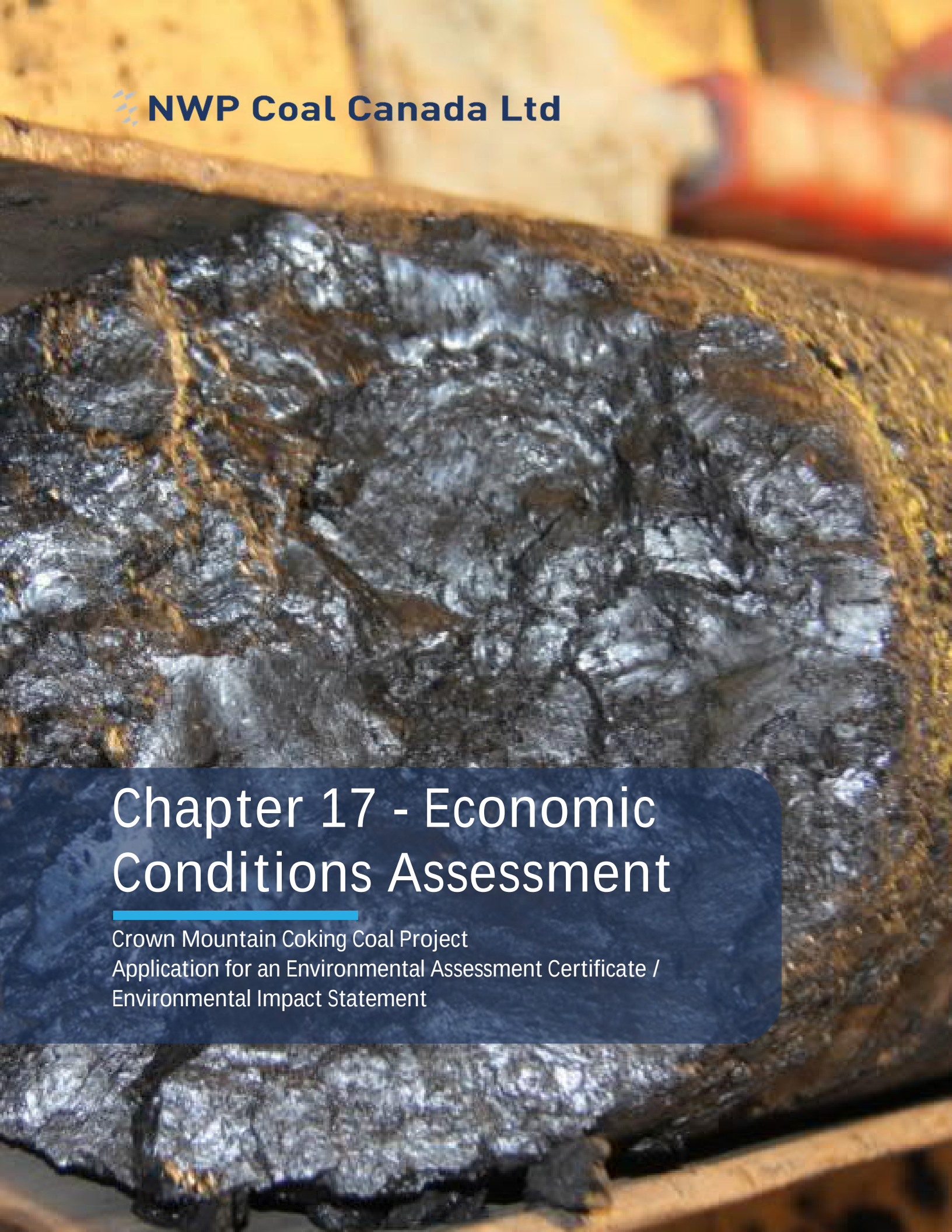
NWP Coal Canada Ltd



Chapter 17 - Economic Conditions Assessment

Crown Mountain Coking Coal Project
Application for an Environmental Assessment Certificate / Environmental Impact Statement

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17. Economic Conditions Assessment

17.1 Introduction

Economic conditions are a key component to consider due to the nature of the Project and its potential effects on local and regional economies, primarily through the generation of employment opportunities, the procurement of goods and services, and tax revenues. Economic effects are critical to understanding how Project-related effects may benefit regional and local communities; as such, economic conditions was identified as a valued component (VC) in the Application Information Requirements (AIR; Environmental Assessment Office [EAO], 2018).

Chapter 17 defines the scope of the assessment on economic conditions through the presentation of the VC and provides an overview of existing conditions related to population and demographics; regional and local economies; government finances; employment and income; and labour force. The effects assessment on the economic conditions includes an overview of Projects interactions, potential effects, mitigation and benefit enhancement measures, characterization of residual effects, and a cumulative effects assessment.

An understanding of the potential effects to the economic conditions with respect to the Project is critical to the enhancement of potential positive economic effects. The Project is expected to generate local and regional employment, employment incomes, and training opportunities, and contribute to local and regional business revenues and municipal, provincial, and federal government finances. The assessment of effects on economic conditions is anticipated to have linkages with other VCs; these effects are primarily assessed in the following chapters:

- Chapter 18: Socio-Community Assessment;
- Chapter 19: Land Use Assessment; and
- Indigenous Communities discussed in Chapters 23 through 31.

17.1.1 Regulatory and Policy Setting

Mining is a major economic driver that creates and sustains employment opportunities, business revenues, and government revenues to support community well-being. Mining can also provide the basis for diversification, as well as other strategies to support economic resilience at the regional and local level. Mining is cyclical and has high potential for leakage based on the labour force requirements. Economic planning often recognizes these challenges and aims to address them. These challenges are central to economic development planning in areas with a high portion of mining jobs and income. Economic development planning occurs at provincial, regional, and local scales. The following describes key policies of relevance to the study areas for this Project (see Section 17.2.3).

As stated in Chapter 1, the Project is subject to and is being prepared to meet the requirements of the Canadian Environmental Assessment Act (CEA Act, 2012) and the British Columbia Environmental Assessment Act (B.C. EAA, 2002). As previously noted in this Application/Environmental Impact Statement (EIS), the CEA Act, 2012 was replaced by the Impact Assessment Act (IAA) in 2019 and the B.C. EAA was updated in 2018. As requested by provincial and federal regulatory agencies, some elements of the new/updated EA/IA processes have been considered in this EA process. One of these elements is the consideration of gender through a Gender Based Analysis plus (GBA+). The IAA, 2019 includes a requirement to consider "the intersection of sex and gender with other identity factors" in federal impact assessments (section 22(1)(s)), otherwise known as the gender-based analysis-plus (GBA+) provision. On May 3, 2023, the Project was transitioned to the EAA (2018) through a Transition Order under Section 78(7) of the 2018 Act. The B.C. EAA, 2018 requires assessments to consider "the disproportionate effects on distinct human populations, including populations identified by gender" (B.C. EAA, 2018).

A GBA+ assessment considers the potential for disproportionate effects for diverse or potentially vulnerable population groups or subgroups (e.g., youth, women, and Indigenous people). NWP has chosen to include GBA+ considerations in this environmental assessment to meet emerging expectations of the IAA, 2019 and B.C. EAA, 2018. While the GBA+ study undertaken for this Project incorporated elements of the GBA+ approach, it was not intended to represent a full GBA+ assessment, as this Project follows the legislative requirements of the CEA Act, 2012 and B.C. EAA, 2018. This study has included the consideration of various issues, including for example: the potential for increased violence to women, changes in housing and healthcare accessibility, mental health, and employment barriers. A focus on this work is on the recommendation of measures that NWP could undertake to reduce any ongoing or potentially additional disproportionate impacts to more vulnerable subgroups.

The findings and recommendations resulting from the completed gender assessment are included in this chapter and in Chapter 18, which summarizes socio-community conditions in British Columbia and the Regional District of East Kootenay (RDEK) and the potential for impact on these conditions as a result of the Project. Chapter 19 provides an overview of land use at the regional and local levels and the potential for impacts on land and resource use as a result of the Project.

17.1.1.1 Provincial Economic Development Planning

The most recent provincial mining development strategy is the B.C. Ministry of Energy and Mines' (BCMEM) 2012 British Columbia's Mineral Exploration and Mining Strategy (BCMEM, 2012). As part of the strategy, BCMEM looked to facilitate the construction of new mines and expansion of existing mines. The construction and expansion of mines would create and sustain jobs; expand government revenues; and

contribute to B.C.'s overall economic development (BCMEM, 2012). As part of an ongoing sector strategy, B.C. aims to increase mineral exploration to maintain opportunities for future mining activity (BCMEM, 2012). BCMEM also views mining as an opportunity to improve the well-being of First Nations through benefit-sharing agreements (BCMEM, 2012). To achieve these goals, BCMEM identified six goals:

- Enhance competitive edge;
- Streamline regulatory processes;
- Ensure health and safety of workers;
- Protect the environment;
- Build partnerships with First Nations; and
- Develop a skilled workforce (BCMEM, 2012).

BCMEM utilizes these priorities as part of their strategy for sustainable mining development in the Province and maintaining mining's role as a key sector.

17.1.1.2 Regional Economic Development Planning

Economic development planning occurs largely at the regional level, including regional Indigenous economic development strategies. Mining is foundational to regional and local economies, and as previously noted, mining can support the local and regional economic base (e.g., contributions to employment, business revenues, and government revenues), on which future diversification efforts can be developed.

The RDEK does not provide an economic development function or service; however, the RDEK has facilitated economic development activities indirectly through the provision of planning services and infrastructure that benefit the regional economy (RDEK, 2014b). Within the RDEK, there are a variety of regional economic development strategies and initiatives that encompass the RDEK or a subsection of the RDEK. These strategies and initiatives, as well as the organizations responsible for their implementation, are described in further detail below.

17.1.1.2.1 Columbia Valley Economic Development Strategic Plan

The communities of the Columbia Valley, via the Columbia Valley Community Economic Development Advisory Commission, are working together in a community economic development partnership. This partnership aims to achieve various economic development objectives, including but not limited to:

- Increasing resilience by diversifying and strengthening the economy of the Columbia Valley;
- Increasing year-round, quality local employment opportunities;
- Increasing and retaining permanent residents;
- Supporting entrepreneurship, new business development, and existing business growth;
- Promoting local investment and the benefits of same;
- Promoting business models with sound environmental and social practices; and
- Collaborating with, and enhancing the work of, other agencies currently undertaking economic development initiatives (Columbia Valley Community Economic Development, n.d.).

The Columbia Valley Community Economic Development Office is leading the Columbia Valley Economic Strategic Plan with the support of other regional bodies (Watmough, 2017). Community strengths identified in the Strategic Plan include natural environment features and quality of life. Community

weaknesses identified include seasonality, lack of affordable housing, lack of community services, and lack of youth (Watmough, 2017). The Plan identified tourism and community services as opportunities for economic development based on the current community strengths and weaknesses (Watmough, 2017). Threats include a lack of industry, financial constraints, and out-migration (Watmough, 2017). Based on this analysis, the Plan identified tourism growth as a key opportunity. The Columbia Valley Economic Strategic Plan also noted that many resources, businesses, and manufacturers in the Columbia Valley may support the development of year-round business, enhance experience of visitors, and enhance economic diversification by supporting opportunities for small-scale makers (e.g., welders, bartenders, mechanics, etc.; Watmough, 2017). The development of mines can be understood as a component of an integrated economic system, as mines can enhance business opportunities in a variety of sectors.

Economic leakage is identified as an issue for the RDEK as household, business, and recreational spending often occurs outside the RDEK (Watmough, 2017). The Columbia Valley Community Economic Development Strategic Plan aims to address leakage by encouraging local consumer spending and incentivizing industrial and commercial activities to enter the Region (Watmough, 2017).

17.1.1.2.2 Columbia Basin Management Plan

The 2015 Columbia Basin Management Plan aims to promote economic development by creating "a diverse and resilient economy [which] is supported by strong businesses, a trained workforce and sufficient job opportunities" (Columbia Basin Trust 2015, 2017). To accomplish this, the Columbia Basin Trust has an Economic Strategic Framework (2017) focused on the use of $20 million allotted by the trust for economic development (Columbia Basin Trust, 2017). Strategic objectives include:

- Originate, acquire and/or develop regional assets to support job creation and sustainable economic growth;
- Develop and maintain innovative programs and initiatives to support economic growth, business vibrancy and workforce development;
- Support local and regional efforts to advance economic development priorities; and
- Optimize economic development opportunities arising from other Columbia Basin Trust activities (Columbia Basin Trust, 2017).

The Columbia Basin Trust will engage in projects and programs that facilitate these goals and establish relationships with communities within the basin (Columbia Basin Trust, 2017).

17.1.1.2.3 Elk Valley Economic Initiative

The Elk Valley Economic Initiative is a partnership between Fernie, Sparwood, Elkford, and Tobacco Plains Indian Band focused on business development and attracting businesses to the RDEK (District of Sparwood, n.d.). The Elk Valley Economic Initiative aims to expand opportunities for existing businesses, while also attracting new businesses and diversifying the types of businesses in the RDEK. In addition, this initiative aims to reduce economic leakage by encouraging full-time residents to spend their money locally (Elk Valley Economic Initiative, 2015).

Within the Elk Valley, mining and tourism have been identified as effective sectors to be pursued (Vann Struth Consulting Group Inc., 2013). It has also been recommended that the Elk Valley improve its accommodation and amenities to attract business and investment to the RDEK (Vann Struth Consulting Group Inc., 2013). From an investment attraction perspective, one of the key advantages of the Elk Valley

is its proximity to expanding and significant mining activity, which creates business and employment opportunities, thereby increasing disposable income. In addition, mining contributes to the local government non-residential property tax base. Overall, the economic opportunity analysis has identified economic diversification as desirable for the Elk Valley; however, this analysis emphasized that economic diversification should be pursued as a secondary economic development objective due to the importance of focusing on existing competitive advantages (i.e., mining) within Elk Valley communities (Vann Struth Consulting Group Inc., 2013).

17.1.1.2.4 Community Futures East Kootenay

Community Futures East Kootenay promotes economic development and the creation of jobs and wealth in the East Kootenay by providing small-business loans for start-up, expansion, or the purchase of existing businesses. In addition to financial support, Community Futures East Kootenay offers a variety of business-related services, including business consultation and access to training for entrepreneurs and their employees (Community Future East Kootenay, 2019). Community Futures East Kootenay invests a portion of the interest accrued on loans into the communities, including contributions to other regional economic development initiatives such as the Elk Valley Economic Initiative or First Nation economic development planning (Community Future East Kootenay, 2019).

17.1.1.2.5 Kootenay Aboriginal Business Development Agency

The Kootenay Aboriginal Business Development Agency aims to increase the number of First Nation businesses and their profitability in the Kootenay Region through providing services, promotion, and information to First Nation businesses (Kootenay Aboriginal Business Development Agency, 2016). The mandate is to "provide support, and technical assistance to First Nation, Métis and Inuit in regards to business exploration in the East and West Kootenay Region" (Kootenay Aboriginal Business Development Agency, 2016). The agency operates under the Ktunaxa Nation Council Society and encourages focus on Ktunaxa Nation entrepreneurs.

17.1.1.3 Local Economic Development Planning

In addition to contributing to regional economic development strategies previously described, the following communities have also developed their respective economic development strategies. These include:

- District of Sparwood's Corporate Strategic Plan (2016) and Official Community Plan (2015);
- District of Elkford's Economic Development Strategy (2010);
- City of Fernie's Economic Development Strategy (2014);
- City of Cranbrook's Economic Development Strategy (2019); and
- Municipality of Crowsnest Pass Economic Development Strategy (2011).

The communities of Sparwood, Elkford, Cranbrook, Crowsnest Pass, and Fernie and the surrounding region rely primarily on resource development. As a result, these communities experience many of the challenges previously identified (i.e., economic leakage, high housing prices, inadequate community services, etc.). Similar to regional economic development planning, in order to address these challenges, many of these communities aim to promote local businesses, enhance economic diversification, encourage and grow the tourism sector, address infrastructure and servicing challenges related to growth, and promote local spending. The Project is expected to become a part of the existing mining cluster in the

Elk Valley and support economic development planning efforts to address these challenges through contributions to employment, labour income, business revenues, and government revenues.

As the largest community of the local study area, Cranbrook also aims to strengthen its role as the regional service centre, leverage existing assets (i.e., international airport, college, and medical facilities), and stimulate opportunities in the resource sector, speciality manufacturing, knowledge-based, technology, and creative sectors.

17.1.1.4 Indigenous Economic Development Planning

Ktunaxa Nation also provides regional economic development for member communities. Ktunaxa Nation identifies its economic goals as:

> *To cultivate a healthy, self-sufficient Ktunaxa economy. Along with communities, partners and* neighbours, achieve sustainable economic growth through equitable access to economic resources *and opportunities, while respecting Ktunaxa culture and values* (Ktunaxa Nation, 2019a).

To achieve this, Ktunaxa Nation identified 15 goals for their economy, including building capacity; build a diversified and sustainable economy; enhance capacity of Ktunaxa communities; improving human capital; improving access to land, resources and capital; establish an autonomous revenue base; support the Ktunaxa Treaty Team; and engage in research and advocacy (Ktunaxa Nation, 2019a).

Ktunaxa's Impact Management Benefits Agreement with Teck is an important part of Ktunaxa's economic development strategy. The agreement has resulted in the Procurement and Business Development Officer position at Ktunaxa First Nation. The mandate of this position is to support business development such that it aligns with Teck procurement opportunities (Ktunaxa Nation, 2019a).

Ktunaxa Nations' member communities also have their respective economic development strategies. These are described in further detail in the Socio-Economic Baseline Report (Appendix 17-A).

17.2 Scope of the Assessment

17.2.1 Valued Components and Measurement Indicators

Seven measurement indicators were identified for the economic conditions VC for the Project in the provincial AIR (EAO, 2018). It is important to note that the economic conditions VC is a receptor VC, which is a VC that occurs at the end of an effects pathway. The measurement indicators are presented in Table 17.2-1.

The Project is expected to contribute positively to economic development, both regionally and locally, through increased demand in goods and services to support Project development and operation, investment in local and regional businesses, and increase the potential need for skills development and training for employees. Development of the Project also has the potential to change the land use and access in the vicinity of the Project, which may impact local businesses such as tourism operators.

The Project will likely result in an increase in localized labour demands over the course of the Project, especially during construction, resulting in an economic benefit for local communities through employment and income opportunities. Long-term employment is expected to be generated by the Project, benefiting local residents and communities. In addition, the generation of income is thought of as a benefit by local communities and businesses.

The Project is expected to also generate tax revenue for all levels of government. In addition, the Project is expected to generate revenue for the Ktunaxa Nation through agreements between the Ktunaxa and the provincial government, as well as agreements between the Ktunaxa and NWP.

Table 17.2-1: Measurement Indicators and Effects Pathways for Economic Conditions

Valued Component	Measurement Indicators	Potential Effects Pathways
Economic Conditions	• Opportunities for training and skills development; • Employment opportunities generated by the Project; • Income generation; • Revenue generation through goods and services purchased; • Generation of business for local services and businesses; • Other business or industry revenue generation or loss (e.g., removal of potentially forested area) and • Local and provincial government revenue.	• Change in direct, indirect, and induced impacts on employment opportunities; • Change in direct, indirect, and induced income generation; • Change in direct, indirect, and induced business revenue; and • Changes to fiscal positions of governments.

Source: B.C. Environmental Assessment Office [EAO], 2018.

17.2.2 Indigenous and Stakeholder Consultation

NWP has engaged and continues to engage with Indigenous groups and conducted consultation with public stakeholders and regulators. A summary of all consultation and engagement activities undertaken to date is presented in Chapter 4. Related to economic considerations, Indigenous communities have expressed an interest in participating in the Project through employment opportunities. Chapters 23 to 31 provides further information regarding input received through engagement activities with interested Indigenous communities.

17.2.3 Assessment Boundaries

17.2.3.1 Spatial Boundaries

The spatial boundaries were determined based on the proximity of the Project to adjacent communities and the potential for Project effects on the existing economic environment. The geographic extent of the economic environment study areas were determined considering the following:

- Project activities;
- Project location;
- Physical extent of potential Project and cumulative effects; and

- Provincial, regional, and local government administrative boundaries.

The Project is located within the asserted traditional territory of the Ktunaxa Nation, which is comprised of the following four Ktunaxa member communities:

- ʔAkisq'nuk (Columbia Lake) First Nation;
- ʔaq'am Community (St. Mary's Band);
- Yaqan Nu?kiy (Lower Kootenay Band); and
- ʔakinkum‡asnuq‡iʔit (Tobacco Plains Indian Band).

Additional Indigenous communities may have an interest in the Project and are considered in the Indigenous rights and interests assessment in Chapters 24 to 31:

- Blood Tribe/Kainai;
- Piikani Nation;
- Siksikda Nation;
- Tsuut'ina Nation;
- Métis Nation of Alberta – Region 3;
- Shuswap Indian Band;
- Stoney Nakoda Nation; and
- Métis Nation of British Columbia (including Elk Valley Métis).

As detailed in Chapter 5, Table 5.3-2, the spatial boundaries for the economic conditions VC have changed from the study areas presented in the AIR. A discussion on the spatial boundaries used in the assessment is provided below.

17.2.3.1.1 Project Footprint

The Project footprint is the directly affected area and represents the anticipated area of physical disturbance associated with the construction and operation of the Project. This area includes both permanent (e.g., mine site) and temporary (e.g., access routes, laydown areas) Project components. The Project footprint covers approximately 1,283 hectares (ha) and is positioned approximately 12 kilometres (km) northeast of Sparwood and approximately 5 km west of the provincial boundary between B.C. and Alberta.

17.2.3.1.2 Local Study Area

The Economic Conditions Local Study Area (LSA) represents the areas beyond the Project footprint within which direct and indirect Project effects are measurable or can occur. The Economic Conditions LSA was determined based on the extent of potential changes as a result of the Project (Figure 17.2-1).

There is potential for communities in the Economic Conditions LSA to experience Project-related direct and indirect effects in relation to population change, employment, business opportunities, government revenues, housing, infrastructure, and emergency services. The Economic Conditions LSA includes the following areas/communities in proximity to the Project location:

- District of Sparwood;
- District of Elkford;
- City of Fernie;
- City of Cranbrook;

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Figure 17.2-1
Economic Conditions Local and Regional Study Areas

LEGEND

- Economic Conditions Regional Study Area
- Economic Conditions Local Study Area
- Project Footprint
- Highway
- Railway
- Transmission Line
- Watercourse
- Waterbody
- Provincial Park/Protected Area
- National Park
- British Columbia/Alberta Border

0 15 30
Kilometres

Scale 1:850,000

Map Drawing Information:
Data Provided By NWP Coal Canada Ltd, Dillon Consulting Limited, Province of British Columbia GeoBC Open Data, Government of Alberta Open Data, Natural Resource Canada.

Map Created By: RB
Map Checked By: DM
Map Coordinate System: NAD 1983 UTM Zone 11N

NWP Coal Canada Ltd

Project: 12-6231
Status: FINAL
Date: 2021-03-22

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- Municipality of Crowsnest Pass (Alberta);
- Regional District of East Kootenay Area A; and
- Ktunaxa Nation:
  - ʔakisq'nuk First Nation (Columbia Lake) First Nation;
  - ʔaq'am Community (St. Mary's Band);
  - Yaqan Nukiy (Lower Kootenay Band); and
  - ʔakinkum‡asnuq‡iʔit (Tobacco Plains Indian Band).

Local communities such as Sparwood, Elkford, and Fernie provide workers for area mines and would likely also supply the workforce for the Project. These communities may also experience in-migration of new workers seeking employment opportunities for the Project. Therefore, the economic environments of these communities are likely to be impacted by the Construction and Pre-Production, Operations, and Reclamation and Closure phases of the Project.

The City of Cranbrook is considered to be a central hub for services within the RDEK, housing both the East Kootenay Regional Hospital and one of the RDEK's main regional offices. The Municipality of Crowsnest Pass continues to be a residence for workers that commute to British Columbia mines for employment. Additionally, Crowsnest Pass itself is a heavily used thoroughfare linking communities between southeastern B.C. and southwestern Alberta seeking access to services and attributes in both areas (e.g., educational facilities located in Lethbridge, Alberta accessed by B.C. residents; recreational areas located in Fernie, B.C. frequented by Alberta residents).

The RDEK Electoral Area A, a regional area encompassing many Economic Conditions LSA communities, may contain workers, community members, or businesses that could be impacted by the development and presence of the Project.

17.2.3.1.3 Regional Study Area

The Economic Conditions Regional Study Area (RSA) is the regional area within which direct and indirect effects[1] would be expected to occur. An example of an indirect effect is a potential change in economic prosperity of nearby communities and local businesses due to the spending of mine workers throughout the Project's lifecycle.

The Economic Conditions RSA encompasses the RDEK and the Province of B.C. (Figure 17.2-1). It is anticipated that the procurement of goods and services to support the Project and government revenues will occur at the regional and provincial levels. In addition, changes to the regional economy and cumulative effects are most likely to occur at the regional and provincial level due to the nature of the mining sector. Within the RDEK, changes to the labour force, employment, and income are most likely to occur.

The Economic Conditions RSA consists of an area of 2.78 million ha, which includes the communities within the Economic Conditions LSA as well as rural areas within the RDEK.

[1] Indirect effects are defined by the Impact Assessment Agency of Canada (IAAC) as secondary environmental effects once removed from the cause-effect pathway that occurs as a result of the Project (IAAC, 2019).

17.2.3.2 Temporal Boundaries

Temporal boundaries include the time periods during which the Project is anticipated to result in potential effects on VCs (EAO, 2013). The temporal boundaries considered in the economic conditions assessment include the temporal limits of the Project in terms of its Construction and Pre-Production, Operations, and Reclamation and Closure phases[2]. Since there will no longer be any activity at the site during the Post-Closure phase, this phase is not relevant to the assessment of effects on economic conditions. The temporal boundaries of the Project used in the effects assessment include the timing of Project phases and activities as outlined in Table 17.2-2. Additional details on the Project phases and activities are provided in Chapter 3.

Table 17.2-2: Temporal Boundaries for the Project Effects Assessment

Phase	Project Year	Length of Phase (Years)
Construction Planning, Construction, and Pre-Production	0 – 2	3
Operations	3 – 17	15
Reclamation and Closure	18 – 19	2

17.2.3.3 Administrative Boundaries

Administrative boundaries represent limitations imposed on the assessment due to political, economic, and social constraints (EAO, 2013). The administrative boundaries for the economic conditions assessment include the economic development planning and initiatives described in Section 17.1.1.

17.2.3.4 Technical Boundaries

Technical boundaries are limitations to the ability to predict or quantify changes to economic conditions. Challenges encountered in the economic conditions assessment include: data time period; incomplete datasets; availability of publicly available secondary data; and limitations to primary data collection. It is further noted that the data obtained for this analysis were mainly from before and during COVID-19 pandemic (2019 to 2020) and relied on available Statistic Canada data at that time (2006, 2011, 2016). Some additional data were collected in late 2021/early 2022 but were related to GBA+ considerations only. It is still expected that the data relied on are representative of post-COVID conditions for the Economic Conditions LSA and RSA, and NWP is not aware of any significant changes that have occurred in the Economic Conditions LSA and RSA that would change the conclusions and recommendations of this assessment. Data challenges are described in further detail in Section 17.4.1.1.

17.3 Regional and Local Overview

Coal production is a mainstay of the Province's economy, generating billions of dollars in annual revenue and supporting thousands of well-paid jobs. Mining has been an important component of the provincial economy for over 150 years. The B.C. mining industry contributes to the overall provincial economy, both directly and indirectly, through investment (in exploration and drilling, physical infrastructure, etc.), job creation, tax revenues, and royalties. More indirectly, mining companies purchase goods from suppliers

[2] The temporal boundaries utilized in the economic conditions effects assessment for the Construction Planning, Construction, and Pre-Production period differs compared to the temporal boundaries utilized in other disciplines. The rationale for this difference is that Project expenditures for construction planning are anticipated to begin prior to the start of the construction. Given that Project expenditures are a component of the economic conditions effects assessment, the temporal boundaries referred to in Chapter 17 also include the period before construction begins.

within the Province who in turn purchase goods from other companies. Workers in the industry spend wages at local businesses in their communities. In 2017, British Columbia's mineral and coal exports were worth more than $9 billion (Trade and Invest British Columbia, 2018).

Coal production currently represents over half of the total mineral production revenues in the Province. For recent years, B.C.'s coal exports were reported to be worth $6.7 billion in 2019, $4.1 billion in 2020, $7.1 billion in 2021, and $11.9 billion in 2022. Coal is B.C.'s largest single export commodity (Government of British Columbia [Government of B.C.], 2018). In 2018, coal mining provided 4,460 direct mining employment jobs. Mineral refining and smelting as well as downstream mineral processing provided an additional 22,335 jobs in the Province in 2018. The average annual salary and benefits for the B.C. mining industry were $123,700 in 2018 (Government of B.C., 2018). Further to the above, a 2020 study completed by Deloitte for the B.C. Chamber of Commerce reported that coal mining in the Elk Valley contributes the following to Canada per annum: $2.3 billion in labour income, $1.5 billion in government revenues, and about 30,500 jobs. (Deloitte, 2020).

The East Kootenay coalfields extend along the northwest-southeast structural grain of the Rocky Mountain Front Ranges in southern British Columbia, and include three fields: Flathead, Crowsnest, and Elk Valley. In the last 20 years, these fields have produced more coal than the rest of B.C.'s coalfields combined (Government of B.C., 2018). In 2018, Teck's coal mines in the Elk Valley produced approximately 26 million tonnes of steelmaking coal (Teck Resources Limited, 2018), approximately 84% of the 31 million tonnes steelmaking coal produced in B.C. in 2018 (Coal Association of Canada, 2022).

Coal mining has played a significant role in the modern history and economy of the Elk Valley and the RDEK. The growth of the communities of Fernie and Sparwood during the first half of the 1900s and Elkford during the 1970s was the direct result of the development of Elk Valley mines. Since 1898, more than 830 million tonnes of mainly metallurgical coal have been produced from the Crowsnest and Elk River fields (Government of B.C., 2018). Additional information on the history of communities in the Elk Valley is provided in the Socio-Economic Baseline Report (Appendix 17-A).

17.4 Existing Conditions

This section describes the existing conditions in the Economic Conditions LSA and RSA in sufficient detail to enable potential effects of the Project on economic conditions to be identified, understood, and assessed. This section provides an overview of the regional and local context and data collection methods. In addition, this section characterizes the economic baseline conditions for the population and demographics, regional and local economics, government finances, employment and income, and labour force within the Economic Conditions LSA and RSA. Additional information on the economic baseline conditions is provided in Appendix 17-A.

17.4.1 Data Collection Methods

Data and information collection for the economic existing conditions was completed by conducting preliminary desktop (secondary) research, supplemented by conducting key informant interviews and stakeholder engagement (primary research). Secondary research was conducted through 2018 and 2019. Primary research was conducted through 2020.

17.4.1.1 Baseline Data Collection Methods

17.4.1.1.1 Primary Data Collection

Primary research was conducted as part of the economic baseline information collection program to supplement baseline data and information gathered through secondary (desktop) research. Key informant interviews and discussions (via telephone and/or questionnaire) were conducted with stakeholders including external agencies (i.e., municipal government), community representatives, and key interest groups. The purpose of the economic primary research program was to:

- Clarify and verify secondary data collected on the Project study areas;
- Acquire additional information to address identified knowledge gaps; and
- Identify concerns related to current and future regional mining activity, including the Project.

Participants were identified based on their ability to support the overall objectives of primary data collection, with a focus on addressing knowledge gaps. Participants included representatives from local government, non-governmental organizations (NGO), recreation and tourism businesses, clubs, educational institutions, service providers, and other organizations relevant to the socio-economy. Each participant was provided a tailored list of questions specific to their area of interest. A list of organizations contacted, as well as copies of the interview guide questions, are provided in Appendix A of the Socio-Economic Baseline Report (Appendix 17-A).

Fifty-three stakeholders were contacted between May 2020 and July 2020. Each stakeholder was contacted a minimum of three times for participation in the program, including by phone and email. Of the stakeholders that were reached, 25 interviews were conducted and 15 stakeholders expressed that they were not willing to participate in the survey.

Primary data collection provided contextual information on the Economic Conditions LSA. Information from stakeholders has been integrated throughout the economic baseline assessment where input best fits in the economic profile of each community.

In addition to the activities noted above, in 2021, NWP continued to engage with key stakeholders through discussions, meetings, and surveys. This included the administration of an online survey available to the public from December 2021 to January 2022 to received additional input and suggestions on the Project. A total of 154 responses were received. Information from this survey applicable to the socio-community assessment have been considered. A summary of the responses to this survey are available in Appendix 19-B. NWP's ongoing outreach efforts have provided additional primary data that is relevant to the socio-community environment; this information has also been integrated into the socio-community existing conditions.

To support the examination of gender related considerations, targeted interviews were conducted with representatives of various sub-groups located in Elk Valley and/or associated with the mining industry. The purpose of the interviews was to better understand any existing gender, diversity, and identity related issues in the local communities and mining industry and to determine what recommendations could be made to address some of the identified issues in relation to the Project.

Participants were identified based on their knowledge and experience in the local mining industry and/or familiarity with the local communities/Elk Valley. Women employed or formerly employed in mining were specifically selected for interviews as they are underrepresented in the mining industry. The following individuals/organization representatives were interviewed:

- Socio-Community & Economic Effects Advisory Committee (District of Sparwood);
- Women in Mining Canada;
- Women/Indigenous Women employed/formerly employed in mining;
- Fernie Pride Society;
- Alpine Childcare Solutions;
- Elkford Housing Society;
- Elkford Women's Task Force Society;
- Kootenay Employment Services;
- Indigenous-owned business; and
- Elk Valley RCMP Detachment.

To guide the interview, each participant was provided a tailored list of questions related to their specific area of interest. The interview questions are provided in Appendix 17-B.

Twenty-two stakeholders were contacted between December 2021 and January 2022. Each stakeholder was contacted by email and/or phone to determine their interest in participating in an interview. As the interviews progressed, key subgroups who did not respond to the initial interview request were emailed/called to fill in any knowledge gaps and/or to provide information for a subgroup that was underrepresented in the interviews. Several individuals responded and participated as a result of the follow up request. Of the stakeholders that were reached out to, 12 semi-formal interviews were conducted by phone, video call, or email during the interview period (December 2021 to January 2022). Over the course of the interviews, the interviewees noted their appreciation to participate in the process to collect gender related information, particularly as it relates to the mining industry.

As mentioned in Section 17.1.1, a full GBA+ analysis was not completed, as the requirements for GBA+ were through federal and provincial legislation introduced during the course of the EA. The intent of the GBA+ study was to gain a high level understanding of gender and diverse populations/subgroup issues in the mining industry and the study area in order to address gender considerations for the Project. Only a limited number of stakeholders were interviewed from a variety of subgroups. These subgroups were identified through local municipal websites and proponent knowledge of the area. Limitations of this study include:

- Small sample size;
- Limited perspectives from different subgroups;
- Potential unintended exclusion of subgroups; and
- Potential bias (interviewer(s)/proponent) for the selection of interviewees.

Primary data collected through the GBA+ interviews were compiled into key themes and points raised by stakeholders. The information from stakeholders has been integrated in the baseline conditions, assessment, and recommendations sections.

17.4.1.1.2 Secondary Data Collection

The main source of economic baseline information collected through desk-based research is based on information available through Statistics Canada and, in particular, the 2016 Census of Canada and National Household Survey (NHS). These valuable sources provide baseline information on topics such as demographics, labour force, and employment, among others. Table 17.4-1 provides a list of areas of interest used for economic baseline conditions characterization, and their sources. Areas of interest provide the basis for defining a robust economic community profile for communities and regional areas which may be impacted by the Project. These areas of interest were selected to form the basis for indicators used in the assessment of impacts on economic conditions.

Table 17.4-1: Secondary Economic Research Sources

Topic	Areas of Interest	Secondary Sources
Population & Demographics	• Population • Demographics • Migration	• Canada Census (2006, 2011, 2016) • Statscan Aboriginal Population Profile (2006, 2011, 2016) • BC Stats • Regional District of East Kootenay • Municipal websites
Regional Economy	• Economic diversity • Businesses • Sector profiles	• Canada Census (2006, 2011, 2016) • Statscan Aboriginal Population Profile (2006, 2011, 2016) • BC Stats • Regional Profiles • Private Sector Reports • Academic Literature • Web-based Sources
Economic Development	• Economic planning	• Regional Planning • Municipal Planning
Government Finances	• Expenditure • Taxation	• Municipal Financial Statements
Employment and Income	• Income • Inequality • Employment and participation	• Canada Census (2006, 2011, 2016) • Provincial Government Websites • Academic Literature • Web-based Sources
Labour Force	• Labour supply and demand • Labour distribution, by sector	• Canada Census (2006, 2011, 2016) • Provincial Government Websites

17.4.1.2 Data Challenges

The most recent census data available for use in the economic baseline is the 2016 Canadian Census. Where available and relevant, historical trend data and information (i.e., 2006 and 2011 Census data) are presented to show changes over time with respect to a specific indicator.

Some census and National Household Survey data are limited for smaller communities due to confidentiality concerns or suppression of data. Population data are suppressed in communities with less

than 40 people, while income data are suppressed when a community has less than 250 people, or less than 40 households. Data may also be suppressed with enumeration was incomplete or data quality was poor. Gaps were also apparent in the collection of secondary information on Indigenous communities in the Economic Conditions LSA. These communities may not have publicly available data on facets of the economy such as unemployment rates.

17.4.2 Population and Demographics

Population and demographics inform the assessment of economic conditions. For example, the age and distribution of populations contribute to employment and labour force, as well as other components of the socio-economy. Throughout this assessment, it is assumed that the individuals aged 15 to 64 years of age (inclusive) represent the working-age population, while those aged 65 and older represent the retired-age (or senior) population. This section characterizes the population and demographics, including population growth, population distribution, median age, seasonal populations, as well as demographic trends, within the Economic Conditions RSA and LSA.

17.4.2.1 Regional Study Area

In 2016, the total population in the RDEK was 60,439. Between 2006 and 2016, the overall population in the RDEK increased steadily at a rate of approximately 9%. In comparison, during the same period, B.C.'s population growth rate was 13%, or 4% higher than the RDEK. It is important to note that from 2011 through 2016, population growth in the RDEK was 1% higher than the Province, with a 6.6% increase in RDEK population growth compared to B.C.'s population growth of 5.6% (Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2017a; b; Statistics Canada, 2018a). Overall, the higher rate of population growth for the Province is likely driven by urban areas, as the concentration of employment opportunities in finance, technology, and similar industries concentrated in urban centres.

In 2016, the total Indigenous population in the RDEK was 4,710. Between 2006 and 2016, this population increased by 37.5%. This rate is well beyond the growth of non-Indigenous populations, and is consistent with national trends, where Indigenous peoples are Canada's fastest growing demographic, proportionately (Kirkup, 2017).

The total RDEK working-age population was 38,965 in 2016, approximately 65% of the total RDEK population. Overall, the RDEK and the Province of B.C. have a similar age cohort profile. The majority of both these populations are working-age (15 to 64 years old); however, growth in the working age population in the RDEK is slower than in the Province. This may be due to trends towards economic opportunities not commonly found in the RDEK such as finance, technology, and other professional services industries; however, the younger population in the RDEK has increased at a higher rate than the Province (Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2017a; b; Statistics Canada, 2018a).

Median age for Indigenous peoples in the RDEK is lower than the median age for non-Indigenous people. This is consistent with the general Indigenous population in Canada, which has a high fertility rate and lower life expectancy than the general population (Kirkup, 2017). Age profile information for the RDEK Indigenous population was not available for the 2006 or the 2011 Census.

Population projections suggest that overall, population growth will be minimal and over three times less in the RDEK (3.5%) than for B.C. (11.1%) as urbanization becomes the norm. While it is anticipated that the RDEK will see an overall decline in populations for individuals aged 64 years of age or younger, the age characteristics suggest a substantial change in the proportion of seniors (i.e., 65 years of age and older) in the population, increasing by 33.4% from 2019 to 2028, which is slightly below the expected projections for the same age class and time period for B.C. (35.5%). The senior demographic dependency ratio[3] for the RDEK is expected to increase from 34.3 in 2019 to 48.3 in 2028, which is much higher than the estimated ratio for the Province (from 29.0 in 2019 to 37.7 in 2028; Statistics Canada, 2019a).

The RDEK has a large temporary or seasonal population. The large temporary and seasonal populations in the Economic Conditions LSA are due to a variety of reasons, including recreation, tourism, and working in the mining sector, which cycles individuals in and out of the community based on vacation plans and work schedules. Seasonal population is not readily available in the Census data; however, an estimate was prepared for this assessment by considering the number of available dwellings and the average size of a household. It was found that in 2016, the temporary population was anticipated to be approximately 19,200 people based on the 8,334 residences not permanently occupied in 2016, which would be equal to approximately 32% of the population of RDEK. This population represents a source of economic activity, uses community services, and impacts the overall socio-economy. Aside from the City of Fernie, other communities in the RDEK have indicated that they do not have a prevalent secondary, seasonal, or temporary population.

Additional information on regional population profiles, percent change per age profile, and population projections is provided in Table 2, Table 3, and Table 4 of the Socio-Economic Baseline Report (Appendix 17-A).

17.4.2.2 Local Study Area

The population and age cohorts for the Economic Conditions LSA communities are presented in Table 17.4-2 and Table 17.4-3, respectively.

17.4.2.2.1 District of Sparwood

Between 2006 and 2016, the total population of Sparwood increased by 4.6%, growing from 3,667 to 3,784. The working-age population in Sparwood increased by approximately 1% between 2006 and 2011, followed by a decline of nearly 3% over the next five years (Statistics Canada, 2007f; Statistics Canada, 2017g). The decline and slowing growth may be attributed to the decline of Asian demand for coal in 2011 and the commodities downturn in 2015 (World Bank, 2016). These events were likely to negatively impact work opportunities in Sparwood, as the economy is reliant on coal mining operations for employment. According to the District of Sparwood, in recent years, the population appears to have remained static, with no observable or notable change in population (District of Sparwood, pers. comm., 2020). It is important to note that there is a large number of migrant workers associated with the mining industry, which is not reflected in population numbers reported as part of Sparwood's Census counts (District of Sparwood, pers. comm., 2020).

[3] Calculation of the senior demographic dependency ratio is based on number of seniors (age 65 or older) per 100 workers (working-age population). Note that the working-age population used for this calculation are those aged 15 to 64.

Table 17.4-2: Local Study Area Communities – Population Profiles, 2006 – 2016

Year	Sparwood	Elkford	Fernie	Cranbrook	Crowsnest Pass	RDEK Electoral Area A*	RDEK
Population							
2016	3,784	2,499	5,249	20,047	5,589	1,943	60,439
2011	3,667	2,523	4,448	19,319	5,565	1,899	56,685
2006	3,618	2,463	4,217	24,138	5,749	1,873	55,485
% Change							
2006 - 2016	4.6%	1.5%	24.5%	-16.9%	-2.3%	3.7%	8.9%
2011 - 2016	3.2%	-1.0%	18.0%	3.8%	0.4%	2.3%	6.6%
2006 - 2011	1.4%	2.4%	5.5%	-20.0%	-3.2%	1.3%	2.2%

Source: Statistics Canada, 2007a; b; c; d; e; g; f; Statistics Canada, 2012a; b; c; d; e; f; and Statistics Canada, 2017; a; b; c; d; e; f; g
*Note: Includes rural population in RDEK Electoral A outside of the communities located within it.

Table 17.4-3: Local Study Area Communities – Age Profiles, 2006 - 2016

Age	Sparwood	Elkford	Fernie	Cranbrook	Crowsnest Pass	RDEK Electoral Area A*	RDEK
Age of Population (2016)							
0-14	725	540	965	3,230	785	320	9,640
15-64	2,550	1,735	3,545	12,630	3,545	1,325	38,965
65+	500	230	740	4,175	1,260	295	11,840
Median age	39.8	38.0	38.0	44.5	50.9	43.1	45.1
% 15-64	67.5%	69.3%	67.5%	63.0%	63.4%	68.2%	64.5%
% 65 and over	13.2%	9.2%	14.1%	20.8%	22.5%	15.2%	19.6%
Age of Population (2006)							
0-14	700	475	605	4,135	790	340	9,115
15-64	2,510	1,840	3,040	16,245	3,755	1375	6,790
65+	400	145	580	3,755	1,210	150	13,630
Median age	39.9	39.7	41.0	42.7	48.0	40.0	43.1
% 15-64	69.5%	74.8%	72.0%	67.3%	65.2%	73.4%	68.6%
% 65 and over	11.1%	5.9%	13.7%	15.6%	21.0%	8.0%	14.9%

Source: Statistics Canada, 2007a; b; c; d; e; f; g; Statistics Canada, 2012a; b; c; d; e; f; and Statistics Canada, 2017a; b; c; d; e; f; g.
*Note: Includes rural population in RDEK Electoral A outside of the communities located within it.

As of 2016, the median age of the population in the District of Sparwood was 39.8, which was 5.3 years lower than the RDEK (Statistics Canada, 2017d; and Statistics Canada, 2017g). Despite the generally younger population, the older population has continued to rise, with 11.1% of the population represented by older adults in 2006 to 13.2% for the same age cohort in 2016. The younger population may be due to the in-migration of mining workers from outside of the Economic Conditions LSA. The aging population is also common for the mining industry, as the average age of workers is higher than in most sectors.

Sparwood has indicated it would like to attract families to live in the community (District of Sparwood, pers. comm., 2020).

17.4.2.2.2 District of Elkford

In 2016, the District of Elkford had a total population of 2,499, reflecting a 1.5% increase since 2006. Between 2006 and 2011, the District of Elkford's total population increased by 2.4%. Comparatively, Elkford's population decreased by 1.0% between 2011 and 2016.

In comparison to the other Economic Conditions LSA communities in the RDEK, Elkford has an overall younger population demographic characterized by a lower number of individuals over the age of 65 (9.2%) and a higher percentage of working-aged residents (67.5%). Elkford is one of two LSA communities (the other being the City of Fernie) where the median age of the population is decreasing: in 2016, the median age was 38 years, which is 7 years younger than the RDEK median. There was, however, a 35.3% increase in the older population in Elkford, and close to a 3% decrease in the working population between 2011 and 2016 (Statistics Canada 2012c; Statistics Canada, 2017e).

Despite the small changes in median age, Elkford is experiencing similar trends related to the general decline in working population as Sparwood. Elkford's decrease in working population is likely due to similar events (i.e., reduced mine output and labour demand due to declining coal demand and commodities downturn), as the communities have similar profiles and challenges due to the presence of mining operations (Statistics Canada 2012c; Statistics Canada, 2017e).

Recently it has been noted that there has generally been an influx of young workers (i.e., working-aged individuals fit to work in/support the mine[s]; District of Elkford, pers. comm., 2020); however, a similar age group seems to migrate out of the community when work ends, or seeks other opportunities elsewhere (District of Elkford, pers. comm., 2020).

Elkford was established as a community to support local mines; it is still occupied by businesses and people that directly or indirectly support the mines (District of Elkford, pers. comm., 2020). Construction activities related to the mining sector have led to the need for, and subsequent influx of, temporary workers. The Elk Valley Lodge was established in 2019 as temporary accommodation for close to 500 temporary workers, and is at or near capacity (District of Elkford, pers. comm., 2020).

The seasonal or temporary population in Elkford is not as apparent or established compared to Fernie (District of Elkford, pers. comm., 2020).

17.4.2.2.3 City of Fernie

In 2016, the City of Fernie had a total population of 5,249. Between 2006 and 2016, the City of Fernie experienced substantial population growth (24.5%), the largest population growth of all the communities in the Economic Conditions LSA (Statistics Canada, 2007e; Statistics Canada, 2017f). Fernie has been identified as the fastest growing community of its kind in Canada, though the reason for the growth is unknown (Black, 2017). It has been speculated that this population growth may be due to the community amenities and previous seasonal residents moving more permanently to the community (Black, 2017). The City of Fernie has indicated that this population growth is supported, as it promotes local businesses and brings disposable income into the community (City of Fernie, pers. comm., 2020). Based on

conversations with representatives from the City of Fernie, approximately 30% of housing in the City of Fernie is assumed to be secondary residents (City of Fernie, pers. comm., 2020). This supports the assumption that the temporary population in the RDEK is approximately 32%.

Approximately 1,000 employees in the mining industry reside in Fernie – there is a well-established multi-generational population on the operations side (City of Fernie, pers. comm., 2020). Additionally, professionals that supplement the mining industry (e.g., environmental engineers, geologists, etc.) also choose to live in Fernie (City of Fernie, pers. comm., 2020).

According to Census data, Fernie experienced population fluctuations between 2006 and 2016. During this period, the working population increased at a percent change of 17%. The number of individuals over the age of 65 also increased over the same period by a percent change of 22%.

Similar to Elkford, the median age of the population in Fernie has steadily decreased since 2006. In 2016, the median age in Fernie was reported as 38 years, which is 7 years lower compared to the RDEK. Between 2006 and 2016, Fernie has experienced a notable increase (percent change of 60%) in individuals under the age of 15. According to the City of Fernie, the average age is below the provincial average, with a notable "baby boom"' occurring a few years ago and another one at present (City of Fernie, pers. comm., 2020). Although there is some influx of older individuals (leading active and healthy lifestyles) into Fernie, there also seems to be a noticeable amount of seniors leaving the community, which may be due to lack of and/or issues with accessibility in the winter due to the snow and ice (City of Fernie, pers. comm., 2020).

17.4.2.2.4 City of Cranbrook

The City of Cranbrook is the most populated municipality in southeastern B.C., with a total population of 20,047 in 2016. Cranbrook has experienced a notable change in population for the 10 year period of 2006 through 2016, with an apparent upswing in population growth from 2011 to 2016 (3.8% increase) that followed a considerable drop in population that occurred between 2006 and 2011 (20.0% decrease) (Statistics Canada, 2007a; Statistics Canada, 2012b).

The median age for Cranbrook was slighter lower than for RDEK in 2016 (44.5 years of age and 45.1 years of age, respectively), and has been steadily increasing since 2006 for both cohorts (Statistics Canada, 2017; a; c). Similar to the RDEK, Cranbrook's older population has been increasing steadily, with the working age population on the decline since 2006. Cranbrook's position as the regional service centre and as a diversified economy likely explain its similarity to the RDEK and Province.

17.4.2.2.5 Municipality of Crowsnest Pass

In 2016, the Municipality of Crowsnest Pass had a population of 5,589. From 2011 to 2016, the Municipality of Crowsnest Pass experienced a 0.4% increase in population from 5,565 to 5,589, following a 3.2% decline in population between 2006 and 2011 (Statistics Canada, 2007a; Statistics Canada, 2012b; Statistics Canada, 2017b).

The working age population experienced fluctuations between 2006 and 2016, increasing slightly from 2006 through 2011, and declining between 2011 and 2016 (Statistics Canada, 2007a; Statistics Canada, 2012b; Statistics Canada, 2017b). According to the Municipality of Crowsnest Pass, there is a certain proportion of the population that is made up of transient workers who tend to live in the community

during shifts and leave right after, and where they stay depending on their shift schedule (Municipality of Crowsnest Pass, pers. comm., 2020). It has been observed that young adults or recent graduates leave to further their post-secondary education or find a career elsewhere. The Municipality would like to focus future population growth on the influx of families (Municipality of Crowsnest Pass, pers. comm., 2020).
The median age of the population in Crowsnest Pass was 50.9 in 2016, over 5 years higher than in the RDEK. The aging population has exhibited slow but steady growth since 2006; however, the proportion of older adults in Crowsnest Pass in 2016 was the highest among the Economic Conditions LSA communities (22.4%), and almost 3% higher than in the RDEK; however, it is noted that more families are coming back to the community, resulting in a decrease in the overall population age (Municipality of Crowsnest Pass, pers. comm., 2020). Second home owners and part-time residents, estimated to be approximately 1,500 individuals, typically consist of individuals over the age of 50 (Municipality of Crowsnest Pass, pers. comm., 2020).

17.4.2.2.6 Ktunaxa Nation

Table 17.4-4 presents population data for the four Ktunaxa Nation communities in the Economic Conditions LSA. According to Statistics Canada, the total population for Ktunaxa Nation communities in 2016 was 500, with a median age of 36.2. As of 2016, ʔaq'am represented the largest of the communities with 175 individuals, and Tobacco Plains among the smaller of the communities with 75 individuals. According to the Census population data, the number of Ktunaxa Nation community members decreased by 7.4% between 2001 and 2016, with ʔakisq'nuk experiencing the highest decrease in population (-15%). Only one member community, ʔaq'am, experienced an increase in population from 2001 to 2016 (2.3%). ʔakisq'nuk also had the highest median age in 2016 (42.8), with Lower Kootenay having the lowest median age in 2016 (27.8).

Table 17.4-4: Ktunaxa Nation Historical Population and Median Age Data

Ktunaxa Nation	ʔakisq'nuk	ʔaq'am	Lower Kootenay	Tobacco Plains	Ktunaxa Nation
Population in 2016	140	175	110	75	500[1]
Population in 2006	153	164	124	67	508[1]
Population in 2001	165	171	122	82	540[1]
Population change: 2001 to 2016	-15%	2.3%	-9.8%	-8.5%	-7.4%
Median age in 2016	42.8	38.0	27.8	36.4	n/a

Source: Statistics Canada, 2007h;i;j;k; Statistics Canada, 2018e;f;g.
Notes:
[1] The population totals presented above for Ktunaxa Nation communities were calculated based on the 2006 and 2016 Census for Aboriginal Population Profiles (Statistics Canada) for the four member First Nations identified in the table.
n/a = not applicable

17.4.3 Regional Economy and Local Business

Mining is the primary industry in the RDEK. Sparwood and Elkford, the two communities closest to the Project, were established as mining communities. Currently, Teck has four[4] coking coal mines operating within the Elk Valley Region (BC Mine Information, 2019; Teck Resources Limited., 2019). As result, mining

[4] Teck's fifth operation in the RDEK, Coal Mountain Operations, concluded operations in 2018 (Teck Resources Limited, 2019). Currently, the site is transitioning into the care and maintenance phase of the project, including site reclamation.

plays a central role in the regional economy. Therefore, mining-driven economic issues are common within the regional economy, including boom-and-bust cycles, leakage, economic diversification, and inequality.

As mining is a "price-taker" industry, it is inherently cyclical, as movements in commodity prices drastically impact the profitability of mining operations (Dive, 2018). This impacts site-level decisions on production, expansion, acquisition, and construction of mines. In boom periods, mines operate at full capacity, requiring labour and input materials and services; however, in bust periods, mines near the end of their life cycle or lower margin mines reduce production or place their operations on hold. For example, the COVID-19 pandemic caused fluctuations in metallurgical coal prices, with a significant drop in 2020 to as low as $100 USD per tonne (British Columbia Ministry of Energy, Mines and Low Carbon Innovation, 2020). Coal production volumes also reduced in 2020 as a result of the drop in price. This presents a challenge for communities attracting new business, as these businesses are likely to be dependent on mining as the primary sector to provide demand for their goods and services. This facilitates the lack of economic diversification in the RDEK.

Climate change has increased media coverage in recent years, prompting social concerns over the impacts of "clean coal" on local and regional ecosystems. Political figures are now beginning to address these concerns, potentially impacting market prices of coal as investors look to shift to clean energy sources. In March of 2023, President Joe Biden and Prime Minister Justin Trudeau met to discuss the impacts of B.C. mining operations on local water supplies and ecosystems. While no formal direction was declared, a statement of joint effort to address mining pollution across the U.S.-Canada border was announced (Cruickshank, 2023).

Outputs of B.C. coal are continuing to rise, but future mining operations may feel the impact of climate action pressure as a "price-taking" industry. B.C. has enacted mine reclamation legislation, creating business opportunities to help mine operations return land, watercourses, and cultural heritage resources to environmentally safe states.

In addition, this presents a challenge for communities attracting new business, as these businesses are likely to be dependent on mining as the primary sector to provide demand for their goods and services. This facilitates the lack of economic diversification in the RDEK.

Leakage is an issue for communities in the RDEK. Mining operations often utilize longer shifts with longer periods off, such as four-days-on, four-days-off 12-hour shifts at Teck's Elk Valley operations (Golder Associates Ltd., 2015). Similar shift schedules allow workers the opportunity to commute larger geographic distances to the mine. Also, the longer shifts reduce viable consumption periods within the site region for these workers. Therefore, workers often spend much of their income beyond the RDEK, which negatively impacts the retention of local businesses.

Economic diversification can often be a challenge in resource driven communities. The cyclical nature of primary industries and the associated leakages often prevent businesses from locating in the RDEK as demand fluctuates with the primary industry in the community. In addition, the high wages in mining often make local businesses uncompetitive in attracting labour (Golder Associates Ltd., 2015).

The Economic Conditions RSA encompasses British Columbia and the RDEK. Impacts to the economy from the Project will be assessed at a regional level; however, it is anticipated that local businesses and communities will be impacted by changes to the regional economy associated with the Project.

This section provides an overview of the provincial economy, regional economy, and local economies and businesses.

17.4.3.1 Economy - British Columbia

In recent years up to the COVID-19 pandemic in 2020, B.C.'s economy has grown rapidly. This growth is expected to have slowed in 2018 to 2% GDP growth and to have since recovered to 3.2% in 2022. It is projected that the GDP will continue to grow by 1.5% through 2023 (Government of British Columbia, 2022). B.C. boasts healthy investment, strong labour markets, and decent public finances, which should allow for growth in B.C. to remain above the national average over the next two years (Toronto-Dominion Bank, 2019). Housing market corrections and moderation of consumer spending are expected to continue this slowdown, though housing construction activity remains elevated well above the 10-year historical average (Government of British Columbia, 2022). While household spending is slowing, it is likely to remain resilient, as B.C. has the strongest labour markets in Canada (Toronto-Dominion Bank, 2019). Recent global inflation and rising interest rates have moderated consumer goods spending, with retail sales in the first six months of 2022 seeing an increase of 1.5% year-to-date (Government of British Columbia, 2022). Wage growth, which has been healthy, will receive a boost from increases in minimum wage, and should support household spending (Toronto-Dominion Bank, 2019).

Despite the weakening housing market, investment in non-residential sectors is growing, led by the liquefied natural gas (LNG) sector. Recent strong commodity prices for natural gas and coal have increased the value of B.C. good exports by 32.1% year-to-date to June 2022 (Government of British Columbia, 2022). The strength of this investment should boost growth and shows confidence in the Province (Toronto-Dominion Bank, 2019). Public finances remain relatively stable, with new expenditures in education, healthcare, and transportation infrastructure supporting growth (Toronto-Dominion Bank, 2019). Overall, B.C. has a strong economy with high investor confidence, including in the resource sector as demonstrated by the advancement of LNG projects.

The new Biden Administration has brought greater attention to B.C.'s coal industry as he met with Prime Minister Justin Trudeau in March 2023 to discuss water pollution. The B.C. Ministry of Environment and Climate Change Strategy has stated that the provincial government will continue to "work with all parties to improve water quality" (Cruickshank, 2023).

The Province has prepared a paper on developing and implementing a Watershed Security Strategy and Fund, targeting the development of watershed governance and approaches, resetting the water supply-and-demand relationship, and collaboration with Indigenous peoples (Canadian Mining Journal, 2022). A draft Watershed Security Strategy and Fund Intentions Paper was released and is open for public feedback until April 2023. Implementation of the strategy will have significant implications for land use and water use planning, and therefore the mining industry.

Additionally, "green steel" is being considered across Canada as a way to safeguard against sector-wise downturns that have previously bankrupted mining operations and take advantage of carbon tax

incentives and credits (Marowits, R., 2021). Green steel utilizes electric arc furnaces, powered by non-fossil fuel sources, to melt and convert scrap metal into molten steel. As B.C. has committed to reducing greenhouse gas emissions to 40% from 2007 levels by 2030, the switch to green steel is a strategic economic move for the mining and processing sectors (Government of British Columbia, n.d.).

In 2017, the mining, quarrying, oil and gas sector accounted for nearly $12 billion (or 5%) of B.C.'s Gross Domestic Product (GDP; Table 17.4-5). Copper, coal, zinc, silver, gold, lead, and molybdenum are the primary minerals mined in the Province. B.C. is Canada's largest producer of copper and steelmaking coal, and the second largest producer of silver (Mining Association of B.C., n.d.). The capital intensity of mining positions it as a key sector supporting other sectors due to the volume of required goods and services to conduct a mining operation. Mining is also focused in rural areas, where the mine is the economic driver for the community. This means the community's businesses and economic prosperity is often tied to the prosperity of the mine(s).

Table 17.4-5: Gross Domestic Product by Industry, British Columbia, 2013 to 2017 [$million] Chained in 2007 Dollars

Industry	2013	2014	2015	2016	2017
Agriculture, forestry, fishing and hunting	3,983	3,953	4,204	4,223	4,074
Mining and oil and gas extraction	11,110	11,764	11,231	11,649	11,589
Utilities	3,596	3,633	3,784	3,912	4,121
Construction	16,690	18,157	17,801	18,142	19,936
Manufacturing industries	14,048	14,821	15,155	16,034	16,750
Total Goods producing industries	49,335	52,221	52,274	54,041	56,795
Total Services Sector	148,985	153,275	159,736	165,568	171,517
Total All Industries (Goods and Services Sectors)	198,224	205,271	211,945	219,553	228,195

Source: BC Stats, 2018b

B.C. is projected to continue to grow through strengthening Pacific ties, which is part of Canada's national strategy (WorkBC, 2019b). B.C. is anticipating to continue to attract investment throughout the Province through strategic ties to Japan, China, Korea, and India (WorkBC, 2019b). Industries expected to grow include natural resources, tech, and green technology (WorkBC, 2019b). Interest and adoption of electric vehicles has grown rapidly in North America, prompting a shift in mining focus from coal to lithium-ion battery metals.

17.4.3.2 Economy - Regional District of East Kootenay

The RDEK is, as an economy, very dependent on primary industry and resource development. This is evidenced by the Hachman Index, which measures economic diversity. Relative to B.C., the RDEK has a Hachman Index value of 0.51 in 2016, which suggests that the economy is heavily reliant on specific sectors, particularly mining. Further information on the Hachman Index and its calculation is provided in the Economic Conditions LSA section (Section 17.4.3.3).

17.4.3.2.1 Mineral Exploration and Mining

The mining industry constitutes the largest component of the regional economy. Four operating coal mines are located in the Elk Valley, all owned by Teck, and include the following:

- Fording River Operations, located approximately 29 km northeast of Elkford;
- Greenhills Operations, located approximately 8 km from Elkford, which includes two sites;
- Line Creek Operations, located approximately 25 km north of Sparwood, which includes both the Horseshoe Ridge site and the Line Creek Extension; and
- Elkview Operations, located approximately 3 km east of Sparwood, which includes the Elkview, Baldy Ridge Extension, and Harmer Ridge sites.

Several other mines operating in the RDEK produce industrial minerals including silica, magnesite, gypsum, graphite, and phosphate. Placer mining occurs throughout the RDEK, and several small operations produce aggregate, sand and gravel, and dimension stone (Katay, 2017)

Coal is the RDEK's leading mineral resource product, and accounts for almost all of the coal produced in British Columbia. The RDEK accounts for over 70% of Canada's annual coal exports (Katay, 2017). The coal produced from Elk Valley mines is primarily metallurgical coal, which is exported primarily to Asia for use in steel production and for other industrial purposes.

Coal utilized within Canada is typically transported via rail for export or to steel mills in eastern Canada. Recent transportation infrastructure changes include the shutdown of Neptune Terminals for five months in 2020, with a new stacker-reclaimer delivered to the terminal in August of 2020, increasing the capacity of the terminal from 12.5 to 18.5 million tonnes by 2021 (British Columbia Ministry of Energy, Mines and Low Carbon Innovation, 2020).

Cominco's Sullivan Mine in Kimberley contained the largest known lead/zinc ore body in the world. Silver, tin, and iron concentrates were also produced. Lead and zinc were shipped to Cominco's smelter in Trail for processing. After more than 100 years of operation, the mine closed on December 31, 2001 (RDEK, 2014a). No metal mines currently operate in the RDEK (Katay, 2017). Placer mining has occurred in southeastern B.C. since the gold rush began in 1864. At present, placer mining (dredging and washing) is carried out on a modest scale in various locations. Currently, there are still several placer streams in the RDEK, though activities have not been tracked in detail.

Within the RDEK, there are currently three other proposed coal mines and an expansion, several proposed industrial mineral mines and quarries of various scales, and proposed metal mines. The coal projects are Michel Coal Project (North Coal LTD.), Coal Mountain Phase 2 Project (on hold; Teck), and Bingay Main Coal Project (Centermount Coal Ltd.). Of these projects, only the Michel Creek Project is understood to being actively progressed. There is also the Teck Fording River Extension Project, which is a proposed extension of Teck's Fording River Operations. An industrial mineral project includes the Kootenay West Mine (Katay, 2017).

The surge in demand for electric vehicles has sparked a growth in exploration activities in B.C.'s mining sector, with the largest increase in late-stage exploration activities. While this focus has primarily been on metals that contribute to battery production, the mining industry overall is seeing an increase in

exploration. As Canada prepares to lead the race as a global provider of battery metals, it is anticipated that mining in B.C. will continue to grow towards this focus.

17.4.3.2.2 Forestry

Forestry is viewed as an important sector in RDEK. The Rocky Mountain Forest District is responsible for overseeing planning, harvesting, and silviculture activities encompassing approximately 2.6 million ha. Five major sawmills operate in the RDEK. The primary product is finished dimensioned lumber for the housing market in the United States (RDEK, 2014a). Other forestry activities include small sawmills, wood preserving plants, post and pole manufacturing plants and several log home building companies. Two major forestry companies in RDEK are Canfor and Skookumchuck. Canfor operates the Elko Mill and holds more than one million cubic metres (m^3) of harvest rights (RDEK, 2014a). Skookumchuck produces 650 metric tonnes per day of softwood pulp for markets in North America and Asia used to make paper products. It employs 290 employees (RDEK, 2014a).

17.4.3.2.3 Agriculture

The agricultural sector remains an important economic driver in the RDEK, with approximately 10% of the land in the RDEK located within the Provincial Agricultural Land Reserve. According to the 2011 Census of Agriculture, a total of 80,072 ha are being farmed in the RDEK (RDEK, 2014a). The land base for agricultural activities decreased 18%, while the number of farms was similar (325). Annual gross farm receipts were approximately $14.5 million in 2011 in the RDEK. Annual gross farm receipts decreased 6.9% between 2006 and 2011 (RDEK, 2014a).

The agricultural sector experiences two main barriers in the RDEK. First, geographical challenges such as the short growing season, lack of water, and poor soil limit potential return of the land for agricultural operations (RDEK, 2014a). Second, economic challenges such as distance to large markets, low population, and wage competition from the mining sector limit the economic viability of agriculture operations and impact their ability to attract workers (RDEK, 2014a).

17.4.3.2.4 Tourism

Tourism is a growing sector in the RDEK. The RDEK is located within the Kootenay Rockies Tourism Region (Destination BC, 2017). In 2014, Kootenay Rockies had over 2 million overnight visitors and $654 million in tourism spending. The visitors and spending in the Kootenay Rockies represent 11% and 7% of overnight visitors and spending on tourism in B.C., respectively (Destination BC, 2017). Between 2013 and 2014, visitors and spending in the Kootenay Rockies declined by 3% and 10%, respectively. In the Kootenay Rockies, the average tourist spends approximately $86 to $100 per night (Destination BC, 2017). Visitors to the Kootenay Rockies were primarily from other parts of B.C. and Alberta (Destination BC, 2017).

Tourism in the RDEK focuses on outdoor tourism in all seasons (RDEK, 2014a; Destination BC, 2017). The RDEK has a variety of recreational activities including, but not limited to: downhill skiing, snowboarding, cross country skiing, heli skiing, cat skiing, ski touring, snow machine tours, bird watching, wildlife viewing, golf, hiking, backpacking, mountain biking, canoeing, kayaking, whitewater rafting, boating, fishing, windsurfing, heli-touring, rock climbing, mountain climbing, hang gliding, paragliding, trail riding, hunting, and ATV riding (RDEK, 2014a).

Major resorts are common accommodations in the RDEK, with many offering four seasons service to attract tourists throughout the year. In addition, common accommodation options include staying with friends and family, hotels, motels, wilderness lodges, bed and breakfasts, commercial vacation rentals, and camping (Destination BC, 2017). Kimberley and Fernie within the Economic Conditions RSA are specifically identified as tourism hubs. Kimberley was formerly a mining economy but has shifted to tourism since the closure of the Sullivan Mine (RDEK, 2014a).

Many Economic Conditions LSA communities have identified tourism as a targeted growth sector, in particular Fernie (City of Fernie, 2014a). In 2016, Destination British Columbia began the process of creating a ten-year Destination Development Strategy for the Kootenay Rockies area to encourage and promote tourism growth in all seasons.

17.4.3.2.5 Energy

The BC Oil and Gas Commission identifies two major coal fields with petroleum and natural gas tenures, Elk Valley Coalfield and Crowsnest Coalfield. Three exploration programs have been approved by the BC Oil and Gas Commission. While exploration drilling has occurred since the 1960s, no commercial production occurs in the RDEK (BC Oil and Gas Commission, 2011). The oil and gas sector has a minimal presence in the RDEK and is not a major contributor to the regional economy at this time; however, the feasibility of the exploration areas may change its role in the regional economy.

Currently, BC Hydro does not generate electricity using any dams in the RDEK. The only dam in the RDEK, the Elko Dam, was constructed in 1924, and is not currently generating electricity (BC Hydro, 2019). BC Hydro currently operates the Elko Dam and spillway and ensures the facility is maintained to mitigate any safety or environmental concerns (BC Hydro, 2019).

17.4.3.3 Economic Diversification - Local Study Area

While economic conditions will be primarily assessed at the regional level, the reliance of Economic Conditions LSA communities on key regional sectors can be measured through economic diversity, which considers how reliant an economy is on specific sectors. Overreliance on sectors may make an economy more vulnerable to industry specific shocks such as the 2015 commodities downturn (World Bank, 2016). Comparatively, a more diversified economy is more likely to be resilient to industry shocks, which are common in resource based economies (Benway and Gardner, 2017; Shaleen 2017; Shuai, 2013).

The Hachman Index is used to measure the diversity of an economy by measuring the mix of GDP or employment in a geographic area relative to a larger geographic area that is considered well diversified (Benway and Gardner, 2017; Shaleen, 2017; Shuai, 2013). In this case, employment is used as the measure with British Columbia (or Alberta) as the diversified economy. Additional information on the Hachman Index variables and calculations is provided in the Socio-Economic Baseline Report (Appendix 17-A).

The Hachman Index generates values between 0 and 1, with 1 representing a diversified community equal to that of the reference economy. Table 17.4-6 shows the economic diversity of Economic Conditions LSA communities relative to British Columbia using the Hachman Index.

Table 17.4-6: Economic Diversity of Economic Conditions LSA Communities

Year[3]	Sparwood	Elkford	Fernie	Cranbrook (CMA)	Crowsnest Pass[1]	RDEK Electoral Area A[2]	RDEK
2016	0.09	0.04	0.26	0.84	0.72	0.26	0.51
2011	0.10	0.04	0.20	0.91	0.69	-	0.57

Source: Statistics Canada, 2017g, 2017e, 2017f, 2017a, 2017b, 2017c, 2017d, 2013e, 2013c, 2013d, 2013a, 2013b, 2013f, 2007f, 2007d, 2007e, 2007a, 2007b, 2007c, 2007g.

Notes:

1. Crowsnest Pass' economic diversity is measured relative to the Alberta economy.
2. Data are suppressed for RDEK Electoral Area A in 2011.
3. 2006 is not included, as Statistics Canada changed their methodology for accounting for labour force sectors between 2006 and 2011. The change in method eliminates effective comparison using this Index.

Within the Elk Valley, Sparwood, Elkford, Fernie, and the RDEK Electoral Area A are not very diversified, with an overreliance on primary industries relative to the Province. This is typical for smaller municipalities in resource rich areas; however, these communities are vulnerable to "booms and busts" in resource sectors that are often prone to this type of cyclical activity (Golder Associates Ltd., 2015). Fernie has diversified between 2011 and 2016 due to increases in the retail and construction spaces, diversifying the economy of Fernie consistent with Fernie's economic development priorities.

Cranbrook, as the regional economic centre, is a much more diversified economy closer to the Province's economic make up (City of Cranbrook, 2009). Slight decreases in manufacturing, finance, and professional services and a corresponding increase in mining have led to a reduction in Cranbrook's economic diversity. Section 17.4.3.4 provides descriptions of the local economies of communities in the Economic Conditions LSA.

17.4.3.4 Local Economy and Businesses

As mining is the primary industry in the Economic Conditions LSA, many of the businesses in the RDEK are directly or indirectly related to the sector. In addition, the communities within the RDEK also participate in other primary industries and tourism, which is common for the rural character of the area.

17.4.3.4.1 District of Sparwood

Mining is the primary economic activity in Sparwood, with Teck as the primary employer (District of Sparwood, 2015b). Teck has four active operations in the RDEK, which employ approximately 4,000 people including 800 from Sparwood (District of Sparwood, 2015b). Teck's operations continue to support many businesses within the community (District of Sparwood, 2015b). Other mining and quarrying firms in Sparwood include North Coal LTD and Emslie Gravel. Representatives and business organizations within the community noted mining has been an important economic contributor to the RDEK (District of Sparwood, pers. comm., 2020; Sparwood Chamber of Commerce, pers. comm., 2020). Given this importance, it was identified that global coal markets were the key determinant of economic trends. Municipal representatives also identified food and beverage, and hotels and accommodation, as underserviced sectors within the community (District of Sparwood, pers. comm., 2020).

There are several businesses within Sparwood that are identified as contributing to mining operations including, for example: Elk Valley Environmental (coal analysis); Komatsu (sales and services of mining equipment); and Joy Global (HVAC repair).

Sparwood also includes a variety of construction, utilities, heavy and civil engineering, specialty trade, manufacturing, machinery suppliers, and other industry operators that may support a mining operation. These firms may be reliant on mining companies purchasing goods and services to maintain operations.

17.4.3.4.2 District of Elkford

Elkford was formed for miners at the Fording Coal Operations. Mining continues to act as the primary driver of the economy, as much of the population is employed in the sector. Retail businesses are often supporting industries similar to Sparwood. Key businesses in Elkford that support the mining sector include:

- Finning Canada – Elkford (mining sales and services);
- North American Services Inc. (mining and heavy construction); and
- SMS Equipment Ltd. (mining equipment sales and service).

In addition, Elkford has a variety of businesses that may support mining through the provision of specialized services, including construction firms, environmental services firms, heavy equipment sales firms, and other contracting and repair service firms (District of Elkford, 2010a). Representatives from Elkford noted mining is the key demand driver within the community (District of Elkford, pers. comm., 2020). The Chamber of Commerce also noted the importance of mining to the community (Elkford Chamber of Commerce, pers. comm., 2020). Given this importance, global coal markets were identified as the key determinant of economic trends.

The forestry industry has a presence in Elkford. Forestry and wood manufacturing firms in Elkford include CanWel Timber Ltd. and Agnes Creek Trading Co. Ltd. (District of Elkford, 2010a).

Elkford also provides tourism opportunities with surrounding natural wilderness areas and close proximity to the Elk Lakes Provincial Park, Height of the Rockies Provincial Park along the Continental Divide, fly-fishing on the Elk River, a local ski hill, and community recreational amenities (District of Elkford, 2010b). Recently, additional investment has entered Elkford centred around tourism and recreational properties (District of Elkford, 2010b).

Elkford representatives also noted there may potentially unsatisfied demand within the community for retail due to leakage to surrounding communities (District of Elkford, pers. comm., 2020). As a result, leakage was identified as a key community issue due to lack of availability for goods and services within the community (District of Elkford, pers. comm., 2020).

17.4.3.4.3 City of Fernie

Fernie's economy centres on resource development and tourism (City of Fernie, 2014b; City of Fernie, pers. comm., 2020; Fernie Chamber of Commerce, pers. comm., 2020); Fernie is much more diversified than Elkford and Sparwood, which are primarily focused on the mining industry. The mining sector is expected to remain central to the Fernie economy, while the tourism sector is expected to continue to expand (City of Fernie, 2014b). Teck and North Coal are identified as operating within Fernie (Fernie

Chamber of Commerce, 2017). Fernie also has a variety of businesses that may support mining, including construction firms and engineering firms (Fernie Chamber of Commerce, 2017).

There is a relatively large portion of tourism and real estate businesses in Fernie (Fernie Chamber of Commerce, 2017). Tourism Fernie identified 26 lodges or other forms of accommodation supporting tourism and recreation activities in Fernie (Tourism Fernie, 2018).

17.4.3.4.4 City of Cranbrook

Cranbrook is a diversified economy and acts as the regional service centre for RDEK. Common economic opportunities in Cranbrook include education (including post-secondary), healthcare, and transportation (Stetski, 2014). Former Member of Parliament and former mayor Wayne Stetski identified the presence of the Canadian Rockies International Airport, Canadian Pacific Railway, and Highway 3 as important economic drivers for Cranbrook, as the traffic from these transportation options generates economic activity (Stetski, 2014).

Unlike other Economic Conditions LSA communities, Cranbrook does not have a large reliance on the mining sector, with only 5% of the population employed in mining; however, Cranbrook serves as the leading distribution and service centre for the mining industry due to its presence as the regional hub for the Elk Valley (Stetski, 2014; City of Cranbrook, 2019a).

Local manufacturing primarily focuses on lumber and wood products, machinery, equipment, fabricating, and food and beverage products. Forestry remains an important sector in Cranbrook, with 12% of the population employed in forestry related sectors (City of Cranbrook, 2019a). Major employers in Cranbrook also include the Canfor and Galloway lumber mills and Skookumchuck Pulp Mill (Stetski, 2014).

17.4.3.4.5 Municipality of Crowsnest Pass

Crowsnest Pass is situated in Southern Alberta's prime farming and ranching areas. The local economy is primarily driven by natural resource development in energy and coal mining, and recreation. Arts, culture, and tourism also have an important role in the local economy. Coal mining, including the proposed Grassy Mountain Coal Project and employment in Teck's B.C. operations are important economic opportunities in the RDEK (Alberta Southwest Regional Alliance, 2019; Municipality of Crowsnest Pass, pers. comm., 2020). Key businesses within Crowsnest Pass that may contribute to a mining operation include Kestrel Technical Services Ltd. Additional service providers including construction, professional services, and repair and service firms may contribute to mining operations through specialized service offerings (Municipality of Crowsnest Pass, n.d.).

Tourism in Crowsnest Pass focuses on outdoor recreation and heritage activities. Outdoor tourism and recreation activities include camping, hiking, skiing, mountain biking, fishing, hunting, caving, and rock climbing. Heritage activities include the Frank Slide Interpretative Centre and Bellevue Underground Mine (Alberta Southwest Regional Alliance, 2019).

17.4.3.4.6 Indigenous Local Economy and Business

Ktunaxa Nation

The traditional economy remains important for Ktunaxa Nation communities, including the formal and informal economy. Harvesting and sharing economies remain important for Ktunaxa Nation (Firelight Group Research Cooperative, 2014). The traditional economy remains important to health and economic outcomes for community members, as over half of Ktunaxa Nation community members made less than $20,000 in 2009. Therefore, the traditional economy and associated sharing supports the food and economic security of community members (Firelight Group Research Cooperative, 2014).

Ktunaxa Nation has a variety of businesses. These include development corporations such as ʔaq'am Community Enterprises, Lower Kootenay Development Corporation, Nupqu Development Corporation, and Tobacco Plain Development Corporation (Ktunaxa Nation, 2019b). Development corporations tend to manage a variety of economic development opportunities on behalf of Indigenous communities, including business interests.

Despite the presence of Teck in the RDEK and Ktunaxa's historical emphasis on economic development and entrepreneurial growth, Ktunaxa Nation has not obtained a population proportionate share of business opportunities supporting the mining sector (Firelight Group Research Cooperative, 2014). Ktunaxa Nation is working with Teck to increase Ktunaxa opportunities to provide goods and services to Teck. Key businesses operated by Ktunaxa Nation that may contribute to a mining operation include Nupqu Development Corporation, which provides environmental services, including monitoring and Tipi Mountain Native Plants, which provides native plant material (Ktunaxa Nation, 2019b).

In addition, Ktunaxa Nation operates accommodation (4), artisan (2), catering (2), childcare (2), computer (1), consulting (1), construction (1) cultural (2), entertainment (1), landscaping (1), health (1), recreation and tourism (2), retail (3), and service (4) businesses (Ktunaxa Nation 2019b). While these businesses do not support resource development, they inform the makeup of the Ktunaxa Nation economy.

ʔaq'am Community (St. Mary's Band)

ʔaq'am owns and operates a Community development corporation, ʔaq'am Community Enterprises (B.C. Assembly of First Nations, 2019c). ʔaq'am Community Enterprises Community Enterprises administers and manages a number of business development initiatives, including community-owned business development; resource development; airport lands development and leasing; strategic partnership development; tourism, culture and hospitality; and agriculture (B.C. Assembly of First Nations, 2019c).

ʔakisq'nuk First Nation (Columbia Lake First Nation)

ʔakisq'nuk First Nation, as a member of the Ktunaxa Nation, has engaged the Provincial Government in several Strategic Engagement, Economic, and Community Development Agreements, as well as a Forestry Consultation and Revenue Sharing Agreement (B.C. Assembly of First Nations, 2019a).

The ʔakisq'nuk First Nation is home to several businesses and business ventures, including a Natural Resources Corporation, a guide outfitting tenure, a 145 unit residential subdivision, a Lakeshore Resort and Campground, and an Early Learning Centre. The Natural Resources Corporation carries out forestry and resource related initiatives on behalf of ʔakisq'nuk First Nation (ʔakisq'nuk First Nation, 2017).

ʔakinkʷum‡asnuq‡iʔit (Tobacco Plains Indian Band)

Tobacco Plains is party to several Agreements with the Province covering Economic and Community Development, Strategic Engagement, and Forest Consultation and Revenue Sharing (B.C. Assembly of First Nations, 2019d).

The Tobacco Plains Indian Band Development Corporation manages campgrounds and RV parks including Big Springs, Ayes Ranch, and Dorr Road. It also manages a series of lease lots on the Edward Lake property (B.C. Assembly of First Nations, 2019d).

Lower Kootenay Band

The Lower Kootenay Band owns and operates the Lower Kootenay Development Corporation, which currently has interests in the forestry, agriculture, energy, and tourism sectors. The Lower Kootenay Band is currently involved in the following businesses: Lower Kootenay Development Limited Partnership, Robert Logging Partnership, Lower Kootenay Forage Products, Lower Kootenay Guide Outfitters Ltd., Nupqu Development Corporation, St. Eugene Resort, Golf Course & Casino, and Lower Kootenay Value Added Industrial Park. Additionally, four privately owned businesses are located on Lower Kootenay Reserves: Legend Logos, Ktunaxa Tipi Co., Stewart Steinhauer Stone Sculpture, and Sturgeon-Nose Creations (B.C. Assembly of First Nations, 2019b).

Other Nations

Descriptions of baseline economic conditions for additional Indigenous communities are provided in Chapters 24 to 31.

17.4.4 Government Finances

Mine operations, as large physical and economic entities, pay a variety of taxes which are used to fund services throughout various jurisdictions. In Canada, taxation on mining focuses on taxing production over land base. While taxes exist for the land base the operation is using, these represent a smaller portion of the tax burden borne by mine operators. The purpose of this section will be to provide scale of government revenue at the regional and local study areas by summarizing current revenue, as available. This section will be used to assess changes to municipal finances. In addition, information presented here will also inform the socio-community assessment (Chapter 18) for community services and community well-being.

This section characterizes government finances (i.e., tax revenue, government expenditures, etc.) at the provincial, regional, and local level.

17.4.4.1 Government Finances - Regional Study Area

Mining provides an important source of tax revenue to provincial, regional, and local governments. Taxes on mining include land taxes, property taxes, mineral taxes, and inspection taxes. In addition, mining operations also pay corporate taxes on their activities, and employees at those operations will also pay taxes on their incomes.

17.4.4.1.1 British Columbia

For the purposes of taxation, mining sector taxation refers to the extraction of minerals and the primary processing activities such as smelting and refining. Mine operations in B.C. are responsible for paying three major taxes:

- The Mineral Tax compensates B.C. for the commercial use and depletion of coal and mineral resources. In some cases, the tax revenue is shared with Indigenous communities through revenue sharing agreements with the Province (Government of B.C., 2018a). Mine operations in B.C. are responsible for self-assessment and payment of the Mineral Tax unless they qualify for an exemption (Government of B.C., 2018a);
- The Mineral Land Tax is paid by owners of freehold mineral rights annually. The freehold ownership may be with the surface land or with minerals only. The value of the tax paid is based on the size of the land and whether or not minerals are produced (Government of B.C., n.d.). The size of the land determines the tax payment rate for firms; however, if the firm does produce minerals, they pay the highest rate of $4.94 per ha (Government of B.C., n.d.); and
- The Mine Inspector Fee - All mining permit holders pay a mine inspection fee to cover the cost of health and safety inspections. The firm must file and pay the mine inspection fee for each mine, pit, or quarry they hold a permit for until reclamation is completed. Once reclamation is complete, the reclamation security will be returned to the firm (Government of B.C., n.d.).

The total mining tax revenue for the Province in 2017/2018 was approximately $489 million, which is approximately an 86% increase from 2016/2017 revenues. As previously noted, the majority of the total government revenue generated from mining is related to the Mineral Tax. In 2017/2018, the total Mineral Tax revenue for coal was $431 million, approximately 88% of total 2017/2018 mining tax revenue. During the same period, the Mineral Tax revenue for metals was $53 million, approximately 11% of the total 2017/2018 mining tax revenue. The remaining 2017/2018 total government revenue from mining was generated through the Mineral Land Tax and Mine Inspector Fee.

Mining revenues have fluctuated over the past 10 years, with year-to-year revenues declining five times. Government revenue from mining is largely generated from the Mineral Tax for coal production, accounting for an average of 83% of the total government revenue from mining over the past 10 years. As a result, the decline in revenue may be associated with the decline in the Asian coal market and declining steel prices.

17.4.4.1.2 Regional District of East Kootenay

Regional districts cannot directly tax properties. Instead, regional districts requisition their member municipalities and the Provincial Surveyor of Taxes (for rural electoral areas) to tax on behalf of the regional district in order to meet annual revenue needs. Requisitions are based on the cost of services provided by the regional district, including costs shared with municipalities in the RDEK. These requisition requirements aid in determining tax rates (Government of B.C., n.d.).

The RDEK notes the property taxes from current mines is “significant” and can be leveraged to fund larger projects (RDEK, pers. comm. 2020). The RDEK also noted additional revenue would reduce tax burdens on existing properties and taxpayers (RDEK, pers. comm., 2020).

17.4.4.2 Government Finances - Local Study Area

Table 17.4-7 provides a summary of tax revenues for Economic Conditions LSA communities. Annual government revenues range between approximately $8 million and $48 million. The primary revenue source for all municipalities within the Economic Conditions LSA is taxation and grants in lieu.

Table 17.4-7: Tax Revenue in Economic Conditions LSA Non-Indigenous Communities, 2017

Community	Total Own Purpose Taxation and Grants in Lieu	Sale of Services	Transfers	Other Revenue	Total Revenue
Sparwood	$6,931,713 (61%)	$3,431,201 (30%)	$1,655,289 (14%)	$-735,680 (-6%)	$11,282,523
Elkford	$5,332,245 (66%)	$1,042,664 (13%)	$1,056,248 (13%)	$618,940 (7%)	$8,050,097
Fernie	$9,384,492 (56%)	$4,187,384 (25%)	$2,979,598 (18%)	$191,559 (1%)	$16,743,033
Cranbrook	$28,528,630 (60%)	$14,768,718 (31%)	$2,972,831 (6%)	$1,567,846 (3%)	$47,838,025
Crowsnest Pass	$7,231,391 (53%)	$4,054,060 (30%)	$866,672 (6%)	$1,427,596 (10%)	$13,579,719

Source: Government of B.C., 2018c
Notes:
% denotes percent

The Elk Valley Property Tax Sharing Agreement shares the property taxes levied on the industrial coal mining properties in the Elk Valley. The agreement is between Elkford, Fernie, Sparwood, and the RDEK Area A. The Elk Valley Property Tax Sharing Agreement came into effect on March 31, 2008 and is for a 25 year term. All properties with a Class 4 industrial assessment that are coal mines, coal processing works, or coal related infrastructure and are located within the confines of the RDEK Area A are subject to the agreement. If an identified property is outside the existing boundary of a municipality in this area, a municipality will apply for a boundary expansion to be able to tax these properties as part of the agreement (District of Sparwood, 2016c). Table 17.4-8 shows the 2018 tax revenue distribution as part of the Elk Valley Property Tax Sharing Agreement. Tax revenues are allocated by a fixed percentage to each local government. The percentage allocation was determined by the level of each local government's dependence on the mines and their ability to diversify their assessment base.

Table 17.4-8: Elk Valley Property Tax Distributions, 2018

Distributions	Sparwood	Elkford	Fernie	RDEK
Taxes Collected	$5,121,211	$4,780,220	-	-
Sparwood & Elkford distribute to Fernie	($1,446,394)	($1,444,534)	$2,890,928	-
Sparwood distribute to RDEK Area A	($555,948)	-	-	$555,948
Total Requisition	$3,118,869	$3,335,686	$2,890,928	$555,948

Total expenditures for municipalities in the LSA range between approximately $7.3 million and $42 million. Most municipalities in the LSA have a similar distribution of expenditures. Ranges for government expenditure in LSA communities are:

- General Government (11% to 16%);
- Protective Services (8% to 22%);
- Health, Social Services and Housing (0% to 2%);
- Development Services (<1% to 8%);
- Transportation and Utilities (25% to 45%);
- Parks, Recreation, and Culture (12% to 25%); and
- Other (18% to 22%).

For all communities located within the LSA, in 2017, government expenditures were highest in the transportation and utilities category. In addition, in Elkford, Sparwood, and Fernie, government expenditures on parks, recreation, and culture were between 22% and 25% of their total government expenditures. Additional information on the breakdown of government expenditures for LSA communities is provided in Table 13 of the Socio-Economic Baseline Report (Appendix 17-A).

Of note, Cranbrook spends 10% more on protective services than any other LSA community. This may be due to the urban nature of Cranbrook. Cranbrook also spends proportionately and nominally less on development services. In part, the variance in Cranbrook's spending from other municipalities in the LSA is due to the nature of and size of Cranbrook (an urban centre) compared to the relatively rural communities in the LSA.

Representatives of Elkford described the current trade-offs associated with regional mines. While current operators pay significant taxes, increases are well below other revenue streams for the District. They also note the presence of mining increases expenditure associated with maintaining physical assets (District of Elkford, pers. comm., 2020). Elkford has also noted municipalities are stressed by increasing responsibilities. Mining has uncertainty associated with it due to global commodity prices. Elkford noted a shutdown may result in the community being unable to sustain its service levels (District of Elkford, pers. comm., 2020).

Representatives from Fernie noted the importance of the Elk Valley Property Tax Sharing Agreement in providing stability to the government, providing more than $3 million to revenues and supporting higher value households that pay property taxes (City of Fernie, pers. comm., 2020). Despite these increased revenues, Fernie notes they still face revenue shortfalls and infrastructure deficits (City of Fernie, pers. comm. 2020).

Crowsnest Pass, which is beyond the bounds of the Elk Valley Property Tax Sharing Agreement, noted they receive no tax benefits from current mining operations (Municipality of Crowsnest Pass, pers. comm. 2020). The Municipality notes a loss of industry has driven a loss of revenue, shifting the burden to the residential tax base (Municipality of Crowsnest Pass, pers. comm. 2020).

17.4.5 Employment and Income

Employment and income in the RDEK are characterized by high median incomes and high labour participation. The prevalence of the mining industry likely explains the high median income, as average

mining salaries are well above provincial averages throughout Canada. The high labour force participation rate is likely also due to the prevalence of mining. Mining operations often result in economic in-migration to the RDEK to fill roles at these sites, which often account for a significant portion of job opportunities in the RDEK. The Project may change employment and income within the RDEK, as demand for labour will be increased by the Project. Changes to employment and income will have effects on the regional economy.

This section provides an overview of provincial, regional, and local employment and income trends within the Economic Conditions RSA and LSA.

17.4.5.1 Employment and Income - Regional Study Area

Employment within B.C. remained relatively stable between 2006 and 2016. The labour force participation rate has fluctuated between 64 and 66%. The employment rate has remained between approximately 60% and 62%. Unemployment increased 1.8% between 2006 and 2011, likely due to the financial crisis in 2007 (Statistics Canada, 2018a). Between 2011 and 2016, unemployment declined by approximately 1% to 6.8% in 2016. The 2018 Labour Market Outlook for B.C. notes unemployment decreased in 2018 (WorkBC, 2018); however, unemployment rates rose in 2020 and 2021 because of the COVID-19 pandemic but have since recovered as of 2022. Year-to-date to August 2022, employment was up 3.6% and the unemployment rate was low at 4.8% (Government of British Columbia, 2022).

Median income in the Province has increased approximately 15% between 2005 and 2010, and 16% between 2010 and 2015 within B.C. Income increases at this rate (approximately 3% annually) are expected and consistent with wage inflation, which has averaged approximately 2% over the period (Bank of Canada, 2019).

Labour force participation in the RDEK has declined slightly from 67.2% in 2006 to 64.7% in 2016. A similar decline was observed in the employment rate from 63.7% to 59.8%. The unemployment rate has risen from 5.2% to 7.6% between 2006 and 2016. The unemployment rate has declined to 4.7% as of March 2019 (WorkBC, 2019a). Therefore, the variance in unemployment was likely due to the financial crisis in 2007 and commodity downturn in 2014 to 2015. It is likely the data do not fully capture changes related to the commodity downturn.

Median income increased between 2006 and 2016 in the RDEK. Between 2006 and 2011, median income increased by approximately 25%. Median income increased approximately 17% between 2011 and 2016. Overall, wage growth has exceeded national wage inflation.

17.4.5.2 Employment and Income - Local Study Area

Overall, employment characteristics within the Economic Conditions LSA are consistent with the provincial average, as shown in Table 17.4-9. A common divergence for B.C. communities in the LSA is the higher median income, which is likely due to the presence of mining employment, which is well beyond the provincial average.

Analysis of individual community employment and income is provided below. The presence of mining makes it hard to recruit both skilled and unskilled workers into other sectors within communities in the LSA (City of Fernie, pers. comm., 2020; Municipality of Crowsnest Pass, pers. comm., 2020). High cost of

living and high mining wages drive individuals seeking labour opportunities to either enter the mining sector or leave the LSA (Sparwood Chamber of Commerce, pers. comm., 2020; Fernie Chamber of Commerce, pers. comm., 2020). Most communities did not note unemployment as a concern (Municipality of Crowsnest Pass, pers. comm. 2020; District of Elkford, pers. comm., 2020; District of Sparwood, pers. comm., 2020).

Table 17.4-9: Employment and Income Characteristics in the Economic Conditions LSA

	Sparwood	Elkford	Fernie	Cranbrook (CMA)	Crowsnest Pass	RDEK A	RDEK	BC	Alberta
2016									
Participation rate (%)	69.0	69.2	74.0	63.0	59.2	71.5	64.7	63.9	71.8
Employment Rate (%)	64.6	65.3	68.7	58.2	54.0	67.0	59.8	59.6	65.4
Unemployment Rate (%)	6.4	5.4	7.2	7.6	8.8	6.4	7.6	6.7	9.0
Median Income (2015) ($)	44,309	56,704	39,579	35,301	34,554	41,391	36,573	33,012	42,717
Low Income, After Tax (%)	8.5	4.8	10.5	12.5	11.0	7.8	11.3	15.5	7.0
2011									
Participation rate (%)	68.7	70.2	74.2	64.4	60.2	n/a	65.8	64.6	73.2
Employment Rate (%)	65.0	67.5	71.5	59.8	56.9	n/a	61.2	59.5	69.0
Unemployment Rate (%)	5.6	4.2	3.7	7.1	5.8	n/a	7.1	7.8	5.8
Median Income (2010) ($)	34,675	40,130	34,402	30,386	31,060	n/a	31,361	28,765	36,306
Low Income, After Tax (%)	12.1	6.9	11.8	13.9	14.6	n/a	13.5	16.4	10.7
2006									
Participation rate (%)	66.2	69.7	72.6	65.7	59.7	73.9	67.2	65.6	74.0
Employment Rate (%)	62.8	66.9	68.3	62.4	56.2	72.6	63.7	61.6	70.9
Unemployment Rate (%)	5.2	4.0	5.8	5.0	5.7	2.2	5.2	6.0	4.3
Median Income (2005) ($)	26,472	36,053	25,560	24,369	23,247	28,793	25,218	24,867	28,896
Low Income, After Tax (%)	10.5	2.4	7.9	7.9	6.0	4.8	7.4	13.1	9.1

Source: Statistics Canada 2007a; b; c; d; e; f; g, Statistics Canada, 2012a; b; c; d; e; f; and Statistics Canada2017a; b; c; d; e; f; g.
Notes: Alberta is included as the comparable jurisdiction for Crowsnest Pass as the municipality lies in Alberta.
n/a = not available

17.4.5.2.1 District of Sparwood

In 2016, Sparwood had approximately 5% higher labour force participation and employment compared to the RDEK and B.C.; however, the unemployment rate was 1.2% and 0.3% lower in Sparwood than in the RDEK and B.C., respectively. This is likely due to the economy's focus on mining, which often brings outside labour into the community for employment. Labour force participation, employment, and unemployment have all slightly increased in Sparwood between 2006 and 2011. This may be due to the expansion of Teck's operations, including Elkview, since 2006 in the regional area.

Sparwood had a higher median income in 2016 than the B.C. median. The median income in Sparwood was approximately $11,000 higher than the provincial median. Since then, the Sparwood median income has increased consistently and at greater rate compared to the B.C. median. In 2006, the Sparwood median income was only approximately $1,500 above the B.C. median. The higher median income may

contribute to the higher rate of labour force participation, as the opportunity cost of unemployment is higher than in B.C. overall.

17.4.5.2.2 District of Elkford

Elkford has a similar employment and income profile as Sparwood. Similar to Sparwood, labour force participation and employment are approximately 5% higher than in B.C. Unemployment is lower in Elkford than Sparwood. Since 2006, Elkford has had a significantly higher median income compared to Sparwood. This is likely due to the reliance on mining, as mining often brings labour into a region to staff operations, and these jobs pay high salaries relative to the provincial median.

17.4.5.2.3 City of Fernie

Fernie has an approximately 10% higher labour participation rate and employment rate than RDEK and B.C. Fernie's unemployment rate is similar to the RDEK and B.C., as unemployment is 0.4% lower and 0.5% higher, respectively. Unemployment in Fernie almost doubled (3.7% to 7.2%) between 2011 and 2016. This may be due to the seasonal nature of work in the Kootenays due to the tourism sector (Vlasic, 2018). The volatility of the unemployment rate may be due to the presence of seasonal opportunities and in-migration, which could drastically alter the composition and requirements of the labour force. For example, in 2018, the unemployment rate declined to 3.1%, the lowest in the Province (Harper, 2019). Inequality is also present within the community, with housing affordability being viewed by the City as a key determinant of inequality (City of Fernie, pers. comm., 2020).

Median income is higher in Fernie than in the RDEK and B.C. Income in Fernie has increased since 2006, consistent with increases in the RDEK and B.C. Median income is likely higher in Fernie due to the presence of mining jobs, which pay well above the provincial median. Relative to Sparwood and Elkford, Fernie has less mining employment opportunity, and a lower median income, which may be due to Fernie being located further from the mining sites as compared to other communities in the RDEK.

17.4.5.2.4 City of Cranbrook

Cranbrook has a similar labour force participation rate and employment rate to the RDEK and B.C. Unemployment is the same as the RDEK and is 0.9% higher than B.C. Unemployment has increased by 2.6% since 2006. While this differs from the trend in B.C., it is similar to the RDEK where unemployment increased 2.4% between 2006 and 2016. Median income in Cranbrook is similar to the RDEK and B.C., as the median income tends to be similar or between median incomes for the two regional areas. In all cases, median income has increased between 2006 and 2016. This would be consistent with Cranbrook's regional role as a diversified service centre.

17.4.5.2.5 Municipality of Crowsnest Pass

Crowsnest Pass has a much lower labour force participation rate than Alberta. This is the case in all three census years (2006, 2011, and 2016), where labour force participation is approximately 12% to 14% below Alberta's labour force participation rate. In all years but 2006, unemployment levels are typical for Alberta. This is likely the case as a higher proportion of the population of Crowsnest Pass is of retirement age (Section 17.4.2.2).

Median income in Crowsnest Pass was below the Alberta median for all three census years. Median income has increased between 2006 and 2016 at a rate comparable to the provincial median income. Median income is likely lower in Crowsnest Pass as Alberta median income is buoyed by the presence of oil extraction jobs, which are higher paying than provincial norms. This is reinforced by Crowsnest Pass having a more similar employment profile to RDEK and B.C., as measured by the Hachman Index. The similar employment profile likely results in a median income more similar to these regions, as shown in Table 17.4-9.

17.4.5.2.6 Regional District of East Kootenay Electoral Area A

Labour force participation and employment are higher in the RDEK Electoral Area A than in the RDEK and B.C. Unemployment has also increased by 3% between 2006 and 2016, though data are not available for 2011. Median income is higher in the RDEK Electoral Area A than in the RDEK and B.C. The higher income is likely due to the presence of mining operations in the RDEK Electoral Area A, which are identified as providing higher than median wages.

17.4.5.2.7 Employment and Income - Indigenous

Indigenous peoples in the Economic Conditions LSA tend to have higher unemployment and lower median income, despite having similar labour force participation and employment rates, as shown in Table 17.4-10. This is typical for Indigenous peoples in Canada, who continue to face social and economic challenges limiting their economic opportunities. The 2011 National Household Survey shows an employment rate of 62.5% among Aboriginal people of core working age (aged 25 to 64). The comparable rate for non-Aboriginal people is 75.8% (Statistics Canada, 2015). Barriers to employment for Indigenous people, as identified by the National Collaborating Centre for Aboriginal Health (NCCAH) and the Organisation for Economic Co-operation and Development (OECD), include:

- Family obligations;
- Poverty;
- Education;
- Racism and discrimination; and
- Geography (NCCAH 2017; OECD 2018).

Table 17.4-10: Employment and Income Characteristics for Indigenous Communities in the Economic Conditions LSA

	ʔaq'am	ʔakisq'nuk	Tobacco Plains Indian Band	Lower Kootenay Band	Ktunaxa Nation	RDEK	B.C.
2016							
Participation rate (%)	81.5	56.5	50.0	66.7	64.2	64.7	63.7
Employment Rate (%)	66.7	56.5	50.0	50.0	56.8	59.7	54.8
Unemployment Rate (%)	13.6	0.0	0.0	25.0	11.5	11.2	14.0
Median Income (2015) ($)	n/a	n/a	n/a	n/a	19,584	28,704	23,857
Low Income, After Tax (%)	n/a	n/a	n/a	n/a	0	17.5	24.8

	ʔaq'am	ʔakisq'nuk	Tobacco Plains Indian Band	Lower Kootenay Band	Ktunaxa Nation	RDEK	B.C.
2006							
Participation rate (%)	69.2	72.0	45.5	68.8	n/a	69.2	65.6
Employment Rate (%)	53.8	56.0	36.4	56.3	n/a	62.0	61.6
Unemployment Rate (%)	22.2	22.2	40.0	18.2	n/a	10.7	6.0
Median Income (2005) ($)	n/a	n/a	n/a	n/a	n/a	16,001	15,836
Low Income, After Tax (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: INAC 2019a, 2019b, 2019c, 2019d; Statistics Canada 2018c, 2018b, 2018a
Notes:
Due to a different methodology used to impute on reserve dwellings in the voluntary 2011 National Household Survey, Statistics Canada recommends the use of 2006 as a point of reference when making historical comparisons.
2006 Data for B.C. were taken from the INAC profile with the exception of median income which is from Statistics Canada.
n/a = not available

A more detailed description of these challenges is provided in the Socio-Economic Baseline Report (Appendix 17-A). The following sections characterize employment and income of Indigenous people in the Ktunaxa Nation compared to Indigenous people in the Economic Conditions RSA, including RDEK and B.C. Descriptions of baseline conditions for additional Indigenous communities are presented in Chapters 23 to 31.

Ktunaxa Nation

As shown in Table 17.4-10, Ktunaxa Nation has a similar employment profile to the RDEK, suggesting the employment of Ktunaxa Nation community members is typical for Indigenous people in the RDEK. Both have approximately 64% labour force participation, 11% unemployment rates, and similar employment rates. Indigenous people in the RDEK tend to earn approximately 150% of the income of the median income in Ktunaxa Nation. Further, the median incomes of Indigenous people are substantially lower than non-Indigenous people, suggesting lower participation rates in higher income jobs such as in the mining sector.

ʔaq'am Community

Labour force participation for ʔaq'am has increased from 69.2% in 2006 to 81.5% in 2016. The increase in participation coincided with increases in the employment rate from 53.8% to 66.7%, and a decline in the unemployment rate from 22.2% to 13.6%. While the unemployment rate is twice the provincial average for Indigenous people, the rates of labour force participation and employment exceed provincial averages.

ʔakisq'nuk First Nation

Trend data from the 2016 census for ʔakisq'nuk cannot be relied on, as it is not likely to provide an accurate representation of the employment rate for the community in part due to the lack of unemployment (0%) being reported. Drawing on the 2006 data, ʔakisq'nuk has a high level of unemployment, despite being above average labour force participation. It is likely that barriers to employment negatively impact community members and their economic situation.

Tobacco Plains Indian Band

Trend data from the 2016 census for Tobacco Plains Indian Band cannot be relied on, as it is not likely to provide an accurate representation of the employment rate for the community in part due to the lack of unemployment (0%) being reported. Drawing on the 2006 data, Tobacco Plains Indian Band has a high level of unemployment and very low labour force participation. It is likely that barriers to employment negatively impact community members and their economic situation. This may lead to a high percentage of discouraged workers, workers who have exited the labour force after struggling to find employment, often due to their inability to find suitable employment. The barriers to employment described above are likely to contribute to discouraged workers.

Lower Kootenay Band

Labour force participation has declined slightly within the Lower Kootenay Band. Unemployment has risen by 6.8% between 2006 and 2016. While labour force participation was typical for the RDEK in 2016, unemployment was more than twice the Ktunaxa Nation and the RDEK average. Similar to other communities in the Economic Conditions LSA, employment is lower in the Lower Kootenay Band than in non-Indigenous communities.

17.4.6 Labour Force

The labour force in the RDEK is characterized by low diversity and disproportionate mining employment. This is to be expected given the role of mining in establishing communities in the RDEK, particularly within the Economic Conditions LSA. Like other rural resource economies, professional services, finance, insurance, and real estate jobs are less likely to be prevalent; however, tourism and sectors supporting tourism are generally experiencing increased employment. Labour force is described as part of existing conditions because the Project may alter the labour force within the RDEK, as employment in the mining sector is attractive due to the high compensation. This may impact other sectors' access to labour and the make-up of the regional economy.

This section characterizes the labour force within the Economic Conditions RSA and LSA.

17.4.6.1 Labour Force - Regional Study Area

B.C. is a robust economy with a diversified labour force. Shares of total occupations within the B.C. economy range from 0.2% for management occupations to 11.7% for retail occupations. Overall, the share of employment in each occupation has not changed drastically between 2006 and 2016. The 2018 Labour Market Outlook for B.C. notes 903,000 new jobs will be created in the Province between 2018 and 2028, largely due to economic growth and workers leaving the workforce (WorkBC, 2018). While migration and workers entering the labour force are anticipated to fill most jobs, approximately 15% or 130,000 jobs currently are not anticipated to be filled based on projections (WorkBC, 2018). WorkBC anticipates these jobs will likely need to be filled by workers staying in the workforce longer or increased participation of underrepresented workers (WorkBC, 2018). Automation and changing demand is expected to result in over 80% of jobs by 2028 requiring post-secondary education (WorkBC, 2018).

Mining and construction are anticipated to require approximately 55,000 new employees (6,200 in mining and 48,700 in construction) between 2018 and 2028 (WorkBC, 2018). Most of these job opportunities are expected to be replacement of existing workers. Construction is expected to contract by approximately

5,800 jobs, while mining is expected to expand by 1,800 jobs (WorkBC, 2018). This fits within the provincial trends as B.C. shifts to higher skill labour and automating jobs in some sectors. The trend towards higher education in the Province and Canada may decrease the desire of young workers to enter into the mining sector in labour roles. In addition, there is a potential for mining jobs to change due to automation.

Within the RDEK, mining employs approximately 10.7% of the population, which is well beyond the B.C. economy, which has 1.1% of workers employed in mining. The area also has more people employed in food services and accommodation and arts, entertainment and recreation in the RDEK, which is consistent with the focus on tourism development.

17.4.6.2 Labour Force - Local Study Area

Economic Conditions LSA communities have a disproportionate reliance on mining jobs due to the presence of coal mining in the Elk Valley. The four (five at the time of the census) large Teck mining operations in the RDEK contribute to this trend. In addition, tourism is a growing employment area within the RDEK due to the natural features for remote tourism and the presence of seasonal homeowners from Alberta. A more detailed breakdown of employment by industry is provided in Appendix 17-A.

17.4.6.2.1 District of Sparwood

A disproportionate amount, over 30%, of the Sparwood labour force is employed in the mining sector. This has remained consistent since 2006 and is likely due to the presence of Teck's five operations within the RDEK. Relative to the size of Sparwood, accommodation and food services is rapidly expanding, doubling its share of the total labour force since 2011. This may be in part to regional economic development planning in the Elk Valley, which has focused on expanding tourism services or local economic planning focused on improving food services in the downtown area.

In all other sectors, except wholesale trade, Sparwood is below regional averages. This is likely due to disproportionate presence of mining occupations, but may also be attributed to the rural setting or leakage of consumption, depending on the specific industry. The above average presence of wholesale trade occupations likely relates to the sale of coal mined in the RDEK.

17.4.6.2.2 District of Elkford

Elkford has a disproportionate amount of the labour force employed in mining (52.3%). This is the highest proportion of the population engaged in mining of all the Economic Conditions LSA communities. The presence of Teck's operations in the area likely contribute to this concentration. In Elkford, all sectors except for mining and public administration are below the regional and provincial rates of employment. This is likely due to the reliance on the mining sector. Since 2011, Elkford has seen minor labour market shifts, with similar labour force distributions; however, there have been slight increases in retail trade, real estate, construction, and recreation services, which would be consistent with trends observed in Elkford's Economic Development Strategy (2010). It was identified that tourism and real estate were growing sectors, as there was a growth in the recreation property market. The growth in retail may be attributed to its role as a supporting sector for this additional economic activity, or may show a higher capture rate for consumption from miners.

17.4.6.2.3 City of Fernie

Fernie's labour force is centred on mining and tourism. While forestry has been identified as a key industry in Fernie, the employment in the sector is small. Mining employment in Fernie (18.0%) is disproportionate to the provincial average; however, the proportion is relatively close the RDEK (10.7%) compared to Sparwood (34.0%) and Elkford (52.3%). Despite the focus on tourism, accommodation, food service, recreation, and culture, employment rate has declined in Fernie since 2011; however, the retail trade, often seen as a supporting sector, has increased from 5.0% to 13.3%. The decline in sectors potentially related to tourism may be due to the investment in upgrading facilities in the area, dis-incentivizing tourists, and restricting current operations (City of Fernie, 2014c).

17.4.6.2.4 City of Cranbrook

Cranbrook has a diversified economy similar in composition to the RDEK and Province. In the mining sector, Cranbrook (4.9%), has more employment than the provincial average (1.1%) and less than the regional average (10.7%). This is consistent with its role as a service centre for RDEK as the largest city.

Cranbrook has less financial, insurance, real estate, and professional services employment than the Province, likely due to the presence of Vancouver as a hub for these sectors. Cranbrook also has more retail employment (16.0%) than the RDEK (12.8%) and the Province (11.7%). Otherwise, Cranbrook's employment is typical for the RDEK and the Province. The diversity in Cranbrook is consistent with their economic development strategy and their role as regional service centre.

17.4.6.2.5 Municipality of Crowsnest Pass

Crowsnest Pass, similar to B.C. Economic Conditions LSA communities, has a disproportionate share of employment in the mining sector. Crowsnest Pass has 19.2% of its labour force employed in the mining sector, relative to 10.7% in RDEK and 6.3% in Alberta. Generally, the labour force diversity of Crowsnest Pass is closer to RDEK than the Province of Alberta. This is likely due to the proximity of Crowsnest Pass to RDEK and its role in the mining sector. While the labour force is similar to RDEK, Crowsnest Pass has less forestry, fishing, hunting, and agriculture than RDEK (0.9% compared to 3.3%). Since 2011, manufacturing and tourism related sectors such as recreation and accommodation have grown. This is consistent with the Crowsnest Pass' economic development goals, specifically those related to tourism attraction, resident attraction, and business attraction. Manufacturing employment has doubled since 2011, though the nominal increase is 45 jobs. The share of employment in accommodation and food services has increased 3% from 6.2% to 9.2% since 2011. The increase in employment share of arts, entertainment, and recreation is 1.8% (1.4% to 3.2%), which is a nominal increase from 40 jobs to 90 jobs.

17.4.6.2.6 RDEK Electoral Area A

The RDEK Electoral Area A has a similar labour force make-up to Fernie, the largest community in the area. Similar to Fernie, mining employment in the RDEK Electoral Area A (18.1%) is disproportionate to the provincial average. The RDEK Electoral Area A also has a larger share of employment in construction and administrative and support, waste management, and remediation services than the RDEK. In part due to the rural character of the RDEK Electoral Area A, a smaller portion of the labour force is employed in retail, accommodation and food services, and healthcare than the RDEK.

17.4.6.2.7 Ktunaxa Nation

Labour force data is only available for Ktunaxa Nation in 2016. In 2016, Indigenous people in the RDEK and B.C. have similar industry employment distributions to the industry employment distribution of the RDEK and B.C. overall; however, there is a large difference in B.C. between Indigenous and non-Indigenous employment in finance and insurance; real estate and rental and leasing; and professional, scientific and technical services. This may be a result of lower education outcomes and underlying discrimination in these sectors. The lack of Indigenous employment (proportionately) in these sectors is offset by increased employment in construction, primary industries, lower value service industries, and public service. These jobs tend to require less education or have more transparent hiring processes, reducing some of the Indigenous barriers to entry.

Considering the 25% sample data for the census and the small labour force of Ktunaxa Nation (250), comparison to proportionate distributions is not reasonable as rounding and the small sample are likely to distort the data such that the nuances of the breakdown are unreliable. It can be noted that primary employment industries in the Ktunaxa Nation include public service; agriculture, forestry, fishing and hunting; healthcare and social assistance; and accommodation and food services. In addition, many service and tourism businesses were identified relative to the total number of businesses.

17.4.6.2.8 Other Nations

Descriptions of baseline economic conditions for additional Indigenous communities are provided in Chapters 24 to 31.

17.4.7 Gender Related Baseline Information

17.4.7.1 GBA+ Background

The inclusion of gender considerations began in Canada in the 1970s when the Government of Canada made commitments to consider "women's issues" and women when making policy decisions. The focus has progressively shifted from strictly women-centred views to consider "how programs and policies affect various groups of people differently due to gender and other diverse factors" (Women and Gender Equality Canada, 2021a). In 2019, the Government of Canada's new Impact Assessment Act (IAA) was released and included requirements for federal assessments to consider the intersection of gender and sex (as well as other identity factors) when assessing a project's impacts through a Gender Based Analysis Plus analytical framework.

Gender Based Analysis Plus (GBA+) is:

> An analytical process the provides a rigorous method for the assessment of systematic inequalities, as well as a means to assess how diverse groups of women, men, and gender diverse people may experience policies, programs and initiatives. The "plus" in GBA+ acknowledges that GBA+ is not just about differences between biological (sexes) and socio-cultural (genders). We all have multiple characteristics that intersect and contribute to who we are. GBA+ considers many other identity factors, such as race, ethnicity, religion, age, and mental or physical disability, and how the interaction between these factors influences the way we might experience government policies and initiatives (Women and Gender Equality Canada, 2021b).

The GBA+ process includes a number of elements, as shown in Figure 17.4-1.

Figure 17.4-1: GBA+ Process Elements (Women and Gender Equality Canada [2021])

The intent of the GBA+ process is to assist in deepening the analysis and systematically incorporate important diversity considerations in the assessment (Women and Gender Equality Canada, 2021c).
For this Project, the potential for disproportionate effects for diverse or potentially vulnerable population groups or subgroups was explored from an economic and socio-community lens. As part of this analysis, in addition to review gender related issues in the Elk Valley, for contextual information, a review of gender related issues in the mining industry at a national and local level was also explored. Consideration for how the mining industry can contribute to inequities and barriers to various groups was taken into account as part of this GBA+ assessment.

Currently, the mining industry in Canada has an underrepresentation of women in mining. The Canadian labour force in mining, quarrying, and oil and gas extraction was comprised of 19% of women in 2016 (Statistics Canada, 2017h), and only 16% of the mineral sector workforce in Canada was represented by women in 2016 (Prospectors & Developers Association of Canada [PDAC], 2022). In British Columbia, the mining, quarrying, and oil and gas extraction industry had a total labour force of 25,920 in 2016, with only 16% of the labour force represented by women (Statistics Canada, 2017i). It has also been shown in an analysis of 70 occupations completed by the Mining Industry of Human Resources Council (MiHR) that there is a lower representation of women in mining compared to the same occupation in other industries.

Globally, the mining industry has higher percentages of women in entry level positions, while there are consistently lower levels of women at more senior executive positions (Women in Mining Canada [WIMC], n.d.). Taking these trends into consideration, the current conditions in the mining industry both globally and nationally were explored as part of the GBA+ desktop review in 2022, with a focus on female

representation in the mining industry. The current conditions in the Elk Valley for different subgroups, primarily women and LGBTQ2QQIA+[5] individuals were also explored as part of the GBA+ study in 2022. The GBA+ approach and study undertaken in 2023 is described in Section 17.4.7.5, which focuses on the opportunities and barriers that Indigenous peoples, Indigenous women, and Two-Spirited [6] and Indigenous LGBTQQIA+ people face in the mining industry in Canada and the Elk Valley region.

17.4.7.2 GBA+ Studies and Current Conditions in the Mining Industry – 2022 Desktop Review

17.4.7.2.1 McKinsey & Company - Why Women are Leaving the Mining Industry and What Mining Companies Can Do about It (September 2021)

McKinsey & Company completed a global survey seeking to better understand the experiences of women in the mining industry and to provide recommendations and insight to mining companies by answering the following questions:

- Why is female representation in the mining industry so sparse?
- And what can mining companies do about it?

Although this article references the global mining industry, the findings of this article are useful to understand female representation and potential barriers for women in the mining industry. The key findings from this article include the following:

- Women are attracted to the mining sector by the type and variety of work the sector offers;
- 40% of entry-level positions in the mining sector are filled by women;
- Women report leaving/wanting to leave due to the following:
  - The work is no longer intellectually challenging;
  - There is a perception of fewer advancement opportunities than there are for male colleagues;
  - Women experienced being sidelined (particularly for technical roles);
  - There is a sense that operational experience and frontline mentorship opportunities are created proactively for men;
  - Women who returned to school to further their expertise feel their academic skills are undervalued and underutilized;
  - Women struggle to access the same “stepping stone” operational roles as men in the same organizations; and
  - The lack of diversity beyond the entry level and company culture;
- Mining companies fail to promote women, as evidenced by the limited female representation in senior management roles. Women indicated they feel they are held to higher standards for promotion; and
- More than 45% of women respondents indicated they experienced inconsistent to no sponsorship (McKinsey & Company, 2021).

[5] LGBTQQIA+ stands for: L- Lesbian, G-Gay, B-Bisexual, T-Trans, Trans-gendered or Trans identified, Q-Queer, Q- Questioning, I-Intersex, A-Asexual, and +-any identity not represented by the acronym. Note that there are different acronyms that can/may be used by different groups, and where this is the case that discrepancy is noted in the chapter.

[6] Two-Spirited is used by some Indigenous people to refer to having both a masculine and feminine spirit and can indicate sexual, gender, and/or spiritual identity.

In the article, McKinsey & Company provided several recommendations, as summarized in Table 17.4-11.

Table 17.4-11: McKinsey & Company Mining Industry Recommendations

Recommendation Area	Recommendation Points
Attraction	• Set a goal for parity in the recruiting outcomes (e.g., 50% women) and define roles that draw on a wider set of expertise; • Cultivate potential applicants early in the education (e.g., high school and university); and • Ensure women are properly "buddied" by a current employee throughout the application process. The interview panels should be diverse and be pushed to challenge implicit biases.
Retention	• Create rotational programs across the company (business units, functions or geographies); • Change the mindsets and behaviours of employees through goals and key performance indicators to frequently evaluate progress: o Give employees tools to succeed (e.g., implicit-bias training); o Hold managers accountable for achieving the initial vision; • Basic provisions for women: o Women only washrooms and changing rooms; o Lactation rooms; o On-site sleeping accommodations; • Zero-tolerance policy for discriminatory or non-inclusive behavior; and • Appropriate channels for women to safely escalate issues.
Promotion	• Sponsorship and sharing successful sponsorships; and • Providing stretch opportunities.

Source: McKinsey & Company, 2021

The McKinsey & Company article indicates that while women are interested and attracted to employment in the mining industry, long-term retention is an issue. The points raised in the article are relevant to this Project as they could assist in better understanding the potential barriers for women to become employed and stay employed in the mining industry, such as lack of training and advancement opportunities.

17.4.7.2.2 Oxfam Canada – GBA+ Preparedness in the Canadian Mining Sector: A Baseline Study (March 2020)

In a baseline study completed by Oxfam Canada, the operational practices and policies of 12 leading mining companies in Canada were reviewed in order to assess the degree to which they were incorporating GBA+ into their practices and policies. The resource sector was identified as making up the largest number of projects that are subject to the federal impact assessment.

The study included a review of recent sustainability reports, company websites, and interviews with company representatives. Oxfam Canada looked at how the mining companies discussed gender issues and other intersecting identities in their sustainability reports and how key concepts and elements of GBA+ were being applied to the industry. It was noted by Oxfam Canada that at the time of the study, "Gender-based analysis in general and the Government of Canada's GBA+ Framework in particular have not been used widely in the industry" (Oxfam Canada, 2020). Oxfam Canada also noted that the IAA (2019)

was too new to prompt the widespread use of GBA+ methods or terminology in the mining industry at the time of the study.

In the review of company documents, Oxfam Canada indicated that the mining sector was already incorporating several principles and approaches of GBA+. Oxfam Canada listed six elements that they identified as being the most relevant to applying GBA+ within the mining industry:

- Making high-level policy commitments to gender equality and equity;
- Developing analytical skills and expertise on gender equity and diversity issues;
- Using gender-disaggregated data to understand problems and make better decisions;
- Taking an intersectional approach that looks at overlapping identity factors, beyond sex and gender;
- Listening to affected populations to help mitigate potential bias within the organization; and
- Developing and implementing mitigation plans to address identified gender and other inequities (Oxfam Canada, 2020).

The baseline study made several recommendations to the Impact Assessment Agency of Canada and to mining companies to advance the application of GBA+ within the Canadian mining sector. The recommendations to mining companies related to economic conditions are summarized in Table 17.4-12. For recommendations related to the socio-community, refer to Chapter 18.

Table 17.4-12: Oxfam Canada Mining Company Gender Related Recommendations

Recommendations
Public Commitments to GBA+: Make a public commitment to incorporate GBA+ into company decision making at all levels (includes internal and external issues and risks). Note: this recommendation is also included in Chapter 18.
Consistent Training of Workforce: Deliver consistent training on GBA+ approaches as part of the training programs for employees and contractors.
Internal Learning Opportunities: Foster cross-functional learning opportunities between company staff and departments who are working on inclusion and diversity internally.
Collaborative Pilot Projects on Gender Impact Assessment: Collaborate with gender-equity-seeking organizations to conduct gender impact assessments of existing mining operations that are not currently undergoing a federal regulatory review, to foster a "learning by doing" approach to GBA+ (appears to be both internal and external impacts). Note: this recommendation is also included in Chapter 18.

Source: Oxfam Canada, 2020

The Oxfam Canada findings and recommendations are important to consider as they highlight the current extent to which gender, inclusivity, and diversity considerations and components (e.g., training) are integrated in mining companies. It also highlights the importance of integrating GBA+ into company decisions at all levels, and for mining companies to make high-level policy commitments to GBA+ and communicating GBA+ activities to the public.

17.4.7.2.3 Mining Association of Canada – Advancing Diversity and Inclusion in Canada's Mining Sector (2022)

As noted by the Mining Association of Canada (MAC), the Canadian mining industry has made progress on gender parity, inclusion, and valuing diversity; however, there is still considerable work to be done (MAC, 2022). MAC has a membership of over 50 of Canada's leading mining companies who have come together

to identify and commit to objectives that are focused on ensuring racism, discrimination, and sexism are not part of Canada's mining sector. Examples of diversity and inclusivity training and initiatives in Canadian mining companies are outlined in Table 17.4-13.

Based on the above referenced studies and resources, the mining industry is considering gender barriers, diversity, and inclusivity and identifying methods to address these barriers.

Table 17.4-13: Diversity and Inclusivity Examples in Canadian Mining Companies

Diversity and Inclusivity Examples
• Assessment and independent validation of several performance indicators addressing critical aspects of social and environmental mine, smelter, and refinery site-level performance (through Towards Sustainable Mining, a requirement of all MAC members); • Providing personal protective equipment designed specifically for women; • Mandatory Expect Respect training for supervisors; • Mandatory Unconscious Bias training; • Inclusion and Diversity Committees; • Mining Industry Human Resources Council's Intercultural Awareness Training program (promotes intercultural competencies for a more diverse workforce); • Mining Industry Human Resources Council's Gender Equity in Mining Works (GEM Works) program (comprehensive training to help establish Change Agents and Gender Champions to eliminate unintentional barriers to gender inclusion); • Resources to support employees experiencing domestic abuse and family abuse; • Inclusion networks to address the needs of underrepresented or specific groups; • Dedicated prayer rooms; • Nursing room; • Office spaces designed with universal independent access for people with disabilities; and • Mentorship and initiatives to promote the professional development for women in mining (encouraged by organizations such as Women in Mining Canada and Women Who Rock; MAC, 2022).

17.4.7.3 Gender Considerations in the Elk Valley

As discussed in the previous sections, gender imbalances and inclusivity barriers exist in the mining industry at a global and nation-wide level; however, mining companies in Canada are considering how to address these barriers. Several studies were examined to better understand gender related conditions in the Elk Valley.

17.4.7.3.1 Fernie Pride Society – 2021 Elk Valley Diversity and Inclusion Needs Assessment Study (July 2021)

A survey was launched by Fernie Pride Society (FPS) from June 14 to July 1, 2021, to understand its LGBTQ2+[7] members' needs and the local barriers to increasing inclusivity. Topics covered included demographics, communities, diverse workplace, healthcare, and support. Respondents resided in several communities within the Elk Valley, including Elkford, Sparwood, Fernie, South Country, Crowsnest Pass, and Cranbrook. Calgary was listed as another option outside of the Elk Valley.

[7] 2SLGBTQ2+ is the acronym used by the Fernie Pride Society

The results outlined below are related to the economy and working in the mining industry. For more information on the results and comments related to the socio-community, refer to Chapter 18.

The survey had a significant community response, with 319 respondents (2.5%), of which 92 respondents currently identified as LGBTQ2+, or were questioning their sexual orientation or gender identity. The largest group of identifying respondents were from the ages of 25 to 34. In the assessment results, it was noted that there was a great representation of people who work in the mining industry. The majority of respondents indicated they worked in the communities of Elkford, Sparwood, and Fernie.

When asked which industry sector respondents primarily work in, over 120 respondents indicated they work in mining or mining services. Of this, approximately 15 respondents indicated they "Identify or [are] Questioning". The majority of respondents, both identifying and not identifying, indicated their organization's headcount exceeded 250 individuals. When respondents were asked to rank how inclusive their workplaces are, those who identified found their workplace to be less inclusive than those who did not identify. Respondents indicated organizations could make workplaces more welcoming and inclusive by doing the following:

- Having inclusive signage on display;
- Receive diversity and inclusivity terminology and language training and the proper ways to address groups of people; and
- Update current employee manuals to reflect diversity and inclusivity policies and procedures.

When asked how important improving diversity and inclusivity is in organizations, respondents indicated that it is important for organizations and businesses to keep policies and practices current with changing environments and that appropriate language and policies are important in the workplace. The biggest barriers to improving diversity and inclusivity in workplaces were identified as the following:

- Breaking through learned language patterns; and
- Finding the correct inclusive and diverse language to use when promoting or marketing.

Respondents recommended that Fernie Pride Society could help organizations create a safer and welcoming environment at work for employees who identify as LGBTQ2+ through the following:

- Education on the appropriate language that should be used to foster diverse safe space;
- Offer workshops or training sessions with Q&A sessions;
- Provide HR policy examples, workbooks, and presentations on resolving everyday work barriers/challenges;
- Provide tools for employers to develop policies and train staff;
- Provide links to diversity and inclusivity resources and tools; and
- Provide a list of consultants who can assist with policy development.

Based on the overall survey, Fernie Pride Society recommended several programs, services, and advocacy efforts, including:

- Celebrating sexual fluidity;
- Launching a community resource centre;
- Creating a support network for healthcare and education professionals;
- Wellness Taskforce (mental, sexual, and medical);
- Collaborate for success (i.e., with regional and provincial groups); and

- Speak about the Elk Valley LGBTQ2+ community to various stakeholders and their role in creating an inclusive environment.

While the majority of questions related to workplace diversity and inclusiveness were not specific to the mining industry, the experiences of LGBTQ2+ community members in Elk Valley organizations, as well as the recommendations for a more inclusive workplace, are important to consider in the economic context of this Project, as well as the Project recommendations as part of this GBA+ study.

17.4.7.3.2 NWP Community Survey – 2021

NWP launched an online survey in late 2021 (NWP, 2021a) to gather input about living and working in southeastern British Columbia and working in coal mines. Topics covered in the survey included the following:

- Perception of living and working in southeastern British Columbia;
- Perception of living and working in the metallurgical coal mining industry;
- Important factors when considering employment in the mining industry/with NWP; and
- Relationships with sub-groups (i.e., Indigenous community members, Two-Spirit, lesbian, gay, bisexual, transgender, queer [or questioning; 2SLGBTQ+[8]], persons with disabilities).

It is noted that survey results related to the socio-community and living in southeastern British Columbia are detailed in Chapter 18.

A total of 154 people (82 males and 72 females) participated in the survey. The respondents included:

- Those who self-identified as Indigenous (4.17% male and 7.32% female);
- Those who self-identified as a member of the 2SLGBTQ+ community (4.17% male and 6.33% female); and
- Those who self-identified as a member of the disabled community (2.82% male and 4.94% female).

The majority of respondents (male and female) indicated they lived in Elkford, followed by Crowsnest Pass, Sparwood, and Fernie. The majority (79.22%) of respondents (male and female) indicated they work or have worked for a coal mine or a company providing goods or services to a coal mine. 73.38% of respondents (male and female) indicated they are the spouse, parent, or other close relation of someone who works for or worked for a coal mine or a company that provides goods or services to a coal mine.

Respondents were asked to rank how they felt about southeastern British Columbia as a place to live and work on a scale of "very negative" to "very positive" for a number of items. A summary of the results are captured in Table 17.4-14. It is noted this table only includes the highest overall rank for all respondents (both male and female respondents). The factor captured in the table is specific to economic conditions.

Table 17.4-14: Summary of Ranking Results - Working in Southeastern B.C.

Factor	Highest Overall Rank (very negative to very positive)	Male (%)	Female (%)
Employment Opportunities	Very positive	54.17	31.71

[8] 2SLGBTQ+ was the acronym used for the NWP Community Survey

While “very positive” was the highest rank for all respondents overall, it was not the highest rank for females. The majority (42.68%) of female respondents ranked employment opportunities as “somewhat positive”, followed by “very positive”.

Respondents were asked to rank how they felt about different aspects of working for the metallurgical coal mining industry on a scale of “very negative” to “very positive”. A summary of the results are captured in Table 17.4-15. It is noted this table only includes the highest overall rank for all respondents (both male and female respondents). Aspects captured in the table are also specific to the economy.

Table 17.4-15: Summary of Ranking Results - Working for Metallurgical Coal Mining Industry

Factor	Highest Overall Rank (very negative to very positive)	Male (%)	Female (%)
Pay and benefits	Very positive	54.17	59.76
Equity, diversity, and inclusion for everyone	Very positive	45.83	37.5

Respondents were “very positive” about pay and benefits, and equity, diversity, and inclusion for everyone. More male respondents ranked equity, diversity, and inclusion as “very positive” compared to female respondents. While not captured in this table, more female respondents ranked equity, diversity, and inclusion as “very negative” (10%) and “somewhat negative” (11.25%) compared to male respondents (4.17% and 6.94%, respectively).

Respondents were asked to rank the most important factor when considering a potential job with NWP on a scale of 1 to 9 (1 being the most important and 9 being the least important). A summary of the results are captured in Table 17.4-6.

Table 17.4-16: Summary of Ranking Results - Important Factors to Employment with NWP

Factor	Highest Ranking Value: Male	% Male Respondents	Highest Ranking Value: Female	% Female Respondents
Pay and benefits	1	32.84	1	40
Support for housing	5	20.90	2	17.11
Equity, diversity, and inclusion for everyone	4	16.42	3	19.23
NWP relationship with Indigenous communities	9	37.31	9	23.68
NWP efforts to minimize environmental impacts and not add to regional cumulative effects	1	28.99	1	24.68
NWP community involvement	6	16.18	6	26.32
Support for daycare/childcare	9	22.39	8	23.68
NWP culture of listening, learning, and growing	6	19.12	5	20

Factor	Highest Ranking Value: Male	% Male Respondents	Highest Ranking Value: Female	% Female Respondents
Employment opportunity for spouse or other family members with other business in the area	2	16.92	1	16.67

Based on Table 17.4-6, the most important factor for both female and male respondents is pay and benefits, followed by minimizing environmental impacts. More female respondents gave equity, diversity and, inclusion a higher value than male respondents, as well as support for housing and employment opportunities for spouse or other family members.

Respondents were asked to indicate their preferred shift work schedule at the mine. The majority of male and female respondents (43% and 36.7%, respectively) indicated that 4 days on and 4 days off works best for the type of work they do. 7 days on and 7 days off was the second highest for male participants (38.9%) and a rotation that aligns with the normal week was the second highest for female participants (34.2%).

Based on the findings of the NWP survey and the other sources above, the Elk Valley mining industry has several pre-existing gender and subgroup related issues, including inclusivity at the workplace level and employment/advancement opportunities.

17.4.7.4 GBA+ Interview Findings (Economic) – 2022 Study

As previously noted, while this Project does not include a full GBA+ analysis, the intent was to gain a high level understanding of gender and diverse populations/subgroups in the mining industry and the area in order to better comment on and address gender considerations for the Project. To obtain input from different sub-group perspectives, interviews were conducted with individuals from various sub-groups. The following individuals/organization representatives were interviewed:

- Socio-Community & Economic Effects Advisory Committee (District of Sparwood);
- Women in Mining Canada;
- Women/Indigenous Women employed/formerly employed in mining;
- Fernie Pride Society;
- Alpine Childcare Solutions;
- Elkford Housing Society;
- Elkford Women's Task Force Society;
- Kootenay Employment Services;
- Indigenous-owned business; and
- Elk Valley RCMP Detachment.

It is noted that while different genders and sub-groups were interviewed to better understand any existing gender, diversity, and identity related issues in the local communities and mining industry, the opinions of the stakeholders interviewed may not be representative of the sub-group they identify with. Several stakeholders indicated they speak based on personal experience and do not wish to speak on behalf of their sub-group.

The GBA+ interviews revealed a variety of economic related concerns and impacts related to the existing mining industry in the Elk Valley. Gender and other inequities identified through the interviews have been

categorized by themes under the economic conditions VC for this Project. The themes have been classified as the following:

- Employment barriers;
- Training & employment opportunities; and
- Work environment/operations.

While the themes have been separated, there is some overlap between the topics discussed. For findings related to the socio-community from the GBA+ interviews, refer to Chapter 18. The findings from the GBA+ interviews related to the economy are summarized in Table 17.4-7. While the focus of the interviews was to obtain input on gender considerations, not all of the information provided was strictly related to gender but is of interest from a general socio-community-economic perspective.

Through the GBA+ interviews, it was indicated that there are potential barriers in the mining industry related to the following:

- Employment opportunities and benefits (e.g., parental leave);
- Training and employment advancement;
- Retaining women in the mining industry;
- Workplace accommodations (e.g., labour, workspace, PPE);
- Inclusivity and work environment; and
- Lack of available and suitable childcare.

Table 17.4-17: Summary of GBA+ Interview Findings

Valued Component	Theme	Sub-Theme	Summary of Findings
Economic Conditions	Employment Barriers	Hiring Process	The hiring process was identified by some participants as an area where the mining industry can be improved and be more inclusive. A summary of comments heard from some of the participants is as follows: • There may be an inherent bias that exists in the hiring process that makes subgroups feel there may not be equal access to opportunities in the mining industry; • A barrier encountered by some subgroups is whether the position is deserved; and • Women/Indigenous women may feel discouraged to apply for a position in the mining industry, as they may feel that there are pre-existing conscious or unconscious biases if they express an interest in the mining industry. Generally, participants noted that mining companies are good at hiring diversely/those who wish to work in the mining industry and more subgroups, such as women, are employed in the mining industry and becoming involved in trades. Participants also indicated that they are aware that larger mining companies have diversity goals and commitments as core values and/or initiatives. To help improve the hiring process to be more inclusive in the mining industry, mining companies were encouraged to consider

Valued Component	Theme	Sub-Theme	Summary of Findings
			implementing inclusive recruitment guidelines and processes, such as having a diverse panel (technical and experience based) and using inclusive language in job advertisements.
		Lack of Awareness and Promotion of Employment Opportunities and Benefits	Some participants indicated that while employment opportunities and benefits may exist in the mining industry, the mining companies may not be promoting these opportunities widely or inclusively enough to capture and/or attract different subgroups. A summary of the comments heard from some of the participants is captured below: • There is a lack of awareness of the different employment opportunities and positions available in the mining industry; • There is a lack of awareness of the benefits that currently exist in the mining industry for different subgroups (e.g., LGBTQ2+ members); • Mining industry job advertisements featuring women were seen by participants and they were aware that there is support around women in mining, but more diverse advertisements including LGBTQ2+ and Indigenous community members were either not seen or considered non-existent by some participants; • Some participants were unaware of whether initiatives or promotions exist for equal opportunities to work in the mining industry; • Young women may not be aware of the opportunities available in the mining industry and they do not have the opportunity to plan their education accordingly to attain these positions; • There are many programs for women to get into trades in Alberta and apprenticeships in British Columbia, but uncertain or unaware of whether similar programs are available in the mining industry; and • Unaware of whether there are any added incentives to work in the mining industry for different subgroups (i.e., women, Indigenous community members, LGBTQ2+). Generally, participants expressed that the mining industry is known to offer good employment opportunities in the Elk Valley. Participants recommended that mining companies can improve awareness and promotion of opportunities by actively sharing the existing opportunities. Mining companies were also encouraged to create more awareness and share how they are doing more in terms of opportunities and benefits for subgroups. It was also recommended that job advertisements inform potential employees of the various employment opportunities and benefits available in the mining industry.

Valued Component	Theme	Sub-Theme	Summary of Findings
		Lack of Transportation	When discussing potential barriers to employment opportunities for Indigenous community members, the distance of Indigenous communities to the mines and the lack of transportation options for commuting were identified. Local Indigenous communities in the Elk Valley are located far from mines. Mining companies were encouraged to go to communities to meet the Chief and Council to discuss solutions for transportation to the mines, as well as outreach for employment opportunities.
		Childcare	When discussing potential barriers to employment, some participants identified the lack of childcare in Elk Valley as a major barrier. While childcare services exist in the Elk Valley, participants indicated that childcare services and/or spaces are limited, there is a lack of qualified services, and there are no childcare services with overnight options. Some participants also noted the following: • The lack of available childcare services can impact the retention of employees. Women formerly employed in mining noted that the lack of childcare services and flexible childcare services was a major reason for leaving the industry. Other participants also indicated that childcare is a particular challenge for women in mining; • The lack of available childcare services was also identified by some participants as potentially negatively affecting family wellbeing. Some participants indicated that parents who are both employed in the mining industry attempt to adjust their shifts in order to take care of their children. Participants indicated this could cause strain on spousal and familial relationships, as well as health; • Some participants noted that childcare services in the Elk Valley could not accommodate shift work (including 12 hour shifts, weekends, statutory holidays, and school holidays) as they maintained conventional hours rather than 24 hour service; and • Some women formerly employed in mining indicated they were proud of the work they were doing in the mining industry and indicated that leaving the industry to accommodate childcare can be hard on a woman's self-esteem. Generally, participants identified the lack of childcare services as an issue throughout the Elk Valley, but mining companies were encouraged to support or provide childcare in some manner.
	Training & Employment Opportunities	Training or Advancement	When discussing potential barriers in the mining industry, some participants identified that there are limited opportunities for women to train or advance into positions of power in the mining industry. Some participants noted the following:

Valued Component	Theme	Sub-Theme	Summary of Findings
			• Women tend to get pushed to the side ("sidelined") when higher positions and training opportunities are available; however, some participants did indicate that women that come into the industry now do not face as many barriers as those who worked in the industry in the past for access or opportunities to employment, training, and benefits; and • The majority of senior positions are held by men. Mining companies were encouraged to offer equal growth opportunities for employees.
	Work Environment/ Operations	Accommodations for Women	Women employed in mining or formerly employed in mining were asked about potential barriers in the mining industry. Workplace related accommodations were identified by some participants, including the following: • Labour intensive positions and other positions (e.g., driving trucks) were highlighted by some participants as being unsafe for women during pregnancy. Some women indicated they left these positions due to the challenges and safety concerns related to being pregnant. It was identified that there are no light duties that are safe for pregnant women, and activities such as climbing into haul trucks can be dangerous. Some women moved into different positions and/or implemented safer measures (i.e., discontinued their exposure to chemicals) to accommodate their pregnancy. In some cases, pregnancy was identified by participants as the biggest barrier for women to be employed or to stay employed in the mining industry; • Lack of bathrooms and nursing rooms were identified as a potential barrier; it was noted that while mining companies are doing a better job of getting women into the industry, they need to do better for accommodations such as bathrooms; and • Personal Protection Equipment (PPE) is provided by mining companies; however, some women indicated that the sizing may be a potential issue as PPE is not sized for women. Generally, it was indicated by participants that they are noticing more women, particularly younger women, in the mining industry. Many of the women, as noted by participants, are single and do not have children, or are older and have already had children. Some participants highlighted that women are also seen more in new areas of the industry (e.g., active water treatment plant and saturated rock formations) because they are new opportunities and are less labour intensive.
		Accommodations for Persons with Disabilities	When discussing potential barriers for persons with disabilities, workplace related accommodations were identified by some participants, including the following:

Valued Component	Theme	Sub-Theme	Summary of Findings
		Negative Experiences/Safety Concerns	• Work scheduling; • Length of shifts; and • Accommodations for specialist appointments and healthcare. Mining specific barriers include the following: • Work site may not be accessible for someone with physical challenges; and • Workstations. Mining companies were encouraged to look at how to address these potential barriers and to consider job matching programs available in the province/region. Participants were asked whether they have had any negative experiences working in the mining industry or if they were aware of personal safety concerns for subgroups. Participants shared the following: • There is a preconceived notion of what the work environment is like that that deters individuals such as LGBTQ2+ community members to be employed or to stay employed; • The mining industry is not that welcoming to LGBTQ2+ community members and those who worked in the mines did not last due to the environment (e.g., homophobic jokes, language); however, it is dependent on the employment landscape (i.e., office versus mines); • The mining industry is getting better for gender and sexual minorities. Part of this has to do with people who identify and are comfortable working in the industry. There is definitely an ingrained attitude and thought in the industry; • Some women employed or formerly employed in mining indicated they did not have any negative experiences or had any personal safety concerns; • Some women employed or formerly employed in mining noted that they felt supported or treated well by their coworkers; • Some women employed or formerly employed in mining indicated that they have experienced some intimidation; • Some participants identified production driven positions such as haul truck driving as being somewhat negative for women. Women may experience shaming for stopping to use the bathroom and/or to address personal feminine hygiene needs; • Some women formerly employed or currently employed in the industry indicated they had or continue to have a positive experiences in the industry, and that they were or

Valued Component	Theme	Sub-Theme	Summary of Findings
			continue to be proud of the work they accomplished in the mining industry; • Some participants noted that the safety culture is so great in the mining industry; and • A woman employed in mining noted that she had learning experiences and would not say they were negative. It was noted that her experiences had to do with the time and it is not something that women experience as much these days as the industry is more aware now. Generally, there was a mix of responses about personal experiences in the mining industry from participants.

17.4.7.5 GBA+ 2023 Study Overview

The second GBA+ study was carried out in 2023 which examined economic considerations in the mining industry as they relate to Indigenous peoples including Indigenous women, and Two-Spirited and Indigenous LGBTQQIA+ people. These sub-groups were identified based on the potential opportunities and barriers to economic development that mining presents for Indigenous groups including Indigenous women and Two-Spirited and Indigenous LGBTQQIAA+ people in the Elk Valley region as well as other mining areas across Canada. Indigenous peoples comprise a critical potential current and future workforce for the mining industry based on living in relative proximity to many mine sites in Canada, as well as having a relatively young demographic compared to the rest of the Canadian population (Statistics Canada, 2022). In addition, economic opportunities in mining may help to provide a pathway out of colonial-induced poverty and deprivation for Indigenous groups. However, there remain important barriers and opportunities to understand in relation to the aforementioned issues. These issues were explored first through a desktop review of the broader literature concerning opportunities and barriers to economic participation of Indigenous peoples in mining in Canada. Existing literature on this topic was found to be fairly limited. This phase also included interviews at the local scale with Indigenous Nations and communities, as well as mining councils to better understand barriers and opportunities to economic participation in mining that may be specific to the Elk Valley region.

17.4.7.6 GBA+ Studies and Current Conditions in the Mining Industry – 2023 Desktop Review

17.4.7.6.1 Mining Industry Human Resources Council Exploring Aboriginal Inclusion – 2016

The Mining Industry Resources Council (MiHR) completed a research report which provided information on the opportunities, barriers, and experiences of Indigenous peoples in Canada's mining and minerals sector. The report also provided recommendations to address the aforementioned issues (MiHR, 2016, p. 1). In this study, barriers and opportunities to economic participation in mining were identified from a survey and interviews with mining employees and consultation with industry. It is noted that not all participants in the study were Indigenous peoples.

Regarding education and training, the report noted that Indigenous peoples are often in roles with low performance requirements and they often do not have the qualifications or training for career

advancement (MiHR, 2016, p. 18). The report also indicated that in some regions, the Indigenous labour force is familiar with mining careers; whereas in other regions, there is very low awareness among potential job seekers (MiHR, 2016). Indigenous workers were also predominantly focused in support positions or front line production, and underrepresented in supervisory and managerial positions, as well as professional and physical science occupations (MiHR, 2016, p. 4). Longer-term training and development strategies for continued career development and advancement opportunities in the mining sector were recommended to ensure that Indigenous careers do not plateau.

A barrier identified through this report was the lack of employment and business opportunities for Indigenous peoples. Approximately 53% of Indigenous employees who responded to the survey believed it is "often or usually harder for Indigenous peoples to succeed in their workplace" (MIHR, 2016 p. 17). A common mindset of Indigenous job seekers was that "if you're not the right colour you won't get the job" (MiHR, 2016, p. 17). Participants in the survey cited the issues of subtle cultural differences and outright overt discrimination that can limit employment and business opportunities for Indigenous peoples (MiHR, 2016).

The report also detailed that many studies found workplace culture / climate in the mining sector is not always inclusive of all groups, recognizing that it may differ across specific organizations or locations within a larger organization and mining operations compared to corporate offices. It was noted in the report that culturally-based misunderstandings have negative impacts on the workplace environment (MiHR, 2016, p. 5).

Summary

This research report provided insights to Canada's mining industry and the potential barriers, opportunities, and experiences for Indigenous peoples. The report highlighted barriers such as lack of employment and business opportunities, as well as lack of training and education that Indigenous peoples face in order to advance to higher levels and positions in the mining industry. Racism and cultural barriers were also identified and cited as negatively affecting Indigenous peoples as well as other groups, though the expressions and degrees of this can vary across different companies and regions.

17.4.7.6.2 Gibson and Klinck (2005) Canada's Resilient North: The Impact of Mining on Aboriginal Communities

In a paper prepared by Gibson and Klinck, the effects of the mining industry on individual, family, and community well-being in the Northwest Territories was reviewed. While not specific to the Elk Valley region or Indigenous peoples, this study provides relevant insights to the potential impacts on individual and/or community experiences in relation to the mining industry.

The paper described common characteristics observed in large-scale operating mines in northern Canada, including high wages, its rotational or cyclical nature (i.e., "the mining cycle"), high mobility (i.e., geographical and temporal transience, employee turnover), and the remote nature of mines. "The Mining Cycle" was described as "activities of exploration, construction, operation (mineral extraction and refinement), mine closure, and reclamation", meaning that periods of unemployment are common for employees between jobs (Gibson and Klinck, 2005, p. 117), and may create job insecurity.

It was noted that employment is the most significant direct community benefit of the mining industry, and while efforts to seek employment from local and / or Indigenous workers are made, the majority of the highest ranked and paid positions are occupied by non-local workers (Gibson and Klinck, 2005, p. 131), thus creating socio-economic disparities. Additionally, lack of training for positions results in entry level positions and the least opportunity for advancement for the majority of Northerners, thus maintaining both racially defined and geographic hierarchies (Gibson and Klinck, 2005, p. 131). For those with lower education qualifications, the mining industry may leave those individuals behind and may cause stratification in communities with the "haves" and "have nots" (Gibson and Klinck, 2005, p. 131). It was also noted that due to the nature of the mining industry (i.e., time demands, remote locations, shift work, mine operations), employment in the mining industry is considered more feasible for those without families (Gibson and Klinck, 2005).

Women were noted to experience more inequity, as a result of negative experiences from the mining industry (Gibson and Klinck, 2005). This includes higher rates of depression, risk of poverty, rape, and prostitution risks (Gibson and Klinck, 2005, p. 133). For women who are able to find work in the mining industry, they are often faced with sexist views that limit career advancement.

Summary

This paper highlighted potential barriers for Indigenous peoples to benefit from employment in mining including lack of training, limited opportunity for advancement, and sexism that Indigenous women are likely to experience which also limit their opportunities for career advancement.

17.4.7.6.3 Additional Barriers Identified in Literature

Fear of losing time on the land to participate in traditional activities and concerns about being away from home were other barriers identified in the literature that Indigenous peoples contend with (MIHRC, 2016). In addition, racialized and sexualized violence and harassment have been reported by Indigenous women at job sites and by off-site workers in the community (Manning et al., 2018). Manning et al. (2018) also highlighted that Indigenous women with disabilities face particular barriers gaining access to employment and training in the resource development industries. A lack of awareness of the skills required, financial resources, education, and possibly life skills (e.g., managing income, budgeting), also create barriers for Indigenous women (Manning et al., 2018). Some of the "ready for the job" training programs may also conflict with Indigenous cultural values (Manning et al., 2018).

In the Native Women's Association of Canada's "Indigenous Women and Impact Assessment Final Report," it was noted that there continues to be a prevalence of disproportionate adverse effects of industrial projects on Indigenous women, and underrepresentation of Indigenous women in economic benefits. This may be as a result of the exclusion that Indigenous women experience in resource governance, as well as the entire environmental assessment process (Native Women's Association of Canada, 2020).

17.4.7.7 GBA+ Interview Findings (Economic) – 2023 Study

To support the 2023 GBA+ work, interviews were conducted with representatives of Indigenous Nations and communities potentially impacted by the Project. The main objective of the interviews was to identify economic opportunities and barriers to meaningful participation in mining from the perspectives and lived experiences of potentially impacted Indigenous Nations and community members. The interviews were critical to building a more complete, culturally appropriate, and enhanced understanding of Indigenous

peoples', and particularly Indigenous women and Two-Spirited and Indigenous LGBTQQIAA+ peoples' participation, or lack thereof, in mining. While the focus of the interviews was to obtain input on meaningful participation in mining and economic opportunities and barriers, not all information provided was strictly related to these themes but was still of interest from an economic perspective.

In total, 14 emailed letters and follow up emails were sent to contacts of all potentially impacted Indigenous Nations and communities by the Project, describing the GBA+ study, adherence to ownership, control, access, and possession (OCAP®) principles, and a request to be interviewed. The following Indigenous and First Nations communities were interviewed for the GBA+ Phase 2 study (note that the information and perspectives presented may not be representative of the entire Nation or community):

- Métis Nation of British Columbia;
- Elk Valley Métis Nation;
- Yaq̓it ʔa·knuq̓ǂi'it First Nation/Tobacco Plains Indian Band;
- Kainai First Nation;
- Tsuut'ina Nation; and
- Anonymous Nation (who requested to remain unidentified).

In addition to the participation of Indigenous Nations and communities in the GBA+ Phase 2 study, a representative of the Mining Industry Human Resources Council was also interviewed based on their experience and knowledge of diversity and inclusion within the mining industry labour force across Canada.

The interview responses revealed a variety of economic related concerns, interests, and impacts related to the mining industry both across Canada and also specific to the Elk Valley. The themes have been broadly classified as the following:

- Education and Training;
- Racism and Sexism; and
- Other Barriers

The findings from the GBA+ interviews related to the economy are summarized in Table 17.4-18. While these themes have been identified and parsed out in order to generate meaning and understanding, there is also some overlap between these themes and those presented in the Socio-Community chapter (Chapter 18).

Interviewees primarily highlighted barriers rather than opportunities associated with economic development in mining. Sometimes these barriers were specific to the Elk Valley region, and other times they were described more generally as a common barrier that Indigenous peoples face in mining, which may be applicable to the Elk Valley region. Many, but not all of these barriers also reflect what was outlined in the literature (see Section 17.4.7.6), providing further validation and confirmation of their relevance and importance as barriers. The following are highlights of themes and findings outlined in Table 17.4-18 (note that where there was a counter case or finding that did not agree with the dominant theme this was noted in Table 17.4-18).

- Education and Training
  - Lack of or limited education and training specific to mining industry;
  - Limited community awareness;
  - Lack of training in high schools;

    - Distrust of the Western education system; and
    - Indigenous knowledges and skills as unrecognized.
- Racism and Sexism
    - Rampant in the mining industry
    - Lack of/limited training
    - Leadership support needed
- Other
    - Lack of interest in mining career
    - Opposition to mining
    - Lack of revenue sharing

Table 17.4-18: Summary of GBA+ Interview Findings Related to Economic Conditions

Theme	Summary of Findings
Education and Training Barriers for Indigenous Peoples	• From a Canada-wide perspective, it can be difficult for Indigenous peoples to find employment in mining even where there are jobs available due to lack of or limited skills and training, i.e., there is a mismatch with skills, education, and/or experience • Indigenous peoples have a distrust of the Western education system so this presents an obstacle where the mining industry is attempting to educate and qualify individuals • Lack of awareness of opportunities in mining, i.e., specific jobs and training needs • Only entry-level, 'grunt work' opportunities that have a stigma associated with them; community members have a lot of knowledge and skills and are able to do higher level work and want better pay • Indigenous peoples have skills that are going unrecognized with mining companies • There is no advanced training for trades in high schools for youth just coming out of high school to enter the mining industry
Racism and Sexism in the Mining Industry	• Racism as an important issue that is always in the mining sector and needs to be addressed • Often mining culture is laden with both racism and sexism • Mining is an "old boys club" • Indigenous workers should feel more comfortable reporting racism to managers and senior staff, but power dynamics are an issue • When the person in charge of safety (foreman, as an example) leaves the site, discrimination and harassment come back • There needs to be training on how to deal with discrimination • There needs to be a place for people to go to express any concerns they encounter in the workplace (ombudsman, oversight committee. etc.) • Racism is always an issue for Indigenous peoples wherever they are and this cannot be addressed by checking boxes for cultural training and it is not just about land acknowledgements • Two-Spirited people put on their "straight hat" and act more masculine on-site to avoid discrimination • Discrimination against Indigenous peoples in towns like Sparwood and Elkford deters them from wanting to move there for mining work

Theme	Summary of Findings
	• It was noted by one Nation's representatives that racism is not an issue – this was something they experienced in the past but it is not noticeable as much now
Other Barriers or Challenges for Indigenous Peoples to Participate Meaningfully in Mining	• From a broader Canadian perspective, it was noted that some communities do not want to work in the mining industry, as it may not necessarily be part of their life vision. Mining companies need to be careful of the perceptions around the mining life and recognize that the appeal to work in the mining industry may not be there for everyone Environmental and cultural concerns can mean opposition to mining and lack of interest in mining employment • Lack of opportunity to enter into Impact Benefit Agreements • Lack of consistent, longer-term stable employment as a general issue but not necessarily specific to mining • Work absences (i.e., sense of time), including no shows, absences, and tardiness[9] • Lack of soft skills in the workplace

For mitigation measures and recommendations related to the GBA+ study, refer to Section 17.5.5.

17.5 Project Effects Assessment

17.5.1 Thresholds for Determining Significance of Residual Effects

A significant adverse residual effect on economic conditions is one where the Project causes an unacceptable change in baseline conditions that is beyond the historical range of variability, or one which alters the current economic system to an extent that is beyond the capacity of the economic system to respond. Both potential positive and adverse economic effects were considered in this assessment.

The definitions provided in Table 17.5-1 were used to assess the magnitude of effects on the economic environment arising from a Project-related change.

Table 17.5-1: Magnitude for Determining Significance of Residual Economic Conditions Effects

Magnitude	Definition	Rationale
Negligible	An effect that may or may not be discernible but is within the historical variability as defined by baseline conditions. The effect is within the capacity of the economic system to respond and/ or will not alter the current economic structures.	Negligible effects are small and may not be noticeable. These effects do not represent a change in day-to-day life at a community-level.
Low	An effect that is small but discernable and within historical variability as defined by baseline conditions. The effect is within the capacity of the economic system to respond and/ or will not alter the current economic structures.	Low effects are noticeable to community members. These effects do not represent a change in day-to-day life at a community-level.

[9] This may be related to deeper, and more entrenched systemic issues associated with colonialism and intergenerational trauma, e.g., substance abuse and health issues, cultural differences, and/or lack of interest in mining as a career.

Magnitude	Definition	Rationale
Medium	An effect that is clearly discernable and beyond the historical variability as defined by baseline conditions. The effect is within the capacity of the economic system to respond and/ or will not alter the current economic structures.	Medium effects are noticeable to community members. These effects may or may not represent a change to day-to-day life but can be adjusted to within the current economic system.
High	An effect that is clearly discernable and beyond the historical variability as defined by baseline conditions. The effect is beyond the capacity of the economic system to respond and/ or will alter the current economic structures.	High effects are noticeable to community members. These effects represent a change to day-to-day life and cannot be responded to within the current economic system resulting in systemic change.

17.5.2 Assessment Methods

This section provides a description of the methods and approach used to assess the economic effects of the Project, including the economic conditions VC and the measurement indicators, and explains how the pathway assessment methodology and economic modelling methodology were used in the effects assessment.

17.5.2.1 Economic Valued Components and Indicators

As previously described in Section 17.2.1, six measurement indicators were identified for the economic conditions VC for the Project, including:

- Opportunities for training and skills development;
- Employment opportunities generated by the Project;
- Income generation;
- Revenue generation through goods and services purchased;
- Generation of business for local services and businesses;
- Other business or industry revenue generation or loss (e.g., removal of potentially forested area); and
- Local and provincial government revenue.

Indicators represent the resource, feature, or issue related to the VC that, if changed, may demonstrate an effect on the economic environment. The indicators provided the overall structure for the impact assessment.

As the economic environment has an abundance of interlinkages and overlaps, certain aspects of the economic environment are considered in other assessments and are documented in other sections of this Application/EIS. For example, the Socio-Community Assessment (Chapter 18) assesses impacts on housing and infrastructure. The Land Use Assessment (Chapter 19) examines potential impacts of the Project on land uses, including tourism. Elements of the traditional economy are covered in Chapters 23 to 31.

17.5.2.2 Pathway Assessment Methodology

Chapter 5 provides a general overview of the effects assessment approach for all VCs, including for economic conditions. As previously described, effects associated with the Project Construction and Pre-Production, Operations, and Reclamation and Closure phases are assessed. While economic residual

effects are typically positive for the Construction and Pre-Production and Operations periods, these positive effects will reduce or cease in the closure stage, as ending the Project will require less labour and capital.

A pathways analysis was used to focus the assessment on key interactions between the Project and the economic environment by evaluating the different ways that the Project could result in effects. Figure 17.5-1 provides a graphical illustration of how the Project could result in economic impacts, noting that the potential for impact would be as a result of one of the following actions or events: the employment of personnel, the purchase of goods and services, the removal of land for other economic uses, and environmental/visual impacts from the Project that could impact existing businesses/economic activity. The general possible effect pathways include:

- No pathway;
- Secondary pathway; and
- Primary pathway.

As part of the pathway assessment approach, for identified adverse residual effects, impact management measures (i.e., mitigation) are then applied to avoid or lessen the identified adverse effect. After the application of the mitigation measures if there is still potential to cause adverse residual effects, further analysis is completed for those residual effects, including the consideration of secondary or tertiary effects. Those effects that are considered to be avoided or adequately managed or reduced were not carried forward for further analysis (i.e., secondary effects).

It is noted that for the economic conditions VC, most of the identified impacts are positive and as such do not warrant the consideration of mitigation measures; however, the potential to introduce enhancement measures was considered to further expand the economic benefit of the Project.

17.5.2.3 Input-Output Modelling

The economic impacts of the Project have been estimated using Input-Output (IO) Modelling prepared by Statistics Canada prior to the COVID-19 pandemic. The Statistics Canada IO models estimate the total economic impact of the Project, which comprises direct, indirect, and induced impacts. The purpose of undertaking IO Modelling is to identify how the direct expenditures associated with the Project are likely to impact the overall regional and local economies through direct, indirect, and induced economic effects. Direct, indirect, and induced economic impacts are described in further detail as follows:

- Direct economic impacts are the result of expenditures associated with the construction and operation of a new mine, including labour, materials, goods, and services;
- Indirect, or “second round” economic impacts are the result of engaging upstream suppliers to satisfy this demand, including the manufacture of machinery and equipment, local materials, and services such as concrete, gravel, fuel, food, steel, engineering, and transport. These expenditures create the “ripple effect” across multiple industry sectors and would not occur if not for the direct expenditures required for mine construction and operations; and
- Induced economic impacts are the “household spending” effect: the result of successive rounds of household spending on goods and services as a result of changes to the payroll of businesses associated with the Project’s direct and indirect expenditures, including items such as groceries, household appliances, and cars.

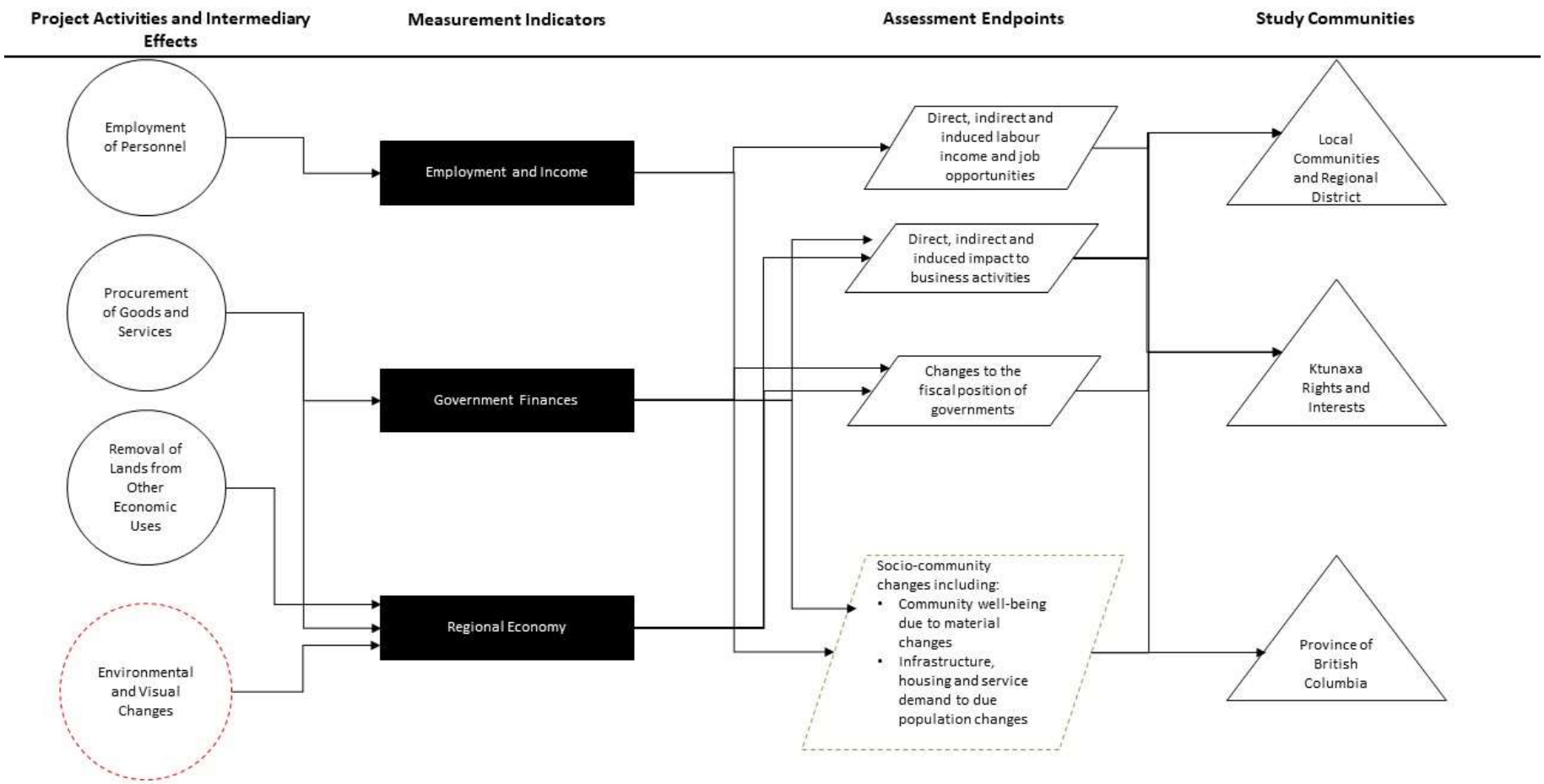

Figure 17.5-1: Economic Conditions Effects Pathways

This section describes how potential Project effects to employment, income, business revenue, and government tax revenue were assessed quantitatively using Statistics Canada's Interprovincial IO Model 2016.

The IO Model is based on estimated Project expenditures provided by NWP. This information is assumed to be an accurate estimate of Project expenditures, as these estimates are consistent with expenditure expectations for the construction and operation of a new mine (e.g., construction costs, machines, equipment, transportation, fuel, etc.)[10]; however, it is important to note that these expenditures were estimated in July 2020 and are subject to change based on future market conditions for expenditures, labour agreements, as well as other external factors.

Using these estimated expenditures, the Interprovincial IO Model[11] was used to estimate the Project-related direct, indirect, and induced employment, income, GDP, economic output, and tax revenues at the provincial level. The simulation involves "shocking" the IO Model with the Project's direct expenditures to understand how to quantify the economic effects. This was completed for two separate Project phases: a three-year Construction Planning, Construction, and Pre-Production period and a 15-year Operations period.

The IO Model only generates estimated impacts arising from the expenditure of the "shock" to the economy during the Construction and Pre-production and Operations periods but does not include Reclamation and Closure activities. Consequently, the economic effects of the Reclamation and Closure period were examined qualitatively. Economic impacts anticipated to occur during Reclamation and Closure are likely to follow a similar cycle to other mine operations (i.e., the initial economic impacts associated with Construction Planning, Construction, and Pre-Production and Operations will likely slow down as the operation moves into closure and reclamation). Based on this understanding, the overall effects assessment results, input from NWP, and the experience of similar projects, the qualitative assessment of Reclamation and Closure was completed.

[10] NWP provided estimates of its anticipated direct expenditures on engineering, procurement, and construction management services, construction costs, machines, equipment, and materials during Construction and Pre-Production. NWP also provided its anticipated direct expenditures on labour, transportation, fuel, explosives, equipment, parts, tires, and consumables for the Operations period. Lastly, NWP provided high-level predictions of where they expect to source materials, goods, and services (e.g., international, national, or provincial).

[11] The Interprovincial Input-Output Modelling was completed by Statistics Canada in consultation with Dillon's economic team. It is important to note that the model utilizes the following assumptions:

- "The input-output model is based on the assumption of fixed technological coefficients. It does not take into account economies of scale, constraint capacities, technological change, externalities, or price changes. This makes impact analysis less accurate for long term and large impacts as firms adjust their production technology and the IO technological coefficients become outdated. Assuming that firms adjust their production technology over time to become more efficient implies that the impact of a change in final demand will tend to be overestimated.
- The endogenization of household consumption is based on the assumptions of constant consumption behaviour and fixed expenditure shares relative to incomes.
- It is generally acknowledged that the open model underestimates economic impacts since household activity is absent and the closed model overestimates economic impacts because of the rigid assumptions about labour incomes and consumer spending. They can be considered as upper and lower bounds of impact" (Statistics Canada, 2020).
- As such, the quantitative estimates provided in this assessment are based on Statistics Canada's Interprovincial Input-Output Model using the closed model. The closed model was used as it is expected workers will be drawn from the local areas and, as a result, will spend locally, suggesting it is valid to include induced impacts covering household expenditures.

It must be noted that the IO model captures estimated impacts from the point in time that the data used were collected. Since this assessment's IO modelling, the mining industry in B.C. has faced impacts from the COVID-19 pandemic, a shift in focus from coal to supporting the electric vehicle supply chain, and general cyclical economic downturn. It can be expected that the results of this modelling are within a reasonable order of magnitude to actual outputs but that they likely trend towards the higher end of the scale.

In March 2023, a study was released that showed that three major mines in B.C. over the 1999 to 2019 period only delivered a portion of the anticipated benefits, suggesting that coal mine economic impacts are generally overstated (Collard et al., 2023). Explanatory conditions such as global economic recessions and pandemics may provide additional context as to why impacts were overestimated. The results of this assessment should be considered optimistic outlooks on the impact of the Project and a best estimate of economic impacts under ideal conditions.

Local impact can be prioritized through specific NWP commitments that benefit communities at the local level. Community-specific funding programs or investments can ensure that the economic impact of equity-seeking groups is positively focused and more closely meets the best estimates provided in this assessment.

Further information related to the temporal boundaries and associated Project activities that were recognized in the economic assessment is provided in Chapter 5.

The outputs of the IO Model, which are standard measures of economic activity, include: Total Output, GDP, Employment, Labour Income (wages and salaries), and Government Tax Revenues. These outputs are described in further detail as follows:

- Total Output is the broadest measure of economic impact, generally measured as the total increase in business sales revenue, or the total value of goods and services produced in response to the Project expenditures. Total output tends to be a large number; however, it double-counts impacts, since the output of one industry requires outputs from others;
- Gross Domestic Product (GDP) or "value added" is the wealth generated from industry activity, or the "unduplicated" output excluding the cost of inputs used for production. GDP is smaller than Total Output but a more relevant measure of economic impact because it avoids double-counting during the "ripple effect" of inter-industry spending;
- Labour Income is the additional wages and salaries generated for the employees associated with the Project;
- Employment is the number of additional jobs created by the Project as a result of the expenditures made for mine construction and operation over time; and
- Government Tax Revenues are the total amount of taxes generated for each level of government (municipal, provincial, and federal) including personal income tax, indirect taxes such as sales tax (less subsidies), and corporate income tax. Government Tax Revenues do not include royalties collected, and therefore are considered to be a conservative measure.

For the purposes of this assessment, the focus is on regional and local impacts on GDP, Labour Income, Employment, and Government Tax Revenue, as described in Section 17.5.

Table 17.5-2 describes the relevant economic outputs generated from the IO Model at the provincial level, and the corresponding measurement indicators. Economic accounts provide a multi-dimensional understanding of how direct expenditures impact the economy.

Table 17.5-2: Economic Accounts Relevant to Measurement Indicators

Measurement Indicator	Relevant Economic Outputs
• Employment opportunities generated by the Project • Income generation	• Direct, indirect, and induced jobs • Direct, indirect, and induced labour income
• Revenue generation through goods and services purchased • Generation of business for local services and businesses • Industry revenue generation or loss (e.g., removal of potentially forested area)	• Direct, indirect, and induced output • Direct, indirect, and induced GDP contribution
• Local and provincial government revenue	• Direct, indirect, and induced tax revenues

Notes:
The Training Opportunities indicator was assessed qualitatively.

Considering the IO Model outputs at the provincial level, the analysis then involved estimating potential economic effects at the local level. The assessment of local effects was achieved by using ratios of the provincial IO Model results. These ratios are based on experience with other mining projects within the Economic Conditions LSA. In addition, these ratios are grounded in the expectation that NWP would capture a portion of the local labour force and procure goods and services locally, when possible and cost-competitive.

17.5.3 Project Interactions

Project activities during the Construction and Pre-Production, Operations, and Reclamation and Closure phases have the potential to affect economic conditions. Specific details on Project activities and components are discussed in Chapter 3.

To support the identification of potential effects, a matrix (Table 5.3-4 in Chapter 5) was developed to identify interactions between Project components and activities and VCs. Potential effects and key interactions identified in the interaction matrix are further assessed by ranking interactions to differentiate interactions that require further analysis in the effects assessment. Due to the nature of the interactions of the Project and economic conditions, interactions are not considered at the specific Project component or activity level described in Table 5.3-4 and Table 5.3-5.

Through a high-level pathway analysis, the following Project interactions were identified:

- The employment of personnel could affect employment, employment income, and training opportunities;
- The procurement of goods and services for the Project could affect indirect and induced employment and local and regional business revenues;
- The removal of lands from other economic uses could affect local and regional business revenue; and

- The payment of Project taxes could affect the fiscal positions of provincial and local governments.

As previously noted, the total economic impact of the Project will be comprised of direct, indirect, and induced effects. For employment, income, and regional and local economies, indirect and induced effects can be expected to occur. Indirect effects refer to the economic activities generated by the Project upstream in the supply chain, including material providers, capital asset providers (e.g., heavy equipment manufacturers), and contractors retained by NWP for the Project. Induced economic effects refer to the economic effects generated through consumer spending derived from labour income. This consumer spending can be expected to support other businesses and generate additional local labour opportunities. The total direct, indirect, and induced economic effects present the best representation of the Project's impact on the economic environment and are discussed in the following section.

Potential effects and key Project activities that are expected to interact with economic conditions are presented in Table 17.5-3. These potential effects were assessed in the collective for each respective Project phase described in Section 17.2.3.2. All other Project interactions with economic conditions are not discernable, and are therefore not assessed further.

Table 17.5-3: Potential Project Interactions and Economic Effects

Project Phase(s)	Project Component or Activity	Measurement Indicators	Potential Effect or Pathway of Interaction
Construction and Pre-Production, Operations, and Reclamation and Closure	Employment of Personnel	• Opportunities for training and skills development • Employment opportunities generated by the Project • Income generation	• Change in direct, indirect, and induced impacts on employment opportunities • Change in direct, indirect, and induced income generation
Construction and Pre-Production, Operations, and Reclamation and Closure	Procurement of Goods and Services	• Revenue generation through goods and services purchased • Generation of business for local services and businesses	• Change in economic activity in regional and local economies • Change in direct, indirect, and induced business revenue
Construction and Pre-Production	Removal of Lands from Other Economic Uses	• Other business or industry revenue generation or loss (e.g., removal of potentially forested area)	• Change in direct, indirect, and induced business revenue
Construction and Pre-Production, Operations, and Reclamation and Closure	Government Taxation	• Local and provincial government revenue	• Change in fiscal positions of governments

17.5.4 Discussion of Potential Economic Effects

The following sections provide a detailed description of the key potential economic effects summarized in Table 17.5-3. These potential economic effects are discussed in the context of the following three Project phases: 1) Construction Planning, Construction, and Pre-Production[12], 2) Operations, and 3) Reclamation and Closure.

17.5.4.1 Change in Employment, Employment Income, and Training

The following describes the effects assessment results related to the following measurement indicators:

- Employment opportunities generated by the Project;
- Income generation; and
- Opportunities for training and skills development.

Employment and income are expected to be impacted by the Project, as the site activities will require labour during Construction and Pre-Production, Operations, and Reclamation and Closure. The labour force required by the Project will vary with respect to each Project stage, with the majority of labour required for the Operations period. It is expected that 65% of the Construction Planning, Construction, and Pre-Production labour force and 85% of the Operations labour force will be drawn from the Economic Conditions LSA; however, similar to other regional mines, some labour, particularly during construction, may be drawn from the Economic Conditions RSA and other relatively close regional centres in Alberta (e.g., Lethbridge and Calgary).

The Project will require labour for construction, operation, and closure encompassing the Project lifecycle. The direct employment at the site and procurement of goods and services is expected to generate indirect and induced employment driven by supplier demand for labour in response to the Project, and household spending, respectively.

Project employment numbers and employment income were determined quantitatively for the Construction Planning, Construction, and Pre-Production and Operations phases using the Input-Output Modelling results. For the Reclamation and Closure phase, the employment and income effects are described qualitatively based on professional judgement and experience with other projects.

17.5.4.1.1 Construction Planning, Construction, and Pre-Production

The Project Construction Planning, Construction, and Pre-Production phase would involve the construction of infrastructure, including the construction of the CHPP, run-of-mine stockpile, reservoir, office/shop complex, Interim Sediment Pond, powerline, natural gas line, explosives manufacturing site, and the rail loadout. In addition, Construction Planning, Construction, and Pre-Production will also involve upgrading existing infrastructure (e.g., Grave Creek Road). The Project activities encompassing all of the construction of the mine and pre-production are expected to require 1,166 direct jobs, or full-time

[12] As previously noted in Section 17.2.3.2, the temporal boundaries utilized in the economic conditions effects assessment for the Construction Planning, Construction, and Pre-Production period differs compared to the temporal boundaries utilized in other disciplines. The rationale for this difference is that Project expenditures for construction planning are anticipated to begin prior to the start of the construction period. Given that Project expenditures are a component of the economic conditions effects assessment, the temporal boundaries referred to in Chapter 17 also include the period before construction begins.

equivalent (FTE[13]), over a 3 year period. NWP estimates that the annual labour requirements for Construction and Pre-Production would range between 297 and 513 personnel, with peak labour requirements expected to occur in the last Year 3 of the Construction Planning, Construction, and Pre-Production period. This section describes employment effects in FTE jobs, which are jobs that are converted to a full-time equivalence based on the overall average full-time hours worked. The discrepancy between NWP's estimates and the results from the IO Model presented in this section can be attributed to the different units of employment measurements.

These direct jobs are expected to be short-term, as they are associated with construction, which is temporary in nature. It is important to note that the estimates are prepared in FTEs; however, workers may work for periods shorter than a year. Project construction activities can be expected to vary over the period, which will require different types and volumes of labour, causing short-term variance in employment throughout the construction period. A summary of the employment and income effects within the Economic Conditions LSA and RSA is provided in Table 17.5-4.

Table 17.5-4: Employment and Income Effects during Construction within the Economic Conditions LSA and RSA

		Direct Employment[a]		Indirect Employment[a]		Induced Employment[a]		Total Employment[a]	
		Jobs (FTEs)	Income	Jobs (FTEs)	Income	Jobs (FTEs)	Income	Jobs (FTEs)	Income
Economic Conditions LSA	Cumulative	638	$48.55 million	166	$14.18 million	38	$2.53 million	842	$65.25 million
	Annual Average	213	$16.18 million	55	$4.73 million	13	$0.84 million	281	$21.75 million
Economic Conditions RSA	Cumulative	982	$74.69 million	831	$70.88 million	384	$25.25 million	2,197	$170.81 million
	Annual Average	327	$24.90 million	277	$23.63 million	128	$8.42 million	723	$56.94 million

Note: Cumulative refers to the total number of jobs over the construction period (three years), while annual average divides the cumulative employment over the construction period.
a. In FTE

Similar to other mining projects, it is anticipated that the Construction Planning, Construction, and Pre-Production workforce would be comprised of construction supervisors, tradespersons, equipment operators and labourers, and engineers. During this period, labour requirements would largely be concentrated in Years 2 and 3, accounting for approximately 85% of total Construction Planning, Construction, and Pre-Production labour expenditures.

Over the three year Construction Planning, Construction, and Pre-Production period, the estimated direct employment derived from the Economic Conditions RSA is expected to be 982 FTE jobs, or approximately 327 FTE jobs annually (Statistics Canada, 2020a). During the Construction Planning, Construction, and Pre-production period, it is anticipated that direct employment would be primarily, approximately 65%, sourced from the Economic Conditions LSA labour force. Therefore, it is estimated that over the three-year construction period, 638 direct FTEs would be hired from communities within the Economic

[13] The employment effects are reported in full-time-equivalent (FTE) jobs. FTE jobs include only employee jobs that are converted to full-time equivalence based on the overall average full-time hours worked in either the business or government sectors (Statistics Canada, 2020a).

Conditions LSA, which includes several communities such as Elkford, Sparwood, and Fernie. This estimate is based on the expectation that NWP will focus its efforts on hiring in the LSA communities.

Figure 17.5-2 shows the estimated distribution of total jobs (FTEs) employed each year during the Construction Planning, Construction, and Pre-Production phase (Phase 1).

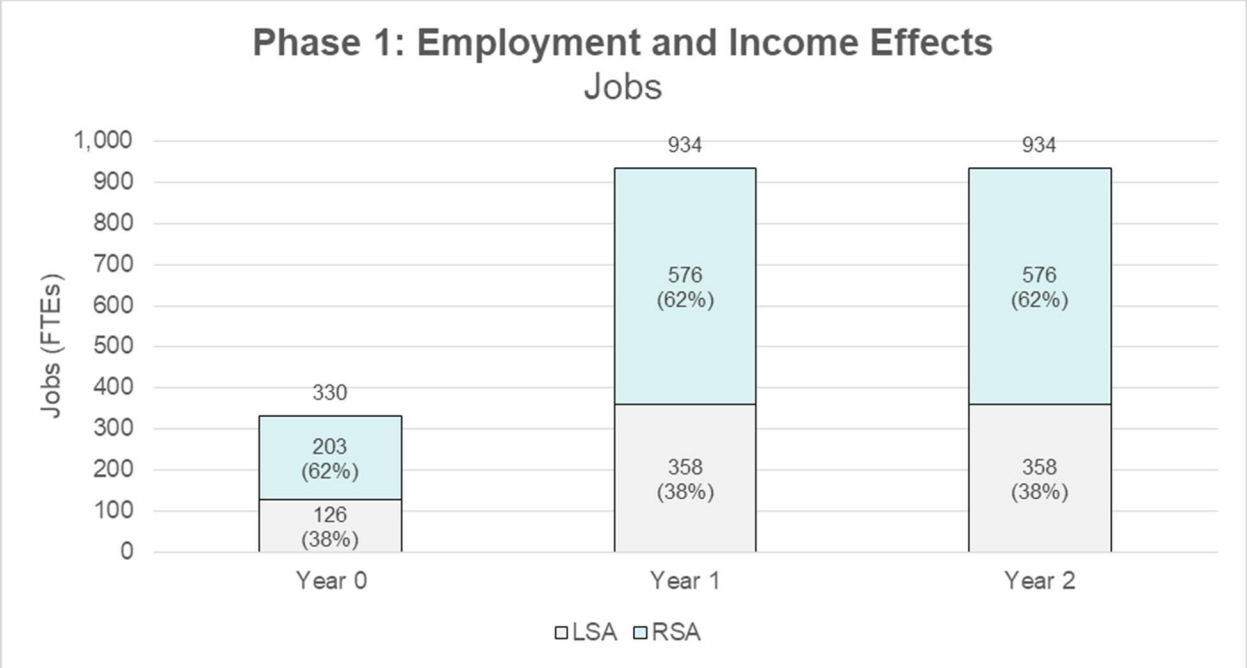

Figure 17.5-2: Number of Jobs during Construction Planning, Construction, and Pre-Production (Phase 1)

With 85% of labour expenditures expected to take place during the second and third year of the Construction Planning, Construction, and Pre-Production phase, the remaining 15% of labour expenditures would occur during the first year (i.e., Year 1 / Project Year 0). Within the first three years of the project (Phase 1), the total number of jobs employed in the Economic Conditions RSA is estimated to be 2,197 FTEs, where: the Economic Conditions LSA would support a total of 842 FTEs, with an estimated 126 FTEs during Year 1 (Project Year 0) and 716 FTEs distributed across Years 2 and 3 (Project Years 1 and 2); and the rest of the RSA would support the remaining total of 1,355 FTEs, with an estimated 203 FTEs during Year 1 (Project Year 0) and 1,868 FTEs distributed across Years 2 and 3 (Project Years 1 and 2).

In order to capture the local labour force, NWP intends to encourage the earthworks contractors and personnel employed during the Construction Planning, Construction, and Pre-Production period to transition into positions that will be required during Operations (e.g., rock truck drivers; NWP, 2021b). This initiative aims to create opportunities for long-term employment commencing in the early phases of the Project, and, as a result, attract local residents, benefit local economies, and support the development of transferrable skills.

Direct employment effects in the Economic Conditions LSA and RSA would generate both indirect and induced employment effects. Indirect employment effects include employment related to upstream

economic activities such as the supply of goods and services (i.e., intermediate inputs) required for the Construction Planning, Construction, and Pre-Production stage. Indirect employment effects can include both direct supplier employment, as well as indirect upstream employment. Within the Economic Conditions RSA, the indirect employment effect is estimated to total 831 FTE jobs, approximately 277 FTE jobs annually, during Construction and Pre-Production. Proportionally, indirect employment effects will be higher for the Economic Conditions RSA compared to the Economic Conditions LSA due to the fact that there are more suppliers of goods and services in the Economic Conditions RSA. It is estimated that during Construction Planning, Construction, and Pre-Production, the Project will generate 166 indirect FTE jobs, approximately 55 FTE annually, within the Economic Conditions LSA.

Consumer expenditures, induced by household incomes and wages generated through Project-related direct and indirect employment opportunities, can be expected to result in induced employment opportunities. During the Construction Planning, Construction, and Pre-Production stage, an estimated 384 FTEs, approximately 128 annual FTEs, induced employment opportunities will be generated by the Project within the Economic Conditions RSA. In comparison, within the LSA, it is expected that there would be a lower share of induced employment opportunities, approximately 38 FTEs jobs over the three year construction period, compared to indirect employment opportunities.

The direct, indirect, and induced employment from Project Construction Planning, Construction, and Pre-Production activities would benefit regional and local economies through employment incomes. The three-year Construction Planning, Construction, and Pre-Production period is anticipated to generate $74.69 million in direct employment income in the Economic Conditions RSA and $48.55 million in the LSA. In comparison, the indirect employment income (e.g., upstream industries such as manufacturing and professional and technical services) generated from the Project is estimated to be $70.88 million within the RSA and $14.8 million within the LSA. In addition, during the Construction Planning, Construction, and Pre-Production stage, approximately $25.25 million and $2.53 million in induced employment income would be generated in the RSA and LSA, respectively. Induced income is expected to be concentrated in sectors such as accommodation and food services, finance, insurance, real estate, and retail.

Figure 17.5-3 shows the estimated distribution of total employment income for each year within Phase 1.

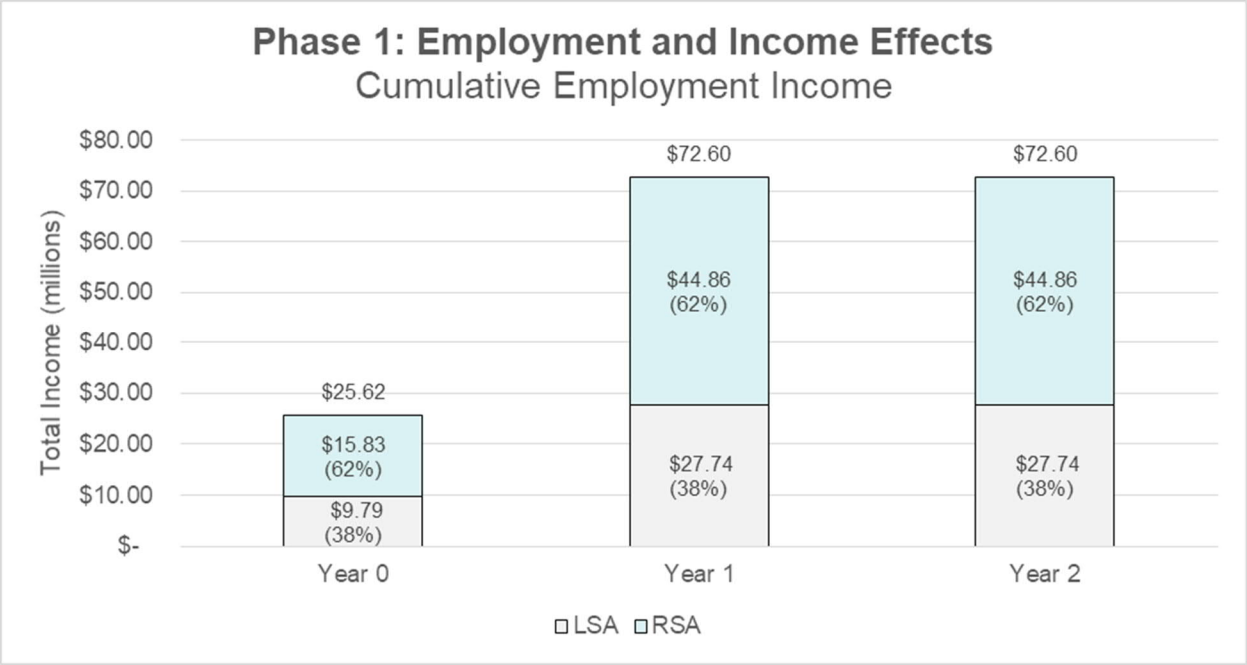

Figure 17.5-3: Estimated Distribution of Total Employment Income for Each Year within Phase 1

Given an estimated labour expenditure distribution of 85% across Years 2 and 3 (Project Years 1 and 2), within the first three years of the Project (Phase 1), the total employment income is estimated to be $170.82 million, where: the LSA would generate a total income of $65.26 million, with an estimated total income of $9.79 million during Year 1 / Project Year 0 and $55.484 million distributed across Years 2 and 3 / Project Years 1 and 2; and the rest of the RSA would generate an estimated total income of $105.56 million, with an estimated $15.83 million during Year 1 / Project Year 0 and $89.72 million distributed across Years 2 and 3 / Project Years 1 and 2.

17.5.4.1.2 Operations

Over the planned 15 year Operations phase for the mine, the total direct employment is anticipated to be 3,940 FTEs. The Project is expected to have the highest expenditures on labour from the fifth to the tenth year of Operations, with a decline anticipated to occur leading into the closure stage, which is consistent with typical mine operations cycles and associated labour requirements. Direct employment during mine Operations is expected to be largely sourced from the local workforce. Direct employment effects would consequently generate indirect revenue for local and regional suppliers (e.g., "ripple effects") and induce household spending.

During the Operations phase of the Project, direct employment sourced from the Economic Conditions RSA is expected to average an estimated 263 FTEs on an annual basis. These direct employment opportunities would be located on-site. The estimated direct, indirect, induced and total employment effects for the Operations phase in the Economic Conditions LSA and RSA are summarized in Table 17.5-5.

Table 17.5-5: Employment and Income Effects during Operations

		Direct Employment[a]		Indirect Employment[a]		Induced Employment[a]		Total Employment[a]	
		Jobs (FTEs)	Income	Jobs (FTEs)	Income	Jobs (FTEs)	Income	Jobs (FTEs)	Income
Economic Conditions LSA	Cumulative	3,349	$489.79 million	709	$59.59 million	433	$28.48 million	4,4914	$577.86 million
	Annual Average	223	$32.65 million	47	$3.97 million	29	$1.90 million	2994	$38.52 million
Economic Conditions RSA	Cumulative	3,940	$576.23 million	7,088	$595.89 million	2,888	$189. 87 million	13,917	$1,361.97 million
	Annual Average	263	$38.42 million	472	$39.73 million	193	$12.66 million	928	$90.80 million

Source: Statistics Canada, 2020a

Notes: Cumulative refers to the total number of jobs over the operation period (15 years) while annual average divides the cumulative employment over the operation period.

a. In FTE

The mine Operations labour profile is expected to be distributed between management positions (e.g., plant management, surface mine operations management, surface mine maintenance management, and site management) and hourly positions (e.g., plant and clean coal transport, surface mine operations, and surface mine maintenance). Based on average personnel requirements, management positions are expected to account for approximately 20% of all positions, while hourly wage workers are expected to occupy the remaining 80% of positions (NWP, 2021b). During the Operations period, it is anticipated that the majority of these workers would work a shift-rotation schedule of 12-hour shifts on a rotation of two-days on, 24 hours off, two-days on, and three-days off. It is anticipated that this work schedule would counter leakage within LSA communities.

Within the Economic Conditions RSA, the Operations stage is expected to generate a total of 3,940 FTE direct jobs, or 263 FTE direct jobs annually. During the Operations stage, the Project will be required to hire personnel for the mine, administration, and coal haul activities. It is anticipated that the majority of these direct jobs will be sourced from LSA communities. Within the LSA, the existing labour force is primarily employed in the mining sector, particularly in the communities of Elkford and Sparwood, which demonstrates the presence of a skilled local workforce. In 2015, the median income of LSA communities ranged from $34,554 to $56,704. The Project is expected to contribute to the existing trend of higher median incomes in LSA communities (Section 17.4.5), particularly for those communities closest to the Project.

NWP intends to focus on hiring local residents and actively seek opportunities to capture the local labour force. It is anticipated that this will be achieved through ongoing engagement with local residents who have connections within LSA communities. To support this objective, NWP intends to hire locally, which includes developing targets for local and Indigenous employee numbers. This is particularly relevant given the rate at which the Indigenous population is growing in the region, which could serve as a future source of employees for the mining sector.

However, while it may be important to increase the participation of Indigenous people in the mining sector workforce, a number of barriers exist for Indigenous peoples to participate in and benefit from employment opportunities, including lack of training and education that would enable Indigenous peoples to either work in the mining sector or advance to a higher level and higher paying positions. Entry level jobs are not as desirable, and are not as well paid. Indigenous community members also lack awareness of what job opportunities there are in mining, and what the training needs are for that sector (see Table 17.4-18).

Racism is another issue that was mentioned more generally as a pervasive and ongoing problem in the mining sector by interviewees (see Table 17.4-18). It was also an issue documented in the literature review (Section 17.4.7.6). The experience of racism and knowledge of its persistence in the workforce can act as a major barrier to Indigenous peoples' interest in or sustained employment in mining. Again, given commitments to hire Indigenous peoples, the potential for disproportionate effects on Indigenous well-being due to racism would need to be managed as it could act as a barrier to Indigenous peoples taking advantage of any employment opportunities.

Indigenous peoples interviewed also mentioned interest in longer term employment; for example, if they get hired for the construction phase of the Project they would want to see job opportunities beyond that phase (see Table 17.4-18). Given that NWP intends to transition workers from construction to operations, longer term employment for Indigenous peoples may be more realizable, especially given the number of mining operations in the area. In addition, Indigenous peoples may be reluctant to take up mining as an occupation due to lack of interest in or opposition to mining due to environmental and cultural concerns (see Table 17.4-18). Additional barriers to Indigenous employment are documented in Chapter 18 and as examples these include: very limited housing availability and high costs, limited childcare availability, and shiftwork schedules.

As previously noted, NWP intends to encourage Construction Planning, Construction, and Pre-Production contractors and employees to transition into Operations positions to attract the local labour force and provide long-term employment opportunities. Furthermore, technological changes (e.g., autonomous haul trucks) may reduce labour requirements at other larger mining facilities within the LSA, which may potentially increase the pool of available local labour. While the bulk of the labour force is expected to come from the LSA, it is possible that workers may move into the LSA community for employment opportunities because of the Project. Over the 15 year Operations phase, it is anticipated that the majority of these jobs, approximately 3,349 direct FTE jobs or 223 direct FTEs annually, will be sourced from LSA communities.

The Project would also generate employment opportunities to local and regional suppliers of materials, goods, and services required for production. During Operations, the indirect employment opportunities associated with upstream economic activities are expected to amount to a total of 7,088 FTE jobs, or 473 FTEs jobs annually, within the Economic Conditions RSA. These indirect FTE jobs are expected to be largely concentrated in the following industries: repair construction, wholesale trade, transportation and warehousing, as well as mining, quarrying, and extraction. Of these jobs, it is estimated that 709 FTEs will occur within LSA communities. The majority of the materials, goods, and services required for major industrial construction are sourced outside the Economic Conditions LSA due to the fact that many of these supplier industries are not represented locally. As a result, it is anticipated that the indirect

employment effect within the Economic Conditions LSA will be lower compared to the direct employment effect within the Economic Conditions LSA.

Figure 17.5-4 shows the estimated distribution of total jobs (FTEs) employed each year within the Operations phase (Phase 2).

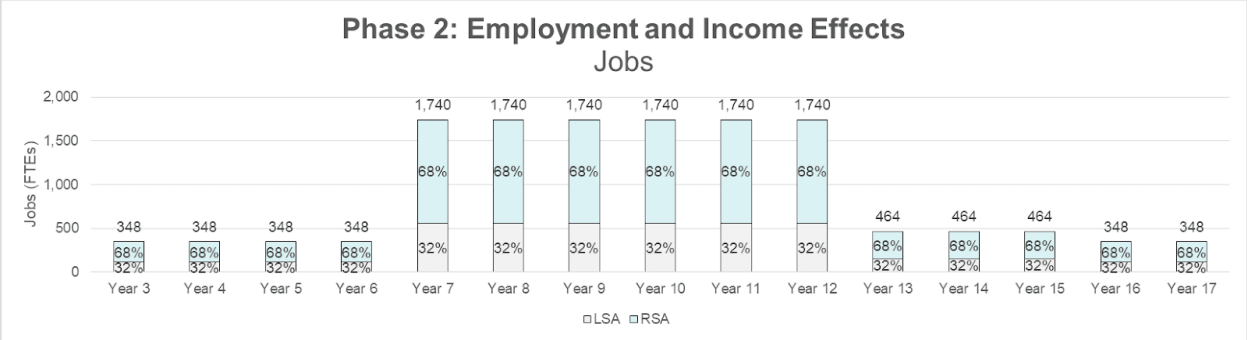

Figure 17.5-4: Estimated Distribution of Total Jobs (FTEs) Employed Each Year within the Operations Phase (Phase 2)

Labour expenditures are expected to be largely concentrated in Years 5 through 10 (i.e., Project Years 7 through 12), with a decline anticipated to occur leading into the closure stage. As such, estimates on total labour expenditures for the Operations phase (Phase 2) are presented as: 10% occurring in Years 1 through 4 (Project Years 3 through 6); 75% occurring during Years 5 through 10 (Project Years 7 through 12); 10% occurring during Years 11 through 13 (Project Years 13 through 15), and 5% occurring during Years 14 and 15 (Project Years 16 and 17).

Within the 15-year Operations phase (Phase 2, Project Years 3 through 17), the total number of jobs employed is estimated to be 13,916 FTEs, where:

- The LSA would support a total of 4,491 FTEs, with an estimated 449 FTEs distributed across Years 1 through 4, 3,368 FTEs distributed across Years 5 through 10, 450 FTEs distributed across Years 11 through 13, and 225 FTEs distributed across Years 14 and 15; and
- The rest of the RSA would support a total of 9,425 FTEs, with an estimated 944 FTEs distributed across Years 1 through 4, 7,068 FTEs distributed across Years 5 through 10, 942 FTEs distributed across Years 11 through 13, and 224 FTEs distributed across Years 14 and 15.

NWP's Indigenous Policy aims to encourage and create opportunities for the procurement of goods and services from Indigenous businesses. For example, during the Construction Planning, Construction, and Pre-Production phase, NWP intends to support existing joint ventures between Indigenous-owned businesses and construction companies. Examples of Indigenous businesses include Nupqu and Kettle River Contracting.

Household spending generated through Project-related direct and indirect employment opportunities, can be expected to result in induced employment opportunities throughout the Operations stage. Within the Economic Conditions RSA, induced employment is predicted to generate 2,888 FTEs, or 193 FTEs annually. In comparison, within the LSA, it is estimated that the Project will generate 433 FTEs, or 29 FTEs annually.

Over the 15 year Operations phase, the direct, indirect, and induced employment from the Project would benefit regional and local economies through employment incomes. The Operations stage is expected to generate approximately $1.36 billion in total employment incomes within the Economic Conditions RSA. This includes a total of $576.23 million in direct employment income in the RSA, including $489.79 million in the LSA; $595.89 million in indirect employment income in the RSA, including $59.59 million in the LSA; and $189.87 million induced employment income in the RSA, including $28.48 million in the LSA. As noted in Section 17.4.3, stakeholders within LSA communities cited concerns related to economic leakage. As some workers are anticipated to reside outside of LSA communities, household spending from the wages of these workers will likely occur in the RSA and elsewhere in Canada. As such, it is possible that economic leakage will occur; however, this is expected to be minimal since induced local effects are estimated to be low in comparison to direct and indirect effects.

Figure 17.5-5 shows the estimated distribution of total employment income for each year within the Operations phase (Phase 2).

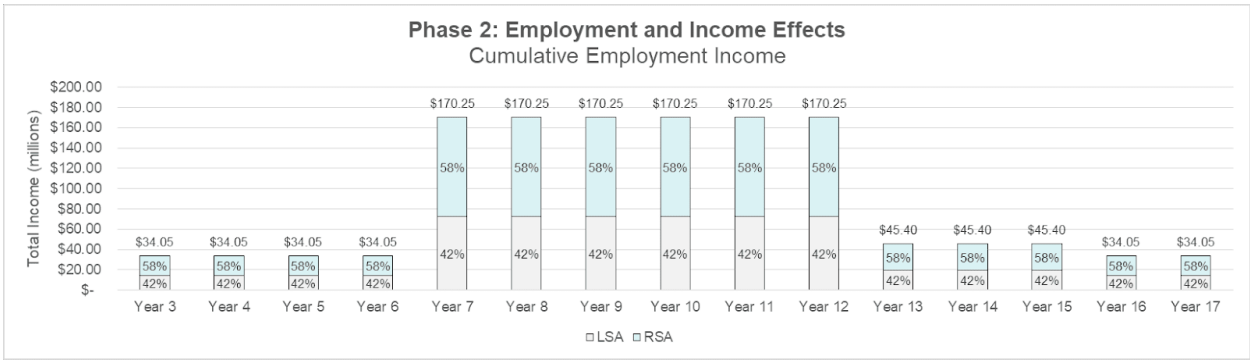

Figure 17.5-5: Estimated Distribution of Total Employment Income for Each Year within the Operations Phase (Phase 2)

Within the 15-year Operations phase (Phase 2, Project Years 3 through 17), the total employment income generated is estimated to be $1.362 billion, where:

- The LSA would generate an estimated total income of $577.86 million, with $57.80 million distributed across Years 1 through 4, $433.38 million distributed across Years 5 through 10, $57.78 million distributed across Years 11 through 13, and $28.90 million distributed across Years 14 and 15; and
- The rest of the RSA would generate an estimated total income of $784.13 million, with $78.40 million distributed across Years 1 through 4, $588.12 million distributed across Years 5 through 10, $78.42 million distributed across Years 11 through 13, and $28.90 million distributed across Years 14 and 15.

17.5.4.1.3 Reclamation and Closure

As mine production decreases over time, the mine will cease Operations and workers will likely transition into other projects. Direct Project employment opportunities and expenditures would be reduced and eventually also cease during the Reclamation and Closure phase of the Project, which is expected to occur

over two years. During this period, it is expected that some jobs, approximately 15 FTE positions, would be created to support reclamation activities and conduct environmental monitoring (NWP, 2021b).

When the mine closes, workers employed during the Operations phase will likely move onto other opportunities in the Economic Conditions LSA and RSA. Alternatively, some workers may retire, while new workers, including new people entering the workforce and people moving to the LSA, would replace the retirees as the market responds to a labour shortage over time. It is important to note that the jobs from Project Operations will not be lost; rather, workers will transition into other opportunities within the broader mining cluster or system. It is anticipated that coal mining will continue in the LSA. Therefore, there will likely be other employment opportunities for these workers within the LSA. For example, other current coal mining projects located within the LSA that are anticipated to be in operation when the Project enters Reclamation and Closure include: Teck's Greenhill Operations, which is expected to be in Operations for another 28 years and Teck's Elkview Operations, which is expected to be in Operations until 2045. In addition, other proposed coal mining projects within the LSA (e.g., Michel Coal Project) will likely be in operation when the Project shifts into reclamation and closure. For further details on these other project, refer to Chapter 5. These workers would have the skills and experience developed through training and working during the operations phase that would make them desirable hires for other mining projects.

17.5.4.1.4 Summary (Change in Employment, Employment Income, and Training)

The Project is expected to result in a total of 4,921 FTE direct jobs in the Economic Conditions RSA, including 3,987 FTE direct jobs in the Economic Conditions LSA during Construction and Pre-Production and Operations. The direct employment opportunities and employment incomes are anticipated to be most beneficial to the LSA communities. In 2016, approximately 3,345 people within LSA communities were directly employed in mining, quarrying, and oil and gas extraction sectors, demonstrating the presence of a skilled workforce. In addition, in Sparwood and Elkford, 52% and 34% of the labour force was employed in this sector, respectively, which reflects a reliance on mining for employment opportunities in the communities closest to the Project.

An estimated 16,113 total FTE jobs are expected to be generated by the Project, including direct, indirect, and induced jobs. While some of these opportunities will occur in the Economic Conditions LSA, it is likely that the indirect and induced employment effects will extend throughout Canada and abroad due to the global nature of the supply chain for mining in Canada. While the employment opportunities directly tied to the Project are time bound with respect to the operation's requirements, training and work skills development as a result of the Project will be carried by the workers to future employment opportunities and may positively influence their employment and compensation. While it is certain these effects will occur, the exact number of employment opportunities may vary depending on technological, operational, and other economic factors. As the information informing the economic conditions effects assessment is derived from detailed planning and government-led Input-Output Modelling, there is a high confidence in this prediction.

Indigenous peoples are especially in need of training opportunities that they can use for future, long-term employment in mining beyond entry level positions, as well as building awareness of the skills/education they need to work in the mining sector.

During Reclamation and Closure, many of the employment opportunities associated with Operations would be expected to end. Mining is expected to continue in the Economic Conditions LSA; therefore, many workers employed during the Project Operations phase would likely transition to other opportunities within the LSA. It is estimated that during the Reclamation and Closure phase, a workforce of approximately 15 FTEs would be required (NWP, 2021b).

17.5.4.2 Change in Regional and Local Economy

The following describes the effects assessment results related to the following measurement indicators:

- Revenue generation through goods and services purchased;
- Generation of business for local services and businesses; and
- Business or industry revenue generation or loss (e.g., removal of potentially forested area).

Project procurement of goods and services is expected to have a positive effect on local and regional business revenues. These activities may include, but are not limited to: hiring labour, hiring contractors, buying equipment, renting equipment, and buying materials or supplies. As these activities underpin development, mining, and reclamation and closure activities, it can be presumed most Project activities can be expected to have a positive effect on the regional and local economies.

As previously discussed, income generated through direct, indirect, and induced employment is also anticipated to have a positive effect on regional and local economies. Section 17.5.4.1 provides a detailed description of the economic effects and effects pathways related to employment, income, and training.

However, Indigenous peoples may not benefit as much from these positive effects due to the number of barriers they face with respect to obtaining employment in mining, particularly at more intermediate and senior levels (see also Chapter 18). It is important to note that some of these barriers are beyond the control of what a single company can achieve, particularly at a larger scale and in relation to barriers that are larger systemic or structural in nature. However, it is important to recognize that NWP will make effort to address these barriers, including, for example, developing a mentorship and training program specific to Indigenous peoples working in the mining industry and support the reporting and follow-up of any racism in the workplace through management and supervisor trainings and leadership practices (see Section 17.5.5 for Mitigation and Benefit Enhancement Measures).

For the Construction Planning, Construction, and Pre-Production and Operations phases, changes in regional and local economies were assessed quantitatively using results from Input-Output Modelling. The relevant economic accounts from these results were GDP and economic output. In comparison, change in regional and local economies for the Reclamation and Closure phase were assessed qualitatively based on professional judgment and experience with other projects.

The total output is a valuable economic indicator to understand the inter-industry relationships that occur within the overall economy; however, the total output is duplicative in nature, and therefore cannot be considered in isolation. GDP is smaller relative to total output because it avoids the double-counting during inter-industry spending. GDP reflects the value added or net contribution to the economy. Considered together, total output and GDP can provide a more comprehensive understanding of inter-industry relationships and net economic effects to business revenues.

17.5.4.2.1 Construction Planning, Construction, and Pre-Production

The Project Construction Planning, Construction, and Pre-Production period involves the construction of the infrastructure required for mine operations, as well as the upgrading of existing infrastructure. Initial capital expenditures in the industrial construction sector are largely concentrated at the beginning of the Project, including Years 2 and 3 of Construction and Pre-Production. Total direct output, including all inter-industry relationships, for the three-year construction period, are estimated to total $311.99 million within the Economic Conditions RSA and $93.60 million within the Economic Conditions LSA. This would include the Project's direct expenditures on construction costs, machines, and equipment, and materials, as well as engineering, procurement, and construction management services. Table 17.5-6 provides an overview of estimated business revenue generated from goods and services during the Construction Planning, Construction, and Pre-Production phase in both the Economic Conditions LSA and RSA.

Table 17.5-6: Revenue Generated from Goods and Services during Construction Planning, Construction, and Pre-Production

		Direct Output[a]	Indirect Output[a]	Induced Output[a,b]	Total[b]
Economic Conditions LSA	Cumulative	$93.60 million	$9.54 million	n/a	n/a
	Annual Average	$31.20 million	$3.18 million	n/a	n/a
Economic Conditions RSA	Cumulative	$311.99 million	$190.82 million	$97.83 million	$600.64 million
	Annual Average	$104.00 million	$63.61 million	$32.60 million	$200.21 million

Source: Statistics Canada, 2020a

Notes:

(a) "Output consists of those goods and services that are produced within an establishment that become available for use outside that establishment, plus any goods and services produced for own final use" (Statistics Canada, 2021a). It is important to note that output quantifies the total value of all goods and services, which creates an issue of double counting the intermediate inputs.

(b) Induced output was not calculated at the local level due to the fact that this would be a highly speculative estimate and relatively minimal. Induced output includes household spending from direct and indirect effects. During the Construction Planning, Construction, and Pre-Production stage, this spending occurs largely outside of the LSA.

The Project expenditures on materials, goods, and services can be expected to generate indirect effects, which are commonly understood as supplier effects. NWP and its contractors will be required to purchase materials, goods, and services for the construction of the mine and associated infrastructure. Within the Economic Conditions RSA, the revenue generated from the purchase of goods and services is estimated to be $190.82 million, or approximately $63.62 million annually.

In comparison, within the Economic Conditions LSA, it is estimated that the Project would generate approximately $9.54 million in indirect output at the local-level during Construction and Pre-Production. The majority of the materials, goods, and services required for construction are expected to be sourced outside the Economic Conditions LSA, and therefore, a lower share of indirect outputs will occur within the LSA.

The top direct supplier industries to the Project during the construction stage are expected to include: manufacturing, wholesale trade, transportation and warehousing, professional, scientific, and technical services, finance, insurance, real estate, rental and leasing and holding companies, and mining, quarrying, and oil and gas extraction. When possible and cost-competitive, NWP intends to source materials, goods,

and services required for construction within the LSA; however, many of the supplier industries listed above are located outside of the LSA. With the exception of equipment, it is predicted that all other expenditures during Construction Planning, Construction, and Pre-Production will occur within Canada. The location of equipment source is distributed as follows: British Columbia (55%); Canada (25%); and outside of Canada (20%; NWP, 2021b).

NWP's Indigenous Policy aims to encourage and create opportunities for the procurement of goods and services from Indigenous businesses. For example, during the Construction Planning, Construction, and Pre-Production phase, NWP intends to support existing joint ventures between Indigenous-owned businesses and construction companies.

The Project is also expected to generate induced effects, particularly within the RSA, because most of the major expenditures are expected to be outside the LSA. Within the RSA, the Project is anticipated to generate approximately $97.83 million in induced output, which includes household spending from direct and indirect outputs. In comparison, induced output within the LSA is expected to be significantly smaller, and as such, a specific value has not been assigned to it.

As presented in Table 17.5-7, the Project is expected to result in an increase in GDP of $93.87 million and $28.16 million within the RSA and LSA, respectively, during the Construction Planning, Construction, and Pre-Production phase, demonstrating an increase in economic activity. It is important to note that GDP measures the gross valued added of goods and services and does not double count intermediate inputs (i.e., inter-industry spending), and therefore, when compared to total output, is relatively smaller.

During Construction and Pre-Production, the Project is expected to contribute indirectly to GDP. Indirect Project effects are anticipated to result in increases of indirect GDP of $109.46 million and $5.47 million within the RSA and LSA, respectively.

Table 17.5-7: Gross Domestic Product Generated During Construction Planning, Construction, and Pre-Production

		Direct GDP[a]	Indirect GDP[a]	Induced GDP[a,b]	Total[b]
Economic Conditions LSA	Cumulative	$28.16 million	$5.47 million	n/a[b]	n/a[b]
	Annual Average	$9.39 million	$1.82 million	n/a[b]	n/a[b]
Economic Conditions RSA	Cumulative	$93.87 million	$109.46 million	$63.04 million	$266.64 million
	Annual Average	$31.28 million	$36.49 million	$21.01 million	$88.79 million

Source: Statistics Canada, 2020a

Notes:

(a) Gross Domestic Product (GDP) is defined as the "unduplicated value of goods and services produced during a period that is available for final domestic consumption, investment, or export" (Statistics Canada, 2020b).

(b) Induced GDP was not calculated at the local level due to the fact that this would be a highly speculative estimate and relatively minimal. Induced GDP includes household spending from direct and indirect effect. During the Construction Planning, Construction, and Pre-Production phase, this spending will occur largely outside of the LSA.

Related to the potential for business or industry revenue generation or loss, the development of the Project will result in the removal of some amount of forestry lands that are intended for commercial harvesting. This impact is described in the land use assessment (Chapter 19).

Figure 17.5-6 and Figure 17.5-7 show the distributions of total revenue generated from goods and services and total gross domestic product (GDP) generation, respectively, during the Construction Planning, Construction, and Pre-Production Phase (Phase 1).

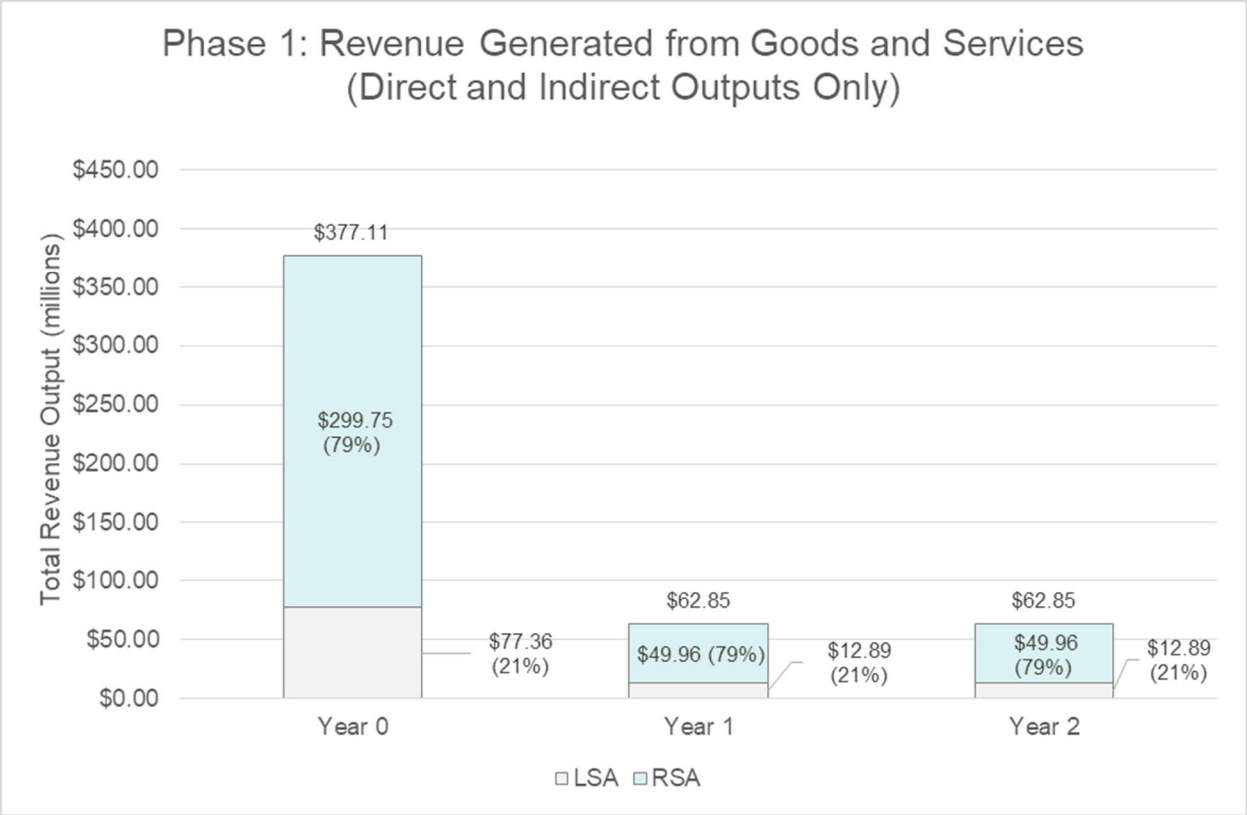

Figure 17.5-6: Distributions of Total Revenue Generated from Goods and Services during the Construction Planning, Construction, and Pre-Production Phase (Phase 1)

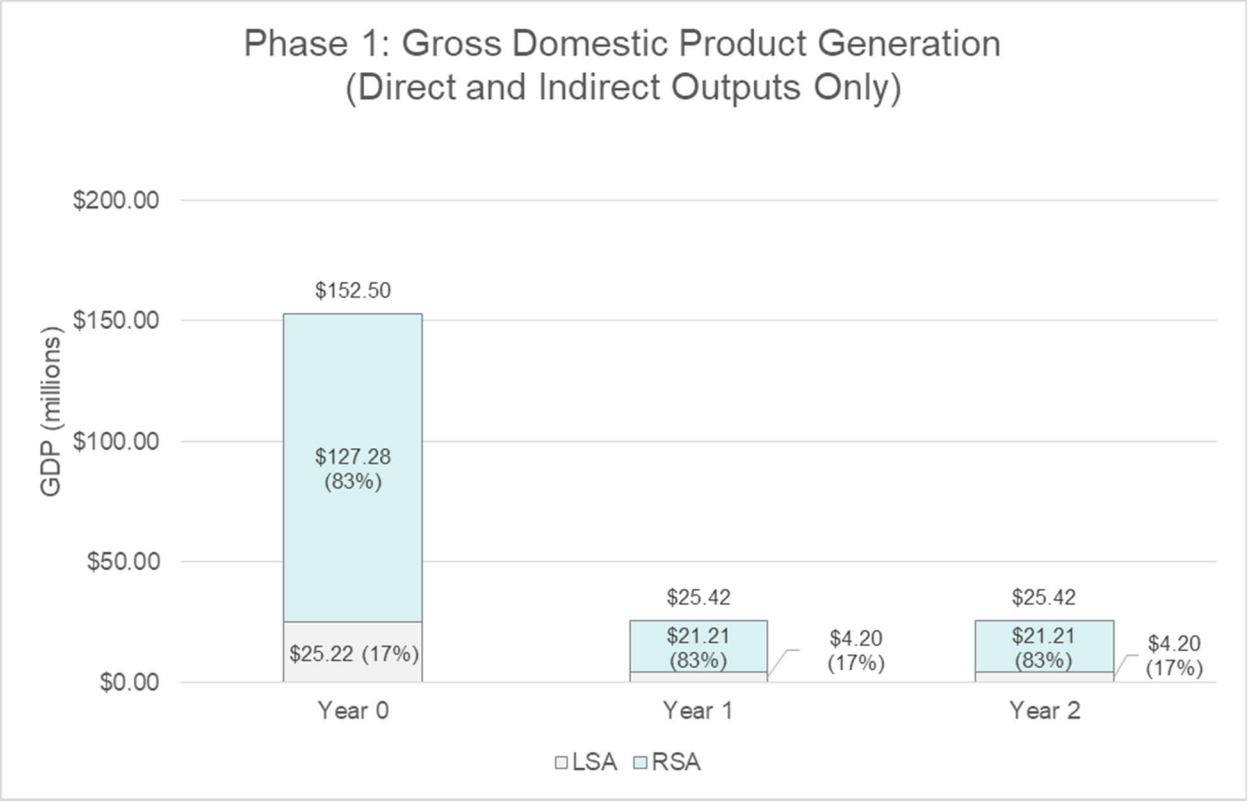

Figure 17.5-7: Distributions of Total Revenue Generated from Total Gross Domestic Product (GDP) Generation during the Construction Planning, Construction, and Pre-Production Phase (Phase 1)

It is expected that initial capital expenditures are highest at the outset of this phase, therefore Phase 1 is presented with Year 0 (Project Year 1) accounting for 75% of total revenue generated from goods and services and total GDP generation, with the remaining 25% distributed across Years 1 and 2 (Project Years 2 and 3).

Within the first three years of the project (Phase 1), the total revenue generated from goods and services (excluding induced output) in the RSA is estimated to be $502.81 million, where: the LSA would generate a total revenue of $103.14 million, with an estimated $77.36 million during Year 1 (Project Year 0) and $25.78 million distributed across Years 2 and 3 (Project Years 1 and 2); and the rest of the RSA would generate the remaining total revenue of $399.67 million, with an estimated $299.75 million during Year 1 (Project Year 0) and $99.92 million distributed across Years 2 and 3 (Project Years 1 and 2).

With respect to total GDP generation (excluding induced output), the RSA is estimated to generate $203.33 million in GDP, where: the LSA would generate a total GDP of $33.63 million, with an estimated $25.22 million during Year 1 (Project Year 0) and $8.40 million distributed across Years 2 and 3 (Project Years 1 and 2); and the rest of the RSA would generate the remaining total revenue of $169.70 million, with an estimated $127.28 million during Year 1 (Project Year 0) and $42.42 million distributed across Years 2 and 3 (Project Years 1 and 2).

17.5.4.2.2 Operations

Similar to the Construction Planning, Construction, and Pre-Production phase, initial capital expenditures are also high in the early years of Operations. As a result of these initial capital expenditures, particularly on equipment, the Project is expected to generate a greater impact on total output and GDP at the beginning of Operations. Direct operating expenditures include fuel, explosives, equipment, parts, tires, consumables, labour, and rail and port transportation. Expenditure estimates are based on assumptions related to the cost of operation inputs such as fuel, equipment, and materials, as well as future labour agreements; these costs are subject to change depending on future market conditions.

As presented in Table 17.5-8, during the 15 year Operations phase, the total direct output from the purchase of goods and services for the Project in the Economic Conditions RSA is estimated to be $3.35 billion, approximately $223 million annually. Within the LSA, it is estimated that the Project's direct output will be approximately $1.17 billion, approximately $78.10 million annually. Over the Operations phase, expenditures will likely vary year-to-year.

The upstream economic activities associated with supplying goods and services required for Project Operations will benefit from the direct Project expenditures, resulting in indirect effects on local and regional business revenues. During Operations, the total indirect output within the RSA is estimated to total $2.11 billion, approximately $141.30 million annually. In comparison, the total indirect output within the Economic Conditions LSA is estimated to be $21.20 million, or $1.41 million annually, during Operations. The share of indirect output, or upstream business revenue, is expected to be lower in the LSA compared to RSA due to the fact that the total indirect output occurring during Operations is largely concentrated in industries located outside of the LSA such as manufacturing, transportation and warehousing, wholesale trade, and repair construction[14].

Table 17.5-8: Business Revenue Generated from Goods and Services during Operations

		Direct Output	Indirect Output	Induced Output	Total
Economic Conditions LSA	Cumulative	$1,171.50 million	$21.20 million	n/a	n/a
	Annual Average	$78.10 million	$1.41 million	n/a	n/a
Economic Conditions RSA	Cumulative	$3,347.15 million	$2,119.63 million	$735.43 million	$6,202.25 million
	Annual Average	$223.14 million	$141.30 million	$49.03 million	$413.48 million

Source: Statistics Canada, 2020a

Notes:

(a) "Output consists of those goods and services that are produced within an establishment that become available for use outside that establishment, plus any goods and services produced for own final use" (Statistics Canada, 2021a). It is important to note that output quantifies the total value of all goods and services, which creates an issue of double counting the intermediate inputs.

(b) Induced output was not calculated at the local level due to the fact that this would be a highly speculative estimate and relatively minimal. Induced output includes household spending from direct and indirect effects. During the Operations phase, this spending will occur largely outside of the LSA.

There are a number of existing businesses that can provide materials, goods, and services required during the Operations phase located within the LSA. In addition to labour requirements, NWP anticipates that all

[14] Repair construction comprises all establishments engaged in repairing buildings and engineering works, and subdividing land; this sub-sector differs from construction, non-residential building construction, and engineering and other construction services (Statistics Canada, 2018h).

fuel, explosives, tires, and parts required for Operations will be sourced directly from businesses within the LSA, generating business revenue at the local level (NWP, 2021b). In addition, NWP's Indigenous Policy emphasizes efforts to create benefits for Indigenous-owned businesses through procurement, capacity development, and business relationships. When possible, NWP intends to continue to provide opportunities to Indigenous-owned businesses within the LSA during the Operations phase.

Based on the experience of other mining projects within the LSA and input from NWP, examples of goods and services that may be sourced locally include:

- Site preparation (e.g., logging, clearing, soil removal);
- Transportation services;
- Machinery and equipment supplies;
- Engineering and environmental consulting;
- Fuel and power;
- Tires and road maintenance;
- Temporary accommodations;
- Food and beverages; and
- Human resources and employment services.

While it is understood that other mining projects have had success sourcing these goods and services locally, it is important to note that the extent to which this occurs is largely dependent on the capacity of local businesses to respond to the Project's procurement opportunities, as well as NWP's ability to build relationships with local suppliers. As described in Section 17.1.1.2, there are multiple economic development initiatives within the RDEK that are focused on supporting business development, attracting new businesses, and incentivizing industrial and commercial activities to enter the RDEK. Many of these initiatives also aim to reduce economic leakage and enhance local economic benefits by encouraging local business development. Local and regional business capacity may grow in order to respond to and benefit from future economic activities such as the Project.

The induced economic output is estimated to total $735.43 million over the 15 year Operations phase within the Economic Conditions RSA. Induced output at the provincial level, or the Economic Conditions RSA, is expected to be largely concentrated in retail, finance, insurance, real estate, rental and leasing and holding companies, and owner-occupied dwellings industries. Within the LSA, induced economic output is expected to occur to a lesser extent compared to the RSA because the majority of the direct and indirect output is predicted to occur largely outside of the LSA. Therefore, estimates presented in this section are considered to be conservative as they do not account for induced output.

As referenced in Table 17.5-9, during the 15 year Operations phase, it is estimated that the direct Project contribution to GDP will be $576.23 million within the RSA and $201.68 million within the LSA. In comparison, the Project is expecting to result in an increase of $1.21 billion in indirect GDP within the RSA, while only $12.09 million in indirect GDP within the LSA, as the majority of goods and services required for Operations are expected to be sourced outside of the LSA.

Table 17.5-9: Gross Domestic Product at the Regional and Local Level During Operations (Base Prices)

		Direct GDP[a]	Indirect GDP[a]	Induced GDP[a,b]	Total[b]
Economic Conditions LSA	Cumulative	$201.68 million	$12.09 million	n/a	n/a
	Annual Average	$13.45 million	$0.81 million	n/a	n/a
Economic Conditions RSA	Cumulative	$576.23 million	$1,209.01 million	$474.01 million	$2,259.24 million
	Annual Average	$38.42 million	$80.60 million	$31.60 million	$150.62 million

Source: Statistics Canada, 2020a

Notes:

(a) Gross Domestic Product (GDP) is defined as the "unduplicated value of goods and services produced during a period that is available for final domestic consumption, investment, or export." It is important to note that GDP quantifies the "value added" component and avoids double counting intermediate inputs (Statistics Canada, 2020b).

(b) Induced GDP was not calculated at the local level due to the fact that this would be a highly speculative estimate and relatively minimal. Induced GDP includes household spending from direct and indirect effects. During the Operations phase, this spending will occur largely outside of the LSA.

Figure 17.5-8 and Figure 17.5-9 show the distributions of total revenue generated from goods and services and total GDP generation, respectively, during the Operations Phase (Phase 2).

It is expected that initial capital expenditures are highest in the early years of the Operations phase, although expenditures will likely vary from year to year. Phase 2 is, therefore, presented with Years 1 through 7 (Project Years 3 through 9) accounting for 80% of both total business revenue generated from goods and services and total GDP generated, with the remaining 20% distributed across Years 8 through 15 (Project Years 10 through 17).

During the Operations phase (Phase 2), the total revenue generated from goods and services (excluding induced output) in the RSA is estimated to be $5.467 billion, where: the LSA would generate a total revenue of approximately $1.19 billion, with an estimated $954.17 million distributed over Years 1 through 7 (Project Years 3 through 9) and $238.56 million distributed across Years 8 through 15 (Project Years 10 through 17); and the rest of the RSA would generate the remaining total revenue of approximately $4.27 billion, with an estimated $3.42 billion distributed over Years 1 through 7 (Project Years 3 through 9) and $854.80 million distributed across Years 8 through 15 (Project Years 10 through 17).

With respect to total GDP generation (excluding induced output), the RSA is estimated to generate approximately $1.79 billion in GDP, where: the LSA would generate a total GDP of $213.77 million, with an estimated $171.01 million distributed over Years 1 through 7 (Project Years 3 through 9) and $42.72 million distributed across Years 8 through 15 (Project Years 10 through 17); and the rest of the RSA would generate the remaining total GDP of approximately $1.57 billion, with an estimated $1.26 billion distributed over Years 1 through 7 (Project Years 3 through 9) and $314.32 million distributed across Years 8 through 15 (Project Years 10 through 17).

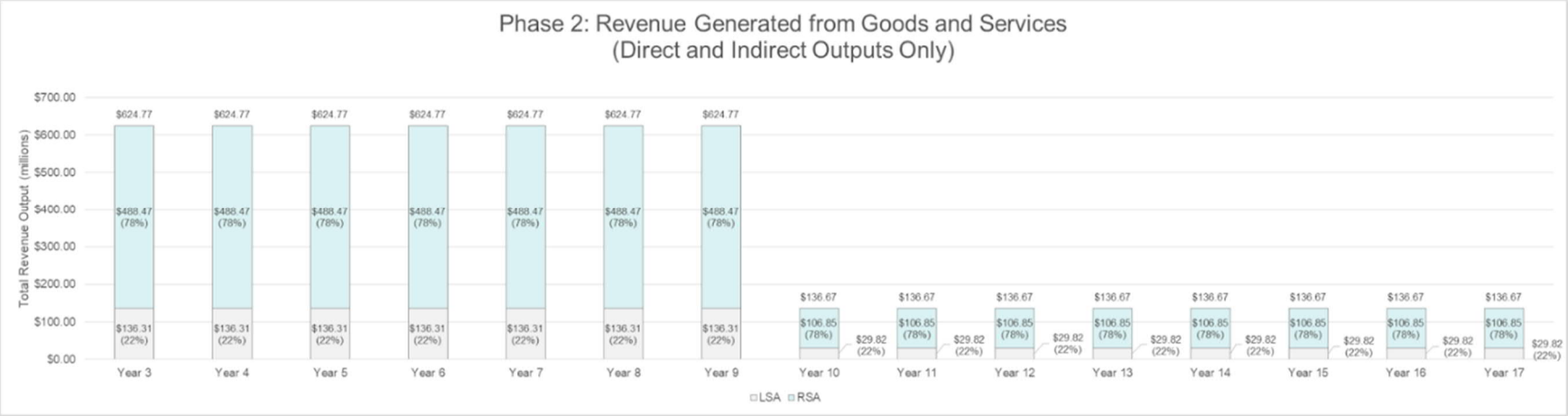

Figure 17.5-8: Distributions of Total Revenue Generated from Goods and Services during the Operations Phase (Phase 2)

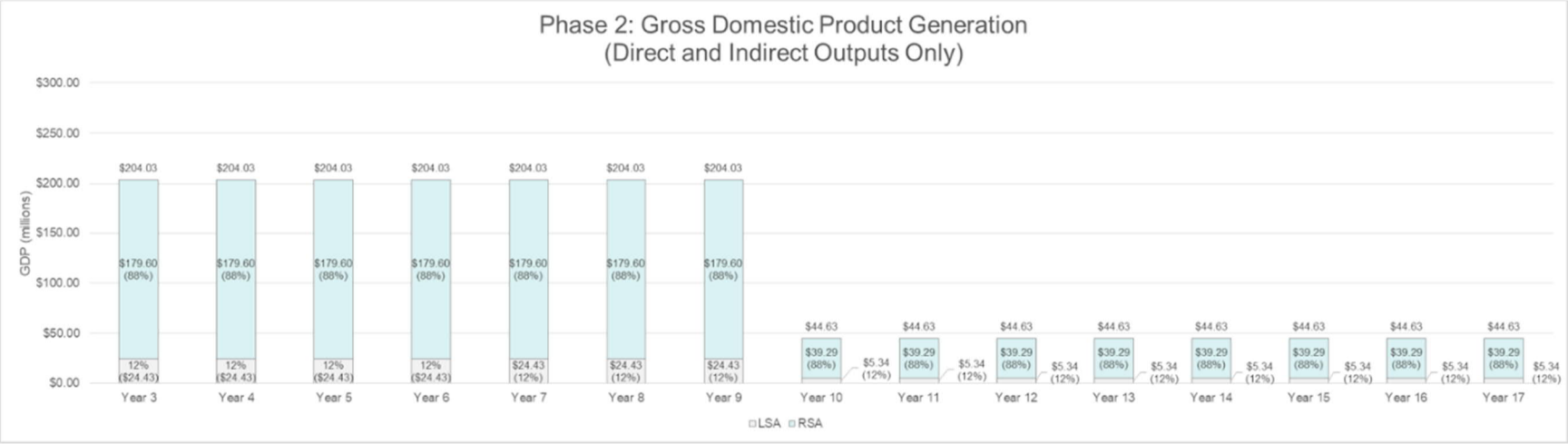

Figure 17.5-9: Distributions of Total Revenue Generated from Total Gross Domestic Product (GDP) Generation during the Operations Phase (Phase 2)

17.5.4.2.3 Reclamation and Closure

As the Project moves into Reclamation and Closure and ceases production, the initial economic effects associated with Construction Planning, Construction, and Pre-Production and Operations will likely slow. While to a lesser extent than the Operations period, mine reclamation and closure activities would involve the contracting of local businesses and thus result in local economic benefit. This is expected to occur over a period of two years. While some services, including those related to environmental monitoring, reclamation, water management, and the dismantling and removal of infrastructure would be required, the majority of services and supply contracts would be terminated following mine closure. During Reclamation and Closure, the Project is not anticipated to reduce local and regional business revenues within the LSA and RSA below existing conditions.

17.5.4.2.4 Summary (Change in Regional and Local Economy)

The procurement of goods and services is anticipated to positively affect the regional and local economies during all phases of the Project. Mining is the primary industry within the Economic Conditions LSA; many businesses within LSA communities are reliant, either directly or indirectly, on mining to support revenue generation. The Project is anticipated to contribute to the business revenues generated by the existing cluster of coal mines within the Economic Conditions LSA.

It is important to note that the majority of goods and services required for Operations are expected to be sourced outside of the LSA, resulting in a proportionally smaller economic effect on the local economy compared to the regional economy. Within the RSA, the total direct, indirect, and induced output and GDP is estimated to be $6.80 billion and $2.53 billion, respectively. It is important to consider these results within the broader industry context and provincial trends. The Province of B.C. is Canada's largest producer of steelmaking coal. In 2017, mining, quarrying, and the oil and gas sector accounted for approximately $12 billion, or 5%, of the Province's GDP. As coal mines have a finite life, mine expansions or new mines are required to continue the industry. The Project is expected to contribute to the continuation of the mining industry in the LSA and RSA that will drive new investment, and remain a high economic priority for the Province and local communities. Additionally, the Project is anticipated to support economic development planning initiatives, including efforts to enhance economic diversification, through its contributions to the regional and local economic base.

17.5.4.3 Change in Government Finances

The following describes the effects assessment results related to the following measurement indicator:

- Local and provincial government revenue.

In addition to generating business revenue and employment opportunities, economic activities associated with the Project can be expected to result in tax revenues for all levels of government. Taxation on both products and production factors, such as land, can be expected to generate revenues through all Project phases roughly consistent with the occurrence of economic activity and the rate of production. Additionally, changes to the use and demand for community services and infrastructure (Chapter 18) may alter the demand for government-funded services and infrastructure, which will influence the financial position of the responsible government.

For the Construction Planning, Construction, and Pre-Production and Operations phases, changes to government revenues were assessed quantitatively using results from IO Modelling. Changes to government revenues for the Reclamation and Closure phase were assessed qualitatively based on professional judgement and experience with other projects.

17.5.4.3.1 Construction Planning, Construction, and Pre-Production

The tax revenues expected to be generated for local, provincial, and federal governments during the three year Project construction period are presented in Table 17.5-10. Construction taxes are expected to total $41.26 million, including over $29.63 million in product taxes and $11.64 million in taxes on production factors (e.g., land).

Table 17.5-10: Tax Revenues by Tax Type and Level of Government during Construction

Tax Type	Municipal	Provincial	Federal	Total
Taxes on Products	$183,676	$22,743,175	$6,698,298	$29,625,149
Taxes on Production	$8,008,321	$3,530,234	$102,325	$11,640,880
Total Taxes	$8,191,997	$26,273,409	$6,800,623	$41,266,029

Source: Statistics Canada, 2020a

Municipal taxation during construction is estimated to total $8.19 million. Municipal tax revenues are estimated to include $8.01 million of taxes on production and $0.18 million on products.

At the provincial government level, an estimated $26.27 million of tax revenue is expected to be generated during construction. Tax revenues include $22.74 million of taxes on products and $3.53 million of taxes on production factors. Provincial tax revenues are reflective of the Economic Conditions RSA, which spans the extent of B.C.

Federal taxation during construction is estimated to total $6.80 million, including $6.70 million in product taxes and $0.10 million in taxes on factors of production. These taxes are largely on sales, fuel and international trade barriers (e.g., tariffs, customs, duties, etc.).

17.5.4.3.2 Operations

Tax revenues are expected to be generated for local, provincial, and federal governments during Operations. Operations taxes are anticipated to total $401.34 million, including over $311.91 million in product taxes and $89.43 million in taxes on production factors (e.g., land). Table 17.5-11 provides an overview of municipal, provincial, and federal tax revenue during the Project Operations phase.

Table 17.5-11: Tax Revenues by Tax Type and Level of Government during Operations

Tax Type	Municipal	Provincial	Federal	Total
Taxes on Products	$1,923,058	$236,876,353	$73,114,819	$311,914,230
Taxes on Production	$61,266,056	$27,384,652	$776,189	$89,426,897
Total Taxes	$63,189,114	$264,261,005	$73,891,008	$401,341,127

Source: Statistics Canada, 2020

Over the 15 years of Operations, municipal taxation is estimated to total $63.12 million. Municipal tax revenues are estimated to total $61.23 million of taxes on production and $1.92 million on products during Operations. It is important to note that the annual government revenues for municipalities within the Economic Conditions LSA range from approximately $8 million to $48 million.

As noted in the socio-community assessment (Chapter 18), the Project may increase demand for community services and infrastructure in the Economic Conditions LSA during the Operations phase. These services and infrastructure are administered by the government at all levels. Tax revenues contribute to the governments' ability to fund existing programs and expand current offerings to support community demand.

At the provincial government level, an estimated $264.26 million of tax revenue is anticipated to be generated during Operations. Tax revenues include $27.3 million of taxes on production and $236.88 million on products. The majority of the revenue generated is through taxes on products through the provincial sales tax, provincial gas tax, and provincial environmental tax.

Federal taxation during Operations is estimated to total $73.89 million, including $73.11 million in taxes on products and $0.78 million in taxes on factors of production. The majority of revenue generated through federal taxes is through taxes on products, more specifically through the federal gas tax and federal sales tax (i.e., GST and HST).

17.5.4.3.3 Distribution of Tax Revenues Generated by Level of Government in Phases 1 and 2

Figure 17.5-10 shows the distribution of total tax revenue earned on products and production by level of government across the first 18 years of the project (i.e., Phases 1 and 2, or Years 1 through 18 / Project Years 0 through 17).

Total tax revenues by tax type (products versus production) by Project phase are presented as being evenly distributed across each year of that phase. A total tax revenue of $442,607,156 will be generated by all levels of government (municipal, provincial, federal) over the first two phases (18 years) of the Project:

- The total tax revenue generated during the Construction Planning, Construction, and Pre-Production Phase (Phase 1) is estimated to be $41,266,029 and is distributed evenly across three Project years (i.e., $13,755,343, or ~33.3%, per year during Phase 1); and
- The total tax revenue generated during the Operations Phase (Phase 2) is estimated to be $401,341,127 and is distributed evenly across 15 Project years (i.e., $26,756,075, or ~7%, per year during Phase 2).

With respect to total tax revenue distribution by level of government, much of the tax revenue generated within the first 18 years of the Project (i.e., during Phases 1 and 2) is generated at the provincial level, with an estimated total of:

- $71,381,111 in tax revenue generated at the municipal level (average of $3,965,617 per year over 18 Project years);
- An estimated total of $290,534,414 in tax revenue generated at the provincial level (average of $16,140,801 per year over 18 Project years); and
- An estimated total of $80,691,631 in tax revenue generated at the federal level (average of $4,482,868 per year over 18 Project years).

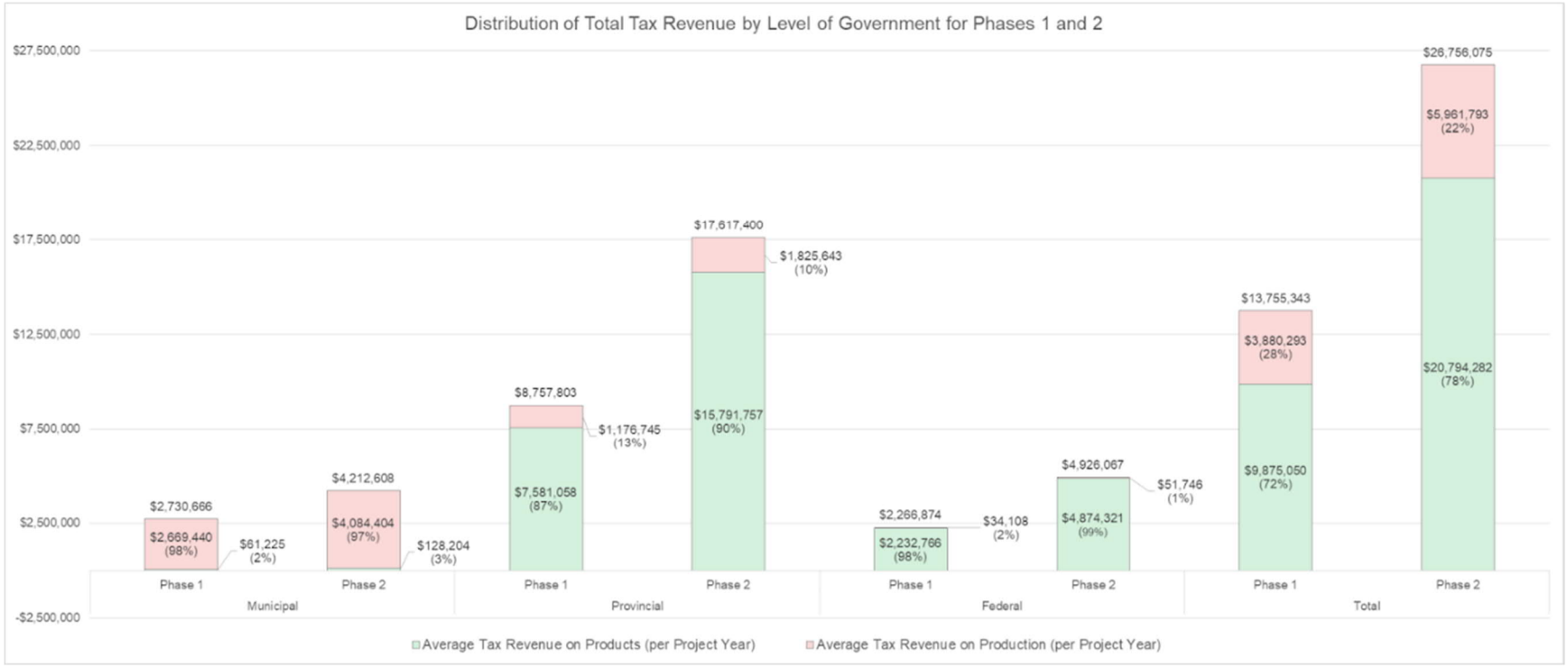

Figure 17.5-10: Distribution of Total Tax Revenue by Level of Government for Phases 1 and 2

It is important to note that tax revenue generated at the municipal level is predominantly on production (98% of tax revenue is generated from production during Phase 1; 97% of tax revenue is generated from production during Phase 2), whereas the inverse is estimated for both the provincial and federal governments: 87% and 98% of tax revenues are generated by the provincial government and federal government, respectively, from products during Phase 1, and 90% and 99% of tax revenues are generated by the provincial government and federal government, respectively, on products during Phase 2).

17.5.4.3.4 Reclamation and Closure

Government revenues due to the Project are expected to decline during closure as mine production, the primary source of revenue and taxation, is ceased. Project closure expenditure (i.e., direct, indirect, and induced expenditures) would be expected to generate some tax revenues for local, provincial, and federal governments. The Project is not expected to result in a reduction of local and regional government revenues below existing conditions. In addition, it is anticipated that other new mine projects within the LSA and RSA would come online and continue to contribute to government revenues in the long-term.

17.5.4.3.5 B.C. Mineral Tax

British Columbia's Mineral Tax Act, 1996 imposes a two-part mineral tax on operators of mines in the Province, consisting of:

- A 2% net currents proceeds tax; and
- A 13% net revenue tax.

The Net Current Proceeds Tax serves as a minimum tax on the net current proceeds of an operator of a mine. The net current proceeds are the amount by which the gross revenue from the mine exceeds the current operating costs (including capital costs).

The Net Revenue Tax is levied on the gross revenue of the mine less operating costs and capital costs incurred in the year and the cumulative expenditure account balance at the end of the previous year.

As a key component of the completion of the Bankable Feasibility Study (BFS) in July 2020, a detailed Financial Model for the Project's development and operation was prepared by Stantec. That model was updated further for the Project's Yield Optimisation Study in August 2021. Using a benchmark long term hard coking coal price of US$165/tonne, the model determined that the Project would result in payment of B.C. Mineral Taxes of $208.7 million over the Project's 15 year production period. It is noted that this long term coal price assumption is substantially less than current market price and below revised long term coal price forecasts in March 2022. Given that the Mineral Tax is levied on both net proceeds and net revenue, a higher received coal price than that adopted in the BFS would result in a substantial increase in Mineral Taxes payments from the Project.

17.5.4.3.6 Summary (Change in Government Finances)

Tax revenues are important to the local and regional socio-economies as they fund the operation of governments at all levels. Governments can expend revenue on operational challenges and capital concerns, such as infrastructure and research.

Overall, Project effects on government revenue are anticipated to be beneficial. The total tax revenue generated by the Project during Construction Planning, Construction, and Pre-Production and Operations is estimated to be $442.73 million, an annual average of $24.60 million. The majority of this tax revenue is generated through taxes on production. As a result, the tax revenues gained through the increased economic activity associated with the Project can be expected to improve the financial position of governments in the Economic Conditions LSA, Economic Conditions RSA, and beyond the Economic Conditions RSA. In addition, the government revenue estimates generated through the IO Model do not account for royalties, therefore, these predictions are considered to be a conservative estimate of the Project's overall contribution to government revenues.

17.5.4.4 Transboundary Effects

Other than some positive economic benefits results in other parts of Canada from the purchase of goods to support the Project, no other economic transboundary effects are anticipated. Potential effects to economic conditions of Indigenous communities, including federally-owned reserve lands, are discussed in Chapters 23 to 31. No economic effects to other federal lands in the vicinity of the Project (i.e., Dominion Coal Blocks; Chapter 1, Section 1.3.3) are anticipated as these lands are largely unutilized beyond limited forestry operations and recreational activities.

17.5.4.5 Distribution of Spending

Figure 17.5-11 shows the distribution of annual wealth creation over the life of the Project.

Annual wealth creation is presented as the combined total of revenue and GDP generated, excluding induced outputs, during each year of the 20-year Project. During Reclamation and Closure (Phase 3; Project Years 18 and 19), the Project is not anticipated to reduce local and regional business revenues within the LSA and RSA below existing conditions. As such, values from Project Year 17 were presented as the same for Project Years 18 and 19.

During the 20-year Project, the total wealth generated is estimated to be approximately $8.3 billion. It is estimated that $530 million of that wealth is generated in the RSA during the first year of the Project (Project Year 0), where: the LSA is estimated to generate $103 million, and the rest of the RSA is estimated to generate the remaining $427 million. Wealth generation is presented to taper off for the remainder of Phase 1; however, the majority of wealth is anticipated to be generated during the first seven years of Phase 2 (i.e., Project Years 3 through 9). It is estimated that Project Years 3 through 9 would generate approximately $5.80 billion in wealth in the RSA (69.9% of total wealth generated during the Project), where: the LSA is estimated to generate approximately $1.13 billion during Project Years 3 through 9; and the rest of the RSA is estimated to generate the remaining $4.67 billion.

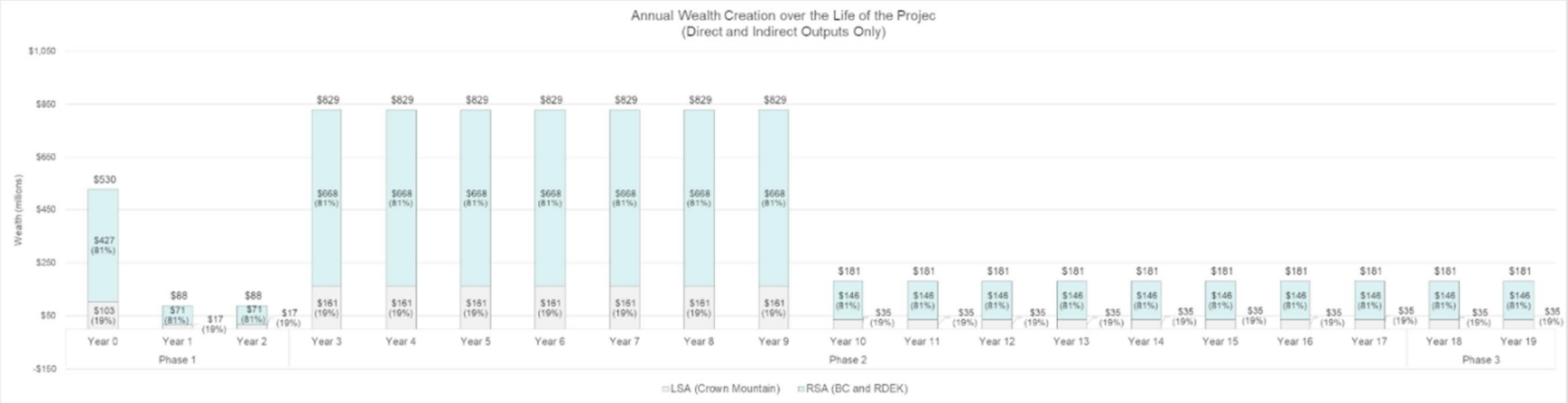

Figure 17.5-11: Distribution of Annual Wealth Creation over the Life of the Project

17.5.5 Mitigation and Benefit Enhancement Measures

Changes to economic conditions due to the Project are expected to be positive. Mitigation and benefit enhancement measures can be utilized to enhance the positive contributions of the Project to the local and regional economies.

17.5.5.1 Employment, Income, and Training

The Project is expected to result in positive effects to employment, income, and training, as the site activities will require labour during Construction Planning, Construction, and Pre-Production, Operations, and Reclamation and Closure. In addition to direct employment benefits, it is anticipated that the Project will also generate indirect and induced employment effects. In order to enhance the benefits of employment, income, and training at the local and regional level, the Project will focus on implementing measures to support local and Indigenous hiring and training. Key mitigation and benefit enhancements are as follows:

- Ongoing engagement with local residents with connections in LSA communities;
- Implement measures to support local hiring and training;
- Development of and adherence to Skills, Training, and Employment Plan;
- Encourage employees and contractors to transition from positions held during Construction Planning, Construction, and Pre-Production to positions available during Operations; and
- Collaborate with existing educational institutions to support targeted-skills hiring.

In addition to the above, the following mitigation and benefit enhancements are provided based on the GBA+ study completed:

- Create more awareness of job opportunities and benefits available at NWP through outreach programs (e.g., in high schools and Indigenous communities), job advertisements, and public communications;
- Develop an equal opportunities program that includes mentorship, coaching, programs, and training to allow for training and advancement for all employees;
- Implement an inclusive recruitment process through inclusive language in advertisements, defining roles to draw a wider set of expertise, using a diverse hiring panel, and setting a goal for parity in the recruiting outcomes;
- Develop a mentorship and training program specific to Indigenous peoples working in the mining industry;
- Provide high school workshops or training sessions specific to working in the mining industry to Indigenous peoples;
- Develop a co-op and summer student program for Indigenous youth;
- NWP to undertake discussions with local interested, Indigenous communities to receive their input and suggestions regarding job awareness and training and possible employment barriers (e.g., transportation, local housing, childcare, time off to participate in traditional activities, etc.). With this input, NWP will develop a specific hiring plan with the objective to increase Indigenous peoples' participation in the Project workforce;
- Develop and encourage opportunities for Indigenous capacity building, direct and indirect employment, and education and training, as outlined in NWP's Indigenous Policy;

- Provide a healing centre for Indigenous employees at the mine site for healing and incorporating traditional culture;
- Support the reporting of discrimination (e.g., racism and sexism) in the workplace through management and supervisor trainings and leadership practices;
- Development of an anti-racial and anti-sexual discrimination oversight committee;
- Implement and maintain a workplace culture with zero tolerance for sexism and racism and the fostering of Indigenous-non-Indigenous relations (e.g., through social events that include families, teachings about communities, etc.);
- Provide inclusivity and diversity training seminars and cultural sensitivity training to employees with support in design and implementation from Indigenous community member(s);
- Make diversity and inclusivity a core company value that is integrated into every aspect of the company;
- Mandatory respect, diversity, and inclusive terminology and language, and unconscious bias training for all employees;
- Provide resources to support employees experiencing violence (work or domestic) and discriminatory or non-inclusive behaviours;
- Engage and work with Fernie Pride to help NWP develop policies and create a safe workplace; and
- Work with employees to identify and implement inclusive workplace measures and practices, including for pregnancy, nursing, Personal Protection Equipment, washrooms, change rooms, workspace ergonomics, etc.

17.5.5.2 Regional and Local Economy

The procurement of goods and services is anticipated to positively affect the regional and local economy during all phases of the Project. Benefit enhancements measures to support local and regional procurement are as follows:

- Provide notice of and encourage Indigenous owned businesses to participate in Project procurement opportunities, as described in NWP's Indigenous Policy. Project procurement opportunities to be designed/packaged to increase participation;
- Build relationships with existing Indigenous-owned businesses (e.g., water quality services, plant nurseries, etc.);
- Develop partnerships with the local Chamber of Commerce and other economic development organizations;
- Leverage existing economic planning initiatives and efforts, including those identified in Section 17.1.1.2; and
- Build relationships with regional and local suppliers.

17.5.5.3 Government Finances

Project Construction and Pre-Production, Operations, and Reclamation and Closure will require economic activity, which is taxed, generating revenue for municipal, provincial, and federal governments. Economic activities associated with the Project can be reasonably expected to enhance government fiscal positions at all levels.

In order to enhance these benefits at the local level, one existing mechanism that supports the distribution of property taxes between local communities is the Elk Valley Property Tax Sharing Agreement. As discussed in Section 17.4.4.2, through this agreement, property taxes levied on the Project would be directed to incorporated municipalities (i.e., Sparwood, Elkford, and Fernie) and Electoral Area A of the RDEK. Through this agreement, a fixed percentage of tax is allocated to each local government; the specific percentage is determined based on the level of each municipal government's dependency on mines as their ability to diversify its assessment base.

17.5.5.4 Summary of Mitigation and Benefit Enhancement Measures

All phases of the Project are anticipated to positively affect the regional and local economies; adverse impacts on the economy are not predicted or expected. As such, mitigation measures are not required; however, several enhancement measure recommendations have been made that are summarized in Table 17.5-12. The recommendations for enhancement measures also consider the results of the GBA+ work that was undertaken and previously described in this chapter. The effectiveness of these enhancement measures are expected to be moderate to high as they would be largely in the control of NWP.

17.5.6 Characterization of Residual Effects

Based on the evaluation of potential Project effects on economic conditions and related benefit enhancement measures, positive residual effects that would remain after implementation of proposed benefit enhancement measures include:

- Change in employment, income, and training;
- Change in regional and local economies; and
- Change in government finances.

When Project-VC interactions are predicted to result in no or negligible adverse effects, further analysis is not warranted (EAO, 2013). As discussed in Section 17.5.4, no adverse effects to economic conditions are predicted to occur due to Project activities. Overall, the Project is anticipated to result in beneficial economic effects.

17.5.6.1 Potential Residual Effects Assessment

No residual adverse economic effects are predicted to occur as a result of the Project.

17.5.6.2 Characterization of Residual Effects

No residual adverse economic effects are predicted to occur as a result of the Project.

17.5.6.3 Summary of Residual Effects

No residual adverse economic effects are predicted to occur as a result of the Project. The Project will result in positive economic impacts, including additional employment and income, contribute to regional and local economies, and contribute to government finance through taxes and royalty payments.

Table 17.5-12: Summary of Proposed Benefit Enhancement Measures Related to Economic Conditions

Potential Effect	Mitigation and Benefit Enhancement Measures	Rationale	Applicable Project Phase(s)	Effectiveness	Residual Effect
Change in Employment, Income, and Training	• Development of and adherence to Skills, Training, and Employment Plan. • Development of and adherence to a local hiring system, including local and Indigenous employment targets. • Engage with local residents with connections in LSA communities. • Encourage employees and contractors to transition from positions held during Construction Planning, Construction, and Pre-Production to positions available during Operations. • Explore opportunities to collaborate with existing educational institutions to support targeted-skills hiring. • Develop and encourage opportunities for Indigenous capacity building, direct and indirect employment, and education and training, as outlined in NWP's Indigenous Policy. • Implement an inclusive recruitment process through inclusive language in advertisements, defining roles to draw a wider set of expertise, using a diverse hiring panel, and setting a goal for parity in the recruiting outcomes. • Create more awareness of job opportunities and benefits available at NWP through outreach programs (e.g., schools, local communities), job	These measures may result in greater shares of Project employment benefits captured by local and Indigenous communities.	• Construction and Pre-Production • Operations	Moderate to high	Yes (Positive)

Potential Effect	Mitigation and Benefit Enhancement Measures	Rationale	Applicable Project Phase(s)	Effectiveness	Residual Effect
	advertisements and public communications. • Develop an equal opportunities program that includes mentorship, coaching, programs, and training to allow for training and advancement for all employees. • Develop a mentorship and training program specific to Indigenous peoples working in the mining industry. • Provide high school workshops or training sessions specific to Indigenous peoples and to working in the mining industry. • Develop a co-op and summer student program for Indigenous youth. • NWP to undertake discussions with local interested, Indigenous communities to receive their input and suggestions regarding job awareness and training. With this input, NWP is to develop a specific hiring plan to increase Indigenous peoples' participation in the Project workforce. • Develop and encourage opportunities for Indigenous capacity building, direct and indirect employment, and education and training, as outlined in NWP's Indigenous Policy. • Work with employees to identify and implement inclusive workplace measures and practices, including for pregnancy, nursing, Personal Protection Equipment,				

Potential Effect	Mitigation and Benefit Enhancement Measures	Rationale	Applicable Project Phase(s)	Effectiveness	Residual Effect
	washrooms, change rooms, workspace ergonomics, etc. • Make diversity and inclusivity a core company value that is integrated into every aspect of the company. • Mandatory respect, diversity, and inclusive terminology and language, and unconscious bias training for all employees. • Provide resources to support employees experiencing violence (work or domestic) and discriminatory or non-inclusive behaviours. • Support the reporting of discrimination (e.g., sexism and racism) in the workplace through management and supervisor trainings and leadership practices. • Develop an anti-racial discrimination and anti-sexual discrimination oversight committee. • Implement and maintain a workplace culture with zero tolerance for sexism and racism and the fostering of Indigenous-non-Indigenous relations, e.g., through social events that include families, teachings about communities. • Provide inclusivity and diversity training seminars and cultural sensitivity training to employees with support in design and implementation from Indigenous community member(s).				

Potential Effect	Mitigation and Benefit Enhancement Measures	Rationale	Applicable Project Phase(s)	Effectiveness	Residual Effect
	• Provide a healing centre for Indigenous employees at the mine site for healing and incorporating traditional culture. • Engage and work with Fernie Pride to help NWP develop policies and create a safe workplace.				
Change in Regional and Local Economy	• Provide notice of and encourage Indigenous owned businesses to participate in Project procurement opportunities, as described in NWP's Indigenous Policy. Project procurement opportunities to be designed/packaged to increase participation. • Build relationships with existing Indigenous-owned businesses (e.g., water quality services, plant nurseries, etc.). • Develop partnerships with the local Chamber of Commerce and other economic development organizations. • Leverage existing economic planning initiatives and efforts, including those identified in Section 17.1.1.2. • Build relationships with regional and local suppliers.	These measures may result in greater shares of Project procurement benefits captured by local and Indigenous communities.	• Construction and Pre-Production • Operations	Moderate to high	Yes (Positive)
Change in Government Finances	Payment of taxes to Economic Conditions LSA municipalities through the Elk Valley Property Tax Sharing Agreement	This existing agreement supports the distribution of property taxes, and therefore benefits, between several LSA communities.	• Construction and Pre-Production • Operations • Closure and Reclamation	Moderate to high	Yes (Positive)

17.6 Cumulative Effects Assessment

Cumulative effects are the result of adverse Project residual effects interacting with the effects of other past, present, and reasonably foreseeable future projects or activities to produce a combined/overlapping effect. The objective of the cumulative effects assessment is to consider overlapping effects for all residual effects, not only those predicted to be significant. The following is required for a potential cumulative effect to occur:

- The Project results in a residual adverse effect on the VC;
- The residual Project effect interacts cumulatively with effects from other projects or activities (i.e., the effects of the Project overlap spatially and temporally with those of other projects or activities that have been or will be carried out);
- The other projects or activities have been or will be carried out and are not hypothetical; and
- The cumulative effect is likely to occur.

Further information regarding the cumulative effects assessment methodology is provided in Chapter 5, Section 5.3.5.

Residual effects to economic conditions, as characterized in Section 17.5.6, are positive in direction and beneficial in nature. As such, considering the conditions regarding the need to complete a cumulative effects assessment as described above, a full cumulative effects assessment is not warranted for the economic conditions VC. Nevertheless, the following provides a brief description of the potential positive economic effects of the Project that are expected to result in relation to other similar present or future projects that are currently in operation or could occur in the Economic Conditions RSA and LSA.

As presented in Section 17.5.6, the Project is expected to result in the following positive residual effects:

- Increase in employment opportunities and income in the Economic Conditions LSA and RSA;
- Contribution to the regional and local economies; and
- Increased payment to government through taxes and royalty payments.

The Project is expected to contribute to the continuation of the coal mining industry in the Elk Valley, which is a main economic driver for the communities of Elkford and Sparwood. The Project's positive residual economic effects would combine with the economic effects of other present and future mining projects in the Economic Conditions LSA and RSA.

Present coal mines in the Elk Valley are all operated by Teck and include Elkview Operations, Fording River Operations, Greenhills Operations, and Line Creek Operations. These active coal mines operated by Teck employ about 3,000 people. In addition to projects operated by Teck, there are other existing mining projects within the RDEK that are expected to overlap temporally and spatially with the Project (e.g., Kootenay West Mine, Marten Lake Phosphate Exploration Project, etc.).

There are multiple proposed mining projects and activities, which could occur in the reasonably foreseeable future and interact cumulatively with the economic impacts of the Project. Within the Elk Valley, these include the Michel Coal Project, the Bingay Main Project, and Teck's proposed Fording River Extension Project. In addition to Teck projects, the Tent Mountain Mine and the Elan Hard Coking Coal

Project are located near Crownest Pass, Alberta and could have an economic impact on communities such as Sparwood.

The Project, as well as the above present and reasonably foreseeable future mining projects, are expected to cumulatively contribute to economic conditions in the Economic Conditions LSA and RSA, compounding the economic benefits associated with the Project. The overall increased economic activity would further enhance employment, income, and training opportunities, as well as benefits to local and regional economies and government finances.

The Project is situated within an existing cluster of coal mines and would contribute to the continuation of the mining industry and associated economic benefits both within the Economic Conditions LSA and RSA. Overall, it is anticipated that the regional and local economic systems will continue to adapt and respond to the increased economic opportunities and benefits associated with the Project, as well as other present and future projects that may develop and operate in the timeline of the Project.

17.7 Follow-up Strategy

In the absence of potential residual adverse economic effects, and subsequently a cumulative effects assessment, a formal follow-up program is not required for the economic conditions VC; however, as previously noted in Section 17.5.5, there are a number of recommended initiatives for NWP to implement, including:

- Develop and implement a Community Awareness and Involvement Plan that would include employment and training related notices;
- Building upon existing partnerships with the local Chamber of Commerce and other economic development organizations;
- Ongoing engagement of local Indigenous communities to receive their input on how to increase participation of Indigenous people in the workforce, development of an appropriate program for this, and monitoring of the program regarding its effectiveness;
- Continue to work with Fernie Pride to receive input on how to achieve diversity and inclusiveness objectives at the mine;
- Work with local childcare service providers to explore how to improve and support required childcare facilities in the local communities (to support local hiring);
- Discuss with the local municipalities the need for and form of a socio-economic monitoring program, which could include participating in existing monitoring programs related to the mining industry in the Elk Valley; and
- Monitor employee in-migration that may be attracted to the area because of the Project and possible implications of this (e.g., increase in demand of local services).

17.8 Summary and Conclusions

As a result of this assessment the Project is not expected to result in adverse economic effects or adverse cumulative effects. The Project is expected to result in positive economic outcomes for employment, income, the regional and local economies, and government finances. These positive outcomes are to be enhanced through initiatives such as training programs to maximize the hiring of local workers and from Indigenous communities. Relative to existing conditions, these positive effects are expected to occur

during all Project phases, with the primary economic benefits occurring during Construction Planning, Construction, and Pre-Production, and Operations, which together are expected to occur over an 18 year period. During the Reclamation and Closure stage, spending can be expected to slow, reducing the positive economic effects relative to the previous Project stages.

17.9 References

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