Just wants to go home. They help us make that hard call sometimes.” (Key Person\_5)

“Baffinland has come a long ways from where they were five years ago. More understanding people... I find the company is more open and helpful than they ever have been. ...Having the Elders and everything is excellent. That’s the best thing we ever did. Started that a few years ago but it was only an occasional thing. Now its permanent – with an Elder there all the time. Having somebody here like the Elders, it’s a big help for people. They can walk in the room, close the door and talk. ‘I want to go home.’ ‘Do you really want to go home?’ ‘No – I want to work, but I’ve got to go home.’ ‘Well – let’s talk to your wife.’ ...Or whatever they do... (Key Person\_13)

The availability of the Elders — who are experienced and respected counsellors — provides an avenue for individuals to work through issues they may be facing from past experiences. For example, one person spoke about how some have been really affected by residential schools. Being at site and able to speak with the Elder... “it may be the first time they have really had the opportunity to talk about it. What they’re feeling from here kind of dips in to their past.”<sup>23</sup>

The importance of having more than one Elder was highlighted by comments made by one LSA employee who felt that close family connections hindered his / her ability to feel comfortable speaking with one of the Elders. This person noted that with two Elders and another person, s/he had opportunities to talk things out.

#### *Friends and relatives as support*

Friends and family members are the main source of support for many people working at Mary River. Achieving a high level of participation in the Project by Inuit residents of LSA communities means that many find they have a friend or relative also working at the Project. As well, friendships with others working at the site often form in ways that provide mutual support. This was expressed well by one LSA resident employed at Mary River:

“It took me awhile to adjust to leaving home for two weeks...Thank goodness for people to talk to here. It helped me out a lot... I have a lot of friends here – not just Inuit... And they helped me out with how to do night shift. I have to thank my friends for that!” (Mary River Project Employee\_2)

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<sup>23</sup> Conversation with Key Person\_15.

Support from friends and relatives back home is equally important. One young employee noted how a relative took an active interest in how things were going, often being available to communicate during the two week rotation:

“My uncle always asks me how things are here and he pretty much asks me about everything here and he’s one of them that keeps contact with me when I’m here.” (Mary River Project Employee\_2)

A good communication network at Mary River – personal telephones in private rooms and Wi-Fi access — promotes these sorts of support networks.

#### *Finding the right ‘fit’ in the Project*

The importance of finding a job in the project that fits well with the interests and capabilities of individuals was raised both by employees and by managers/supervisors. For example, one employee described how s/he had started as a dishwasher but didn’t really like that job. This individual recognised that every job has its challenging moments...but after a year or so, s/he managed to move into a kitchen assistant role.

“Keep your head up. If you don’t like your job, try to ask somebody to get you to a different job. [Interviewer: “How long should you stay in a job before trying to move?”] I don’t know how long. ...I started asking not right away...after awhile.” (Mary River Project Employee\_4)

In another instance, an individual who had previously quit a job at Mary River managed to come back into another position that was much more suited to his / her attributes and interests:

“We’ve got one guy who was working here who quit. And he was home but then decided he wanted to come back. So then he came back to [a different department]. Now this guy is doing great, driving the B-Trains, makes his two loads a day down to port site...and he’s doing great, doing awesome. But at first this guy was on shaky grounds. He was doing a job he didn’t want to be in... So, whenever he could make any excuse not to be there.... But now he’s doing awesome...” (Key Person\_O)

A similar scenario was described where the switch to a new role was found, by chance, just before the employee quit. This individual was about to be sent home and while waiting for the next opportunity to fly was assigned to a job that no one liked doing – running an incinerator. This employee however loved it and performed great. The upshot, in the mind of the manager / supervisor who recounted the story is that a key part of success is to find the right niche. “There is a job here for everyone, it’s a matter of finding the right fit.”<sup>24</sup>

However, finding the right fit is not necessarily simple. For one, it takes considerable time and attention to work with an individual...and in the context where many face basic challenges settling into a structured work environment it is not evident if employee dissatisfaction or poor performance is related to being in the “wrong” job or simply that the fly-in/fly-out industrial workplace is not the right environment. As one person put it:

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<sup>24</sup> Conversation with Key Person\_14.

“So sometimes you ask yourself, ‘is there something else we can get this guy to do? That he’s going to enjoy doing and be productive at. ...Or do we just get rid of him. How long do we want to work with him? (Key Person\_O)

Even when a determination is made to try to work with the employee, there can be limited options within a particular department and there are not always openings in the positions that are desired:

“So for me – I’m supervisor at Crusher in a mine operation. I deal with the same things – pretty simply. Crusher, Loader, Skid Steer. That’s what I have to offer. That’s the only pieces of equipment that I have. So when you were hired you accepted the job as a grounds man or a crusher operator or a loader operator. I’ve got guys from the south and from the communities who are doing grounds work and kind of want to get out of that position. But for guys coming in new and green to the area that’s the perfect position ‘cause you get to know the whole operation – you get familiar with the crusher, with the parts and pieces that have been giving us problems over the months, you know about the loading operation and feeding the crusher and taking away. So then if you want to go into crushing I’ll put you into the tower to be a crusher operator. That’s an option. If you’d rather go on a loader, that’s an option. So crusher or loader...that’s the only two options after the grounds man. (Key Person\_O)

“We do have guys on loaders who don’t want to be on loaders anymore. They want to do something different. Well, for myself I don’t have anything different other than crushing or ground. So that means applying to different departments. I haven’t seen a whole lot. We’ve had some... We have the pit crew and the heavy hauling... its easy to move within the department if, say, we’ve got a person at the pit who’d rather be at the crusher and you’ve got one at the crusher who’d rather be at the pit. But a lot of time’s you’ve got a good experienced guy down here and the other guy doesn’t have the expertise to replace him...so then it’s a question of how much you are ready to spend on training. (Key Person\_O)

Checking out an employee’s perception of their fit within a position was described by another manager / supervisor who described how a conversation might explore this issue and the options:

“We don’t have any set protocol for jumping departments. One of the questions I’ve posed is, ‘Are you happy?’ Because you know how easy it is to get stuck – you get cemented into a position and you really don’t know anything else. So [we might say to an employee] ...‘It hasn’t been working to this point – we take the blame for it.’ Its not [the employee’s] fault, we hired them on. So the first thing I ask is, ‘Are you happy here?... OK – you want to stay here, don’t want to go to the mine, ...so let’s make this work.’” (Key Person\_7)

This person went on to talk about how valuable a good employee is and how it is worth finding a way to make it work for such a person.

“I haven’t had a case where, say, I’d go to [another department] and say, ‘We have this guy who’s not working out very well, but I think he’d be a great operator.’ ...because we haven’t had that situation. But it could come up. Myself and my peers – we would rather do that than discard somebody. Because we’ve already invested the time and money into somebody. We’d have that conversation – ‘this isn’t working particularly well, what are your interests?’” (Key Person\_7)

*Patience, understanding, and respect*

Recognition of the value of a good employee has led to some effort to give people the chance to try again when things go off the rails. The story was provided of one employee who had moved south from one of the LSA communities only to run into personal struggles that led to termination of employment. The person moved back and approached the company for a job:

“...‘you know what, I’ve got my act together.’ ...and they said, ‘OK – prove it.’ ...and when s/he came in again ...phenomenal work ethic. So s/he’s back and a strong part of the team. ...S/he wasn’t written off, that’s the main thing. His / her value was recognized.” (Key Person\_7)

A similar scenario was provided in relation to another employee:

“[S/he] was fired for using marijuana on-site. S/he was one of my best workers. Very good personality... and s/he was just devastated and apologized when s/he was leaving site. So at that time [the boss] pulled this employee aside and said, ‘You go and get yourself cleaned up and when you have that done you get a hold of me.’ – Which s/he did. S/he went down south and went through the program and was hired back. S/he’s been very good at telling the others, ‘look, I did a stupid thing – nobody should be doing this.’” (Key Person)

While some struggle with serious issues of addiction and trauma, for others the struggle is related more to getting into the rhythm of early mornings and long work days. Patience on the part of the employer has served to provide the second chance that some have needed. This was described by an employee who had been let go and then rehired:

“So after four months they hired me, but then I was getting too much late and so I had only one rotation working here. Then a year later I got hired again. First time didn’t go well... but got a second chance. I kept in touch with [the BCLO]... So the second time I had more experience working here and I didn’t get late that much. Still a challenge but...I have an alarm clock now.” (Mary River Project Employee\_4)

### 3.7 TERMINATION

For many years, exploration activities provided seasonal employment opportunities at Mary River. The shift to year round operation has changed the stakes associated with success at Mary River. One manager / supervisor who observed how this transition to full-year employment has affected the consequence of quitting the job described how s/he encouraged employees to not make rash decisions around job termination:

“It’s a realisation this is a great thing – and its long term...its not, anymore, ‘I’m working ‘till December and then I don’t come back ‘till April.’ Some guys just want to go home – ‘Send me home!’ And so I ask them to think about it. Fifty percent of the time they’ll be like, yeah you’re right, I’m staying. ‘I was just pissed off this morning,’ or ‘the wife said something before I came to toolbox meeting’...Its difficult for them to understand that, its not like 2007 or 2008 where I needed you back in three months. If you leave now you might not get back for... who knows how long. We are drawing from all over the place now. Your position could be filled tomorrow. And next week you’re calling me and saying ‘I want to come back. I made a mistake and I want to come back.’ I feel bad ‘cause I can’t bring you back. That’s why I’m telling you to think it through fully ‘cause ...and a lot of

times its right near the end of their rotation. I'll say go home and think about it and I'll see you in two weeks." (Key Person\_W)

Many of those who had worked at Mary River and then either quit or were fired do express an interest in returning to the Project. However, this may not be so readily accomplished as it perhaps was in the past during the exploration phase. One comment was made by an employee who observed that, from his / her perspective at least, it has not been common for those who quit to return to the Project:

[Interviewer: Do you see guys quitting and then coming back?] "I don't see that a whole lot. If for whatever reason someone leaves – I don't really see them coming back working here. Like my childhood buddy. He came up for two rotations this summer and something came up and I haven't seen him come back. [The company] replaced him." (Mary River Project Employee\_13)

One barrier to getting rehired after voluntary termination relates to the availability of open positions. When an individual vacates his or her full-time position, the position is filled by someone else, so openings may not be available when s/he decides in the future to reapply. While this is obvious, it may be experienced as a departure from previous experiences at Mary River during the exploration phase or from experiences in northern hamlets where scarce positions are often said to be rotated amongst the available workforce.

In addition, the former employee's work record will come into play the second time around. Individuals are accountable for their performance and those with solid records who may have resigned to address specific issues may have better options than those whose record is less favourable:

"[My relative] is thinking maybe he should apply again. He's been applying a few times...but I don't think he can come back 'cause he was fired—he missed his flight—he was incarcerated for a drug-related offence. If it's a serious offence you can't work here, but otherwise, my supervisor says it might be O.K. I tell him to talk to [his former boss] and try to get his job back." (Mary River Project Employee\_J)

It is sometimes perceived by former employees and community residents that employment practices may be, or may have been at some point in their experience, rather informal and possibly unfair. One former employee perceived she had been terminated due to not carrying out a task that she felt had not been explained as being part of her job. She felt she had tried to follow her procedures...but just before she was to go home she was advised that she had not done a specific task that was apparently part of her job. She was told they would not be bringing her back. This former employee concluded, "They are different. They have lame excuses...they don't even have excuses."

Similar stories can be heard. When asked about experiences of those who have had their employment relationship terminated, one community member described the following:

"They don't talk about it – you hear about it from other people. Like there was even a story about this guy who started working at Mary River and everybody was happy for him because they knew he was going to get a house after he paid his bills. But then he brought blubber...fermented...and they thought he was bringing home brew to Mary River. And he tried to tell them it was for him to use when he was eating. But they got rid of him. Those kinds of stuff – they have to know! Even hand sanitizers are used to fire a

worker...craaazzy – we use hand sanitizers everywhere... This lady brought a small hand sanitizer... Those stuff are crazy.” (Community Resident\_4)

Sometimes a termination appears to be triggered by some event, but has its roots in other, more substantial issues. For example, a scenario was described where a serious infraction had occurred. An individual chose to accept responsibility and their employment was terminated. However, the back story to this scenario was described as being rooted in a relationship challenge at home. Getting fired was perceived to be an easier way out than actively quitting.<sup>25</sup>

Whatever its roots, the cost of termination is not felt only by the former employee but by the employer as well. As a year-round Project that is building employee capacity through various training and support efforts, loss of an employee represents loss of experience and loss of investment in human capacity:

“I’ve just had an employee quit – a family thing. S/he wanted to stay home with the kids more...and s/he’s already got another job in town. S/he was working on and off here for five years. So, that’s a loss...we spent so much time training [this person]...but....I understood totally.” (Key Person\_W)

While managers / supervisors understand that events may lead an employee to quit their job, a major expectation is that the employee provides advanced notice to make the departure and the replacement process as smooth as possible.

“What I really want them to understand is, ‘Listen, if something comes up and you need to leave our employment, by all means do it... If you do it in such a way — give me two weeks’ notice so I can find someone to replace you... if you ever want to come back you’ll be on the top of my list — if you’ve been a good worker — if you don’t give me any notice, its going to be very tough.’ If you’ve had enough jobs in your life you realize that you don’t want to burn that bridge — you may want to go back some day. ...The southerners know they shouldn’t burn their bridges plus they may want to use me as a reference. What am I going to say, ‘Oh — he’s a good worker — but he didn’t give any notice when he quit...’ So that’s the biggest thing — they don’t get that concept that for future employment I don’t want to get that against my record.” (Key Person\_10)

### 3.8 POST-TERMINATION FOLLOW-UP AND COMMUNICATION

Many instances where the employee – employer relationship has been terminated have not yet led to rehiring or successful career development. individuals who have either voluntarily or involuntarily discontinued work at the Mary River Project do often express an interest in getting back to the mine to try again. Sometimes this is with the hope that re-engagement will involve different settings.

For some individuals, negative relationships amongst co-workers have not been successfully resolved, apparently contributing to performance issues and departures.<sup>26</sup>

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<sup>25</sup> Conversation with a Community Resident.

<sup>26</sup> It needs to be emphasized that this conversation is based on one individual’s perceptions and do not necessarily reflect what might be a more complex HR issue. The point, though, is that in situations of a termination of employment, there may be lingering individual needs for communication and resolution.

“I started as an operator at [one position], then transferred to [another]. I was there for two weeks – I didn’t like the way people were acting. I was not comfortable with that transfer...and one of my co-workers...so I didn’t go back there. But I had really loved the job. They understood that I didn’t like working with that [individual]...but I never really talked to anyone. ...Now I just hang around in town. [What can you do to get back there?] I’d like to go back there somehow. I’d prefer to [work in another department]. .....if we have a problem with something we can talk to this guy – he’s the Inuit boss for Mary River project. He has come to each community – I would like to meet him. ...If I can talk more, they would understand.” (Former Mary River Employee\_1)

“And very fortunate, one of her daughters was hired casual... But then there was a rumour going around... and so she hasn’t been hired back there again. ...There was no communication at all. They didn’t even tell her she was going to be let go, or they didn’t even say, ‘If you address this we’ll keep you.’ No communication at all or what she could do to continue working. She hasn’t been called for work since. ...It has affected her a lot. ...That rumour was spread by a couple people at Mary River. [Interviewer: Was there some jealousy?] Yes. (She) doesn’t have any children, doesn’t have a husband. She is very capable – doesn’t have any ties to keep her from working – she’s very capable worker.” (Community Resident)

Various suggestions were made by community residents and former employees that suggest a desire for access to someone who can discuss human resource issues with individuals either during an off-rotation or following termination. Situations leading to end-of-employment decisions are often complex, with multiple factors affecting an individual’s performance or outlook on the job. How an employee perceives things may be very different from how a co-worker or the employee’s supervisor perceives things.

Some degree of mutual understanding may be arrived at during conversations at site. However when an employee is back in the community perceptions may change as the individual reflects on the situation or hears opinions from friends and relatives. Stories can take on a life of their own.

Human resource issues that attract broader community attention cannot be fully engaged by the employer due to the confidential nature of these issues. However, having a means to maintain communication with the individual at the centre of such issues and, perhaps, increasing general public awareness of employment policy might help.

“Even on Facebook they complain... we don’t need to see that on Facebook – they should have someone they can complain to. ...So we know there are some negative things going on there too – its not all positive. There are good positives... but people tend to write more what they feel negative – they’re not going to tell their boss ‘cause they don’t want to jeopardize their job.” (Former Mary River Employee\_4)

This last point was also raised by another resident who noted that when individuals have problems with their boss at work or perhaps with another employee they may be unwilling to raise their concern:

“People don’t believe they can do this without jeopardizing their future employment.” (Community Resident\_3)

Another individual spoke about a perceived situation they felt was being unfairly dealt with:

“We have no idea who to contact. ...I'm sure the company does not want bad relations with people.” (Spouse\_2)



**Appendix I:**

**Interview Guide For Inuit Employees, Former Employees, And Partners**

### Employment & Training Background

1. When did you first start working at Mary River Mine?
2. Tell me a little about the training and work you have done leading up to this job.
3. Tell me a little about your job.

### Mary River Experience

4. What are the most rewarding parts of fly-in/fly-out work (for you, your partner, your family)?
5. What are the most challenging parts of fly-in/fly-out work (for you, your partner, your family)?
6. What sorts of things do you do to make work at the Mary River Project work out for you and your family?
7. What kinds of support helps to make fly-in/fly-out employment successful? How well are you and your family able to get the supports you need to make it work?
8. How does your current job compare to other jobs you have had in the past?

### Preparation for work and career advancement

9. What kind of preparation did you have that you found useful?
10. What sorts of goals do you have? What training or education do you need in order to achieve these?

### How Mary River Affects You, Your Family, Community

11. Money Goals: What are your money goals? How are spending decisions made? Any money issues?
12. Importance of Job: Are there other things about this job (besides the money) that are important to you?
13. Individual: What has changed in your life from this employment experience?
14. Children: How has your work changed things for your family—children? partner?
15. Community: How has the Mary River Project changed things in your community?

### Other comments

16. Is there anything else you would like to talk with me about?