



Coffee Gold Mine
YESAB Project Proposal
Appendix 19-A Demographics Intermediate
Component Analysis Report

VOLUME IV

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File: 1658-003.01

Ver. 1.0

March 2017

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ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
FNNND	First Nation of Na-cho Nyäk Dun
IC	Intermediate Component
LSA	Local Study Area
Project	proposed Coffee Gold Mine
Proponent	Kaminak Gold Corporation, a wholly owned subsidiary of Goldcorp Inc.
RSA	Regional Study Area
SFN	Selkirk First Nation
TH	Tr'ondëk Hwëch'in
WRFN	White River First Nation
YBS	Yukon Bureau of Statistics
YESAA	<i>Yukon Environmental and Socio-economic Assessment Act</i>
YESAB	Yukon Environmental and Socio-economic Assessment Board
YG	Government of Yukon

SYMBOLS

Symbol	Definition
%	percent

1.0 INTRODUCTION

This report provides an assessment of the potential changes and cumulative changes of the proposed Coffee Gold Mine (Project) on the Intermediate Component (IC) Demographics. Intermediate and valued subcomponents and indicators are used to focus the assessment on information known to be important or of key interest to First Nations, government, and other technical reviewers. This report identifies and characterizes potential changes to Demographics, and describes the mitigation measures and protection plans that Kaminak Gold Corporation, a wholly owned subsidiary of Goldcorp Inc. (Goldcorp or Proponent), will implement to eliminate, reduce, or otherwise control changes to Demographics. The information provided in this assessment report supports the Project Proposal to be submitted to the Yukon Environmental and Socio-economic Assessment Board (YESAB) Executive Committee for screening under the *Yukon Environmental and Socio-Economic Assessment Act*, SC 2003, c. 7 (YESAA), and applications to be submitted for a Quartz Mining Licence and a Type A Water Licence from the Yukon Water Board, among other permits and licences.

- Demographics is the study of the structure of a population, including age, gender, and mobility. This report presents the results of the analysis of potential Project-related changes and cumulative changes on Demographics, including the following:
- Scope of analysis – issues scoping, description of the IC selection process and outcome, and the establishment of spatial and temporal study boundaries
- Existing conditions relevant to Demographics
- Potential Project – Demographics interactions across the life of the Project, potential adverse changes to Demographics, mitigation measures to eliminate, reduce, or control these adverse changes, and potential residual adverse changes
- Potential interactions between the residual changes due to the Project and the residual change of other past, present, and future projects and activities, potential adverse cumulative changes to Demographics, mitigation measures to eliminate, reduce, or control these adverse changes, and potential residual adverse cumulative changes
- Monitoring to be undertaken to verify change analysis predictions and evaluate mitigation effectiveness.

1.1 ISSUES SCOPING

Through baseline studies undertaken during the Project's Feasibility Study (July 2014 to December 2015) and subsequent Socio-economic Baseline Study (December 2015 to April 2016), the Socio-economic Project team reviewed a mine plan and detailed technical information related to socio-economic values in the vicinity of the Project. Available information regarding other existing and proposed quartz mining projects in Yukon, including environmental and socio-economic assessments, was also reviewed. In addition, secondary data, including census data and other reports on population trends, were used, in addition to key informant interviews. This information supported scoping of the changes analysis, including the identification of candidate ICs, selection of the Demographics IC, and the establishment of study area boundaries for Demographics.

To support the scoping of issues for the Project, the Proponent has undertaken an engagement and consultation process, as defined under Section 50(3) of YESAA (refer to **Section 3.0 Consultation and Engagement**). Issues, concerns, and information were also identified from the Project's engagement and consultation process, and included affected First Nations and communities, government agencies, and interested persons and other stakeholders who may be interested in the Project and its related activities. This consultation and engagement process has included technical working groups established with First Nations and government departments; community meetings, one-on-one, and small group meetings; and ongoing communications such as print communication, newsletters, and website updates. Specific presentations and discussions regarding key themes of interest and exploration of candidate ICs and VCs to represent the themes have also taken place as part of the Project's consultation process.

1.2 SELECTION OF THE DEMOGRAPHICS INTERMEDIATE COMPONENT

Demographics was selected as an IC based on the IC selection process set out in **Section 5.0 Assessment Methodology**.

1.2.1 CANDIDATE INTERMEDIATE COMPONENTS

Issues scoping (**Section 1.1**) played an important role in identifying Demographics as a candidate IC.

Demographics was identified as a candidate, and was selected as an IC based on the Valued Component (VC) and IC selection process set out in the Project Proposal in **Section 5.0 – Effects Assessment Methodology**. Guidance from YESAB suggests that study of the population structure is potentially valuable for inclusion (YESAB 2010). The Project is located in a northern, remote location. Local communities are also remote, and are characterized by small populations, reducing their resiliency to potential socio-economic change as a result of demographic change. The Government of Yukon (YG) has said that the territory's population is particularly vulnerable to change (YBS 2011b).

Selection of Demographics IC: The Demographics candidate IC was selected for its potential ability to affect the VCs identified for the Project, such as Infrastructure and Services and Community Health and Well-being, among others. The IC was refined and shaped through the Project's engagement and consultation process, as defined under Section 50 (3) of YESAA, to support the Project's issues scoping process. This process included potentially affected First Nations and communities, government agencies, and interested persons and other stakeholders who may be interested in the Project and its related activities.

Table 1-1 illustrates the IC selection process that resulted in the selection of Demographics as an IC.

Table 1-1 Candidate Intermediate Components – Evaluation Summary

Candidate IC	Project Interaction			Third-party Input		Supports the Assessment of Which Other VC?	Selected as an IC?	Decision / Rationale
	Interaction?	Project Phase / Project Component / Project Activity	Nature of Interaction	Source	Input			
Demographics	Yes	<ul style="list-style-type: none"> • Construction • Operation • Reclamation and Closure 	Project employment and service delivery opportunities may result in changes to local and regional demographics.	Consultation with TH	Concerns related to potential adverse changes to Education Services, Social Economy, Community Infrastructure, and Community Health and Well-being.	Economic Conditions Social Economy Educational Services Community Infrastructure and services Community Health and Well-being	Yes	Project-related direct, indirect, and induced employment opportunities and service delivery opportunities may cause in-migration of new residents to communities. This potential in-migration of people may cause changes in demographics, which in turn may result in infrastructure and services capacity pressures, as well as changes to the local labour force, among other factors.

1.2.2 SELECTED INTERMEDIATE COMPONENT

Demographics was selected as an IC to assess the Project’s anticipated interactions with the following VCs:

- Economic Conditions (**Appendix 20-A Economic Conditions Valued Component Assessment**)
- Social Economy (**Appendix 21-A Social Economy Valued Component Assessment**)
- Community Infrastructure and Services (**Appendix 22-A Community Infrastructure and Services VC Assessment**)
- Education Services (**Appendix 23-A Education Services Valued Component Assessment**)
- Community Health and Well-being (Appendix 25-A Community Health and Well-being Valued Component Assessment Report).

Project-related employment has the potential to attract new residents to Yukon, in turn changing the size of the population and growth rates, the proportion of the population of certain ages, and the proportion of males to females. Changing demographics in turn have the potential to affect economic conditions, the social economy, education services, community infrastructure and services, and community health and well-being.

1.2.3 INDICATORS

Indicators are quantitative or qualitative measures used to describe existing IC conditions and trends, and evaluate potential Project-related changes and cumulative changes to the IC. Demographic indicators and rationale for their selection are listed in **Table 1-2**.

Table 1-2 Indicators for Demographics

Indicator	Rationale for Selection
<ul style="list-style-type: none"> • Population size and growth • Gender distribution • Age distribution • Mobility 	Indicators are the foundational demographic descriptors and have the potential to interact with the Project.

1.3 ESTABLISHMENT OF ANALYSIS BOUNDARIES

This section identifies the spatial, temporal, administrative, and technical boundaries established for the analysis of Demographics. Analysis boundaries were selected to provide a framework for measuring change to the IC.

1.3.1 SPATIAL BOUNDARIES

The study areas for the Demographics IC consist of a Local Study Area (LSA) and Regional Study Area (RSA), defined in **Table 1-3** and shown in **Figure 1-1**. Due to the nature of the Demographics IC’s data availability as well as anticipated Project-related changes, the LSA and RSA reflect municipal administrative

boundaries for the City of Whitehorse and the City of Dawson (Dawson), and the general developed areas for the communities of Beaver Creek, Mayo and Pelly Crossing.¹

Two main assumptions were made in determining the LSA:

Project pick-up locations and administrative offices: There are currently two pick-up locations for on-site, rotational work employees: Dawson and Whitehorse-based administration offices. Demographic changes may occur in these communities.

Proponent’s local employment and procurement practices: Although smaller communities identified in the LSA are well removed spatially from the Project location and are unlikely to experience in-migration associated with the Project, these communities can still provide a source of labour, goods, and services for the Project. This assumption is based on the Proponent’s strategies to locally source goods, services, and labour, where practical.

These two assumptions were used to determine the LSA relative to Project activities with the potential to cause direct and indirect changes to the Demographics IC. For the Demographics IC, the LSA is the City of Whitehorse, Dawson, and the communities of Beaver Creek, Mayo, and Pelly Crossing.

Whitehorse was included in the LSA as the location of the Project’s main administrative facility, and one of its pickup locations for fly-in, fly-out workers. It was also determined that the Project may result in potential direct changes to demographics in Whitehorse. For the purposes of this Demographics IC analysis, Whitehorse is conservatively included in the LSA, as the city is home to 80 percent (%) of the territory’s population and is Yukon’s fastest-growing community in terms of population. Dawson was chosen for its geographic proximity to the Project, and because the community is likely to be a source of labour, goods, and services associated with the Project. Beaver Creek, Pelly Crossing, and Mayo were included as the administrative centres of White River First Nation (WRFN), Selkirk First Nation (SFN), and First Nation of Na-cho Nyäk Dun (FNNND), respectively, reflecting the availability of demographic data at the community scale. Not all of these communities have administrative boundaries; as a result, the LSA boundaries were approximated based on the apparent physical boundaries of the communities. The LSA boundaries selected do not necessarily exclude from the analysis entities that may be located immediately adjacent to, but outside, the above mentioned communities.

The RSA for the Demographics IC analysis is Yukon Territory, and is the area within which potential indirect changes and some direct changes may occur as a result of the Project. There is a possibility that some people may choose to work for the Project and live in smaller Yukon communities that are not the administrative centres of potentially Project-affected First Nations or the cities of Whitehorse and Dawson, although the lack of available data on those smaller communities’ existing population size and population

¹ For Mayo, Pelly Crossing, and Beaver Creek, administrative boundaries were not available.

growth patterns made it challenging to understand the extent to which they might be directly affected. Including those communities as part of an RSA that encompasses the whole Yukon Territory is a way of considering them in the analysis.

Table 1-3 Spatial Boundary Definitions for Demographics

Spatial Boundary	Description of Study Area
Local Study Area	City of Whitehorse, Dawson, Beaver Creek, Mayo, and Pelly Crossing. The Project footprint has not been included, as changes to Demographics will not likely take place at the Project footprint.
Regional Study Area	Yukon Territory
Cumulative Changes Study Area	An area inclusive of active and proposed major mine projects, as shown in Appendix 5-B

COFFEE GOLD MINE

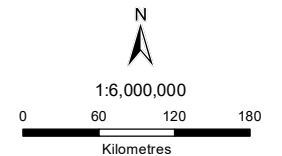
Demographics Spatial Boundaries

Legend

-  Project Footprint
-  Local Study Area
-  Regional Study Area
-  Highway
-  National/International Border

Notes

1. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.



NAD 1983 UTM Zone 8N

Page Size: 8 1/2" x 11"

Figure 1-1

Date:
Mar 29, 2017

Drawn by:
JS

Reviewed:
DP



The logo for Goldcorp, featuring a stylized 'G' icon followed by the word 'GOLDCORP' in a bold, sans-serif font.



Alaska

Yukon Territory

Northwest Territories

Dawson City

Northern Access Route

Mayo

Pelly Crossing

Beaver Creek

Mine Site

Whitehorse

British Columbia

1.3.2 TEMPORAL BOUNDARIES

The temporal characteristics of the Project's Construction, Operation, Reclamation and Closure, and Post-closure phases are described in **Section 2.0 Project Description**. The temporal boundaries established for the analysis of Project changes on Demographics encompass these Project phases.

1.3.3 ADMINISTRATIVE BOUNDARIES

The LSA and RSA spatial boundaries have been defined to reflect Yukon Territory; local government boundaries, where possible; and apparent physical boundaries of communities, as described in **Section 1.3.1**, in which economic activities occur and labour forces exist. These boundaries do not reflect the Traditional Territories of FNNND, SFN, and WRFN; however, due to the overlapping traditional territories of these communities, their administrative centres were selected as spatial area components. In addition, as a result of the nature of data availability and potential Project-related changes related to the Demographics IC, administrative boundaries and centres were selected as the spatial boundaries.

1.3.4 TECHNICAL BOUNDARIES

Technical boundaries refer to the constraints imposed on the analysis by limitations in the ability to predict Project-related changes. Limitations to the accuracy or representation potential of available statistical data exist from statistical data provided by the Yukon Bureau of Statistics (YBS) (YBS 2016a, 2016b, 2016c, 2015, 2013a, 2013b, 2011a, 2011b) and the Statistics Canada Census Program (Statistics Canada 2013, 2012, 2011a). Some communities, in particular smaller communities, may not be accurately reflected in statistical data due to sampling errors, rounding, and data suppression in the interests of privacy. It is also understood that not all Aboriginal communities agree with the census results or the Aboriginal Peoples Survey results (Statistics Canada 2013). This study reflects available published statistical data at the community level across the entire study region, and provides an indication of existing conditions and trends in spite of its limitations. Census data – the principal source of secondary data for understanding Demographics – were collected in 2016 and scheduled for release in stages over 2017. As of the time this report was written, only the 2016 data on population size was available.² Data on changes to age and gender were scheduled for release later in 2017, and as such were unavailable for inclusion in this report.³

For a detailed discussion of statistical data limitations, refer to **Appendix 18-A Socio-economic Baseline Report**.

² Released February 2017.

³ A complete schedule of Census data releases may be found at <http://www12.statcan.gc.ca/census-recensement/index-eng.cfm>

2.0 ANALYSIS METHODS

The Demographics analysis, including the analysis of Project-related changes and cumulative changes, was conducted according to the methods set out in **Section 5.0 Assessment Methodology** of the Project Proposal.

Specifically, demographic changes have been estimated using the Project's input-output model, which estimates the number of direct, indirect, and induced jobs that the Project has the potential to create. The model was based on 2010 Statistics Canada data and the Proponent's February 2016 estimates of the number of direct jobs the Project would provide.⁴

The analysis has been informed by input (e.g., statistical and other information) provided through consultation and engagement with government agencies, potentially affected First Nations, and the public.

⁴ 2016 Statistics related to economics and employment were not available at the time this assessment was conducted.

3.0 EXISTING CONDITIONS

This section describes existing demographic conditions to provide a local and regional context for the assessment of potential Project-related interactions with and changes to this IC. Based on information presented in the baseline report (**Appendix 18-A Socio-economic Baseline Report**), the section also includes regulatory context and background sources of information.

3.1 REGULATORY CONTEXT

The following legislation, community plans, and government-led programs are relevant to the Demographics IC.

Federally, the *Statistics Act*, RSC 1985, c. S-19, requires Statistics Canada to undertake a census of the population in June every five years; and requires respondents to complete the census form. The Yukon *Statistics Act*, SY 2003, c.27, established the YBS to plan, promote, and develop integrated social and economic statistics. Locally, the Integrated Community Sustainability Plan presents a long-term, comprehensive plan that reflects the collective community sustainability objectives of Dawson and Tr'ondëk Hwëch'in (TH) First Nation. One of the community objectives identified in the Integrated Community Sustainability Plan is to retain a sustainable year-round population (City of Dawson and TH n.d.).

Mobility is governed in part through immigration programs. Individuals from outside of Canada can work in Yukon to fill employer needs through federal and territorial programs such as the Yukon Nominee Program, Temporary Foreign Worker Program, and Foreign Qualifications Recognition. The Yukon Nominee Program is designed to fill permanent full-time jobs, and the Temporary Foreign Worker Program provides individuals with permits to gain employment in Canada to fill temporary labour shortages. The Temporary Foreign Worker Program is administered by Human Resources and Skills Development Canada and Immigration, Refugees and Citizenship Canada.

3.2 BACKGROUND INFORMATION AND STUDIES

This section presents background information and studies that were conducted to inform the Demographics IC analysis. Included in this section are descriptions of scientific and other information gathered for the analysis, as well as a description of baseline studies conducted to help characterize existing demographic conditions.

3.2.1 SCIENTIFIC AND OTHER INFORMATION

Baseline conditions were identified through desktop research, as well as through primary research activities, including interviews with key informants, conducted between February 2016 and March 2016 (**Appendix 18-A Socio-economic Baseline Report**).

Existing demographics in the LSA and RSA were documented from statistical data sources including Statistics Canada (2001, 2006, and 2011 Census of Population and 2011 National Household Survey (NHS) (Statistics Canada 2001b, 2006a, 2011c and 2011a)), and various published reports from the YBS (YBS 2016a, 2016b, 2016c, 2015, 2013a, 2013b, 2011a, 2011b). The NHS was a new data product, which was implemented during the 2011 Census cycle. Although weights were applied to reduce or eliminate differences between the underlying total populations for the Census and NHS, Statistics Canada indicates that weighting constraints were sometimes discarded, resulting in discrepancies (Statistics Canada 2011a). For all Project area communities as well as Yukon, differences exist for the underlying total population between the Census and NHS, as well as data contained in YBS reports. This may result in different population data presented in this report, depending on the source data (i.e., 2011 Census versus NHS). In this report, 2011 NHS data are compared to data from the 2001 and 2006 Census, where available and warranted. It should be noted that Statistics Canada advises to exercise caution when comparing 2011 NHS data to previous Census data due to data quality and differences between the voluntary survey and the previous long-form questionnaire (Statistics Canada 2011a). Although limitations to the NHS exist, the data product provides one of the few available published statistical data at the community level across the entire study region, as well as an indication of existing conditions and trends.

3.2.2 BASELINE STUDIES CONDUCTED DURING THE PROJECT’S FEASIBILITY PROGRAM

During baseline studies, data were collected in the LSA and RSA on existing conditions of demographic indicators. **Appendix 18-A Socio-economic Baseline Report** describes the existing socio-economic and health conditions for the Project (**Table 3-1**). The baseline report was developed to support the analysis of potential Project-related socio-economic and health effects, and changes to demographics using local secondary and primary data as well as data from consultation with regulators, First Nations, and communities. Specific primary data collection methods included semi-structured information interviews and focus groups following a semi-structured group interview format (**Table 3-1**).

Table 3-1 Summary of Desktop and Field Studies Related to Demographics

Spatial Boundary	Description of Study Area
Appendix 18-A Socio-economic Baseline	Desktop research for Yukon and communities in LSA: <ul style="list-style-type: none"> • Documentation of existing conditions from statistical data sources including Statistics Canada (2001, 2006, and 2011 Census of Population and 2011 NHS (Statistics Canada 2011a)), and various published reports from the YBS (2016, 2015, 2013a, 2013b, 2011a, 2011b) • December 2015 to April 2016
	Primary Research: <ul style="list-style-type: none"> • Interviews with key informants – including TH, municipal employee, and community member (February to March 2016, Dawson)

3.3 POPULATION: REGIONAL STUDY AREA

The Yukon population in September 2016 was 38,200 people, a 1.8% increase from September 2015 and new record high for Yukon (YBS 2016c). While the Yukon population has been growing between 2006 and 2016, the annual rates of growth have been variable, ranging from a high of over 3.2% in 2008 to a low of less than 0.4 % in 2015. From 2004 through 2014, the population increased almost steadily with successive record highs⁵ in most quarters. However, during the last quarter of 2014, the population decreased by almost 400. The population then remained almost unchanged up to mid-2015 before regaining an upward trend (YBS 2016c). Between 2006 and 2011, the population of Yukon changed by 11.6%; this compares to the national average of 5.9% for the same period (Statistics Canada 2011b). The government of Canada cited migration from other jurisdictions as the reason for population growth during the previous census period (CBC News 2012, Waddell 2016). Fertility rates in Yukon are in line with the national average, and the population overall is aging (Waddell 2016). In addition, in 2011, 30.1% of the RAA population identified as Aboriginal.

Yukon is home to approximately 0.1% of Canada’s population. Population density in Yukon is 0.1 persons per square kilometer, compared to 3.7 persons per square kilometer nationwide (Statistics Canada 2011b).

Population information by gender was not available through the 2016 Census as of February 2017, however according to the YBS, approximately 51% of the territory’s total population is male, whereas 49% is female (YBS 2016c). In 2016, most males living in Yukon are between the ages of 25 and 34, with the highest representation of this range aged 30 to 34 (8.3%). For females in Yukon, the majority are between the ages of 25 and 34, with most highly represented between the ages of 30 and 34 (9.1%) (YBS 2016c).

Community-level 2011 Census data provided by Statistics Canada are summarized below and illustrated in **Table 3-2**. Canada-wide population percentage change from 2006 to 2011 are provided in **Figure 3-1**, and Yukon population growth from 2006 to 2016 is presented in **Figure 3-2**. Aboriginal and non-Aboriginal gender demographics are illustrated in **Figure 3-3**.

Table 3-2 Population in the Regional and Local Study Areas (2006 and 2011)

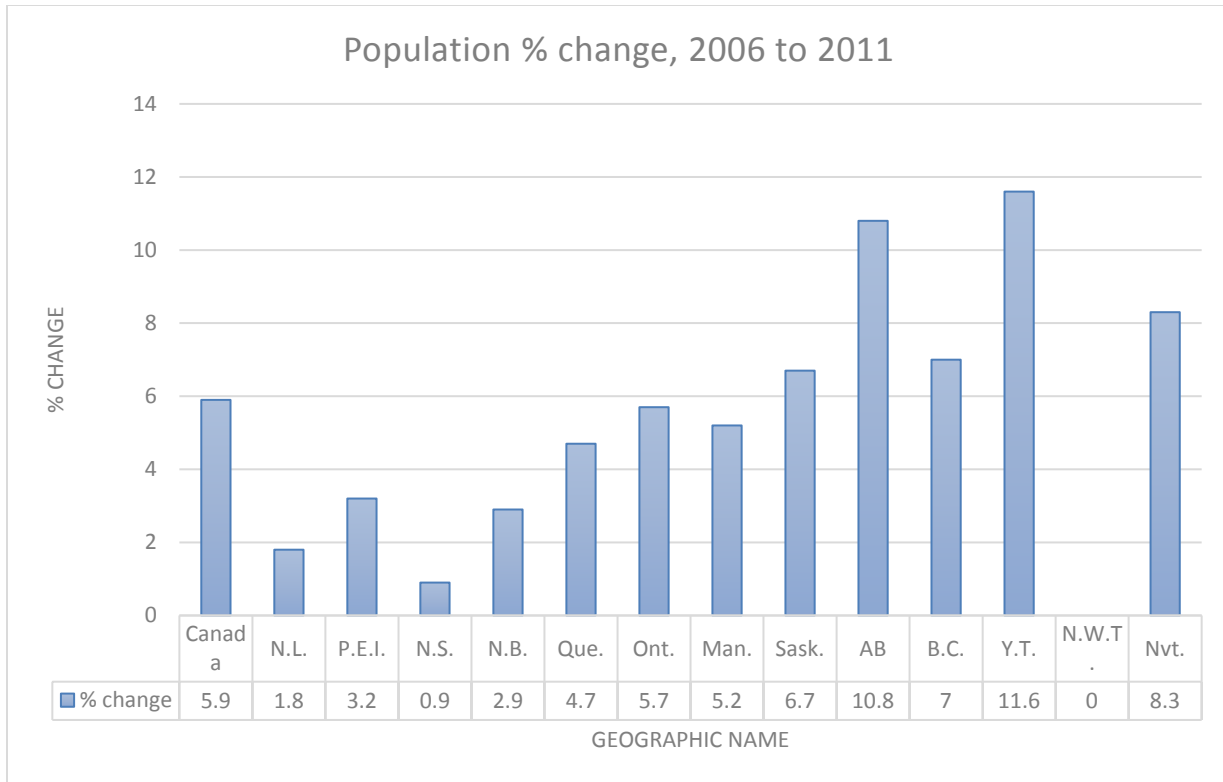
Census	Population	Yukon	Whitehorse	Dawson	Beaver Creek	Pelly Crossing	Mayo
2011	Total	33,320	25,570	1,295	100	335	226 ¹
	Aboriginal Identity	7,705	4,100	430	50	305	No data
2006	Total	30,372	22,898	1,327	112	296	248
	Aboriginal Identity	7,580	4,105	390	45	250	130

Notes: Yukon total and Aboriginal identity includes all data for the territory, including RAA and LAA communities. Total includes Aboriginal identity populations.

Sources (Statistics Canada 2006a, 2011c, 2013)

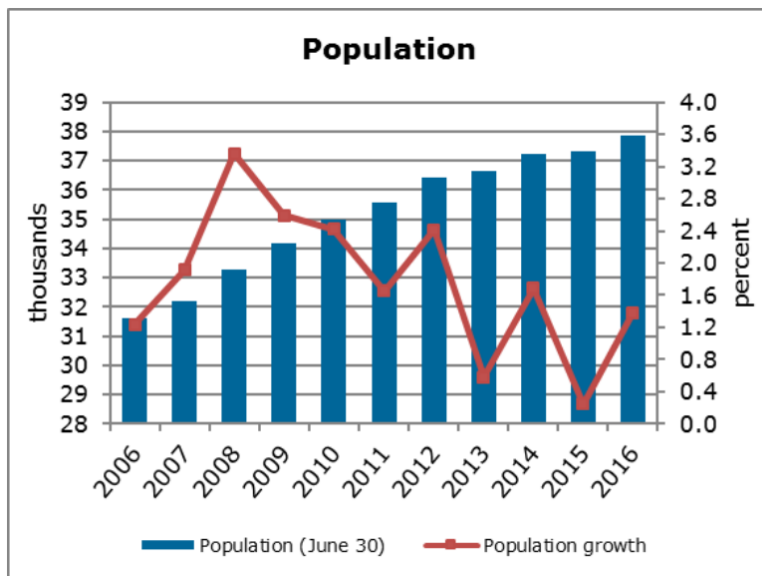
¹ 2011 data for this area (Mayo) have been suppressed for data quality or confidentiality reasons. Therefore, 2006 data are presented.

⁵ Accurate population counts during the Gold Rush are not available; however, the first Census population figure for Yukon was 27,219 in 1901 (YBS 2016c).



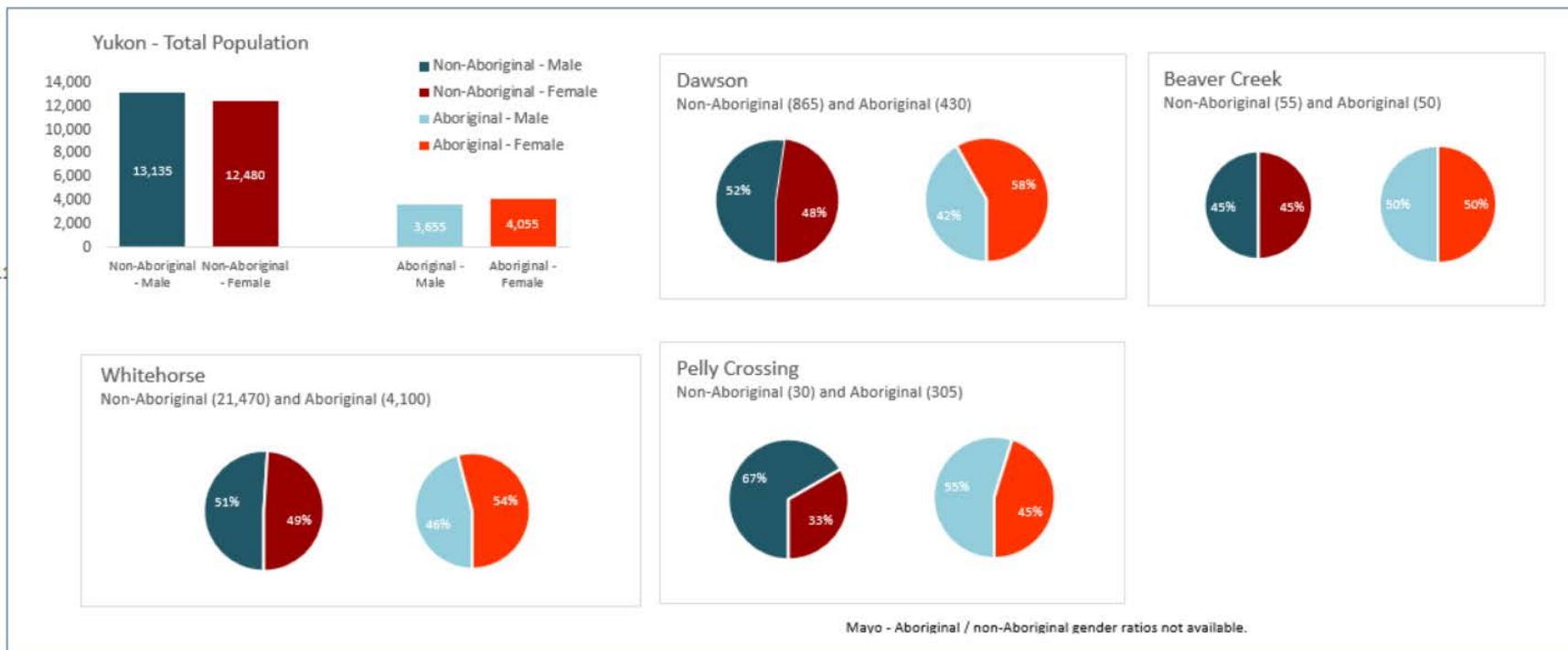
Source: Statistics Canada 2011b

Figure 3-1 Canada Population Percentage Change from 2006 to 2011



Source: YG 2017

Figure 3-2 Yukon Population Growth 2006 to 2016



Source: Statistics Canada 2013b

Figure 3-3 Aboriginal and Non-Aboriginal Gender Demographics in the Regional and Local Study Areas (September 2016) (no data available for Mayo)

3.4 POPULATION: LOCAL STUDY AREA

3.4.1 CITY OF WHITEHORSE

As of September 2016, Whitehorse had a population of 29,529 people, a 1.3% increase from 2015 and comprising 77% of the population of Yukon (YBS 2016c). Whitehorse, the biggest city in the territory, has increased by 21.8% since 2006 (YBS 2016c). Population percentage change in Whitehorse between 2006 and 2011 was 11.7%, and between 2011 to 2016 was 11.5%. Whitehorse is Yukon's business, First Nations, and government hub, as well as a transport hub for tourism and freight (YG 2016).

In 2011, the majority of the male population ranged between the ages of 25 and 34 (16.6%), followed by 44 to 54 (15.1%), and 55 to 64 (14.4%). For females living in Whitehorse in 2011, the majority were aged between 25 and 34 (17.2%), 35 to 44 (15.3%), and 45 to 54 (15.8%) (YG 2013a).

In a 2014 report sponsored by the Resources and Sustainable Development in the Arctic, it was acknowledged that Yukon has seen a continuing trend toward urbanization, with Whitehorse receiving approximately 80% of the Yukon population growth between 2005 and 2010. Similarly, migration within the territory between 2005 and 2010 saw smaller communities, such as Dawson, experiencing declining populations as community members increasingly moved to Whitehorse (Jones 2014).

3.4.2 CITY OF DAWSON

Dawson's population as of September 2016 Census was 2,202, a 4.4% increase from 2015 and a 21.5% increase since 2006 (YBS 2016c). Population percentage change in Dawson between 2006 and 2011 was 2.4%.

The majority male population in 2011 ranged between the ages of 25 and 34 (17.7%), followed by 45 to 54 (16.8%) and 55 to 64 (17%). For females living in Dawson, the majority were aged between 25 and 34 (19%), followed by 35 to 44 (16.2%) and 55 to 64 (16.2%) (YG 2013b).

3.4.3 FIRST NATIONS COMMUNITIES

Some First Nation communities dispute Census data findings: **Table 3-3** shows government data on populations of potentially affected First Nations compared with data from First Nations government websites or from other documentation. Registered membership does not indicate residence in the LSA or RSA, and is used here as an approximation of First Nation size. Tr'ondëk Hwëch'in had the most members of the four potentially affected First Nations (TH 2016).

Table 3-3 Summary of First Nation Registered Members

First Nation	Registered Population (INAC 2016) as of February 2016	Number of Registered Members
Tr'ondëk Hwëch'in	825	1,100
Selkirk First Nation	637	N/A
First Nation of Na'cho Nyäk Dun	555	602
White River First Nation	153	220 ⁶

Sources: FNNND 2016, INAC 2016, TH 2016.

3.4.4 BEAVER CREEK

As of September 2016, the population of Beaver Creek was 113 people, a 13% change from the 2011 census (YBS 2016c). Population percentage change in Beaver Creek between 2006 and 2011 was –10.7%. The reason for the fluctuations in population was not available through desktop research. Small populations are generally more prone to changes in percentage terms than larger populations.

The majority male population in 2011 ranged between the ages of 25 and 34 (21%) followed by 45 to 54 (14.5%). For females living in Beaver Creek the majority were aged between 25 and 34 (22%) followed by 55 to 64 (16%) (YG 2013c).

3.4.5 MAYO

Mayo had a population of 200 people as of the 2016 census, a 11.5% decline compared to the 2011 census (Statistics Canada 2016b). Population percentage change in Mayo between 2006 and 2011 was –8.9%. The reason for the fluctuations in population was not available through desktop research. Small populations are generally more prone to changes in percentage terms than larger populations.

According to 2013 Territory-level data, the majority male population in 2011 ranged between the ages of 55 and 64 (19.3%) followed by 25 to 34 and 45 to 54 (15.6% respectively). For females living in Mayo, the majority were aged between 25 and 34 (19.2%) followed by 45 to 54 (16.2%), and 55 to 64 (15%) (YG 2013d).

3.4.6 PELLY CROSSING

In September 2016, Pelly Crossing had a population of 393, a 17.3% change over the previous census period in 2011 (YBS 2016c). Population percentage change in Pelly between 2006 to 2011 was 13.2%. The reason for the fluctuations in population was not available through desktop research. Small populations are generally more prone to changes in percentage terms than larger populations.

⁶ Data provided from the 2012 White River – Quartz Exploration Report, provided by WRFN.

The majority male population in 2011 ranged between the ages of 25 and 34 (17.9%) followed by 45 to 54 (16.9%). For females living in Pelly Crossing, the majority were aged between 25 and 34 (16.6%) followed by 15 to 24 (14.9%) (YG 2013e).

3.5 MOBILITY

The sections below summarize internal migration and immigration and drivers for mobility for RSA and LSA populations, based on Statistics Canada data. Definitions for categories which are summarized in **Table 3-4**.

Table 3-4 Definitions of Mobility Provided by Statistics Canada

Type of Mobility	Definition
Movers one year ago	Refers to the status of a person with regard to the place of residence on Statistics Canada's chosen reference day, May 10, 2011, in relation to the place of residence on the same date one year earlier. Persons who have moved from one residence to another are referred to as movers. Movers include non-migrants and migrants.
Movers five years ago	Refers to the status of a person with regard to the place of residence on the reference day, May 10, 2011, in relation to the place of residence on the same date five years earlier. Persons who have moved from one residence to another are referred to as movers.
Non-Migrants	Non-migrants are persons who did move but remained in the same city, town, township, village or Indian reserve.
Migrants	Migrants include internal and external migrants.
Internal Migration	Persons who moved to a different city, town, township, village, or Indian reserve within Canada. Internal migrants are either intra-territorial or inter-territorial.
Intra-territorial	Persons who moved within Yukon.
Inter-territorial	Persons who moved from another Canadian province or territory.
External Migration	External migrants include persons who lived outside Canada at the earlier reference date.
Non-Immigrant	Non-immigrant refers to a person who is a Canadian citizen by birth.
Immigrant	Immigrant refers to a person who is or has ever been a landed immigrant/permanent resident. This person has been granted the right to live in Canada permanently by immigration authorities. Some immigrants have resided in Canada for a number of years, while others have arrived recently. Some immigrants are Canadian citizens, while others are not. Most immigrants are born outside Canada, but a small number are born in Canada. In the 2011 National Household Survey, individuals categorized as Immigrants includes immigrants who landed in Canada prior to May 10, 2011.

(Statistics Canada 2006b)

3.5.1 INTERNAL MIGRATION

Internal migration considers movement into and out of Yukon from other Canadian provinces and territories, and considers migrants who are citizens of Canada. **Table 3-5** summarizes Statistics Canada data and presents internal migration patterns from 2001, 2006, and 2011 in the LSA and RSA.

Table 3-5 Internal Migration Patterns in the LSA and RSA from 2001, 2006, and 2011

	2011				2006				2001			
	Total Population 2011 Census	% of Non- movers	% of Movers		Total Population 2006 Census	% of Non- movers	% of Movers		Total Population 2001 Census	% of Non- movers	% of Movers	
			% of Non- migrants	% of Migrants			% of Non- migrants	% of Migrants			% of Non- migrants	% of Migrants
Yukon (All)	32,950	83.79%	16.21%		29,915	83.39%	16.60%		28,210	81.55%	18.45%	
			59.36%	40.64%			64.45%	35.55%			62.73%	37.18%
<i>Yukon (Aboriginal)</i>	7,595	82.62%	17.31%		7,490	82.11%	15.42%		N/A	N/A	N/A	
			65.40%	34.60%			78.35%	21.65%			N/A	65.40%
Whitehorse (All)	22,565	82.45%	17.57%		20,105	82.14%	17.83%		18,705	80.38%	19.59%	
			63.68%	36.32%			72.94%	27.06%			68.35%	31.65%
<i>Whitehorse (Aboriginal)</i>	3,705	76.65%	23.35%		3,740	76.47%	20.99%		N/A	N/A	N/A	
			71.10%	28.90%			86.62%	13.38%			N/A	71.10%
City of Dawson (All)	1,290	79.07%	20.93%		1,315	80.61%	19.01%		1,225	77.14%	22.86%	
			62.96%	35.19%			60.00%	42.00%			75.00%	25.00%
<i>City of Dawson (Aboriginal)</i>	430	76.65%	23.35%		380	89.47%	10.53%		N/A	N/A	N/A	
			71.10%	28.90%			75.00%	25.00%			N/A	71.10%
Pelly Crossing (All)	330	78.79%	21.21%		290	87.93%	12.07%		325	86.15%	12.31%	
			64.29%	35.71%			42.86%	57.14%			50.00%	50.00%
<i>Pelly Crossing (Aboriginal)</i>	305	78.69%	19.67%		N/A	N/A	N/A		N/A	N/A	N/A	
			75.00%	33.33%			N/A	N/A			N/A	75.00%
Beaver Creek (All)	95	78.95%	21.05%		110	81.82%	13.64%		85	88.24%	17.65%	
			0.00%	100%			66.67%	66.67%			66.67%	66.67%
<i>Beaver Creek (Aboriginal)</i>	50	N/A	N/A		50	N/A	N/A		40	N/A	N/A	
			N/A	N/A			N/A	N/A			N/A	N/A

Source: Statistics Canada 2011, NHS. Statistics Canada 2006 and 2001

Note: Data from the 2016 Census on migration was not available as of the time this report was written.

COFFEE GOLD MINE

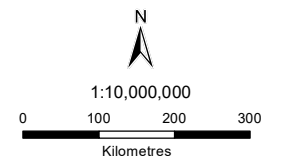
Gender and Age Distribution in Regional Study Area and Local Study Area Communities

Legend

- ▭ Project Footprint
- Local Study Area
- ▭ Regional Study Area

Notes

1. This map is not intended to be a "stand-alone" document, but a visual aid of the information contained within the referenced Report. It is intended to be used in conjunction with the scope of services and limitations described therein.



NAD 1983 UTM Zone 8N

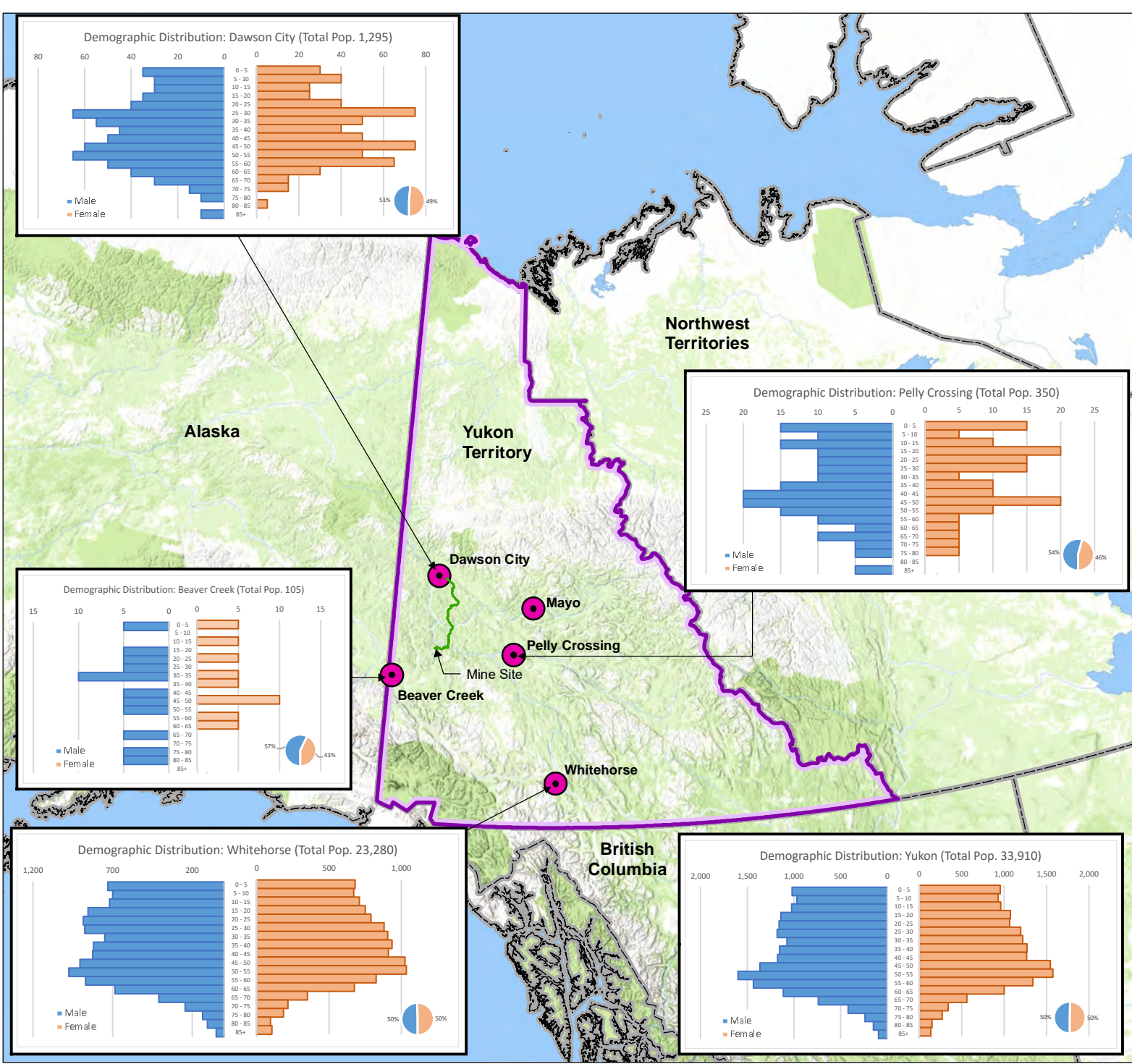
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Figure 3-4

Date: Mar 29, 2017

Drawn by: JS

Reviewed: DP



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3.5.2 IMMIGRATION

Recent immigration (Statistics Canada 2011a) into the LSA and RSA is summarized in **Table 3-6**. Of the 2011 immigrants, the LSA received new residents from Europe and other parts of North America, whereas the RSA received new residents from Asia, other parts of North America, Africa, Europe, and the Oceania.

Table 3-6 Recent Immigration into the LSA and RSA

Location	2011 Population	Recent Immigrants by Selected Place of Birth				
		Asia	Americas	Europe	Africa	Oceania and Other
RSA						
Yukon (Total)	35,563	565	95	160	45	20
LSA						
Whitehorse	27,212	555	55	95	35	0
City of Dawson	1,973	0	15	55	0	0
Pelly Crossing	344	0	0	0	0	0
Beaver Creek	117	0	10	0	0	0

Source: Amalgamated from NHS 2011 ‘Recent Immigration’ Data Set.

Note: Data for Mayo not available

3.5.3 DRIVERS OF MOBILITY

Mobility in Yukon in terms of Internal migration (intra-territorial and inter-territorial), and external migration (immigration⁷) is primarily driven by economic conditions. According to the YBS (2011a), population change is influenced more by migration in response to economic opportunities than by birth or death rates:

Yukon’s population is more sensitive to migration compared with some of the larger Canadian provinces, and to Canada as a whole. Unlike birth and death rates, migration is driven by economic conditions, and is more volatile and less predictable than birth or death rates. (YBS 2011a).

Interviewees stated that people are drawn to Dawson for the landscape and lifestyle, or to start or take over a business (Interview 21 Pers. Comm., 2016). Quality of life and seasonal employment are the main drivers of migration, and housing is a barrier to retaining people in the community over the long term (Interview 19, Pers. Comm., 2016). The Klondike Development Organization has said the following about migration into and out of the LSA:

Typical residents move to the Klondike when they are young for employment or older for the quality of life. Given the locale, secure employment is understandably a strong factor for both. Over time, the range of employment opportunities and the high cost of living begin to create doubt but quality

⁷ Recent immigrants are immigrants who landed in Canada between January 1, 2006 and May 10, 2011. Immigrant refers to a person who is or has ever been a landed immigrant/permanent resident (Stats Can 2013b). <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/index.cfm?Lang=E> (accessed June 3, 2016).

of life is still good. Irrespective of age, quality of life is eventually reduced sufficiently that a decision to leave is made. The young remain in Yukon for its quality of life while older groups choose elsewhere in Canada for improved employment opportunities and the reduced cost of living (KDO 2011).

3.6 POPULATION PROJECTIONS

The YBS estimates population changes from 2011 to 2021 independent of future changes in business or government projects. Its three potential growth scenarios are based on births, deaths, immigration and emigration. The three scenarios -- which were created in 2011, the last year that such projections were made public⁸ -- are:

- **Scenario 1:** Uses the shortest and most recent time period (2009 to 2011) as the reference point, and assumes that the population growth that took place during that period will continue until 2021. Under Scenario 1, Yukon's population will have grown 18.5%, or 6,523 people, between 2011 and 2021.
- **Scenario 2:** Uses a mid-range time period of 2006 to 2011 as the reference point, and assumes that the population growth that took place during that period will continue until 2021. Under Scenario 2, Yukon's population will have grown by 8,013 people, or 22.8%, between 2011 and 2021.
- **Scenario 3:** Uses the longest time period of 2001 to 2011 as the reference point, and assumes that the population growth that took place during that period will continue until 2021. Under Scenario 3, Yukon's population will have grown by 4,955 people, or 14.1%, between 2011 and 2021 (YBS 2011b).

Under all three scenarios, the number of senior citizens is likely to almost double, and the number of youth is likely to remain relatively steady at about 15% of the population. The working-age population (aged 15 to 64) is likely to be 68.9% to 70.3% of the population, compared to 75.2% in 2011, as Yukon-based baby boomers reach retirement. The YBS notes that Yukon is more sensitive than other jurisdictions in Canada to migration-driven changes to population because economic growth is a primary driver of migration, and is more difficult to predict than birth and death rates (YBS 2011b).

The population of Whitehorse is likely to grow faster than Yukon as a whole between 2011 and 2021 under all three scenarios, and is likely to reach 30,721 and 33,179 by 2021, an increase of 6-14% over the 2016 estimated population. The population of Dawson is projected to be potentially between 2,133 and 2,302 in 2021, which would represent a change of 0.24% to 4.7% over the 2016 estimated population (YBS 2011b). (Table 3-7). Data associated with population projections are not available for the smaller communities in the LSA.

⁸ Similar population projections are possible based on the 2016 census data, which was not available at the time this report was written.

Table 3-7 Population Projection Scenarios

Study Area	Estimated Population (March 31, 2016) ¹	Projected Population Extrapolating from Short-Term Historic Growth Scenario 1 (2009–2011)	% Change Compared with 2016 Population	Projected Population Extrapolating from Medium-Term Historic Growth Scenario 2 (2006–2011)	% Change Compared with 2016 Population	Projected Population Extrapolating from 10-Year Historic Growth Scenario 3 (2001–2011)	% change Compared with 2016 Population
Yukon	37,642	41,698	10.8%	43,188	14.7%	40,130	6.6%
Whitehorse	29,092	32,194	10.7%	33,179	14.0%	30,721	5.6%
Dawson	2,128	2,228	4.7%	2,303	8.2%	2,133	0.2%

Source: ¹YBS 2016b; ²YBS 2011b

4.0 FUTURE CONDITIONS WITH THE PROJECT

With the development of the Project, demographic indicators including population, gender distribution, age distribution, and mobility may change. This section identifies and describes potential interactions between Project-related activities and the Demographics IC during Project Construction, Operation, Reclamation and Closure, and Post-closure. Further, this section evaluates the potential for adverse Project-related changes to Demographics arising for each of these interactions. This section is intended to focus the analysis on those interactions most likely to cause changes to Demographics.

4.1 POTENTIAL PROJECT INTERACTIONS WITH DEMOGRAPHICS

Potential Project interactions with Demographics are presented in **Table 4-1**, and each potential interaction is rated using the terms provided in **Table 4-2**. When no interaction between the Project and Demographics is anticipated, or the interaction is considered negligible (i.e., not likely to have a measurable or detectable influence on the short- or long-term integrity of the identified indicator), it is not considered further in the analysis. The future conditions of the IC with development of the Project are a consistent consideration across the life of the Project, with variation from year to year as employment needs change, reflecting various levels of interaction across Project Phases.

Table 4-1 Identification of Potential Project Interactions with Demographics

Project Component	Interaction Rating	Nature of Interaction and Potential Change
Construction Phase		
Overall Construction Phase	Potential Interaction	Changes to Demographics may occur as a result of potential employment opportunities and demand for goods and services associated with the overall Construction Phase of the Project, specifically due to the potential for in-migration to the LSA. In-migration has the potential to cause changes to population, age distribution, gender distribution, and mobility. Yukon's population is aging and currently skews slightly male; the Project has the potential to attract more working-age people to Yukon, with the possibility that more of them are males, based on the experience of demographic changes that have resulted from development and operation of other mines in Yukon.
Operation Phase		
Overall Operation Phase	Potential Interaction	Changes to Demographics may occur as a result of potential employment opportunities and demands for goods and services associated with the overall Operation Phase of the Project, specifically due to the potential for in-migration to the LSA and RSA. In-migration may cause changes to population, age distribution, gender distribution, and mobility.
Reclamation and Closure Phase		
Overall Reclamation and Closure Phase	Negligible Interaction	Project-related employment is much less than during the Construction and Operation Phases, and resultant changes to demographic conditions from these phases is likely to reverse.
Post-closure Phase		
Overall Post-closure Phase	Negligible Interaction	Project-related employment will further reduce in Post-closure, and changes to demographic indicators are not likely.

Table 4-2 Potential for an Interaction between Demographics and the Project

Term	Definition
No Interaction	Project activity will not interact with the IC.
Negligible Interaction	Interaction with the Project activity will not have a substantive influence on the short- or long-term integrity of the IC (i.e., not measurable / not detectable using the identified indicator). This interaction is not considered further in the change analysis.
Potential Interaction	Interaction between the Project activity and the IC may have a substantive influence on the short- or long-term integrity of the IC (i.e., measurable or detectable using the identified indicator). The potential change due to the interaction is considered further in the change analysis.

4.2 CHANGES TO DEMOGRAPHIC INDICATORS

Potential changes to the demographic indicators, including population distribution and growth, age distribution, gender distribution, and mobility of LSA and RSA communities are anticipated to be driven by potential employment opportunities associated with the Project (direct, indirect, and induced).

Direct employment opportunities associated with the Project will vary among the Construction and Operation Phases and by Project component (i.e., Process Plant, Open Pit, surface and infrastructure, construction, and general and administrative). **Figure 4-1** presents a summary of annual labour estimates for the Project across the Project Phases.

Direct, indirect, and induced employment changes for Construction and Operation within and without Yukon are presented in **Appendix 20-A Economic Conditions Valued Component Assessment Report**. Direct employment within Yukon is anticipated to be 703 jobs total during Construction and 278 jobs average during Operation. Total employment (direct, indirect, and induced) within Yukon is predicted to be 1,260 jobs total during the Construction Phase, and 390 jobs annually during Operation. Including indirect and induced jobs elsewhere in Canada, total jobs created during the Project's Construction Phase are 2,567 and 686 during Operation.

COFFEE GOLD MINE

Maximum Annual Labour Estimates by Project Component

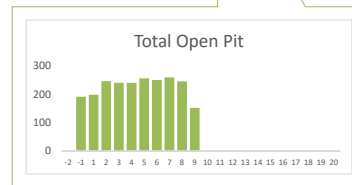
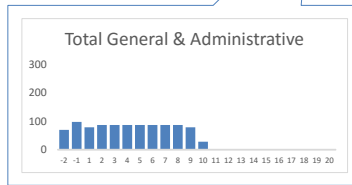
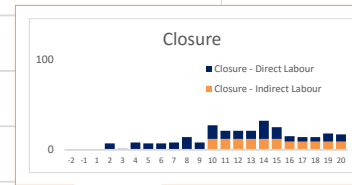
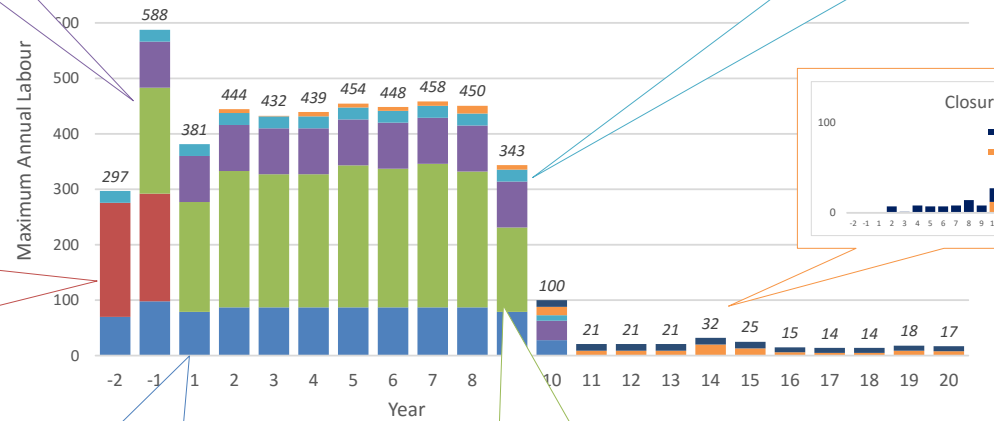
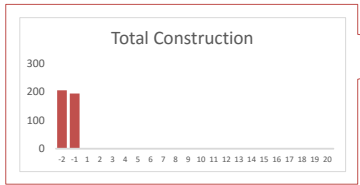
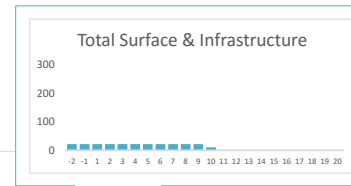
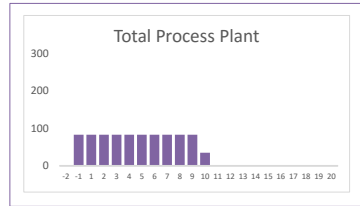


Figure 4-1

Date: Mar 29, 2017

Drawn by: JS

Reviewed: MH



The extent to which local and regional residents will participate, and the extent to which in-migration fills labour roles, depends on existing labour force size and availability, industry experience, timing of other projects with similar labour demands, personal choice, and other factors. These factors are discussed in the **Appendix 20-A Economic Conditions Valued Component Assessment Report (Appendix 20-A)**,

The Proponent will need to draw on labour from beyond the LSA and RSA to fill the full complement of workers. The Proponent will seek labour from the RSA, as well as beyond, potentially through temporary workers and permanent in-migration of workers.

4.2.1 POPULATION SIZE

The discussion below considers potential Project-related changes to population during the Construction and Operation phases of the Project. As discussed above, accurate predictions of the number of employees who may relocate, either inter-territorially or intra-territorially, is difficult to determine.

The analysis of potential changes to demographic indicators from direct employment relied on the following assumptions:

- **Percentage of local workforce:** The Project will source a certain percentage of the workforce from the local area. A study by the Mining Industry Human Resources Council shows that approximately 50% of staff at operating mines in Yukon in 2012 lived outside of Yukon. Yukon-based staff comprised 30% for mines in pre-production phases, although construction was not included as a separate category in the study. The assessment has used these figures as conservative (low) estimates of the number of locals who may be hired, thus estimating a conservatively large percentage of people who may not already live in Yukon and choose to work for the Project. Although it is unlikely that 50% of the non-local workforce during Operation and 70% of the non-local workforce during Construction may choose to relocate to Yukon, the assessment has assumed this is the case to assess the maximum conceivable effects of the Project on Demographics.
- **Family size:** Of the hypothetical numbers of employees who may relocate to either Whitehorse or Dawson, an average accompanying family was assumed to include another adult and two children. Census data shows that Yukon (together with Nunavut and Northwest Territories) is one of the provinces and territories in Canada with the lowest incidence of two-parent nuclear families (Statistics Canada, 2011a), so this estimation of accompanying family members may slightly over-estimate the amount of immigration that the Project may create, and is therefore conservative and precautionary.

Indirect and induced employment may also cause changes to demographic indicators. As discussed in **Appendix 20-A Economic Conditions Valued Component Assessment Report**, input-output modelling was performed by the Government of Yukon Economic Development based on information provided by the Proponent. The results of this modelling point to the number of potential full time equivalent jobs indicated in **Table 4-3**.

Table 4-3 Projected Effects, Total Construction and Average Annual Operation Phase Full-time Equivalent Jobs

	Year	Direct Jobs	Indirect Jobs	Induced Jobs	Total Jobs Created
Construction	2018	194	45	33	272
Construction	2019	337	78	58	473
Operation	2020	252	58	43	353
Operation	2021	263	61	46	370

Source: YGED, Pers. Comm., 2017

4.2.1.1 Construction

Potential changes to population in the LSA and RSA as a result of direct employment during Construction were calculated by adding the Project’s predicted changes to population (from direct, indirect, and induced employment) to YBS population projections. It was assumed each employee relocating was accompanied by a family defined as an accompanying adult and two children. While not all workers will relocate as a family, this assumption allows a conservative estimate of changes by cautiously over-estimating the number of people who will relocate to the area.

4.2.1.2 Operation

Changes to population size during the Operation phase were calculated using the following assumptions:

- The median growth prediction reference period provided by the YBS (2006 to 2011) is a population of 2,303 for Dawson and 33,179 f for Whitehorse in 2021 (YBS 211b).
- 30% of the workforce is likely to remain with a home base outside Yukon during the Construction Phase and 50% outside Yukon during the Operation phase.
- All potential employees relocating to Yukon will be accompanied by families (estimated as one adult partner and two children).

The number of new residents is derived by multiplying the Project-related employment during Operation by the percentage of relocated employees, and the number of family members per employee. The result is compared to the predicted population for the community.

These calculations show that the total Yukon population (direct, indirect, and induced workers plus their families) will increase by a maximum of 4.3% as a result of the Project during the second year of Construction, with total population change percentage decreasing to 2.2% and 2.3% afterwards.

If Whitehorse receives a proportional amount of the Project-related immigration – approximately 75% of Yukon’s population – the city’s population will grow by 1.7% to 3.2% from 2017 to 2021 as a result of the Project, with the amount varying by year as a function of the number of jobs available. In an extreme scenario in which 100% of the Project-related migrants are from Yukon, the city’s population would grow

by 2.2% to 4.5% beyond any population growth already predicted. If Dawson receives a proportional amount of new migrants – about 6% of Yukon’s population – its population would grow 1.7% to 3.2% beyond growth already predicted. **Table 4-4** below shows potential changes to population size in Whitehorse and Dawson as a result of the Project and summarizes the potential population increases as a result of the Project (YBS 2011a).

The Proponent’s local employment and procurement practices may change demographic indicators in Beaver Creek, Pelly Crossing, and Mayo. While these communities are smaller and further from the Project’s fly-in, fly-out drop-off points and thus less likely to experience in-migration from the direct workforce, Project local employment and procurement practices with First Nations may draw business and employment opportunities to these First Nations administrative centres, and may result in migration-driven population change.

Official population projections for these communities are not available, and historic data show these communities alternately growing and shrinking between official census periods. As such, it is challenging to quantify the size or the direction (positive or adverse) of change to population size in these communities.

4.2.1.3 Reclamation and Closure

At the end of the Operation Phase, the total number of jobs will decrease, and demographic conditions will likely return to close to baseline conditions.

Table 4-4 Population Size Change with Direct, Indirect and Induced Predicted Employment

Project Phase	Year	Without Project Yukon Projected Population	With Project: In-migration				With Project: Population Size Change (with families)							
			Construction (maximum)	Operation (potential)	With Families (3 additional)	Total Yukon Pop' n	RSA	LSA						
								Whitehorse, predicted future population		Whitehorse, 100 % of future population		Dawson (predicted)		
		<i>2006 - 2011 population patterns</i>	<i>70% of direct, indirect, and induced</i>	<i>50% of direct, indirect, and induced</i>	(#)		<i>% change to Yukon population</i>	(%)	(#)	(%)	(#)	(%)	(#)	
Construction	2018	39,861	190		762	40,623	2.5%	1.9%	580	2.5%	762	1.9%	41	
Construction	2019	40,970	331		1,324	42,294	4.3%	3.2%	1,001	4.3%	1,324	3.2%	71	
Operation	2020	42,079		176.5	706	42,785	2.2%	1.7%	530	2.2%	706	1.7%	37	
Operation	2021	43,188		185	740	43,928	2.3%	1.7%	552	2.3%	740	1.7%	38	

Source: YBS 2011b, Goldcorp employment estimates 2017

4.2.2 GENDER DISTRIBUTION

4.2.2.1 *Construction and Operation*

The in-migration of Project-related direct, indirect, and induced workers may attract more males in LSA and RSA community populations. As of 2011, males represented 51.1% of Dawson's population (YBS 2015). A review of 2013 workforce data from three operating mines in Yukon demonstrated that approximately 88% of total employees and contractors were male (Ecofor 2012).

If the Project attracts a similar proportion of male employees and contractors to the three operating Yukon mines studied in 2013, an additional 239 to 416 male workers will join the Yukon workforce and population during the Construction Phase, and 311 to 326 male workers will be added to the Yukon population during the Operation phase. This anticipated influx of employees represents 88% of the direct, indirect, and induced workforce during the Operation Phase. Assuming 50% of the accompanying family members are male, the Project will add 525 to 913 males to the Yukon population during the Construction Phase and 575 to 603 males to the RSA population during the Operation Phase. The Project would also change the gender balance in Yukon from 51.5% to 51.7% male (based on current projections) by 2019 without the Project to 51.8% to 52.3% male with the Project during the Construction phase. During the Operation Phase, the gender balance would change from 52.0% to 52.3% male without the Project by 2021 to 52.5% to 52.8% with the Project. **Table 4-5** below shows the estimated proportion of males that the Project has the potential to add to the local population during the Construction and Operation phases.

Changes to the gender balance are therefore likely to be negligible, and as a result, will not be carried forward in the analysis.

Table 4-5 Percentage Change to Population Gender Balance

Phase	Year	Total New Male Workers (direct + indirect + induced) (assumed 88% of population)	Number of Accompanying Male Family Members	Total New Males in Yukon as a Result of Project	Total Male Population Size as a Result of Project	Percent Male Population as a Result of Project	Difference in Yukon's Gender Balance (toward male) as a Result of Project
Construction	2018	239	286	525	21,037	51.79%	0.33%
Construction	2019	416	497	913	22,111	52.28%	0.54%
Operation	2020	311	265	575	22,465	52.51%	0.49%
Operation	2021	326	278	603	23,190	52.79%	0.49%

Notes: 2011 YBS estimate

Changes estimated at the Yukon level

Personal choice will dictate where workers choose to live

Sources: Goldcorp population estimates, YBS 2011b, YGED Pers. Comm., 2016

4.2.3 AGE DISTRIBUTION

The Project may interact with the RSA population by introducing additional working-age people, defined by Statistics Canada as those aged 15 to 64. Because of the possibility that working-age people may migrate with children, the Project also has the potential to add young people (aged 0 to 14) to the LSA and RSA.

4.2.3.1 Construction and Operation

The YBS estimates that 70% of the population will be working age by 2021,⁹ while 15% will be below-working-age people and the remaining 15% will be 65 or older. As of 2021, the Project will have added 740 new working-age people plus 740 children.¹⁰ No changes are likely to take place to the retired population as a result of the Project. With or without the Project, the working-age population will be approximately 70% (70.3% without the Project, 69.6% with the Project). The below-working-age population in **Table 4-6** would rise slightly to 15.8% with the Project, compared to 14.7% without the Project.

Table 4-6 Percentage Change to Working-age Population

Project-related Jobs Created by 2021 (direct, indirect, induced)	Working-age Population (age 15 – 64) without the Project by 2021 (%)	Working-age Population (age 15 – 64) with the Project (%)
370	70.3%	69.6%

Source: YBS 2011b.

The change to the working-age population as a result of the Project is negligible, and has not been carried forward for further analysis.

4.2.4 MOBILITY

In-migrants can be generally classified as returning former residents; Project employees and their immediate families; opportunists; goods and services providers to local communities; goods and services providers to the Project; and entrepreneurs (IFC 2009).

Project-related employment may have a positive effect on mobility by offering employment, and as a result facilitating the personal decision to move to Yukon.

4.2.5 SUMMARY

The Project will likely result in a small change to total population size during the Construction and Operation Phases, which will naturally reverse when the Project moves toward Reclamation and Post-closure. Annual Project-related growth rates are predicted to be within 2.2 % to 4.3 %, similar in range to the population

⁹ This forecast uses 2006-2011 historic population trends to predict future growth. Population projections for each individual year to 2021 were not available.

¹⁰ For this assessment, children are defined as those under age 15.

growth fluctuations for 2006 to 2016 (see **Figure 3-2**). Changes to gender distribution, age distribution, and mobility are likely to be negligible.

4.3 MITIGATION AND ENHANCEMENT MEASURES

Where non-negligible potential adverse changes are likely to occur from a project, mitigation measures are described that are consistent with the definition provided by the YESAA (i.e., measures for the elimination, reduction, or control of adverse environmental or socio-economic effects). Mitigation measures comprise any practical means taken to manage potential adverse change, and may include applicable standards, guidelines, and best management practices supported by specific guidance documents (e.g., *Engaging with Yukon First Nations and Communities, A Quick Reference Guide to Effective and Respectful Engagement Practices* (FNNND et al. 2012)). Potential Project-related changes to Demographics will be driven by potential employment opportunities, and those changes will likely vary as positive, neutral, or adverse, depending on the specifics of each relevant VC. As such, mitigation and enhancement measures are presented with the receptor VCs; mitigation is identified to minimize potential adverse effects and enhancements are proposed for any identified Project-related positive effects. This section provides a description of mitigation measures related to mitigating adverse changes and enhancing positive changes that are likely to result to employment from the Project.

The selection of mitigation and enhancement measures was informed by primary and secondary data collection, a review of mitigation and enhancement measures and follow-up programs undertaken for past projects, and First Nation and public input. Specifically, feedback was received regarding hiring policies, working with local communities, communication, training, and mine closure.

The suite of mitigation and enhancement measures presented in this section provides an over-arching framework for minimizing adverse changes and enhancing positive changes to demographic characteristics and mobility as a result of employment opportunities. Mitigation and enhancement measures to address potential changes to demographics are described below.

4.3.1 LOCAL HIRING PRACTICES

Goldcorp will aim to offer employment opportunities in the LSA where possible, in an effort to reduce migration and minimize changes to demographic indicators. Mitigation measures developed for local hiring practices comprise several components, including the following:

- Goldcorp will develop a Local Employment Strategy to encourage the recruitment of local and territorial labourers in accordance with the Proponent's internal sustainability management system.
- Goldcorp will provide first consideration for employment opportunities is provided to qualified local, regional, and First Nations residents with appropriate skills and qualifications.

- Goldcorp will communicate typical job descriptions, employment requirements (including skills and qualifications), and other information in a timely manner to support local residents in preparing and seeking any required training / experience in advance of Project Construction and Operation.
- Goldcorp will develop a program for First Nations employees to encourage work site integration and retention.
- Goldcorp will advertise employment opportunities with appropriate local organizations and through appropriate venues.
- Goldcorp will work with local communities and organizations to identify barriers to employment, and evaluate the implementation of potential solutions.
- Goldcorp will track the number of local applicants and employees through socio-economic monitoring.
- Goldcorp will implement a Community Feedback Protocol to respond to questions and concerns regarding Project employment opportunities.
- Goldcorp will engage with local businesses, industry partners, and organizations if potential concerns are identified related to local or regional labour competition. Goldcorp will work with these groups to identify appropriate means to offset any challenges.
- Goldcorp will engage educational bodies in the LSA and RSA to promote opportunities for experiential learning that will allow students to consider potential career paths within the mining industry.

The mitigation and enhancement measures associated with local hiring practices will be implemented in conjunction with other socio-economic mitigation, such as education and training activities, implementation of the Project's Engagement Plan, local contracting and procurement practices, and the Workforce Transition Strategy, among others. Mitigation and enhancement measures developed to support local hiring practices are generally standard in the industry, and reflect the Proponent's intentions to continue to work closely with local communities and maximize local benefits associated with the Project. Goldcorp will also be entering into Impact Benefit Agreements with affected First Nations, which will provide specific details regarding employment and other benefits.

The measures identified for local hiring practices will likely to become effective before the Project's Construction Phase begins. Uncertainty regarding the effectiveness and the ability to implement local hiring practices and measures is largely associated with the dynamic nature of labour markets and other project labour demands in the region and territory.

In the event that local hiring practices and measures are not effective, potential benefits associated with the Project may not be realized to their fullest extent by local communities and residents. As part of the proposed socio-economic monitoring, the Proponent will track the effectiveness of local hiring practices and mitigation measures, and adapt its strategies as needed based on feedback received.

4.3.2 LOCAL CONTRACTING AND PROCUREMENT PRACTICES

The Project will aim to prioritize business opportunities in the LSA, where possible, to reduce the number of in-migrants who may move to the area and alter demographic indicators. Mitigation and enhancement measures to address potential Project-related change to local contracting and procurement practices and measures comprise several components, including the following:

- Goldcorp will develop a local procurement strategy to encourage the recruitment of local and territorial businesses prior to seeking other labour sources.
- Goldcorp will implement the local contracting and procurement strategy through its direct contracts, as well as include requirements to procure local goods and contract services in its primary contracts.
- Goldcorp will include local and regional hiring clauses in all Project contracts.
- Goldcorp will communicate contracting and procurement opportunities, as well as pre-qualification factors (e.g., safety certifications) and evaluation criteria in a timely manner to enable local businesses to prepare and seek any required qualifications in advance of Project Construction and Operation.
- Goldcorp will advertise contracting and procurement opportunities with appropriate local organizations and through appropriate venues.
- Goldcorp will implement a Community Feedback Protocol to respond to questions and concerns regarding Project-related contracting and procurement opportunities.

The measures associated with local contracting and procurement practices will be implemented in conjunction with other socio-economic mitigation and enhancement measures, such as education and training activities, development and implementation of an Engagement Plan, and local hiring practices, among others. Several of the local contracting and procurement practices measures were informed by primary data collection and other Project communications.

Mitigation measures associated with local contracting and procurement practices are generally standard in the industry; reflect the Proponent's intention to work closely with local communities and maximize local benefits associated with the Project; and will likely become effective before the Project's Construction Phase begins. Uncertainty regarding the effectiveness and the ability to implement mitigation measures associated with local contracting and procurement practices is largely associated with the dynamic nature of labour markets and other project demands for goods and services in the region and territory.

In the event that mitigation measures identified for local contracting and procurement practices are not effective, potential benefits associated with the Project may not be realized to their fullest extent by local communities and residents. As part of the proposed socio-economic monitoring (**Section 7.0**), the Proponent will track the effectiveness of local contracting and procurement practices measures, and will adapt its strategies as needed based on feedback received.

4.3.3 EDUCATION AND TRAINING ACTIVITIES

The Project will aim to offer training opportunities to local residents, where possible, in an effort to improve their ability to work for or supply to the Project, therefore reducing the number of in-migrants who may move to the area and alter demographic indicators. Education and training measures comprise several components, including the following:

- Goldcorp will partner with local education and training organizations and institutions to identify programs or courses necessary for Project employment to encourage that programs or courses necessary for Project employment are available to local and regional residents.
- On-the-job training will be available for employees who identify a need or who express an interest in furthering their career.
- Career development opportunities will be available to encourage retention of employees and further develop the skills of the local labour force.
- New employee orientation will include cultural awareness training.
- Goldcorp will provide or facilitate training opportunities for under-represented groups in the mining sector, such as First Nations and women.
- Goldcorp will offer an Employee Assistance Program which provides support for career development.

Developing education and training measures will enable the Proponent to maximize direct employment and employment-related incomes in local (LSA) and territorial (RSA) labour. Facilitating, developing and implementing education and training programs specific to affected First Nations will assist the Proponent in addressing under-representation by identifying strategies for capacity-building and overcoming barriers to employment. The measures associated with education and training activities will be implemented in conjunction with other socio-economic mitigation and enhancement, such as development and implementation of the Engagement Plan and local hiring practices, among others.

Several of the education and training measures were informed by primary data collection and other Project communications. The education and training measures are generally standard in the industry, and reflect the Proponent's intention to continue to work closely with local communities and maximize local benefits associated with the Project. The education and training measures will likely become effective before the Project's Construction phase begins.

Uncertainty regarding the effectiveness and the ability to implement education and training measures is largely associated with the dynamic nature of labour markets, other project demands for labour in the region and territory, and individual choices. In the event that education and training measures are not effective, potential benefits associated with the Project may not be realized to their fullest extent by local communities and residents. As part of the proposed socio-economic monitoring, the Proponent will track the effectiveness education and training measures, and adapt its strategies as needed based on feedback received.

4.3.4 WORKFORCE TRANSITION STRATEGY

Goldcorp will prepare for a planned or unplanned temporary or permanent Project closure, an event that has the potential to encourage people who have moved to the Project area for economic opportunity to then move away. Mitigation measures related to the Workforce Transition Strategy comprise several components, as identified below:

- Goldcorp will endeavour to carry out a staged reduction of workforce in the event of a temporary or permanent closure.
- Goldcorp will fulfill all conditions for terminations as defined in contracts, including severance payments. Goldcorp will offer an Employee Assistance Program to support employees during transition in the event of a temporary or permanent closure.
- Goldcorp will communicate the proposed schedule and activities associated with temporary or permanent closure of the mine to employees, local communities, governments and businesses and appropriate local non-profit and non-governmental organizations, allowing those engaged in indirect and induced employment and businesses to prepare for the transition, and begin to seek other opportunities.
- Goldcorp will offer on the job training to employees.
- Goldcorp will identify and provide a local workforce transition contact to respond to questions and concerns regarding temporary or permanent closure status, schedule, and activities.

The Workforce Transition Strategy will include support for education, training, and career development opportunities. Project-specific training opportunities (**Section 4.3.3**) and job experience will likely be beneficial for employees seeking other opportunities during the Reclamation and Closure and Post-closure Phases of the Project. The measures associated with the Workforce Transition Strategy will be implemented in conjunction with other mitigation measures associated with the socio-economic disciplines, such as the Engagement Plan and local hiring practices, among others. The mitigation measures associated with the Workforce Transition Strategy will likely become effective in advance of a planned or unplanned temporary or permanent closure.

Uncertainty regarding the effectiveness and the ability to implement Workforce Transition Strategy mitigation measures is largely associated with the dynamic nature of labour markets, other project demands for labour in the region and territory, and individual choices. In the event that mitigation measures related to the Workforce Transition Strategy are not effective, potential changes associated with Project closure may occur. As part of the proposed socio-economic monitoring (**Section 7.0**), the Proponent will track the effectiveness of the mitigation measures developed for the Workforce Transition Strategy, and will adapt its strategies as needed based on feedback received.

4.4 POTENTIAL RESIDUAL CHANGE TO DEMOGRAPHICS

Anticipated residual changes of the Project to Demographics (i.e., changes likely to occur subsequently to the application of mitigation measures) include small changes to total population size during Construction and Operation phases. These residual changes will reverse during the Reclamation and Closure and Post-closure Phases, and demographic conditions are likely to return to baseline conditions.

The effectiveness of the proposed mitigation strategies (local hiring practices, local contracting / procurement practices, and education/training activities) is dependent on individual decisions and therefore difficult to predict. While the measures will likely influence decisions, it is likely that changes to population size will occur.

4.5 SUMMARY OF FUTURE CONDITIONS WITH THE PROJECT

Changes to the Demographics IC may result from in-migration to the LSA due to direct, indirect, and induced Project-related employment opportunities in the Construction and Operation Phases. To mitigate changes to demographic indicators, which may result in adverse effects on relevant receptor VCs, the Proponent will develop and implement local hiring policies and community-based training initiatives. **Table 4-7** provides a summary of potential Project-related residual changes to Demographics.

Changes to gender distribution, age distribution, and mobility are likely to be negligible (**Section 4.2.5**) and were therefore not carried forward in the analysis of residual change.

Table 4-7 Summary of Potential Project-related Residual Changes to Demographics

Project Component / Activity	Potential Change to Demographics	Proposed Mitigation Measures	Potential Residual Adverse Change
Overall Construction Phase	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	<ul style="list-style-type: none"> • Local hiring practices • Local contracting and procurement practices • Education and training activities • Workforce Transition Strategy 	Likely a residual change (increase) in population size.
Overall Operation Phase	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	<ul style="list-style-type: none"> • Local hiring practices • Local contracting and procurement practices • Education and training activities • Workforce Transition Strategy 	Likely a residual change (increase) in population size.

5.0 FUTURE CONDITIONS WITH THE PROJECT AND OTHER PAST, PRESENT, AND FUTURE PROJECTS AND ACTIVITIES

This section presents a preliminary analysis of potential residual cumulative changes to Demographics and the Project's contribution to these changes. Cumulative changes result from interactions between Project-related changes and the incremental residual change on the IC of other past, present, and reasonably foreseeable future projects and activities. Potential activities that may affect Demographics are provided in the Project and Activity Inclusion List provided in the **Section 5.0 Assessment Methodology; Appendix 5-B Projects and Activities Inclusion List**.

Input from primary data collection activities were used to identify and select Demographics as an IC, and characterize existing conditions within the LSA and RSA. Refer to **Section 1.0** and **Section 3.0** for additional details on this process. Demographic data in Section 3.0 supports the cumulative effects assessment.

5.1 SPATIAL AND TEMPORAL SCOPE OF THE CUMULATIVE CHANGE ANALYSIS

As described in **Section 1.3.1**, the spatial boundary of the cumulative effects analysis for Demographics is described as an area inclusive of active and proposed mine projects in Yukon, that may result in a change of demographics within the LSA and RSA.

The temporal boundaries for consideration of cumulative changes are defined as the Construction, and Operation Phases. The Project's Reclamation and Closure and Post-closure Phases are not considered, as residual changes were not identified for these phases (**Section 1.3.2**).

5.2 CHANGES DUE TO OTHER PAST, PRESENT, AND FUTURE PROJECTS AND ACTIVITIES

The baseline description of existing conditions (**Section 3.0**) presents the incremental change from past and present projects and activities; therefore, this cumulative change analysis focuses on the potential changes of reasonable and foreseeable future projects and other activities. Relevant projects and activities that have or may result in residual changes that could interact with Project-related changes to demographics within the spatial and temporal scope of the cumulative change analysis are identified in the Project and Activity Inclusion List (**Appendix 5-B**), and summarized below in **Table 5-1**.

Current and future agricultural, energy, forestry, industrial, settlement, transportation, and utility projects are not likely to substantially affect employment numbers, and subsequently will not result in a measurable or detectable change to demographics in the LSA or RSA. Similarly, employment requirements for mining exploration projects, and as placer mines are also not likely to result in changes to demographics within the LSA and or RSA – activity levels for these projects will likely not change.

Major mine projects, both active and proposed in Yukon, may result in substantial additional employment opportunities, however, and may change demographics in the LSA and RSA, and are subsequently considered within the following cumulative effects analysis. Current and future mining projects include:

- Bellekeno (Alexco Keno Hill Mining Corp.);
- Brewery Creek (Golden Predator Canada Corp.);
- Carmacks Copper (Carmacks Mining Corp.);
- Casino (Casino Mine Corporation).
- Eagle Gold (Stratagold Corporation);
- Kudz Ze Kayah (BMC Minerals)
- MacTung Tungsten Mine (North American Tungsten Corporation Ltd.)
- Minto (Minto Explorations Ltd.); and
- Wolverine (Yukon Zinc Corporation);

Mining projects considered in the analysis of cumulative change on demographics, and their potential interactions with the Project, are summarized in **Table 5-1**.

Table 5-1 Other Projects and Activities Considered in the Analysis of Cumulative Change on Demographics

Other Project / Activity	Description	Potential Residual Effects	Potential for Interaction Resulting in Cumulative Change and Rationale
Project Name			
Bellekeno (Alexco Keno Hill Mining Corp.);	The Bellekeno silver mine, commenced commercial production at the beginning of calendar year 2011 and was Canada's only operating primary silver mine from 2011 to 2013	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	No – Mine operations at Bellekeno are currently suspended. As it is unknown if/when operations will commence the Project will not likely result in a cumulative change on Demographics.
Brewery Creek (Alexco Resource Corp.)	Brewery Creek is a gold mine located 55 km east of the Dawson. It was operated from 1997 to 2001, and is currently completing reclamation and closure.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	No – a mine project in reclamation and closure phase will likely consist of a negligible workforce, and any interaction with the Project will not likely result in a cumulative change on Demographics.
Carmacks Copper (Copper North Mining Corp.)	Carmacks Copper is a copper, gold, and silver mine project located 38 km northwest of Carmacks and 192 km north of Whitehorse. The Project received its Quartz Mining Licence in 2009, but has been in a state of temporary closure since that time, Temporary closure will likely continue until 2020.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes, with population size
Casino (Casino Mining Corp.)	Casino is a copper, gold, molybdenum, and silver mine project located 300 km northwest of Whitehorse. It is proposing a 22-year mine life. The Project was recently referred to a Panel Review.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes, with population size
Eagle Project	Eagle Gold is a gold deposit project located 85 km by road northeast of Mayo.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes, with population size

Other Project / Activity	Description	Potential Residual Effects	Potential for Interaction Resulting in Cumulative Change and Rationale
Project Name			
Kudz Ze Kayah (BMC Minerals)	The Kudz Ze Kayah Project is a proposed copper, lead, zinc project located in the northern Pelly Mountains, 135km south of Ross River in South Central Yukon.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes
MacTung Tungsten Mine (North American Tungsten Corporation Ltd.)	The Mactung property is located in Yukon in the Selwyn Mountain Range and covers the area around Mt. Allan, approximately eight kilometers northwest of MacMillan Pass. The nearest settlement accessible by road, Ross River, is 250 km away to the southwest. The project is currently under screening pursuant to YESAA.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes
Minto (Capstone Mining Corp.)	Minto is an open pit copper mine located 240 km north of Whitehorse. As of 2016, the mine has seven years of operating life remaining. The Project currently employs 307 staff, including contract employees.	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	Yes, with population size
Wolverine (Yukon Zinc Corp.)	Yukon Zinc's Wolverine Mine is a high grade zinc-silver-copper-lead-gold underground mine located approximately 280 km north east of Whitehorse	Changes to demographic indicators: <ul style="list-style-type: none"> • Population size • Gender distribution • Age distribution • Mobility 	No – Mine operations at Wolverine are currently suspended. As it is unknown if/when operations will commence the Project will not likely result in a cumulative change on Demographics.

Notes: 1. No – no interaction or not likely to interact cumulatively; Yes – potential for cumulative change.
 2. Potential residual changes described further in **Section 4.4**

5.3 POTENTIAL CUMULATIVE CHANGES

This section describes potential cumulative changes to Demographics resulting from interactions with mining projects identified in **Table 5-1**.

5.3.1 CHANGES TO DEMOGRAPHIC INDICATORS

The anticipated major mining projects will likely result in additional employment opportunities in the RSA. An estimate of the number of direct workers that the projects may contribute to the Yukon population over a 10-year period is provided in **Table 5-2**. Indirect and induced workers have not been provided in the table as this information was not consistently available across all projects.

Cumulatively, other projects within Yukon will likely require from 754 to 1816 workers per year between 2018 and 2027. The greatest demand for workers will occur between 2020 through 2023 (approx. 1,688 per year), with peak employment of 1,816 workers anticipated for 2021. Workforce demand is anticipated to drop beyond 2024 as some projects complete operations and move into closure and reclamation phases which do not require the same level of personnel.

As part of the population change driven by direct employment, each worker is anticipated to be accompanied by an average of three dependents (one adult, two minors). Similar to above, the greatest increase in population due to other projects within Yukon is anticipated to occur between 2020 and 2023 where workers will likely add an average of 6,750 people to the total population. Peak population change will occur in 2021, with direct workers accounting for 7,264 persons of the Yukon population.

Table 5-2 Estimated Number of Direct Workers and Worker Dependents Contributed from Other Projects

Other Projects (Yukon)	Estimated Number of Workers by Year									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Workers only	1,089	1,128	1,612	1,816	1,647	1,677	1,346	754	754	754
Workers plus dependents	4,356	4,512	6,448	7,264	6,588	6,708	5,384	3,016	3,016	3,016

Source: Minto Explorations 2017, YESAB 2009, 2012, 2014

Note: Estimates do not include indirect or induced workers, as this information was not available across all projects. Information pertaining to direct jobs was consistently available, and therefore used as the basis for comparison. Actual number of jobs created is likely to be higher.

All workers are assumed to be bringing three dependents, one adult and two minors. Workforce estimates are based on publicly available information, and therefore subject to change based on other proponents' business decisions and market conditions.

The Coffee Project's direct workforce and their dependents will also contribute to changes in the population. The Coffee Project's indirect and induced workers were not included in this population change for consistency and comparison with other projects. **Table 5-2** below shows the total number of the Project's direct workers, plus dependents, over a 10-year period.

Between 2018 and 2028, the Coffee Project will likely require an average of 262 workers per year, with peak employment occurring in 2019 (337 workers) as Project construction is completed. With Project operations starting in 2020, an average of 263 workers per year is anticipated. With respect to workers dependents, the peak population change contributed to the Project will occur in 2019 with the workforce contributing 1,348 to the Yukon population. Workers will also account for an average population of 1,052 persons per year from 2021 through 2027.

Table 5-3 Estimate Number of Direct Workers and Workers Dependents Contributed by the Coffee Project

Coffee Project	Estimated Number of Workers by Year									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Workers only	194	337	252	263	263	263	263	263	263	263
Workers plus dependents	776	1,348	1,008	1,052	1,052	1,052	1,052	1,052	1,052	1,052

Source: Goldcorp employment estimates 2017

Note: The Coffee Project's estimates do not include indirect or induced workers. Direct jobs only estimated for consistency and comparison with other projects.

The Coffee Project and other past, present, and future projects are expected to accumulate in adding to the Yukon population. **Table 5-4** below shows how other projects' workers plus dependents will add to the Project's and contribute to Yukon's predicted population.

Over the ten year period from 2018 to 2027, all cumulative projects (other projects including Coffee) are estimated to account 7.5 % to 16.1 % of the total Yukon population. Of this proportion, the Coffee project will account for approximately 2.0% of the anticipated future population size. As with all other projects, the greatest cumulative increase in worker's population will occur from 2020 to 2024 while all projects are in operation. Peak population will occur in 2021 with accumulative workers and dependents accounting for 16.1% (8,316 persons) of the total Yukon population. As previously acknowledged, workforce demand, and related population estimates are anticipated to drop beyond 2024 as some projects complete operations and move into closure and reclamation phases which do not require the same level of personnel.

Table 5-4 Estimate Number of Direct Workers and Workers Dependents Contributing to the Coffee Project

Cumulative Effects (Yukon)	Estimated Number of Workers by Year									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Direct workers plus dependents (Coffee Project plus other projects)	5,132	5,860	7,456	8,316	7,640	7,760	6,436	4,068	4,068	4,068
Predicted population of Yukon (without Coffee Project or any other projects)	39,861	40,970	42,079	43,188	44,297	45,406	46,515	47,624	48,733	49,842
Total predicted population of Yukon (includes Coffee Project plus other projects)	44,993	46,830	49,535	51,504	51,937	53,166	52,951	51,692	52,801	53,910
% population increase as a result of cumulative projects	11.4%	12.5%	15.1%	16.1%	14.7%	14.6%	12.2%	7.9%	7.7%	7.5%
Coffee Project's contribution to future expected population size (which includes other projects)	1.7%	2.9%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

Source: Minto Explorations 2017, YBS 2011b, YESAB 2009, 2012, 2014

5.4 MITIGATION MEASURES FOR CUMULATIVE CHANGE TO DEMOGRAPHIC INDICATORS

No additional mitigation measures are proposed to reduce the Project’s contribution to a cumulative adverse change in Demographics beyond those already proposed to mitigate changes likely to result from the Project. There is a lack of information about the mitigation measures for past, current, and future projects, however, it is assumed that other projects of similar size and scale have implemented or will implement appropriate mitigation measures to eliminate, reduce, or control project-specific adverse changes to demographics.

5.5 SUMMARY OF FUTURE CONDITIONS WITH THE PROJECT AND OTHER PROJECTS AND ACTIVITIES

This section provides a preliminary analysis of the cumulative changes from other projects and activities and the Project’s incremental contribution to those cumulative changes in terms of the residual changes to demographics, summarized in **Table 5-5**.

All three population prediction scenarios developed by the YBS indicate continued population growth regardless of future reasonably foreseeable projects (YBS 2011). As such, it is assumed that the populations will change in both the LSA and RSA regardless of the Project.

Table 5-5 Summary of Potential Project-related Residual Adverse Cumulative Changes to Demographics

Project Component / Activity	Potential Cumulative Change to Demographics	Proposed Mitigation Measures	Potential Residual Adverse Cumulative Change
Overall Construction Phases	Changes to demographic indicators	Project mitigation measures	The Coffee project will account for approximately 2.0% of the predicted cumulative population increase, inclusive of other projects. .
Overall Operation Phase	Changes to demographic indicators	Project mitigation measures	The Coffee project will account for approximately 2.0% of the predicted cumulative population increase, inclusive of other projects.

6.0 SUMMARY OF ANALYSIS OF CHANGES TO DEMOGRAPHICS

Potential interactions between the Project and the Demographics IC are likely during the Construction and Operation Phases. Although employment opportunities associated with the Project will occur during the Reclamation and Closure and Post-closure Phases, the interaction will likely be negligible during that phase compared to Construction and Operation. The Project will likely interact with Demographics through changes in employment opportunities.

Mitigation and enhancement measures are common with the linked VC reports with which the Demographics IC interacts most closely, specifically: Economic Conditions (**Appendix 20-A**), Community Infrastructure and Services (**Appendix 22-A**); Community Health and Well-being (**Appendix 25-A**) and Education Services (**Appendix 23-A**). Key mitigation and enhancement measures include:

- Local hiring practices
- Local contracting and procurement practices
- Education and training activities
- Workforce Transition Strategy.

With the application of mitigation and enhancement measures, small changes to population are predicted for the communities in the LAA, for example between 37 to 71 persons (1.7 % to 3.2% increase) in Dawson, and 530 to 1001 (1.7 % to 3.2% increase) in Whitehorse. Such changes are within the variability of recent annual population growth in Yukon. The residual cumulative adverse changes will likely materialize in different ways depending on the community. Ultimately, the smaller populations, labour forces, and focused local economies of the small communities in the LSA render these communities less resilient than the Dawson and Whitehorse, but still capable of responding to influences from Project mitigation. The LSA's smaller communities (Beaver Creek, Mayo, Pelly Crossing) may experience change of uncertain size or direction as a result of the Project. Monitoring and adaptive management will be designed to address potentially adverse changes.

7.0 CHANGE MONITORING AND ADAPTIVE MANAGEMENT

Due to the dynamic nature of socio-economics, the Proponent will develop a socio-economic monitoring program to 1) verify the accuracy of the residual change predictions and the value of proposed mitigation measures; 2) assess the efficacy of proposed mitigation measures and the need for modifications to those measures so change predictions will remain valid; 3) identify unexpected socio-economic outcomes or problems; and 4) implement additional mitigation measures as per adaptive management plans.

The socio-economic monitoring program will likely track and respond to various topics across the socio-economic VCs and ICs, including Economic Conditions, Social Economy, Community Infrastructure and Services, Education Services, Land and Resource Use, Community Health and Well-being, and Demographics. The approach and methods, including data sources, of the socio-economic monitoring program will be developed in conjunction with the City of Dawson, TH, and YG.

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