

Appendix 17-A

Socio-Economic Baseline Report



NWP COAL CANADA LTD

Socio-Economic Baseline Report

Crown Mountain Coking Coal Project

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Acronyms and Abbreviations

AIR	Application Information Requirements
BC EAO	British Columbia Environmental Assessment Office
CEAA	<i>Canadian Environmental Assessment Act</i>
EA	Environmental Assessment
FTE	Full Time Equivalent
EMS	Emergency Management Services
GDP	Gross Domestic Product
Km	Kilometre
LSA	Local Study Area
MLS	Multiple Listings Service
NHS	National Household Survey
RSA	Regional Study Area

1.0 Introduction

1.1 Overview

NWP Coal Canada Ltd (NWP) is proposing to develop the Crown Mountain Coking Coal Project (the Project), an open pit metallurgical coal mine located in the Elk Valley coal field in the East Kootenay Region of south eastern British Columbia .The Project comprises ten coal licences, covering a total area of approximately 5,630 hectares (ha), referred to as the “Project property”.

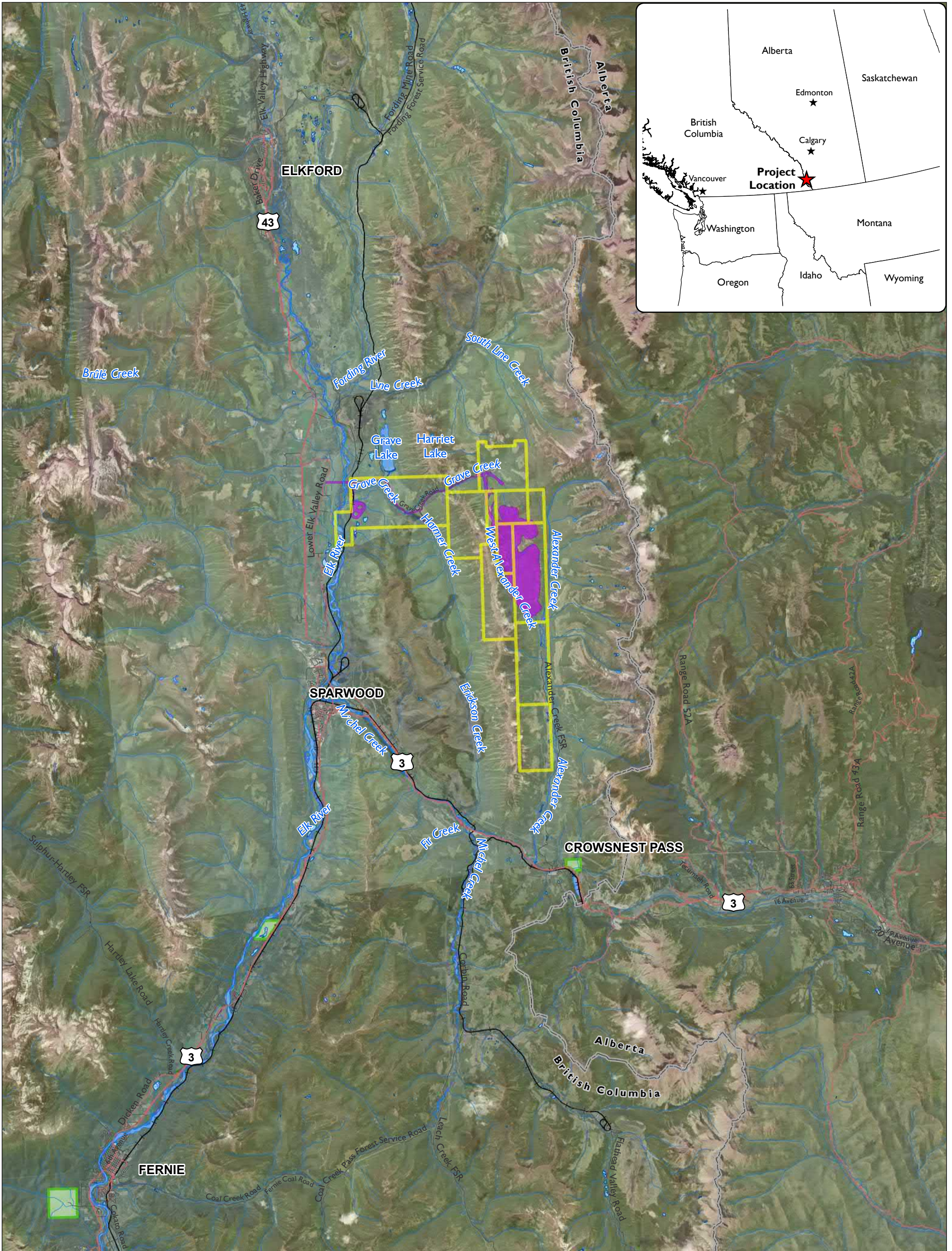
The Project is located between several existing metallurgical coal mines in the Elk Valley, the nearest being Teck Coal Limited’s (Teck) Elkview Operations (8 kilometres [km] to the southwest) and Line Creek Operations (12 km to the north). The Elk Valley and Crowsnest coal fields are home to 5 of Canada’s 23 producing coal mines. The coal mines in the area produce over 21 million tonnes per annum of export quality metallurgical and thermal coal and represent over 70% of Canada’s total coal exports annually, making the Elk Valley coal field the most productive in the country. Exploration activities have indicated that the coal at the Project site is typical of coking coals produced from existing mines in the Elk Valley. The Project is expected to produce approximately 10,150 tonnes per day (tpd) and up to 4.0 million run-of-mine tonnes per year for 15 years. The high quality metallurgical coal would be transported via railway to coastal BC, where it would be shipped overseas to be used in steelmaking.

The centre of the Project’s property (i.e., coal licences) is located approximately 12 km northeast of the District Municipality of Sparwood (Sparwood) at 114°43.6’W and 49°48.4’N. The site is currently not within an organized municipality. By road, the Project is situated approximately 30 km from Sparwood. The Project is accessed by several local roads, including Grave Creek Road in the northwest and Alexander Creek Road from the south.

If approved, the proposed Project would create a new coal mine within the Elk Valley, influencing the local socio-economy, particularly the communities of Sparwood, Elkford, Crowsnest Pass, and Fernie. The high-quality metallurgical coal would be transported via railway to the Port of Vancouver and subsequently shipped overseas for use in steelmaking.

Key mine components include, but are not limited to:

- Surface extraction areas (3 pits – north pit, east pit, and south pit);
- Waste rock management areas;
- Plant area (includes raw coal stockpile area, a processing plant, shops, and offices);
- Clean coal transportation route (via an overland conveyor and haul road);
- Rail loadout facility and rail siding;
- Power supply;
- Natural gas supply;



Crown Mountain Coking Coal Project

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Project Location and Footprint

Figure 1

- LEGEND**
- Project Footprint
 - Coal Licences
 - Highways
 - Arterial Roads
 - Local/Resource Roads
 - Railway (Canadian Pacific)
 - Watercourse
 - Waterbody
 - Wetland
 - Provincial Park
 - BC/Alberta Border

0 5 10 km

SCALE 1:200,000

MAP DRAWING INFORMATION: Data Provided by Province of British Columbia, NWP Coal Canada Ltd., Dillon Consulting Limited

MAP CREATED BY: RBB
 MAP CHECKED BY: DM
 MAP PROJECTION: NAD 1983 UTM Zone 11N



PROJECT: 12-6231
 STATUS: FINAL
 DATE: 2020-12-17

- Explosives storage;
- Fuel storage;
- Sewage treatment; and
- Water supply.

The Project is subject to both the *Canadian Environmental Assessment Act 2012* and the *British Columbia Environmental Assessment Act 2002*. Characterization of baseline socio-economic conditions is required to assess potential effects on the social and economic Valued Component as a result of Project activities. The purpose of the socio-economic baseline study is to describe the existing socio-economic conditions within the Project study area, which can ultimately serve as the basis for which potential impacts related to the Project activities can be identified and evaluated.

This report is organized as follows:

- **Section 2.0** describes the study boundaries;
- **Section 3.0** presents the methods used for the baseline study;
- **Section 4.0** presents a description of the socio-economic baseline conditions;
- **Section 5.0** provides a summary of socio-economic baseline conditions;
- **Section 6.0** presents references cited in this report; and
- **Section 7.0** provides a glossary of terms used in this report.

1.2 Purpose

The socio-economic baseline report describes the existing social, and economic (referred to frequently as the “socio-economic”) environment in the region, and of the communities in the Project-affected area. The description of the existing (or baseline) environment provides the basis for determining potential changes to socio-economic conditions in the study area as a result of the proposed Project. Data for this baseline report was collected from 2019 to mid-2020. As such, the baseline conditions described in this report should be viewed as a pre COVID-19 conditions. Because of the pandemic, there could be future changes to the socio-economic environment described in this report.

Information presented in this baseline report will be used to:

- Identify potential effects of Project construction and operations on the current social and economic conditions;
- Determine suitable mitigation and benefit enhancement measures;
- Identify residual adverse effects after mitigation; and
- Evaluate the significance of residual adverse effects once mitigations have been taken into account.

1.3 Scope

This report describes current socio-economic baseline conditions and trends at the regional and local level with a focus on:

- Population and Demographics;
- Regional Economy and Local Business;
- Economic Development;
- Government Finances (Municipal and Provincial);
- Employment and Income;
- Labour Force;
- Education Facilities and Attainment;
- Housing and Accommodations;
- Community Services;
- Community Health and Well-Being;
- Community Infrastructure; and
- Transportation.

2.0 Study Boundaries

2.1 Temporal Boundaries

The socio-economic assessment, which is based on this report, is bounded by the three temporal phases of the Project. The assessment will consider:

- **Construction and Pre-Production** – Period from the start of construction to the beginning of operation; anticipated to begin in 2022 and be 19 months in duration.
- **Operations** – Period from operation of the site and production extending until closure, including maintenance activities associated with the site; anticipated to begin in 2023 or 2024 and extend 15 years.
- **Reclamation and Closure** – Encompasses the execution of the closure plan for the site and reclamation; anticipated between 2039 and 2047 and to occur over 2 years.

2.2 Study Areas

The study areas were determined based on the proximity of the Project to adjacent communities and the potential for Project effects on the existing socio-economic environment. The spatial extent of the socio-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 also in 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);
- Yaqaan Nukiy (Lower Kootenay Indian Band); and
- ʔakinkumʔasnuqʔit (Tobacco Plains Indian Band).

Additional Indigenous communities may also be affected by the Project and are considered in the assessment of effects:

- Blood Tribe/Kainai First Nation;
- Piikani Nation;
- Siksikda Nation;
- Tsuut'ina Nation;
- Metis Nation of Alberta – Region 3;
- Shuswap Indian Band;

- Stoney Nakoda Nation; and
- Metis Nation of BC.

Indigenous interests are captured in the environmental assessment application which describes the socio-economic environment of these Indigenous communities.

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 1,300 ha and is positioned approximately 12 km northeast of Sparwood and approximately 5 km west of the provincial boundary between B.C. and Alberta.

2.2.1 Regional Study Areas

The Regional Study Area (RSA) is the regional area within which direct and indirect effects¹ 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.

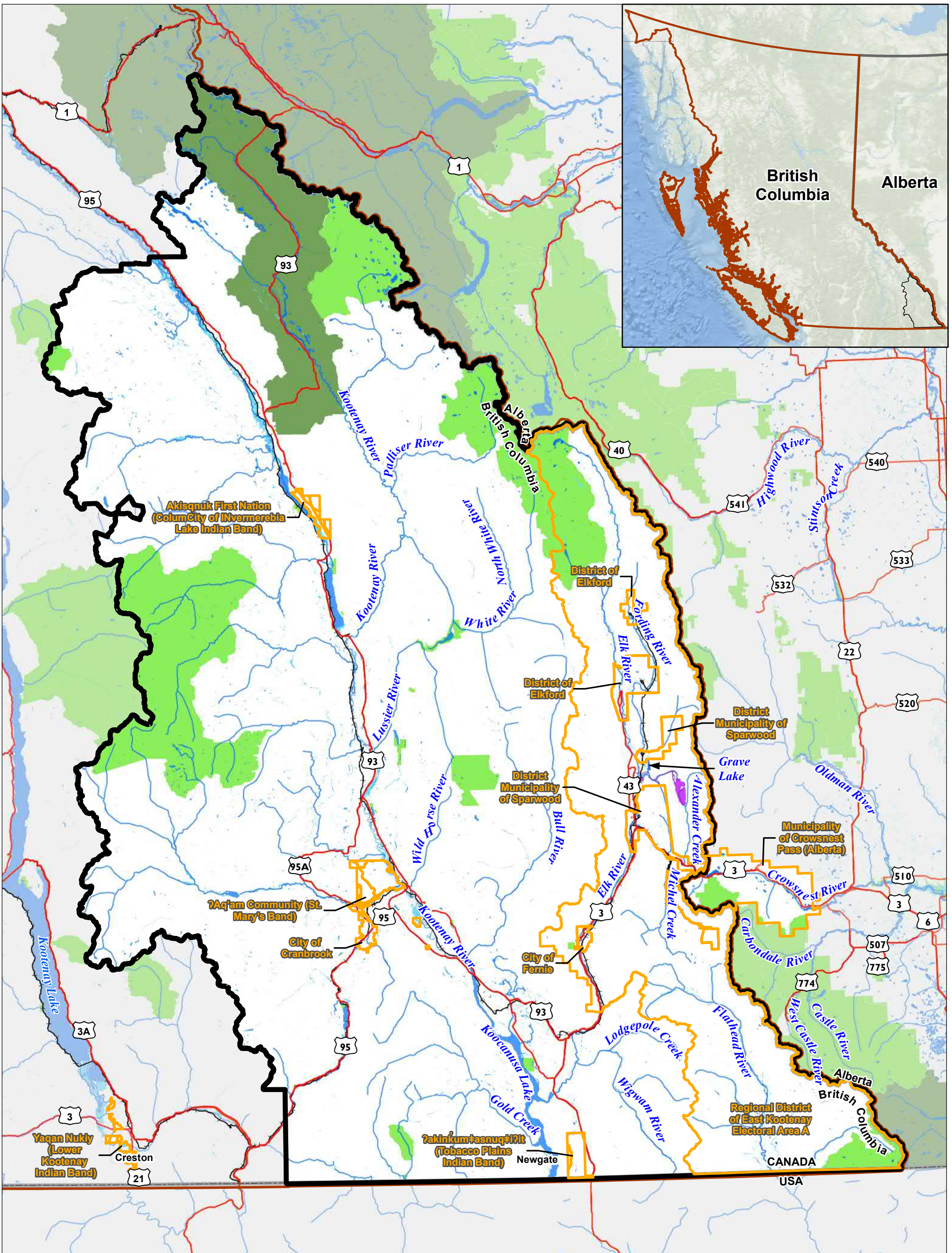
2.2.1.1 Economic RSA

The economic RSA encompasses the Regional District of East Kootenay (RDEK) and the Province of British Columbia (BC) (**Figure 2**). 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.

2.2.1.2 Social RSA

The social RSA incorporates RDEK for describing social baseline conditions (**Figure 2**). It is anticipated that additional human resources, supplies, and services for the Project may be drawn from the RDEK. The RDEK provides local government services to rural residents in unincorporated areas, provides representation for rural residents on regional issues, and works with the local municipalities to provide services within urban areas. The RDEK provides services to areas outside of municipalities, and works with municipalities and electoral areas to ensure the provision of shared services (e.g., land use planning, fire protection, solid waste and recycling, etc.) (Regional District of East Kootenay [RDEK], 2019a).

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).



Crown Mountain Coking Coal Project

Socio-Economic Baseline Report Economic and Social Regional and Local Study Areas Figure 2

LEGEND

- Economic Regional Study Area
- Social Regional Study Area
- Economic/Social Local Study Area
- Project Footprint
- National Park
- Provincial Park/Protected Area
- Waterbody
- Wetland
- Watercourse
- Highways
- +— Railway
- BC/Alberta Border



SCALE 1:835,000

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: RBB
MAP CHECKED BY: DM
MAP PROJECTION: NAD 1983 UTM Zone 11N



PROJECT: 12-6231
STATUS: FINAL
DATE: 2020-12-17

2.2.2 Local Study Areas

The 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 and social LSAs were determined based on the extent of potential changes, as a result of the Project, specific to each VC (**Figure 2**). The social LSA and economic LSA encompass the same area.

There is potential for communities in the LSA to experience Project-related direct and indirect effects in relation to population change, employment, business opportunities, government revenues, housing, infrastructure, and emergency services.

2.2.2.1 Economic LSA and Social LSA

The economic LSA and social LSA includes the following areas/communities in proximity to the Project location:

- District Municipality of Sparwood;
- District of Elkford;
- City of Fernie;
- City of Cranbrook;
- Municipality of Crowsnest Pass (Alberta);
- Regional District of East Kootenay Area A; and
- Ktunaxa Nation:
 - ʔAkisqʔnuk First Nation (Columbia Lake Indian Band);
 - ʔAqʔam Community (St. Mary's Band);
 - Yaqaᑎ Nukiy (Lower Kootenay Indian Band); and
 - ʔakinkumʔasnuqʔiʔit (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 social and economic environments of these communities is 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 the residence for workers that commute to British Columbia mines for employment. Additionally, Crowsnest Pass itself is a heavily used thoroughfare linking communities between southeastern BC and southwestern Alberta seeking access to services and attributes in both areas (e.g., educational facilities located in Lethbridge, Alberta accessed by BC residents; recreational areas located in Fernie, BC frequented by Alberta residents).

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

3.0 Methodology

Data and information collection for the socio-economic baseline 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.

3.1 Secondary Research

The main source of socio-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, education level of the population, and housing.

Baseline information was also collected from the following sources:

- BC Stats;
- Statistics Canada;
- RDEK publications;
- Municipal studies and reports;
- Provincial and national government studies and reports;
- Indigenous Services Canada (ISC);
- Private sector and professional association reports;
- Internet sites;
- Internet publications;
- Academic research; and
- Completed environmental assessments and related baseline studies for other projects situated in close proximity to the Project.

Table 1 below provides a list of areas of interest used for baseline conditions characterization, and their sources. Areas of interest provide the basis for defining a robust socio-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 assessment of impacts on social and economic conditions.

Table 1: Socio-Economic Research Sources

Topic	Areas of Interest	Secondary Sources
Population & Demographics	<ul style="list-style-type: none"> Population Demographics Migration 	<ul style="list-style-type: none"> Canada Census (2006, 2011, 2016) Statscan Aboriginal Population Profile (2006, 2011, 2016) BC Stats Regional District of East Kootenay Municipal websites
Regional Economy	<ul style="list-style-type: none"> Economic Diversity Businesses Sector profiles 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Economic Planning 	<ul style="list-style-type: none"> Regional Planning Municipal Planning
Government Finances	<ul style="list-style-type: none"> Expenditure Taxation 	<ul style="list-style-type: none"> Municipal Financial Statements
Employment and Income	<ul style="list-style-type: none"> Income Inequality Employment and Participation 	<ul style="list-style-type: none"> Canada Census (2006, 2011, 2016) Provincial Government Websites Academic Literature Web-based Sources
Labour Force	<ul style="list-style-type: none"> Labour Supply and Demand Labour Distribution, by sector 	<ul style="list-style-type: none"> Canada Census (2006, 2011, 2016) Provincial Government Websites
Education	<ul style="list-style-type: none"> Facilities Levels of Attainment Training Programs 	<ul style="list-style-type: none"> Canada Census (2006, 2011, 2016) Post-secondary facility websites (e.g., College of the Rockies) School districts Municipal websites
Housing	<ul style="list-style-type: none"> Permanent Accommodation Temporary Accommodation Seasonal Accommodation 	<ul style="list-style-type: none"> Canada Census (2006, 2011, 2016) Provincial Government Websites Academic Literature Web-based Sources
Social and Community Services	<ul style="list-style-type: none"> Health Services Ambulance Services Fire and Emergency Services Police and Protective Services Childcare Services Recreation Services 	<ul style="list-style-type: none"> BC Stats BC Ministry of Health Municipal websites
Community Health and Well-Being	<ul style="list-style-type: none"> Community Well-being Prevalence of substance misuse Available community and support services and networks 	<ul style="list-style-type: none"> BC Stats BC Ministry of Health Interior Health Authority

Topic	Areas of Interest	Secondary Sources
Community Infrastructure	<ul style="list-style-type: none"> • Water • Waste Water • Solid Waste • Power • Gas 	<ul style="list-style-type: none"> • Municipal Websites • Service Provider Websites • Web-based Sources
Transportation	<ul style="list-style-type: none"> • Airports • Roads • Rail 	<ul style="list-style-type: none"> • Ministry of Transportation • Web-based Sources

3.2 Primary Research

Primary research was conducted as part of the socio-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 relevant interest groups. The purpose of the socio-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**.

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 LSA and social LSA. Information from stakeholders has been integrated throughout the socio-economic baseline assessment where input best fit in the socio-economic profile of each community.

3.3 Data Challenges

The most recent census data available for use in the socio-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 of 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 social and economic LSAs. These communities may not have publicly available data on facets of the socio-economy such as community services and infrastructure.

Sensitive data topics related to community well-being and health have limited secondary data available. Efforts were made through the primary research program to gather additional information to further understand the community health and well-being in the social LSA; however, in some cases, stakeholders were unable to participate. Despite gaps, sufficient information is available to understand the current state of health and well-being in social LSA communities.

4.0

Description of Existing Socio-Economic Environment

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 BC 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 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. In 2017, BC's coal exports were worth \$6.5 billion. Coal is BC's largest single export commodity (Government of British Columbia [Government of BC], 2018). In 2017, 26,005 kilotonnes of coal were mined in BC, and provided 4,745 direct exploration and mining employment jobs. Mineral refining and smelting as well as downstream mineral processing provided an additional 24,805 jobs in the province. The average annual salary and benefits for the BC Mining industry were \$116,000 in 2017 (Government of BC, 2018).

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 River. In the last 20 years, these fields have produced more coal than the rest of BC's coalfields combined (Government of BC, 2018).

Coal mining has played a significant role in the modern history and economy of the Elk Valley and the Regional District of East Kootenay. 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 BC, 2018).

4.1 Setting

4.1.1 Regional District of East Kootenay

The economic RSA and social RSA (see **Figure 2**) include the RDEK, which is located in the southeast corner of the Province of British Columbia, along the western ridge of the Rocky Mountain Trench. The region is bordered by the Province of Alberta to the east, the state of Montana to the south, the Purcell

Mountains and Regional District of Central Kootenay to the west, and the Columbia Shuswap Regional District to the North.

The RDEK is 28,244.3 km² in size which represents 3.2% of the Province's land base. According to the RDEK's regional profile, 30% of the region's population resides in rural or unincorporated areas and 70% within the incorporated communities (RDEK, 2014a).

The RDEK is divided into three distinct subregions (i.e., Columbia Valley, Central, and Elk Valley) (RDEK, 2014a), and has six Electoral Areas (A, B, C, E, F and G) (RDEK, 2014a; RDEK, 2019a). The Columbia Valley subregion encompasses electoral areas F and G, and includes the municipalities of Radium Hot Springs, Invermere and Canal Flats, the unincorporated communities of Spillimacheen, Brisco, Edgewater, and Fairmont Hot Springs. The Central subregion is comprised of electoral areas B, C and E, and includes the City of Kimberley and Cranbrook, and the unincorporated communities of Meadowbrook, Ta Ta Creek, Wasa, Moyie, Monroe Lake, Green Bay, Lumberton, Wardner, Jaffray, Tie Lake, Rosen Lake, Baynes Lake, Elko and Grasmere. The Elk Valley subregion is made up of RDEK electoral area A, and includes the City of Fernie, as well as the districts of Elkford and Sparwood, which are the major settlement areas in the regional district. This subregion also includes the communities of Hosmer and the Dickens Road area (RDEK, 2014a).

4.1.2 Communities in the Economic LSA and Social LSA

As defined in **Section 2.2.2.1**, the following communities are included as part of the economic LSA and social LSA (**Figure 2**):

- District Municipality of Sparwood;
- District of Elkford;
- City of Fernie;
- City of Cranbrook;
- Municipality of Crowsnest Pass (Alberta); and
- Ktunaxa Nation:
 - ʔAkisq'nuk First Nation (Columbia Lake Indian Band);
 - ʔAq'am Community (St. Mary's Band);
 - Yaqan Nukiy (Lower Kootenay Indian Band); and
 - ʔakinkumʔasnuqʔiʔit (Tobacco Plains Indian Band).

The District Municipality of Sparwood is located in the Elk Valley at the junction of Highway 3 and Highway 43 in the southeastern corner of BC, encompassing an area of approximately 192 km². Sparwood is the closest community to the Project. The town site is situated approximately 13 km to the south and west of the project footprint. The District Municipality of Sparwood is an amalgamation of five former coal mining communities brought together in the 1960s. Sparwood has a primarily resource-based economy with five metallurgical coal mines in close proximity to the community (District of Sparwood, 2016a).

Elkford was initially established in 1971 to provide miners employed with Fording Coal, now Teck Coal Limited (Teck), with a place to reside. Since then, the District of Elkford continues to have strong economic and social connection to the mining industry (District of Elkford, 2019a). The community is located on Highway 43 in the BC Rocky Mountains, 34 km north of Sparwood on Highway 3, and approximately 25 km northwest of the Project footprint. The District of Elkford is situated at the junction of the Elk River and Boivin Creek, marking the end of Highway 43 northbound, and is the highest in elevation of any community in British Columbia at 1,300 m above sea level (District of Elkford, 2019b). The District of Elkford has an incorporated area of nearly 102 km², and is situated within the RDEK's Electoral Area A. By highway, the communities of Elkford and Sparwood are about the same distance from the project site.

The City of Fernie is situated among the mountains of the Elk Valley in the southeastern corner of B.C, approximately 31 km south of Sparwood and about 66 km southwest of the Project. At an elevation of 1,000 metres, Fernie has a land base of roughly 14 km². Incorporated as a municipality in 1904, Fernie was born through the growing coal mining sector and the establishment of the Canadian Pacific Railroad in the community (Tourism Fernie, 2019a). Fernie boasts a robust and prominent recreation and tourism sector, with the 'world-class' Fernie Alpine Resort offering a variety of winter (downhill skiing and snowboarding, cross-country skiing, snowshoeing) and summer (mountain biking, hiking) activities just minutes away from the City centre (Fernie Alpine Resort, 2019).

The City of Cranbrook is located in the East Kootenays and considered the largest urban centre in southeastern BC. It is also recognized as the major retail centre of the RDEK, and is home to the East Kootenay Regional Hospital (RDEK, 2014a). Although Cranbrook is located approximately 160 km southwest of the Project, it is included in the economic LSA and social LSA communities due to its importance as a large regional centre. The City is situated at an elevation of approximately 926 m above sea level, encompassing a total land area of 31.95 km² (City of Cranbrook, 2019a). Cranbrook's skyline is dominated by the Steeples Mountain Range and Fisher Peak, with the Rocky Mountains to the east and the Purcell Mountains to the west. Cranbrook is a regional transportation centre, with one interprovincial and two international highways converging on the City, and the Canadian Rockies International Airport within 10 km of the city limits.

The Municipality of Crowsnest Pass is located in the southwest corner of Alberta adjacent to the BC-Alberta provincial border and is located approximately 55 km southeast of the Project footprint (at Crowsnest, AB). Crowsnest Pass covers an area of roughly 371 km². Crowsnest Pass itself is a 32-km long corridor located in the valley of the Crowsnest River through the Rocky Mountains extending from Elko, British Columbia to Lundbreck, Alberta. Highway 3 connects various Crowsnest Pass communities along the corridor as it roughly follows the path of the Crowsnest River. Settlement within the Crowsnest Pass and the establishment of five communities (Coleman, Blairemore, Bellevue, Hillcrest and Frank) was initially spurred to accommodate a thriving mining industry and the establishment of Canadian Pacific Railway (Crowsnest Heritage Initiative, 2019). Crowsnest Pass continues to be residence to those that

work in BC mines (Alberta Southwest, 2019a). The Municipality of Crowsnest Pass was established in 1979 through the consolidation of the five population centres along Highway 3 (Alberta Southwest, 2019b).

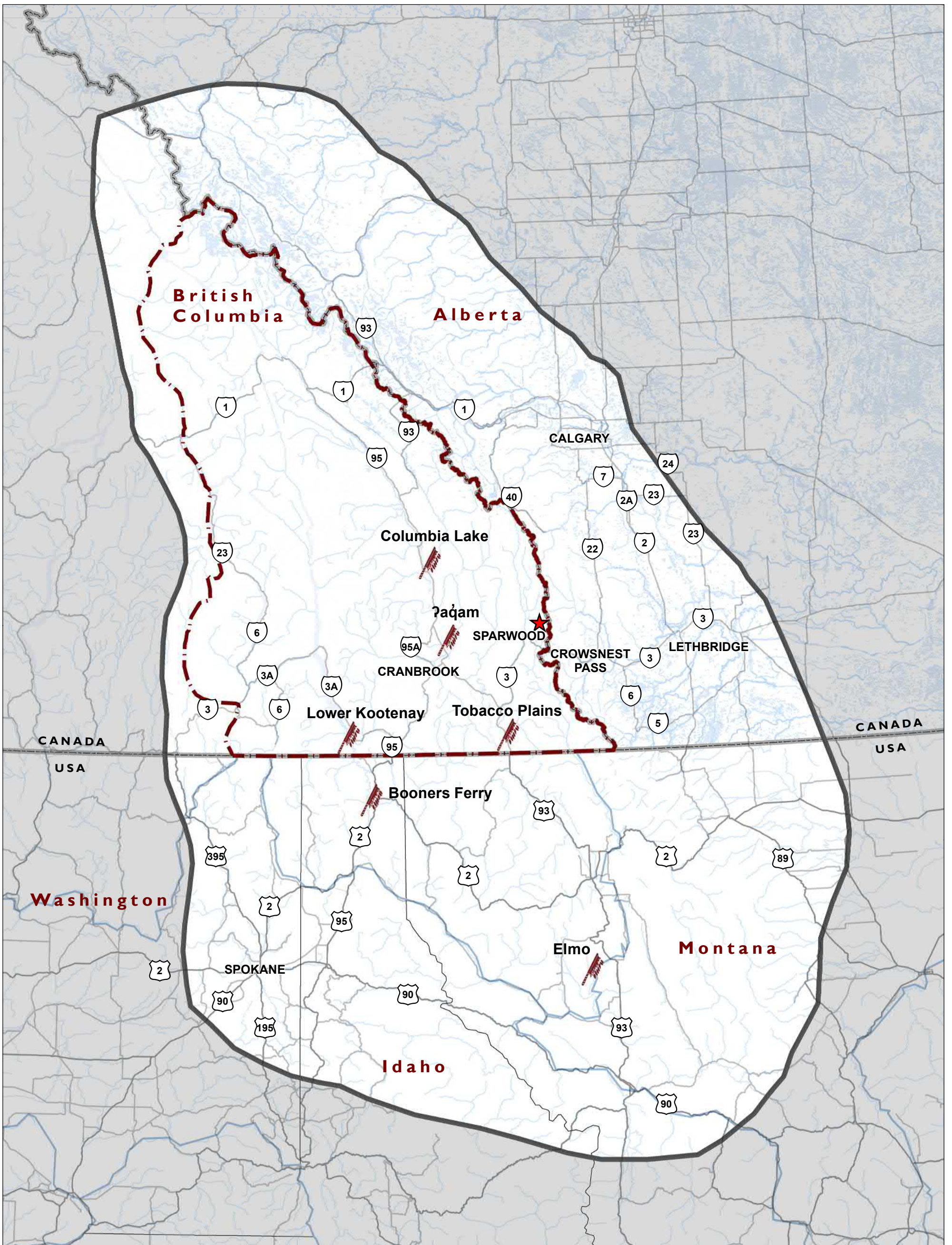
The Ktunaxa Nation traditional territory lies within the Kootenay region of southeastern British Columbia encompassing an area of approximately 70,000 km², which used to include portions of Alberta, as well as parts of Montana, Washington and Idaho in the United States (Ktunaxa Nation, 2019a). The Ktunaxa people have occupied this traditional territory for thousands of years, historically using the Elk Valley and Crowsnest Pass as a travel and trade route, accessing areas east of the Rocky Mountains to participate in bi-annual bison hunts (Tourism Fernie, 2019b). The extent of the Traditional Territory of the Ktunaxa Nation is illustrated in **Figure 3**. The present-day member bands of the Ktunaxa Nation were established following European settlement in the late 1800s and subsequent delineation of Indian Reserves (Ktunaxa Nation, 2019a).

The Ktunaxa Nation is comprised of six member bands: two in the United States [(?a?anqmi (Kootenai Tribe of Idaho in Bonners Ferry, Idaho), and kúpawic?nuk (Ksanka Band in Elmo, Montana)] and four in Canada (?Akisq'nuk First Nation, ?a?am, Ya?an Nukiy and ?akin?um?asnuq?i?it). Formerly the Ktunaxa/Kinbasket Tribal Council, the Ktunaxa Nation Council (KNC) was assembled to advance and develop the socio-economic and political interests of the member bands, which includes preserving and promoting traditional knowledge, language and culture; land, resource and social development; and self-government (Ktunaxa Nation, 2019b). The KNC represents and is responsible to the Chiefs and Council of the Ktunaxa Nation member bands, and is currently in the process of treaty negotiations (Stage 5) with the governments of BC and Canada (Ktunaxa Nation, 2019b; British Columbia, 2019a; British Columbia Treaty Commission, 2019). A Memorandum of Understanding between the Ktunaxa Nation, the BC provincial government and the federal government was signed in December 2018 (British Columbia, 2018a).

The four Canadian Ktunaxa Nation member bands are situated within the economic RSA and social RSA and included as part of the economic LSA and social LSA communities. Further information on each member band is provided below.

?Akisq'nuk First Nation (Columbia Lake Band)





The ?Akisq'nuk First Nation is led by a Chief and four Councillors, has a population of 99 individuals living on reserve lands (?Akisq'nuk First Nation, 2019; Indigenous and Northern Affairs Canada [INAC], 2019a), and is located about 268 km west and north of the Project footprint. The ?Akisq'nuk reserve lands cover an area of 32.7 km² (INAC, 2019b) and are situated along Highway 93/95 between Windermere to the north and Fairmont Hot Springs to the south. The western border of the reserve shares the shoreline of Lake Windermere for about 14 km, with the eastern extent of the lands abutting the Rocky Mountains.



Crown Mountain Coking Coal Project

**Socio-Economic Baseline Report
Ktunaxa Nation Traditional Territory
Figure 3**

LEGEND

-  Project Location
-  Ktunaxa Treaty Area
-  Ktunaxa Nation
-  Ktunaxa Traditional Territory
-  Waterbody
-  BC/Alberta Border
-  Major Road / Highway
-  Watercourse



SCALE 1:2,500,000

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, Ktunaxa Nation (2018),
ESRI Basedata

MAP CREATED BY: RBB
MAP CHECKED BY: DM
MAP PROJECTION: NAD 1983 UTM Zone 11N



PROJECT: 12-6231
STATUS: FINAL
DATE: 2020-12-18

ʔaᑭam (St Mary’s Band)

The ʔaᑭam community (St. Mary’s Band) is led by a Chief and four Councillors and has a population of 193 individuals (on reserve) (ʔAq’am First Nation, 2019b; INAC, 2019c). The ʔaᑭam community is located approximately 154 km west and south of the Project footprint and has the largest land base of the Ktunaxa Nation member bands in the economic LSA and social LSA, occupying 74.6 km² (INAC, 2019d). The reserve lands are located eight kilometres north of the City of Cranbrook within the East Kootenay region of southeastern British Columbia. The community is situated alongside the St. Mary’s River between the Rocky Mountains to the east and Purcell Mountains to the west. The reserve lands are in close proximity to Highways 3 and 93/95, as well as the Canadian Rockies International Airport.

Yaᑭan Nukiy (Lower Kootenay Band)

The Yaᑭan Nukiy or Lower Kootenay Band has a population of 111 individuals led by a Chief and four Councillors living on reserve lands which are located approximately 267 km south and west of the Project Footprint (INAC, 2019e; Lower Kootenay Band, 2019a). The community is currently situated on approximately 32.5 km² (INAC, 2019f) in the Creston Valley along the banks of the Kootenay River in southeastern British Columbia. The main community is located 4 km south of Creston just north of the USA border and in close proximity to Highways 3 and 21. The Lower Kootenay Band are said to be the original inhabitants of the Lower Kootenay Area, with the name Yaᑭan Nukiy literally meaning “where the rock stands” which refers to an important place in the Creston Valley (Lower Kootenay Band, 2019b).

ʔakinkumʔasnuᑭiʔit (Tobacco Plains Indian Band)

The Tobacco Plains Indian Band has a population of 78 individuals on reserve, and is governed by a Chief supported by four Councillors (INAC, 2019g; Tobacco Plains Indian Band, 2019a). The reserve lands are located in Grasmere, BC approximately 122 km south of the Project footprint, and covers an area of 50.7 km² (INAC, 2019h). The reserve shares its southern boundary with the Roosville Border Crossing to Montana, USA via Highway 93 (Tobacco Plains Indian Band, 2019b).

Further to the above First Nations, as previously noted, IAAC advised that following Indigenous communities may also be affected by the project. Descriptions of these communities will be included in the EIS document.

- Blood Tribe/Kainai First Nation
- Piikani Nation
- Siksikda Nation
- Tsuut’ina Nation
- Metis Nation of Alberta – Region 3

4.2 Population and Demographics

Population and demographics inform the social and economic framework within communities. The age and distribution of populations contribute to employment, labour force, community services and infrastructure use, and community well-being as well as other components of the socio-economy. As a result, changes to the population and demographics will impact the socio-economy of communities within the region. For the purposes of discussion throughout this section, it is assumed that the individuals aged 15 to 64 years of age (inclusive) represent the working-age population, and those aged 65 and older represent the retired-age (or senior) population.

4.2.1 Regional District of East Kootenay

The overall population in the RDEK has been steadily increasing; although, BC's population growth rate from 2006 to 2016 was 4% higher than that in the RDEK (**Table 2**). From 2011 through 2016 growth in the RDEK was 1% higher than the Province. From 2006 to 2016, RDEK's population rose steadily, with an increase in growth from 2011 and 2016 (6.6%) comparable to BC's population growth during the same period (5.6%). 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. Indigenous population in the RDEK has grown at a rate well beyond non-Indigenous populations consistent with national trends where Indigenous peoples are Canada's fastest growing demographic, proportionately (Kirkup, 2017).

Table 2: Economic RSA and Social RSA Population Profiles, 2006 – 2016

Year	RDEK	RDEK (Indigenous Population)	British Columbia
Population			
2016	60,439	4,710	4,648,055
2011	56,685	3,780	4,400,057
2006	55,485	3,425	4,113,487
% Change			
2006 – 2016	8.9%	37.5%	13.0%
<i>2011 - 2016</i>	<i>6.6%</i>	<i>24.6%</i>	<i>5.6%</i>
<i>2006 - 2011</i>	<i>2.2%</i>	<i>10.4%</i>	<i>7.0%</i>

Source: Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2018a

Table 3 presents demographic profiles from 2006 through 2016 for communities in the economic RSA and social RSA. The RDEK has a similar age cohort profile to the province. 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).

Table 3: Economic RSA and Social RSA Age Profiles, 2006 – 2016

	RDEK		RDEK (Indigenous Population)		British Columbia	
Age of Population (2016)						
Age Group	Count	Percent of Total Population	Count	Percent of Total Population	Count	Percent of Total Population
0-14	9,640	15.9%	1,315	27.9%	691,390	14.9%
15-64	38,965	64.5%	3,000	63.7%	3,107,685	66.9%
65+	11,840	19.6%	395	8.4%	848,985	18.3%
Median age	45.1	n/a	30.5	n/a	45.1	n/a
Age of Population (2011)						
Age Group	Count	Percent of Total Population	Count	Percent of Total Population	Count	Percent of Total Population
0-14	8,980	15.8%	n/a	n/a	677,360	15.4%
15-64	38,315	67.6%	n/a	n/a	3,033,975	69.0%
65+	9,395	16.6%	n/a	n/a	688,715	15.7%
Median age	44.5	n/a	n/a	n/a	41.9	n/a
Age of Population (2006)						
Age Group	Count	Percent of Total Population	Count	Percent of Total Population	Count	Percent of Total Population
0-14	9,115	16.4%	n/a	n/a	679,605	16.5%
15-64	38,095	68.6%	n/a	n/a	2,834,065	68.9%
65+	8,285	14.9%	n/a	n/a	599,800	14.6%
Median age	43.1	n/a	n/a	n/a	40.8	n/a

Source: Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2017a Statistics Canada, 2017b; Statistics Canada, 2018a

n/a = not available

Table 4 shows the change in population in age cohorts since 2006 for economic RSA and social RSA communities. 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. Both the RDEK and the Province have seen rapid expansions in the 65+ age cohort. This is due to overall demographics related to the ‘baby boomer’ cohort which has begun to age out of the working age population. Age profile information for the RDEK Indigenous population was not available for the 2006 or the 2011 Census.

Table 4: Percent Change per Age Profile Group, 2006 – 2016

Age	RDEK	British Columbia
% Change 2006 – 2016		
0 – 14	5.8%	1.7%
15-64	2.3%	9.7%
65+	42.9%	41.5%
% Change 2011 – 2016		
0 – 14	7.3%	2.1%
15-64	1.7%	2.4%
65+	26.0%	23.3%
% Change 2006 – 2011		
0 – 14	-1.5%	-0.3%
15-64	0.6%	7.1%
65+	13.4%	14.8%

Source: Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2017a; Statistics Canada, 2017b

Table 5 presents the population projections for the RDEK and BC from 2019 through 2028. Population projections suggest that overall, population growth will be minimal and over three times less in the RDEK (3.5%) than for BC (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 BC (35.5%). The senior demographic dependency ratio² 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).

² 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 5: Population Projections for the Regional District of East Kootenay and British Columbia, 2019-2028

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total	<i>RDEK</i>	58,511	58,745	58,990	59,237	59,482	59,706	59,914	60,130	60,346	60,544
	<i>BC</i>	4,922,000	4,980,100	5,039,700	5,100,300	5,161,400	5,221,900	5,282,100	5,343,400	5,405,400	5,466,800
By Age Group											
0-14	<i>RDEK</i>	8,693	8,741	8,706	8,704	8,665	8,588	8,518	8,428	8,403	8,390
	<i>BC</i>	709,100	716,500	724,000	730,800	737,200	743,600	750,500	758,400	766,500	773,900
15-64	<i>RDEK</i>	37,091	36,773	36,572	36,377	36,170	35,967	35,737	35,592	35,382	35,178
	<i>BC</i>	3,265,000	3,279,100	3,294,300	3,311,100	3,327,600	3,344,700	3,359,900	3,374,900	3,392,500	3,408,400
65+	<i>RDEK</i>	12,727	13,231	13,712	14,156	14,647	15,151	15,659	16,110	16,561	16,976
	<i>BC</i>	947,900	984,500	1,021,400	1,058,500	1,096,500	1,133,700	1,171,700	1,210,000	1,246,400	1,284,400
% 15-64	<i>RDEK</i>	63.4%	62.6%	62.0%	61.4%	60.8%	60.2%	59.7%	59.2%	58.6%	58.1%
	<i>BC</i>	66.3%	65.8%	65.4%	64.9%	64.5%	64.0%	63.6%	63.2%	62.8%	62.4%
% 65 and over	<i>RDEK</i>	21.8%	22.5%	23.2%	23.9%	24.6%	25.4%	26.1%	26.8%	27.4%	28.0%
	<i>BC</i>	19.3%	19.8%	20.3%	20.8%	21.2%	21.7%	22.2%	22.6%	23.1%	23.5%

Source: BC Stats, 2018a

The RDEK also has a large temporary or seasonal population. The large temporary and seasonal populations in the economic LSA and social 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.

4.2.2 Local Study Area

The population and age cohorts for the economic LSA and social LSA communities are presented in **Table 6** and **Table 7**, respectively.

Table 6: 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; Statistics Canada, 2007b; Statistics Canada, 2007c; Statistics Canada, 2007d; Statistics Canada, 2007e; Statistics Canada, 2007f; Statistics Canada, 2007g; Statistics Canada, 2012a; Statistics Canada, 2012b; Statistics Canada, 2012c; Statistics Canada, 2012d; Statistics Canada, 2012e; Statistics Canada, 2012f; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c; Statistics Canada, 2017d; Statistics Canada, 2017e; Statistics Canada, 2017f; Statistics Canada, 2017g

*Note – Includes rural population in RDEK Electoral A outside of the communities located within it.

Table 7: 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 (2011)							
0-14	650	510	645	3,245	690	n/a	8,980
15-64	2,585	1,835	3,250	12,610	3,690	n/a	38,315
65+	435	170	550	3,455	1,195	n/a	9,395
Median age	39.5	38.3	39.9	43.1	50.8	n/a	44.5
% 15-64	70.4%	73.0%	73.1%	65.3%	66.2%	n/a	67.6%
% 65 and over	11.9%	6.8%	12.4%	17.9%	21.4%	n/a	16.6%
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; Statistics Canada, 2007b; Statistics Canada, 2007c; Statistics Canada, 2007d; Statistics Canada, 2007e; Statistics Canada, 2007f; Statistics Canada, 2007g; Statistics Canada, 2012a; Statistics Canada, 2012b; Statistics Canada, 2012c; Statistics Canada, 2012d; Statistics Canada, 2012e; Statistics Canada, 2012f; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c; Statistics Canada, 2017d; Statistics Canada, 2017e; Statistics Canada, 2017f; Statistics Canada, 2017g

*Note – Includes rural population in RDEK Electoral A outside of the communities located within it.

District Municipality of Sparwood

A population increase of 4.6% occurred in Sparwood growing from 3,667 in 2006 to 3,784 in 2016. The working-age population in Sparwood experienced growth of close to 1% between 2006 and 2011, followed by a decline of nearly 3% over the next 5 years. 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 the coal mining operations for employment. According to the District Municipality of Sparwood, there has not been an observable / notable change in population with the

population appearing to remain static in recent years (District of Sparwood, pers. comm., 2020). There is also 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).

As of 2016, the median age of the population in the District Municipality of Sparwood was 39.8, which was 5.3 years lower than the RDEK. 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 who are often drawn from beyond the social 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).

District of Elkford

The District of Elkford had a population of 2,499 in 2016, representing a decrease in population of 1.0% since 2011, which followed a 2.4% increase between 2006 and 2011. Compared to the other economic LSA and social 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 economic LSA and social LSA communities (the other being the City of Fernie) where the median age of the population is decreasing: in 2016, the median age was 38.0, 7 years lower than that reported for the RDEK. 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. Despite the small changes in median age, Elkford is experiencing similar trends as Sparwood, likely due to similar events (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. Generally, there has 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 to seek other opportunities elsewhere (District of Elkford, pers. comm., 2020). Elkford has amenities to support a retiring/older residential population (e.g., medical clinic); however, some individuals in this age cohort are likely migrating to other communities with more support services/facilities. In general, Elkford is encouraging population growth to ensure long term sustainability, highlighting the need to provide support for youth and seniors, but not necessarily prioritizing any specific demographic (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 – 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 obvious or established as communities such as Fernie (District of Elkford, pers. comm., 2020).

City of Fernie

The City of Fernie had a population of 5,249 in 2016 and experienced the most population growth from 2006 to 2016 (24.5%) of the communities in the economic LSA and social LSA. Fernie was 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 the population growth may be due to the community amenities and previously seasonal residents moving to the community (Black, 2017). The City of Fernie has indicated that this growth in its population is supported as it is good for local businesses and bring 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 closely matches the assumption made for the temporary population in the RDEK as a whole (i.e., 32%).

According to Census data, Fernie experienced fluctuations in its populations for working-age individuals and the older adults from 2006 through 2016. Roughly 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).

The working population exhibited slight growth from 2006 to 2011 before falling by almost 6% between 2011 and 2016. The retirement age population fluctuated slightly, decreasing from 2006 to 2011 before rising again between 2011 and 2016. Like Elkford, the median age of the population in Fernie has steadily decreased since 2006, reported as 38.0 and over, 7 years lower than the RDEK in 2016. Fernie has also undergone a notable and steady increase in individuals under the age of 15 from 2006 through 2016. 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/issues with accessibility in the winter due to the snow and ice (City of Fernie, pers. comm., 2020).

City of Cranbrook

The City of Cranbrook is the largest municipality in southeastern BC based on population (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). The

median age for Cranbrook was slightly 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. 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 region and province.

Municipality of Crowsnest Pass

The population of the Municipality of Crowsnest Pass had a population of 5,589 in 2016. 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. The working-age population experienced fluctuations between 2006 and 2016, increasing slightly from 2006 through 2011, and declining between 2011 and 2016. According to the Municipality of Crowsnest Pass, there is a certain proportion of the population that is made up of a 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 amongst the economic LSA and social 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).

4.2.2.2 Indigenous Population

Table 8 presents population data for the four Ktunaxa Nation communities in the economic LSA and social 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, ʔaąam 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, ʔaąam, 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 8: Ktunaxa Nation Historical Population and Median Age Data

Ktunaxa Nation	ʔAkisq'nuk	ʔaqam	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
<i>Population change: 2001 to 2016²</i>	-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; Statistics Canada, 2007i; Statistics Canada, 2007j; Statistics Canada, 2007k; Statistics Canada, 2018e; Statistics Canada, 2018f; Statistics Canada, 2018g

n/a = not applicable

¹Note that 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.

4.3 Regional Economy and Local Business

Mining is the primary industry in the region with disproportionate employment shares relative to the Province. Sparwood and Elkford, the two economic LSA communities closest to the site, were established as mining communities. Currently, Teck has four³ coking coal mines operating within the Elk Valley region (British Columbia Mine Information, 2019; Teck Resources Ltd., 2019). As result, mining 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. New developments may also be placed on hold. 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 region.

Leakage is an issue for communities in the region. 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 operation (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

³ Teck's fifth operation in the region, Coal Mountain, was expected to conclude operations in the fourth quarter of 2017 (Teck Resources Ltd., 2019). It is assumed the closure has occurred or will occur prior to the construction and operation period of Crown Mountain.

site region for these workers. Therefore, workers often spend much of their income beyond the region 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 region 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).

4.3.1 Regional Study Area

The economic 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 local businesses and communities will be impacted by changes to the regional economy associated with the Project.

4.3.1.1 British Columbia

In recent years up to the COVID-19 pandemic in 2020, BC's economy has grown rapidly. This growth is expected to have slowed in 2018 to 2% GDP growth. Housing market corrections and moderation of consumer spending are expected to continue this slowdown into 2019. BC boasts healthy investment, strong labour markets and decent public finances, which should allow for growth in BC to remain above the national average over the next two years (Toronto-Dominion Bank, 2019). The slowdown can be, in part, attributed to the housing market slowdown in the Province. While household spending is slowing, it is likely to remain resilient as BC has the strongest labour markets in Canada (Toronto-Dominion Bank, 2019). Wage growth, which has been healthy, will receive a boost from increases in the minimum wage. The minimum wage growth 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. 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, BC has a strong economy with high investor confidence including in the resource sector as demonstrated by the advancement of LNG projects.

In 2017, the mining, quarrying, oil and gas sector accounted for nearly \$12 billion (or 5%) of BC's Gross Domestic Product (GDP) (**Table 9**). Copper, coal, zinc, silver, gold, lead and molybdenum are the primary minerals mined in the province. BC is Canada's largest producer of copper and steelmaking coal and the second largest producers of silver (Mining Association of British Columbia [Mining Association of BC], n.d.). According to the Mining Association of BC:

"The mining industry is a capital-intensive industry and BC mining companies work closely with mining supply companies throughout the province. From heavy equipment and industrial materials to transportation, environmental sciences and more, every job in the BC mining industry, supports two jobs in mining supply and services (Mining Association of BC, 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 9: 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

BC is projected to continue to grow through strengthening pacific ties, which is part of Canada's national strategy (WorkBC, 2019a). BC is anticipating to continue to attract investment throughout the province through strategic ties to Japan, China, Korea and India (WorkBC, 2019a). Industries expected to grow include natural resources, tech and green technology (WorkBC, 2019a).

4.3.1.2

Regional District of East Kootenay

The RDEK is, as an economy, very dependent on primary industry and resource development. Cranbrook, the largest centre in the region with a population of over 18,500, is the hub of activity (City of Cranbrook, 2019a). This is evidenced by the Hachman Index which measures economic diversity. Relative to BC, the RDEK has a Hachman Index value of 0.51 in 2016 suggesting the economy is over reliant on specific sectors, particularly mining. Further information on the Hachman Index and its calculation is provided in **Section 4.3.2**.

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, located approximately 29 km northeast of Elkford;
- Greenhills, located approximately eight km from Elkford, which includes two sites;
- Line Creek, located approximately 25 km north of Sparwood, which includes both the Horseshoe Ridge site and the Line Creek Extension; and

- Elkview Operations, located approximately three km east of Sparwood, which includes Elkview, Baldy Ridge Extension and Harmer Ridge sites.

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

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

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 December 31, 2001 (RDEK, 2014a). No metal mines currently operate in the region (Katay, 2017). Historically, gold mining played a significant role in the European settlement of the region. Placer mining has occurred in southeastern British Columbia 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 region, though activities haven't 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 Creek/Loop Ridge (North Coal Ltd.), Coal Mountain Phase II (on hold; Teck), and Bingay Creek (Centermount Coal Ltd.). There is also the Teck Castle Project which is a proposed extension of Teck's Fording River Project. An Industrial mineral project includes the Kootenay West Mine (Katay, 2017).

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 hectares (ha). Five major sawmills operate in the RDEK. The primary product is finished dimensioned lumber for the US housing market (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 m³ 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).

Agriculture

The agricultural sector remains an important economic driver in the region, 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 hectares 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).

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 BC, 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-\$100 per night (Destination BC, 2017). Visitors to the Kootenay Rockies were primarily from other parts of BC 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 region 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). Kimberly and Fernie within the economic RSA are specifically identified as tourism hubs. Kimberly was formerly a mining economy but has shifted to tourism since the closure of the Sullivan Mine (RDEK, 2014a).

Many economic LSA communities have identified tourism as a targeted growth sector, in particular Fernie (City of Fernie, 2014a).

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 1960's, no commercial production occurs in the region (British Columbia Oil and Gas Commission, 2011). The oil and gas sector has a minimal presence in the region 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).

Clean energy BC does not identify any large renewable projects within RDEK which may contribute to the regional economy (Clean Energy BC, 2019).

4.3.2 Local Study Area

While economy is primarily assessed at the regional level, the reliance of economic LSA communities on key regional sectors can be measured through economic diversity. The measurement of economic diversity will consider how reliant an economy is on certain sectors. Over reliance on sectors may make an economy more vulnerable to industry specific shocks such the 2015 commodities downturn (World Bank, 2016).

Economic Diversity is measured by the Hachman Index. The Hachman Index measures the diversity of an economy by measuring the mix of GDP or employment in a geographic area relative to larger geographic area which is considered well diversified (Benway & Gardner, 2017; Shaleen, 2017; Shuai, 2013). In this case, employment is used as the measure with British Columbia (or Alberta) as the diversified economy. The Hachman Index is calculated as:

$$Hachman\ Index = \frac{1}{\sum_j \left[\frac{EMP_{Community}}{EMP_{Province}} \times EMP_{Community} \right]}$$

Where:

- *EMP is the share of employment in a specific sector*
- *Community is the specific economic LSA community*
- *Province is the Province in which the economic LSA community is located*

The Hachman Index generates values between 0 and 1 with 1 representing a diversified community equal to that of the reference economy. A more diversified economy is more likely to be resilient to industry shocks which are common in resource based economies (Benway & Gardner, 2017; Shaleen, 2017; Shuai, 2013).

Table 10 shows the economic diversity of Economic LSA communities relative to British Columbia using the Hachman Index. Sparwood, Elkford, Fernie and the RDEK Electoral Area A within the Elk Valley 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 which 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 economic development priorities identified in **Section 4.4.2**.

Table 10: Economic Diversity of 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, 2007a; Statistics Canada, 2007b; Statistics Canada, 2007c; Statistics Canada, 2007d; Statistics Canada, 2007e; Statistics Canada, 2007f; Statistics Canada, 2007g; Statistics Canada, 2013a; Statistics Canada, 2013b; Statistics Canada, 2013c; Statistics Canada, 2013d; Statistics Canada, 2013e; Statistics Canada, 2013f; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c; Statistics Canada, 2017d; Statistics Canada, 2017e; Statistics Canada, 2017f; Statistics Canada, 2017g

Note:

1. Crowsnest Pass' economic diversity is measured relative to the Alberta economy
2. Data is 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.

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 4.3.2.1** provides descriptions of the local economies of communities in the economic LSA.

4.3.2.1

Local Economy and Businesses

As mining is the primary industry in the economic LSA, many of the businesses in the region 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.

District Municipality 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 region which employ approximately 4,000 people including 800 from Sparwood (District Municipality 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 Limited, and Emslie Gravel. Representatives and business organizations within the community noted mining has been an important economic contributor to the region (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 underserved sectors within the community (District of Sparwood, pers. comm., 2020).

Businesses within Sparwood that are identified as contributing to mining operations include Elk Valley Environmental (coal analysis); 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.

District of Elkford

Elkford was formed for miners at the Fording Coal Operations. While Elkford continues to have a strong economic and social connection to the mining industry, a number of trends are expected to have an influence on Elkford's future including:

- Modest expansion of community population with anticipated mine employment expansion;
- Significantly higher than provincial average income;
- Growth of the regional tourism industry; and
- (District of Elkford, 2010b).

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 supporting 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 including construction firms, environmental services firms, heavy equipment sales firms, and other contracting and repair service firms (District of Elkford, 2010a). These firms may provide specialized services supporting mining in the region. 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, it was identified global coal markets were 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 Wilderness area 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).

City of Fernie

Similar to Sparwood and Elkford, 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); however, Fernie is much more diversified than Elkford and Sparwood. The mining sector is expected to remain central to the Fernie economy while the tourism sector is expected to continue expanding (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 are a relatively large portion of tourism and real estate businesses in Fernie (Fernie Chamber of Commerce, 2017). Tourism Fernie identifies 26 lodges or other forms of accommodation supporting tourism in Fernie (Tourism Fernie, 2018). Accommodation in Fernie also commonly supports a variety of recreation activities for all season including skiing, hiking and biking (Tourism Fernie, 2018).

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), health care and transportation (Stetski, 2014). 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 LSA communities, Cranbrook does not have a large reliance on the mining sector with only 5% of the population employed in mining. 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 Skookumchuk Pulp Mill (Stetski, 2014).

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 Grassy Mountain Coal Project and employment in Teck's BC operations are important economic opportunities in the region (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).

4.3.2.2

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 First Nations including business interests.

Despite the presence of Teck in the region 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 make-up of the Ktunaxa Nation economy.

ʔAq'am First Nation

ʔAq'am owns and operates a Community development corporation, ʔAq'am Community Enterprises (British Columbia Assembly of First Nations [BC Assembly of First Nations], 2019c). ʔAq'am 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 (BC Assembly of First Nations, 2019c).

ʔAkisq'nuk 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 (BC 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).

Tobacco Plains Indian Band

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

Lower Kootenay Band

The Lower Kootenay First Nation 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 (BC Assembly of First Nations, 2019b).

4.4 Economic Development

Mining as a primary regional industry provides a variety of economic development challenges for communities in the region. As described in **Section 4.3**, mining is cyclical and has high potential for leakage based on the labour force requirements. These challenges are central to economic development planning in areas with a high portion of mining jobs and income. Economic planning often recognizes these challenges and attempts to address them. Economic development planning in the economic study areas occurs at the provincial, regional and local area. The Project has the potential to contribute to the development of local economies and will be considered as part of change to the regional economy.

4.4.1 Regional Study Area

Much of the economic development planning in economic study areas (affecting both the LSA and RSA) occurs at the regional level, including regional Indigenous economic development strategies. Information on regional economic planning undertaken by the Ktunaxa Nation is included in **Section 4.2.2** as Ktunaxa Nation is included as part of the economic LSA.

4.4.1.1 British Columbia

The most recent provincial mining development strategy is British Columbia Ministry of Energy and Mines' (BCMÉM) 2012 Mineral Exploration and Mining Strategy (British Columbia Ministry of Energy and Mines [BCMÉM], 2019). As part of the strategy, BCMÉM 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 BC's overall economic development (BCMÉM, 2012). As part of an ongoing sector strategy, BC aims to increase mineral exploration to maintain opportunities for future mining activity (BCMÉM, 2012). BCMÉM also views mining as an opportunity to improve the well-being of First Nations through benefit-sharing agreements (BCMÉM, 2012). To address these goals, BCMÉM 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 (BCMÉM, 2012).

BCMÉM utilizes these priorities as part of their strategy for sustainable mining development in the Province and maintaining mining's role as a key sector. To support the six goals, 29 action items were identified (BCMÉM, 2012). Action items focused on improving the regulatory system governing mining in BC to free up land for exploration, reduce duplication, develop best management practices and promote a business-friendly environment.

Most coal produced in BC is metallurgical coal used in steel production. This coal is often exported to Asia for urbanization in China, the southeast and India (BCMÉM, 2019). East Asian and Southeast Asian communities are seen as key markets for steelmaking coal production in BC as these countries have rapidly expanding economies requiring construction materials to accommodate urbanization, population growth and income growth.

4.4.1.2 Regional District of East Kootenay

The RDEK has a variety of regional economic development strategies encompassing the area or a subsection of the area through various organizations listed below. The RDEK does not provide an economic development function or service. The RDEK has facilitated economic development activities indirectly through the provision of planning services and infrastructure that benefit the regional economy (RDEK, 2014b).

4.4.1.3 Columbia Valley Community Economic Development Strategy

The communities of the Columbia Valley, via the Columbia Valley Community Economic Development Advisory Commission, are working together in a community economic development partnership and to work towards broader economic development objectives of the region 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.
- 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 this strategy with the support of other regional bodies (Watmough, 2017).

Community strengths identified include natural environment features and quality of life. 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 the primary expansion sector.

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

4.4.1.4

Columbia Basin Trust

The 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). The Columbia Basin Trust was created in 1995 by local residents, officials and representatives to create a legacy of social, economic and environmental well-being within the Columbia River Basin. The Columbia Basin Trust has a long-term mandate, development and planning expertise and financial resources to take action.

The Columbia Basin Trust will act as a leader, catalyst and investor in economic development initiatives. As result the Columbia Basin Trust will “lead and support efforts to advance economic growth, job creation and entrepreneurial opportunity for a prosperous and sustainable basin economy (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).

4.4.1.5 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 region (District of Sparwood, n.d.). The stated goal of the initiative is to:

“collaboratively pursue regional economic development projects and initiatives in the Elk Valley striving to expand opportunities for existing businesses, attract new ones and diversify the types of businesses. In addition, we aim to increase the number of permanent, full-time residents who spend their money locally thereby contributing to the region’s sustainability (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 Elk Valley approve its accommodation and amenities to attract business and investment to the region (Vann Struth Consulting Group Inc., 2013). Overall, the economic opportunity analysis has identified economic diversification pursuing a variety of sectors as desirable for the Elk Valley (Vann Struth Consulting Group Inc., 2013).

4.4.1.6 Community Futures East Kootenay

Community Futures East Kootenay promotes economic development and the creation of jobs and wealth in the east Kootenay region 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 they serve through projects or programs aimed at enhancing the local community (Community Future East Kootenay, 2019). These include contributing to other regional economic development initiatives such as the Elk Valley Economic Initiative or First Nation economic development planning (Community Future East Kootenay, 2019).

4.4.1.7 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, Metis 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.

4.4.2 Local Study Area

The economic LSA communities of Sparwood, Elkford, Cranbrook, Crowsnest Pass and Fernie and the surrounding region rely primarily on resource development. The RDEK Electoral Area A includes many of the economic LSA communities, including First Nations. Regional economic development initiatives encompassing RDEK Electoral Area A are captured in **Section 4.4.1**. Many communities within the economic LSA undertake their own economic development strategies while also contributing to regional economic development strategies.

4.4.2.1 Local Community Economic Development

Local communities in the economic LSA tend to be reliant on mining as their driving economic activity due to the resource rich nature of the economic LSA. Most communities tend to view mining as the primary economic driver and establish services to support mining. As result, these communities are more vulnerable to boom-and-bust cycles common with mining.

District Municipality of Sparwood

Sparwood currently does not have an economic development plan. Under their Corporate Strategic Plan, Sparwood has identified the need to develop an economic development plan (District of Sparwood, 2016b). Key economic development goals identified in the Corporate Strategic Plan and Official Community Plan include economic diversification (District of Sparwood, 2015a; District of Sparwood, 2015b). Sparwood is aiming to become a community that provides shops and services suitable to their industrial workforce recognizing the opportunity to attract additional local miners to the community (District of Sparwood, 2015b). Initiatives to accomplish this include:

- Encouraging business to locate in the downtown;
- Working with local business owners to improve aesthetics and make long term improvements to downtown;
- Supporting inter-community business networks in the Elk Valley to encourage business diversity; and
- Dedicating municipal resources to support local business development (District of Sparwood, 2015b).

A representative of Sparwood's Chamber of Commerce noted mining was a key demand driver for membership businesses (Sparwood Chamber of Commerce, pers. comm., 2020). Representatives from Sparwood noted the funding from mining provides a diversification opportunity to the community (District of Sparwood, pers. comm., 2020). The Sparwood Chamber of Commerce Representative also noted housing and childcare as key economic development challenges (District of Sparwood, pers. comm., 2020). Government representatives and the Sparwood Chamber of Commerce also noted leakage was an issue as shift schedules for mining result in a majority of earnings being spent beyond the community.

Sparwood also works with other communities as part of the Elk Valley Economic Initiative; Community Futures East Kootenay; Kootenay Rockies Innovation Council and the Columbia Basin Trust to enhance regional economic development.

District of Elkford

Elkford's economic development strategy focuses on the opportunities the community has identified as described in **Section 4.3.2.2**. Elkford is targeting investment in:

- Local retail and commercial services supporting population growth milestones;
- Amenities for migrants focused on residential property/commercial opportunities;
- Tourism service infrastructure; and
- Investments in large mountain-based tourism attractions and services such as timeshares, golf, and ski hills (District of Elkford, 2010b).

These targeted investments are driven towards attracting tourist and investors from urban environments seeking “the serenity, peace, solitude, and active lifestyle that is afforded, and affordable (District of Elkford, 2010b).” These tourists and investors are identified as prizing the wilderness aesthetic of Elkford which the community views as a competitive advantage (District of Elkford, 2010b).

Mining is a key determinant of economic activity in Elkford; however, the community is not undertaking specific activities to grow the community's role in the sector (District of Elkford, pers. comm., 2020). The Chamber of Commerce also noted the importance of mining for local business, housing and health care (Elkford Chamber of Commerce, pers. comm., 2020). Due to the presence of mining, and its high paying jobs, diversification is an issue for economic development in Elkford (District of Elkford, pers. comm., 2020). This can cause leakage within the community as business find it hard to operate sustainably. The Chamber of Commerce noted global market competitiveness of BC operations as key driver behind this issue.

Elkford also works with other communities as part of the Elk Valley Economic Initiative to enhance regional economic development.

City of Fernie

Fernie's economic development strategy focuses on making Fernie an attractive destination for new businesses and entrepreneurs. The strategy focuses on business retention, as well as investment in infrastructure and marketing of the city and region, in an effort to recruit new business (City of Fernie, 2014a).

Fernie has identified three key sectors to the economy: mining, forestry and tourism. The economic development strategy for Fernie focuses on tourism development. Fernie is active in promoting and enhancing the community's recreational amenities, maintaining a trail network connecting community

parks, the facilities such as the Aquatic Center, Community Parks, Golf Course, Ski Area, Elk River and the surrounding peaks. Fernie is undertaking upgrades to tourist facilities (City of Fernie, 2014c).

Mining is viewed as the key driver of economic development in Fernie playing an important role in economic activity, consumer spending, housing and pricing (City of Fernie, pers. comms., 2020). Mining has enhanced business offerings in Fernie in response to mine worker interests in outdoor recreation activities. The Chamber of Commerce also noted some new businesses within the community are operated by the spouses of mining sector employees (Fernie Chamber of Commerce, pers. comm., 2020). Mining also may cause some economic challenges in Fernie as the high demand to live in Fernie and high paying mining jobs may be contributing to high housing prices making it challenging for some individuals to live in the community (City of Fernie, pers. comms., 2020). Additionally, leakage was identified as a key issue within the community by government representatives. The Fernie Chamber of Commerce contradicts this assertion noting leakage is not an issue in their view. The Fernie Chamber of Commerce also noted labour shortages for small and medium enterprise are present within the community.

Fernie also works with other communities as part of the Elk Valley Economic Initiative to enhance regional economic development.

City of Cranbrook

The City of Cranbrook focuses its economic development strategy on attracting investment to the region and providing support to investors and entrepreneurs (City of Cranbrook, 2019b). On the municipal website, Cranbrook states it is committed to:

- Strengthening its role as a regional service centre;
- Growing new opportunities in the resource sector, including more value-added processing in the forestry and agricultural sectors;
- Stimulating further opportunities in the growing specialty manufacturing sector;
- Leveraging enhanced assets, such as the newly expanded international airport, and the expanded college and medical facilities;
- Stimulating more opportunities in the knowledge-based, technology and creative sectors through such actions as improved access to broadband (fibre optic) services;
- Leveraging new private residential development investments, with a projected growth of up to 5,000 units (10,000 new residents over the next 10 to 15 years); and
- Continuing to support entrepreneurial/niche business opportunities.

Cranbrook's most recent available economic development strategy was developed in 2009 (City of Cranbrook, 2019c). The 2010-2014 Economic Development Strategy identified 13 economic development strategies for Cranbrook including improving the business climate, adding fibre optic connection, revitalizing the downtown, improve air service from Calgary, increase affordable housing, attract commercial businesses, expand industrial sector, expand the airport, enhance destination

marketing, form a mining cluster, expand the multi modal transit hub, increase senior services and establish clean energy use (City of Cranbrook, 2009). These development strategies would enhance Cranbrook as a regional service hub for mining communities and developments as it would improve access and to the region and provide additional supporting services.

Municipality of Crowsnest Pass

Crowsnest Pass has an Economic Development Committee with 11 members, including two who are members of council. The mandate of the committee is included in the 2014 terms of reference approved by council (Municipality of Crowsnest Pass, 2019b). The terms of reference identifies the key strategic priorities as:

- Tourism;
- Marketing;
- New business opportunities – commercial and industrial; and
- Business attraction and retention (Municipality of Crowsnest Pass, 2014b).

Crowsnest Pass's most recent economic development plan was completed in 2011. Four strategies were identified for the community in this plan:

- People and community – focused on attracting new people to the community;
- Tourism, recreation, arts and culture – growth in these sectors to attract people to the community;
- Business and enterprise attraction – use partnerships with government business and industry to increase business enterprise; and
- Resident attraction – expand the population through growing core demographic groups (Municipality of Crowsnest Pass, 2011).

These strategies were reinforced in the 2014-2016 Business Plan where the economic development strategy focused on attracting people and businesses to increase the tax base (Municipality of Crowsnest Pass, 2014a).

The purpose these strategies is to focus on attracting residents to the community, particularly younger community members and increasing commercial tax revenue (Municipality of Crowsnest Pass, 2011). To execute these strategies, Crowsnest Pass established 29 actionable items. These action items included hiring and economic development officer, consolidating communities into a single municipality; develop a financial strategy for tourism; expand tourism assets and activities including the trail system; redevelop commercial and industrial areas; establish a centre of excellence in field studies; attract new development; enhance relationships with major employers including Teck and Devon; and enhance amenities and services (Municipality of Crowsnest Pass, 2011). The Municipality of Crowsnest Pass has noted growth is a key economic challenge for the community with aging infrastructure and unserved industrial land (Municipality of Crowsnest Pass, pers. comm. 2020). Leakage is viewed a key issue within

the community as shift work reduces the likelihood of workers living in the community (Municipality of Crowsnest Pass, pers. comm. 2020).

4.4.2.2 Indigenous Economic Development

Indigenous communities in the economic LSA undertake economic development as part of regional strategies and have their own economic development strategies. Self-sufficiency, natural resource development and sustainability are key areas of focus for all communities in the economic LSA. This section provides a summary of the economic development strategies for Ktunaxa Nation communities in the economic LSA.

Ktunaxa Nation

Ktunaxa Nation provides regional economic development for member communities in the economic LSA. All economic LSA First Nation communities are involved with Ktunaxa economic development strategy or receive support from Ktunaxa Nation. 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 identifies 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).

?Aq’am First Nation

?Aq’am’s economic development strategy is included as part of their Strategic Community Plan, Our Thinking (?Aq’am First Nation, 2017). To accomplish their overarching economic goal of “[a] profitable, sustainable and self-sufficient community that optimizes our diverse skills”, ?Aq’am lists five objectives:

- Create local, responsible enterprises;
- Grow food and expand agriculture;
- Build employment and entrepreneurial skills and opportunities through training, mentorship and partnerships;
- Develop community government’s capital assets; and
- Create and sustain a revenue base for our community government (?Aq’am First Nation, 2017).

?Akisq'nuk First Nation

?Akisq'nuk First Nation has a five year economic development plan covering 2016 to 2021. The strategic goal of the 5-Year Economic Development Plan (2016-2021) is to “promote the well-being and economic self-reliance of our people by promoting entrepreneurship, employment opportunities, business development, and fostering education and investment opportunities (?Akisq'nuk First Nation, 2016).

The plan identified five economic goals to achieve the strategic goal:

- Undertake infrastructure developments to enable land use;
- Develop the designated commercial lot;
- Invest in community housing;
- Support entrepreneurship; and
- Increase Akisq'nuk First Nation's own source revenue (?Akisq'nuk First Nation, 2016).

The purpose of these goal is to provide a foundation for ?Akisq'nuk First Nation achieving economic self-reliance. The economic development plan provides detailed planning and deliverables for accomplishing the economic goals while noting the completion cycle may extend beyond five years (?Akisq'nuk First Nation, 2016).

Tobacco Plains Indian Band

The Tobacco Plains Indian Band Development Corporation has an economic development department as part of its government (Tobacco Plains Indian Band, 2018). The economic development strategy is to develop the economy in harmony with traditions, values and achieves goals of self-sustainability and employment (Tobacco Plains Indian Band, 2018). To achieve this goal, Tobacco Plains Indian Band focuses on:

- Identifying employment, Community and Economic Development opportunities;
- Creating strategic alliances between Tobacco Plains Indian Band and industry, government and business entities; and
- Determining the feasibility of and capacity for specific business and development opportunities.

The economic development department works closely with Tobacco Plains Indian Band Development Corporation. The corporation manages a variety of properties owned by the First Nation (BC Assembly of First Nations, 2019d).

Tobacco Plains also works with other communities as part of the Elk Valley Economic Initiative to enhance regional economic development.

Lower Kootenay Band

The Lower Kootenay Band has an Economic Sector Strategy covering 2013-2017, the most recent development plan (Lower Kootenay Band, 2019d). This strategy focuses on developing the Lower Kootenay Band's economy through taxation, government services, economic development, sales of goods and services as well as employment and business opportunities (Lower Kootenay Band, 2019d). The Lower Kootenay Band aims to do this in a manner that respects the land and environment and reflects the community's values. To achieve these goals, Lower Kootenay Band is focused on building capacity within the region by building partnerships at the local and regional level (Lower Kootenay Band, 2019d).

Specific objectives outlined in the Economic Sector Strategy are:

- To develop a community-based economic strategy that elicits new ideas and identifies new or untapped opportunities, partnerships on Lower Kootenay Band lands, within Creston Valley and within Ktunaxa Nation;
- To conduct a broad-based community consultation that includes staff, council, Lower Kootenay Band members and regional neighbours;
- To ensure community buy-in of the process where possible, employing different techniques to maximize outreach, community engagement and ownership of the process;
- To increase awareness of past, current and future Lower Kootenay Band economic and community initiatives;
- To ensure awareness of other Ktunaxa activities and services (not just economic) and to build upon the concept of "stewardship economy"; and
- To identify next steps (Lower Kootenay Band, 2013).

The Lower Kootenay Band has identified strong governance and management; access to capital; human capital; community support and economic diversity as key components of their successful economic development (Lower Kootenay Band, 2013). The Economic Sector Strategy identified short-term and medium term goals to achieve improvements in these areas (Lower Kootenay Band, 2013).

4.5 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;

"the mining industry is a highly cyclical and capital-intensive, with a long lead time between initial investment and commercial production. Accordingly, the federal and provincial income tax and provincial mining tax systems treat exploration and other intangible mining expenses generously. Mining companies can recover most of their initial capital investment before they need to pay significant taxes. The income tax regimes also include generous loss carry-over rules that help mitigate the negative financial effects of fluctuating prices (Natural Resources Canada, 2011)."

As result, 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; community services and community well-being.

4.5.1 Regional Study Area

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

4.5.1.1 British Columbia

Mine operations in BC are responsible for paying three major taxes: the Mineral Land Tax, the Mineral Tax and the Mine Inspector Fee. For the purposes of taxation, mining sector taxation refers to the extraction of minerals and the primary processing activities such as smelting and refining. The revenues do not include corporate income tax payments made by companies in other industries that supply services to the mining sector or are dependent on the mining sector for raw materials. Taxes on employees and property taxes levied by municipalities are also not included.

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 BC, 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 BC, n.d.).

The Mineral Tax compensates BC 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 BC, 2018a). Mine operations in BC are responsible for self-assessment and payment of the Mineral Tax unless they qualify for an exemption (Government of BC, 2018a).

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 BC, n.d.).

As shown in **Table 11**, total mining tax revenue for the province in 2017/2018 was approximately \$489 million. This is an approximately 86% increase from 2016/2017 revenues. Overall, since 2008/2009, total mining tax revenue has increased by approximately 49%. Mining revenues have fluctuated over the past 10 years with year-to-year revenues declining five times. The decline in revenue may be associated with the decline in the Asian coal market and declining steel prices.

Table 11: Government Revenue from Mining since 2008/2009 in BC (\$000s)

	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
Mineral Land Tax	574	578	601	594	588	585	477	536	536	532
Mineral Tax- metals	64,219	54,526	75,090	41,528	17,238	4,935	22,187	21,772	30,682	52,618
Mineral Tax- coal	259,643	237,001	288,821	316,178	132,333	101,010	67,003	80,768	227,453	430,561
Mine Inspection Fee	3,258	2,688	2,688	3,826	5,428	5,073	5,011	5,153	5,051	5,681
Total	327,694	294,793	367,200	362,126	155,587	111,603	94,678	108,229	263,722	489,392
Year-to-year % change	n/a	-10%	25%	-1%	-57%	-28%	-15%	14%	144%	86%

Source: Government of BC, 2018a

n/a = not applicable

4.5.1.2

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 region. These requisition requirements aid in determining tax rates (Government of BC, n.d.).

As shown in **Table 12**, in 2017, RDEK's total government revenues were approximately \$37 million. The primary source of funding (approximately 52%) was electoral area and local government requisitions and grants in lieu. Government expenditures ranged from approximately \$1.4 million to \$8.9 million depending on the expense category. The largest expense was transportation and utilities. Overall, RDEK had a surplus of approximately \$11.5 million in 2017.

Table 12: Regional District of East Kootenay Government Finances, 2017

Revenue Source	\$	Expenditure	\$
Electoral Area and Local Government Requisitions and Grants in Lieu	19,753,511	General Government	3,216,260
Sale of Services	6,838,804	Protective Services	5,108,272
Transfers	6,704,661	Development Services	1,445,535
Investment Income	420,927	Transportation and Utilities ^a	8,904,169
Member Municipality MFA Debt Payment	3,993,200	Parks, Recreation and Culture	2,240,257
		Other ^{b, c}	5,374,552
Total Revenue	37,711,103	Total Expenses	26,289,045

a. Utilities includes solid waste management and recycling, water services and sewer services.

b. Other includes amortization and debt payments for member municipality

c. Member municipality MFA debt payment was equal to debt payments for member municipality

Source: Government of BC, 2018b

4.5.2 Local Study Area

Table 13 provides a summary of tax revenues for economic LSA communities. Annual government revenues range between approximately \$8 million and \$48 million. The primary revenue source for most municipalities is taxation and grants in lieu.

Table 13: Tax Revenue in Economic 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	\$3,431,201	\$1,655,289	\$-735,680	\$11,282,523
Elkford	\$5,332,245	\$1,042,664	\$1,056,248	\$618,940	\$8,050,097
Fernie	\$9,384,492	\$4,187,384	\$2,979,598	\$191,559	\$16,743,033
Cranbrook	\$28,528,630	\$14,768,718	\$2,972,831	\$1,567,846	\$47,838,025
Crowsnest Pass	\$7,231,391	\$4,054,060	\$866,672	\$1,427,596	\$13,579,719

Source: Government of BC, 2018c

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 Tax Sharing Agreement became effective on March 31, 2008 and is for a twenty-five year term. All properties with a Class 4 industrial assessment that are coal mines, coal processing works or coal related infrastructure 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 14** 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 (District of Sparwood, 2016c).

Table 14: 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

Sources: District of Sparwood, 2016c

As shown in **Table 15**, expenditures for municipalities in the economic LSA range between approximately \$7.3 million and \$42 million. Most municipalities in the economic LSA have a similar distribution of expenditures. Ranges for government expenditure in economic LSA communities are:

- General Government (11% - 16%);
- Protective Services (8%-22%);
- Health, Social Services and Housing (0%-2%);
- Development Services (<1% -8%);
- Transportation and Utilities (25%-35%);
- Parks, Recreation and Culture (12%-25%); and
- Other (18%-22%).

Of note, is Cranbrook spends 10% more on protective services than any other economic LSA community. This may be due to 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 economic LSA is due to the nature of and size of Cranbrook (an urban centre) compared to the relatively rural communities in the economic LSA.

Table 15: Government Expenditure in Economic LSA Non-Indigenous Communities, 2017

Community	General Government	Protective Services	Health, Social Services and Housing	Development Services	Transportation and Utilities ^{a, b}	Parks, Recreation and Culture	Other	Total Expenditure
Sparwood	\$1,240,824	\$847,590	\$98,073	\$857,302	\$3,263,268	\$2,419,871	\$2,493,573	\$11,220,501
Elkford	\$1,022,747	\$743,012	\$14,509	\$553,663	\$1,895,596	\$1,730,914	\$1,352,912	\$7,313,353
Fernie	\$2,349,838	\$1,749,215	0	\$695,597	\$3,819,687	\$3,728,095	\$2,767,387	\$15,109,819
Cranbrook	\$5,961,320	\$9,291,664	\$92,951	\$42,035	\$12,212,037	\$5,023,491	\$9,131,695	\$41,755,193
Crowsnest Pass	\$2,719,935	\$1,549,614	\$287,703	\$577,408	\$6,100,288	\$2,450,697	\$3,870,001	\$13,685,645

a. Utilities includes solid waste management and recycling, water services and sewer services for BC municipalities.

b. Utilities includes public works, water and waste and electrical distribution for Crowsnest Pass

Source: Government of BC, 2018d

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 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 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).

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 noted additional revenue would reduce tax burdens on existing properties and taxpayers (RDEK, pers. comm., 2020).

4.6 Employment and Income

Employment and income in the region 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 a region to fill roles at these sites which often account for a significant portion of job opportunities in the region. The Project may change employment and income within the region as demand for labour will be increased by the Project. Changes to employment and income will have effects on the regional economy, housing, and community services.

4.6.1 Regional Study Area

Employment within BC has remained relatively stable between 2006 and 2016. The labour force participation rate has remained at approximately 65%. The employment rate has been stable at approximately 60%. Unemployment increased 1.8% between 2006 and 2011 likely due to the financial crisis in 2007 (Statistics Canada, 2018a). It has since declined to 6.8% in 2016. The 2018 Labour Market Outlook for BC notes unemployment has fallen in 2018 (WorkBC, 2018). It is however expected that unemployment rates have risen in 2020 because of the COVID-19 pandemic.

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

Labour force participation in the RDEK has declined slightly since 2006 from 67.2% 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, 2019b). Therefore, the variance in unemployment was likely due to the financial crisis in 2007 and commodity downturn in 2014-2015. It is likely the data does not fully capture changes related to the commodity downturn.

Median income has 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.

4.6.2 Local Study Area

4.6.2.1 Local Community Employment and Income

Overall, employment characteristics within the economic LSA is typical for the provincial average as shown in **Table 16**. A common divergence for B.C. communities in the economic 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 economic LSA (City of Fernie, pers. comm., 2020; Municipality of Crowsnest Pass, pers. comm., 2020). High cost of living and high mining wages drives individuals seeking labour opportunities to either enter the mining sector or leave the economic 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 16: Employment and Income Characteristics in the Economic 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

Notes: Alberta is included as the comparable jurisdiction for Crowsnest Pass as the municipality lies in Alberta.

Source: Statistics Canada, 2007a; Statistics Canada, 2007b; Statistics Canada, 2007c; Statistics Canada, 2007d; Statistics Canada, 2007e; Statistics Canada, 2007f; Statistics Canada, 2007g; Statistics Canada, 2012a; Statistics Canada, 2012b; Statistics Canada, 2012c; Statistics Canada, 2012d; Statistics Canada, 2012e; Statistics Canada, 2012f; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c; Statistics Canada, 2017d; Statistics Canada, 2017e; Statistics Canada, 2017f; Statistics Canada, 2017g

n/a = not available

District Municipality of Sparwood

Sparwood has approximately 5% higher labour force participation and employment than the RDEK and BC in 2016; however, the unemployment rate is 1.2% and 0.3% lower in Sparwood than in the RDEK and BC, 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 2015 than the BC median. The median income in Sparwood was approximately \$11,000 higher than the provincial median, which has increased consistently since 2006 when the median income was approximately \$1,500 above the BC 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 BC overall.

District of Elkford

Elkford has a similar employment and income profile as Sparwood. Like Sparwood, labour force participation and employment are approximately 5% higher than BC. Unemployment is lower in Elkford than Sparwood with a significantly higher income. This is likely due to the reliance on mining as shown in **Section 4.7.2.1**. As described in **Section 4.3**, mining often bring labour into a region to staff operations and these jobs pay high salaries relative to the provincial median.

City of Fernie

Fernie has an approximately 10% higher labour participation rate and employment rate than RDEK and BC. Fernie's unemployment rate is similar to the RDEK and BC 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 BC. Income in Fernie has increased since 2006 consistent with increases in the RDEK and BC. 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 which may be due to Fernie being located further from the mining sites as compared to other communities in the RDEK.

City of Cranbrook

Cranbrook has a similar labour force participation rate and employment rate to the RDEK and BC. Unemployment is the same as the RDEK and 0.9% higher than BC. Unemployment has increased by 2.6% since 2006. While this differs from the trend in BC, it is similar and to the RDEK where unemployment increased 2.4% between 2006 and 2016.

Median income in Cranbrook is similar to the RDEK and BC as the median income tends to be similar or between median incomes for the two regional study areas. In all cases, median income has increased between 2005 and 2015. This would be consistent with Cranbrook's regional role as a diversified service centre as described in **Section 4.3.2.1**.

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%-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 4.2.2**).

Median income in Crowsnest Pass is below the Alberta median for all three census years. Median income has increase between 2005 and 2015 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 BC 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 16**.

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 BC. Unemployment has also increased by 3% between 2006 and 2016 though data is not available for 2011. Median income is higher in the RDEK Electoral Area A than in the RDEK and BC. 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.

4.6.2.2 Indigenous Employment and Income

Indigenous people in the economic LSA tend to have higher unemployment and lower median income despite having similar labour force participation and employment rates as shown in **Table 16** and **Table 17**. This is typical for Indigenous people 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 (National Collaborating Centre for Aboriginal Health [NCCAH], 2017; Organisation for Economic Co-operation and Development [OECD], 2018).

Family obligations such as early parenthood or single parenthood may be a direct and indirect barrier to employment for Indigenous people. Family responsibilities including the cost of childcare or lack of partner support may limit education or employment opportunities. Women, commonly the primary caregivers, are most vulnerable to these factors and tend to have a lower labour force participation rate and are more likely to be employed part time (NCCAH, 2017).

The history of colonization in Canada has negatively impacted Indigenous people including a higher prevalence of poverty. Lower health and socio-economic outcomes, as is this case in most impoverished situations, have a negative impact on the attainment of education and the ability of individuals to access opportunities including employment (Howard et al., 2012; NCCAH, 2017).

Indigenous people are underrepresented in higher education, and are much less likely to have a degree or diploma (Howard et al., 2012). The lower educational attainment of Indigenous people can be attributed to a variety of factors including lower socio-economic and health outcomes; limited access to schools and culturally appropriate curriculum; and continuing impacts of residential schools (Howard et al., 2012). The lack of education in Indigenous communities is a barrier to employment as diplomas and degrees are increasingly required for employment opportunities.

Colonization has contributed to racism, discrimination and negative stereotypes of Indigenous people in Canada. These attitudes are barriers to employment for Indigenous people as they may bias hiring and recruiting processes restricting the opportunities for Indigenous people. When hired, Indigenous people report being less likely to receive promotions, being assign unpleasant tasks at work, stereotyping and exclusion. Indigenous people with university degrees are less likely to be employed or hold managerial positions than non-Indigenous people (NCCAH, 2017; Howard et al., 2012). While racism and discrimination is often anecdotal, a 2009 report from the NCCAH noted 37.9% of Indigenous adults living on reserve experienced racism in the last 12 months. Of those who experienced racism, 27% reported some or a strong effect on their self-esteem (Howard et al., 2012).

Indigenous people also face challenges related to geography such as often being located in remote areas. Indigenous people are more likely to live in remote or non-urban areas than non-Indigenous

people. As result, employment opportunities in these communities can be limited to industries and organizations with local operations (Howard et al., 2012).

The following sections considers the employment and income of Indigenous people in Ktunaxa Nation compared to Indigenous people in the economic RSA including RDEK and BC.

Ktunaxa Nation

As shown in **Table 17**, 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 region. 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.

Table 17: Employment and Income Characteristics for Indigenous Communities in the Economic LSA

	ʔAq'am	ʔAkisq'nuk	Tobacco Plains Indian Band	Lower Kootenay Band	Ktunaxa Nation	RDEK	BC
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
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

Note: 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.

Note: 2006 Data for BC was taken from the INAC profile with the exception of median income which is from Statistics Canada.

Source: INAC, 2019a; INAC, 2019b; INAC, 2019c; INAC, 2019d; Statistics Canada, 2018a; Statistics Canada, 2018b; Statistics Canada, 2018c
n/a = not available

ʔAq'am First Nation

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 exceeded 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 above average labour force participation. It is likely 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 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 region in 2016, unemployment was more than twice the Ktunaxa Nation and the RDEK average. Similar to other communities in the economic LSA, employment is worse in the Lower Kootenay Band than in non-Indigenous communities.

4.7 Labour Force

The labour force in the region is characterized by low diversity and disproportionate mining employment. This is to be expected given the role of mining in establishing communities in the region, particularly within the economic 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 seeing increased employment consistent with the economic development strategies described in **Section 4.4**. Labour force is described as part of baseline conditions because the Project may alter the labour force within the region 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.

4.7.1 Regional Study Area

As shown in **Table 18**, BC is a robust economy with a diversified labour force. Shares of total occupations within the BC 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 BC 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). Work BC 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 only expected to expand by 1,800 jobs (WorkBC, 2018). This fits within the provincial trends as BC 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 and 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 BC economy which has 1.1% of workers employed in mining. The areas also has more people employed in food services and accommodation; and arts, entertainment and recreation, which is consistent with the focus on tourism development as identified in **Section 4.4**. Consistent with other rural areas, there are fewer people in RDEK employed in financial services, real estate, and information and cultural industries. These professions tend to focus on urban areas such as Vancouver.

4.7.2 Local Study Area

Economic 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 region contribute to this. In addition, tourism is a growing employment area within the region due to the natural features for remote tourism and the presence of seasonal homeowners from Alberta.

4.7.2.1 Local Community Labour Force

Table 18 provides a summary of the non-Indigenous workforce in the economic LSA.

	Sparwood		Elkford		Ferne		Cranbrook (CMA)		Crowsnest Pass		RDEK Electoral Area A		RDEK		BC		Alberta		
Professional, scientific and technical services	15	0.7%	0	0.0%	75	2.8%	665	5.1%	125	4.4%	n/a	n/a	1,370	4.5%	179,355	7.8%	162,490	7.8%	
Management of companies and enterprises	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	n/a	n/a	0	0.0%	2,440	0.1%	2,535	0.1%	
Administrative and support, waste management and remediation services	30	1.4%	30	2.1%	40	1.5%	500	3.8%	90	3.2%	n/a	n/a	1,195	3.9%	98,890	4.3%	72,965	3.5%	
Educational services	95	4.5%	65	4.6%	140	5.2%	910	7.0%	170	6.0%	n/a	n/a	1,730	5.7%	167,875	7.3%	141,550	6.8%	
Health care and social assistance	170	8.1%	60	4.3%	340	12.5%	1,675	12.9%	320	11.4%	n/a	n/a	3,175	10.4%	249,030	10.8%	206,695	9.9%	
Arts, entertainment and recreation	50	2.4%	20	1.4%	230	8.5%	270	2.1%	40	1.4%	n/a	n/a	1,215	4.0%	59,915	2.6%	39,720	1.9%	
Accommodation and food services	80	3.8%	85	6.0%	350	12.9%	940	7.2%	175	6.2%	n/a	n/a	2,730	9.0%	179,625	7.8%	125,810	6.0%	
Other services (except public administration)	130	6.2%	50	3.6%	120	4.4%	765	5.9%	175	6.2%	n/a	n/a	1,770	5.8%	112,745	4.9%	101,275	4.8%	
Public Administration	90	4.3%	90	6.4%	125	4.6%	630	4.8%	240	8.5%	n/a	n/a	1,515	5.0%	143,875	6.2%	128,720	6.2%	
2006																			
Total Labour Force	1,930	100.0%	1,385	100.0%	2,560	100.0%	12,785	100.0%	2,885	100.0%	1,135	100.0%	30,520	100.0%	2,193,115	100.0%	1,928,635	100.0%	
Agriculture and Resource Based Industries	600	31.1%	705	50.9%	420	16.4%	940	7.4%	615	21.3%	225	19.8%	3,905	12.8%	107,760	4.9%	228,520	11.8%	
Construction	120	6.2%	35	2.5%	225	8.8%	1,115	8.7%	165	5.7%	130	11.5%	2,950	9.7%	166,100	7.6%	169,420	8.8%	
Manufacturing	60	3.1%	50	3.6%	70	2.7%	965	7.5%	165	5.7%	70	6.2%	2,185	7.2%	189,120	8.6%	138,365	7.2%	
Wholesale Trade	80	4.1%	40	2.9%	100	3.9%	390	3.1%	45	1.6%	40	3.5%	840	2.8%	92,020	4.2%	85,515	4.4%	
Retail Trade	270	14.0%	120	8.7%	290	11.3%	1,975	15.4%	310	10.7%	130	11.5%	3,815	12.5%	248,950	11.4%	206,655	10.7%	
Finance and Real Estate	130	6.7%	15	1.1%	150	5.9%	560	4.4%	95	3.3%	40	3.5%	1,425	4.7%	134,940	6.2%	97,465	5.1%	
Health Care and Social Services	95	4.9%	35	2.5%	160	6.3%	1,420	11.1%	300	10.4%	60	5.3%	2,640	8.7%	213,085	9.7%	175,200	9.1%	
Educational Services	110	5.7%	60	4.3%	175	6.8%	790	6.2%	140	4.9%	35	3.1%	1,715	5.6%	152,565	7.0%	120,460	6.2%	
Business Services	180	9.3%	130	9.4%	265	10.4%	1,945	15.2%	370	12.8%	180	15.9%	4,050	13.3%	436,665	19.9%	354,265	18.4%	
Other Services	270	14.0%	190	13.7%	710	27.7%	2,685	21.0%	685	23.7%	210	18.5%	7,000	22.9%	451,905	20.6%	352,760	18.3%	

Notes: Data for RDEK Electoral Area A is suppressed in 2011 due to confidentiality.

Statistics Canada adopted the North American Industry Classification System in 2011.

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

n/a = not available

District Municipality of Sparwood

A disproportionate amount of the Sparwood labour force is employed in the mining sector with over 30% of the labour force engaged in this sector. This has remained consistent since 2006 and is likely due to the presence of Teck's five operations within the region. 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 region.

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 in any of the economic 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 as described in **Section 4.4.2.1**. 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.

City of Fernie

Fernie's labour force is centred on mining and tourism. While forestry is 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 regional norm (10.7%) compared to Sparwood (34.0%) and Elkford (52.3%). Despite the focus on tourism, accommodation, food service, recreation and culture, rate of employment 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).

City of Cranbrook

Cranbrook has a diversified economy similar in composition to the region 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 region (12.8%) and the province (11.7%). Otherwise, Cranbrook's employment is typical for the region and the province. The diversity in Cranbrook is consistent with their economic development strategy (**Section 4.4.2.1**) and their role as regional service centre.

Municipality of Crowsnest Pass

Crowsnest Pass, similar to BC economic 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 economic development goals for Crowsnest Pass identified in **Section 4.4.2.1**. 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.

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 (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 health care than the RDEK.

Indigenous Labour Force

Ktunaxa Nation

Labour force data is only available for Ktunaxa Nation in 2016. In 2016, Indigenous people in the RDEK and BC have similar industry employment distributions as the industry employment distribution of the RDEK and BC overall (**Table 19**); however, there is a large difference in BC 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 as described in **Section 4.6.2.2**. 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 primary employment industries in Ktunaxa Nation include public service; agriculture, forestry, fishing and hunting; health care and social assistance; and accommodation and food services. This is consistent with the Ktunaxa Nation's regional economy as described in **Section 4.3.2.2** which, highlighted the role of traditional economy in Ktunaxa Nation's economy. In addition, many service and tourism businesses were identified relative to the total number of businesses.

Table 19: Indigenous Employment by Industry in the Economic LSA

Industry	Ktunaxa		RDEK		BC	
	#	%	#	%	#	%
2016						
Total Labour Force	250	100.0%	2,230	100.0%	122,615	100.0%
Agriculture, forestry, fishing and hunting	20	8.0%	110	4.9%	5,635	4.6%
Mining, quarrying, and oil and gas extraction	0	0.0%	200	9.0%	2,460	2.0%
Utilities	0	0.0%	25	1.1%	620	0.5%
Construction	10	4.0%	165	7.4%	12,285	10.0%
Manufacturing	10	4.0%	130	5.8%	7,740	6.3%
Wholesale trade	0	0.0%	35	1.6%	2,705	2.2%
Retail trade	15	6.0%	295	13.2%	14,735	12.0%
Transportation and warehousing	10	4.0%	85	3.8%	6,435	5.2%
Information and cultural industries	0	0.0%	25	1.1%	1,970	1.6%
Finance and insurance	0	0.0%	20	0.9%	1,920	1.6%
Real estate and rental and leasing	0	0.0%	30	1.3%	1,590	1.3%
Professional, scientific and technical services	10	4.0%	90	4.0%	4,615	3.8%
Management of companies and enterprises	0	0.0%	0	0.0%	100	0.1%
Administrative and support, waste management and remediation services	15	6.0%	50	2.2%	6,700	5.5%
Educational services	10	4.0%	100	4.5%	7,815	6.4%
Health care and social assistance	25	10.0%	285	12.8%	14,100	11.5%
Arts, entertainment and recreation	15	6.0%	85	3.8%	2,915	2.4%
Accommodation and food services	35	14.0%	275	12.3%	12,800	10.4%
Other services (except public administration)	0	0.0%	90	4.0%	5,605	4.6%
Public administration	65	26.0%	145	6.5%	9,870	8.0%
2011						
Total Labour Force	n/a	n/a	1,725	100.0%	101,875	100.0%
Agriculture, forestry, fishing and hunting	n/a	n/a	50	2.9%	4,770	4.7%
Mining, quarrying, and oil and gas extraction	n/a	n/a	90	5.2%	2,105	2.1%
Utilities	n/a	n/a	15	0.9%	530	0.5%
Construction	n/a	n/a	120	7.0%	9,275	9.1%
Manufacturing	n/a	n/a	105	6.1%	6,150	6.0%
Wholesale trade	n/a	n/a	45	2.6%	2,705	2.7%
Retail trade	n/a	n/a	130	7.5%	12,275	12.0%
Transportation and warehousing	n/a	n/a	55	3.2%	4,605	4.5%
Information and cultural industries	n/a	n/a	15	0.9%	1,540	1.5%
Finance and insurance	n/a	n/a	15	0.9%	2,140	2.1%
Real estate and rental and leasing	n/a	n/a	105	6.1%	1,535	1.5%

Industry	Ktunaxa		RDEK		BC	
Professional, scientific and technical services	n/a	n/a	80	4.6%	3,880	3.8%
Management of companies and enterprises	n/a	n/a	0	0.0%	40	0.0%
Administrative and support, waste management and remediation services	n/a	n/a	60	3.5%	4,520	4.4%
Educational services	n/a	n/a	95	5.5%	6,145	6.0%
Health care and social assistance	n/a	n/a	285	16.5%	10,995	10.8%
Arts, entertainment and recreation	n/a	n/a	30	1.7%	2,445	2.4%
Accommodation and food services	n/a	n/a	175	10.1%	9,160	9.0%
Other services (except public administration)	n/a	n/a	165	9.6%	4,620	4.5%
Public Administration	n/a	n/a	100	5.8%	12,430	12.2%
2006						
Total Labour Force	n/a	n/a	1,660	100.0%	87,720	100.0%
Agriculture and Resource Based Industries	n/a	n/a	185	11.1%	7,720	8.8%
Construction	n/a	n/a	145	8.7%	8,660	9.9%
Manufacturing	n/a	n/a	170	10.2%	7,850	8.9%
Wholesale Trade	n/a	n/a	15	0.9%	2,065	2.4%
Retail Trade	n/a	n/a	280	16.9%	9,135	10.4%
Finance and Real Estate	n/a	n/a	40	2.4%	2,530	2.9%
Health Care and Social Services	n/a	n/a	115	6.9%	8,370	9.5%
Educational Services	n/a	n/a	45	2.7%	5,125	5.8%
Business Services	n/a	n/a	165	9.9%	12,390	14.1%
Other Services	n/a	n/a	495	29.8%	23,855	27.2%

Note: Profiles for Ktunaxa Nation were not available in the 2006 Census or the 2011 NHS.

Note: Statistics Canada adopted the North American Industry Classification System in 2011.

Source: Statistics Canada, 2008; Statistics Canada, 2013g; Statistics Canada, 2013h; Statistics Canada, 2018a; Statistics Canada, 2018c

n/a = not available

4.8 Education Facilities and Attainment

Education within a region is often driven by the economic opportunities within a region and the socio-economic status of residents. Within the social study areas, primary industry and resource development dominate the economic environment, suggesting that levels of education may, in general, be lower than the provincial average. Based on the presence of heavy industry, trades and non-skilled labour jobs are of higher prevalence. This section highlights the educational facilities and attainment within the region. The Project may alter the level of education and access to education facilities within the social study areas.

4.8.1 Regional District of East Kootenay

There are two school districts (SD) within the RDEK – SD 5 (Southeast Kootenay) and SD 6 (Rocky Mountain) offering public elementary and secondary school education opportunities (British Columbia School District, 2019). Twenty-six educational institutions⁴ occur in SD 5, and 23 in SD 6 (British Columbia, 2019b; British Columbia, 2019c). None of the schools located within the social LSA are under the jurisdiction of SD 6. Schools in Crowsnest Pass are managed by Livingston Range School Division No. 68 in Alberta (British Columbia, 2019b; Municipality of Crowsnest Pass, 2019a). Two of the Ktunaxa Nations have independent schools within their communities – ʔaq̓am community and the Lower Kootenay Band.

There are a number of post-secondary educational facilities in and proximate to the RDEK. The College of the Rockies has seven campuses with the main campus located in Cranbrook. In addition, there are five more regional campuses located within the RDEK:

- Cranbrook Gold Creek campus: offers programs in trades;
- Fernie campus: offers programs including mountain adventure, hospitality, healthcare, and trades;
- Golden campus: specializing in adventure tourism and eco-tourism programs, as well as continuing and adult basic education;
- Invermere campus: a wide variety of courses including evening/weekend programs for adults and youth; and
- Kimberly campus: offering day, evening or weekend vocational and general interest courses, university transfer and contract training.

⁴ Educational institutions categorized by the BC Ministry of Education & Training as public or independent schools, or part of the StrongStart Program.

The College of the Rockies (COTR) location in Fernie is the only campus situated within the social LSA. One of the campus locations is outside the RDEK in Creston, BC (College of the Rockies [COTR], 2019). There is capacity to accommodate additional students at College of the Rockies; however, course availability depends on the program. It is a small college which adapts to the industry needs (i.e., if there is a need identified by, for example, a mine, the college can usually accommodate/fulfill the need (COTR, pers. comm., 2020). College of the Rockies accommodates a number of international students from the United States, Africa, China and India (COTR, pers. comm., 2020). It was noted that enrollment was significantly down this year (2020), with the typical number of international students (i.e., approximately 700 students) not enrolling in programs (COTR, pers. comm., 2020).

East Kootenay Community College is considering development of a 1-year transfer program within Fernie for locals (e.g., Sparwood, Elkford) that would help keep locals in town for one additional year before moving to Cranbrook for the rest (trades/service programs) (School District 5: Southeast Kootenay [SD5], pers. comm., 2020).

There are a number of post-secondary institutions located beyond the social RSA in Lethbridge, Alberta, less than 200 km east of the RDEK via Highway 3 (District of Sparwood, 2019a). These institutions often attract people from the communities in the social RSA to complete post-secondary education. The University of Lethbridge offers over 150 undergraduate programs and more than 60 graduate programs across six faculties, with opportunities to study remotely through online courses (University of Lethbridge, 2019). Lethbridge College provides over 50 programs that span career-training, applied degrees and apprenticeships, with courses available through online learning. The Crowsnest Pass campus of Lethbridge College (located in Pincher Creek) offers courses in business training and development, early childhood education, industrial and technical training, and health care aide programs online (Lethbridge College, 2019). The Lethbridge campus of Reeves College offers vocational training, with programs in business, health care, and legal administration (Reeves College, 2019). The Crowsnest Pass Adult Education Association (CPAEA) located in Bellevue, Alberta is a group that is dedicated to providing quality lifelong learning for adults in the community (Crowsnest Pass Adult Education Association [CPAEA], 2019).

A number of key informants in the primary research program noted that many recent graduates and/or young adults (e.g., aged 19 to 22) seek post-secondary education outside of their communities (approximately 75% [COTR, pers. comm., 2020]). Typically, engineering students will go to other post-secondary institutions both in BC (e.g., University of British Columbia – main and Okanagan campuses, University of Victoria), Alberta (e.g., University of Calgary, University of Lethbridge) or further east (e.g., McGill) (COTR, pers. comm., 2020). Other post-secondary students go to Cranbrook for further education and training (SD5, pers. comm., 2020). The need to travel to attend schools outside the region, financial challenges, and socio-cultural challenges have been identified as potential barriers to education within the region (SD5, pers. comm., 2020). There is currently an annual heavy duty program offered to youth in Sparwood, Fernie and Cranbrook with industry representatives getting together once

a year to train youth for a week on the equipment (SD5, pers. comm., 2020). Providing more local training opportunities (e.g., apprentice and college programs) could make it easier for post-secondary students to transition/enter into the workforce (SD5, pers. comm., 2020).

The education levels for individuals aged 15-years and over (i.e., the working-age population⁵) in private households within the RDEK and BC are summarized in the **Table 20** below.

Table 20: Overall Education Levels for the RDEK and BC, 2016

Education Level	Regional District of East Kootenay		British Columbia	
	Count	Percent	Count	Percent
Total >15-years of age	49,615	-	3,870,375	-
No certificate, diploma or degree	7,815	15.8%	601,640	15.5%
Secondary school diploma or equivalent	14,755	29.7%	1,138,565	29.4%
Post-Secondary certificate, diploma, or degree	27,045	54.5%	2,130,175	55.0%
-Apprenticeship, Trades	7,055	14.2%	338,980	8.8%
-College, Other non-university	10,960	22.1%	700,945	18.1%
-University below bachelor level	1,475	3.0%	138,010	3.6%
-University at or above bachelor level	7,555	15.2%	952,240	24.6%

Source: Statistics Canada, 2017a; Statistics Canada 2017b

The overall level of education for residents in the RDEK are very similar proportionally (for all categories presented above) when compared to the education levels reported by the province of BC in the 2016 Census.

In 2016, 26.1% of individuals in the RDEK with a post-secondary level of education held a post-secondary certificate, diploma or degree in apprenticeship or trades, over 10% higher than the province of BC as a whole (15.9%). In contrast, close to 45% of individuals in BC who obtained a post-secondary degree did so at or above the bachelor level, compared with less than 28% of individuals in the RDEK. The proportion of RDEK residents holding an apprenticeship or trades credentials was double the value for BC in 2016 (26.1% and 15.9%, respectively).

⁵ 'Working-age population' as defined by Statistics Canada (Statistics Canada, 2019b).

4.8.2 Local Study Area

4.8.2.1 Local Community Education

As described in **Section 4.8.1**, all elementary- and secondary-level educational institutions within the social LSA communities are under the jurisdiction of SD 5. Enrollment numbers, where provided for SD 5, are reflective of September 30, 2018 (British Columbia, 2019b). Information on current capacity, trends and anticipated demand for educational institutions with the social LSA communities will be validated through primary research.

Two public schools offer elementary and secondary education opportunities to over 600 students within the District Municipality of Sparwood: Frank J. Mitchell Elementary (368 students, grades K – 6), and Sparwood Secondary School (262 students, grades 7 – 12). There is also the Frank J. Mitchell StrongStart Centre, offering a pre-K/early learning program in Sparwood (SD5, 2019a; British Columbia, 2019b). Schools within the Municipality can accommodate the current number of students within the community (SD5, pers. comm., 2020), and there is capacity as well as room for expansion at the secondary level (SD5, pers. comm., 2020).

The District of Elkford’s public education system accommodates over 450 students from Kindergarten through grade 12: Rocky Mountain Elementary School (252 students, grades K – 6), and Elkford Secondary School (200 students, grades 7 – 12) (British Columbia, 2019b). There is currently room to accommodate more students for both elementary and middle school students in Elkford (SD5, pers. comm., 2020).

There are three public schools in Fernie, including Isabella Dicken Elementary (466 students, grades K through 6), Fernie Secondary (372 students, grades 7 through 12) and Kootenay Discovery School (162 students, grades 3 through 12) (SD5, 2019a; British Columbia, 2019b). The Fernie Academy is a private independent school for children in kindergarten through grade 12 (287 students). An Early Learning Program is available at the Isabella Dicken StrongStart Centre (Pre-kindergarten), with Continuing Education available at the Kootenay Learning Campus (British Columbia, 2019b). Previous and ongoing “baby booms” that have occurred in the community have put pressure on the school system (City of Fernie, pers. comm., 2020). Recently, there were 256 registrants for the pre-kindergarten program in Fernie (SD5, pers. comm., 2020). Fernie has also been referred to as the ‘bedroom community’ for Sparwood and Elkford: expansion of currently elementary school capacity is required due to high demand resulting from families choosing to live in Fernie (SD5, pers. comm., 2020).

The City of Cranbrook offers the most elementary, intermediate and secondary school-level educational opportunities of the LSA communities, with 10 public schools (seven elementary, two middle and one secondary), and two private schools all within SD 5 (SD5, 2019a). There are also two institutions that offer StrongStart early learning programs (pre-kindergarten) available in Cranbrook (British Columbia, 2019b). **Table 21** lists the primary and secondary educational institutions available in the City of Cranbrook.

Table 21: Schools in the City of Cranbrook

School Name	Level	Type	Grades	Enrollment ¹	Other Amenities
Amy Woodland	Elementary	Public	K – 6	271	-
	StrongStart Program		Early Learning, Pre-K	-	-
Gordon Terrace	Elementary	Public	K – 6	254	-
Highlands	Elementary	Public	K – 6	270	Neighbourhood learning centre
Kootenay Orchards	Elementary	Public	K – 6	221	Neighbourhood learning centre
Pinewood	Elementary	Public	K – 6	117	-
Steeples	Elementary	Public	K – 6	188	-
	StrongStart Program		Early Learning, Pre-K	-	-
TM Roberts	Elementary	Public	K – 6	366	-
?A'q'amnik Primary	Elementary	Independent	K – 6	49	-
Laurie	Middle	Public	7 – 9	343	Neighbourhood learning centre
Parkland	Middle	Public	7 – 9	438	Neighbourhood learning centre
Mount Baker	Secondary	Public	10 – 12	834	-
Kootenay Christian Academy	-	Independent	K – 9	161	-
St. Mary's Catholic	-	Independent	K – 6	103	-
Kootenay Educational Services	Alternate Programs	Public	10 – 12	88	-

¹Number of students enrolled as of September 30, 2018.

Source: SD5, 2019a; British Columbia, 2019b; ?Aq'am First Nation, 2019a

The Rocky Mountain International Student Program is coordinated through the Southeast Kootenay International Education office in Cranbrook, for students interested in studying in this community as well as Fernie, Sparwood and Elkford (SD5, 2019b).

The public schools in the Municipality of Crowsnest Pass are members of the Livingston Range School Division No. 68 in Alberta, and include the Horace Allen School (grades K – 3) and Crowsnest Consolidated High School (grades 7 through 12) in Coleman, and the Isabelle Sellon School in Blairmore (grades 4 through 6) (Municipality of Crowsnest Pass, 2019a). There are currently enough schools in the municipality to support current demands (Municipality of Crowsnest Pass, pers. comm., 2020).

Table 22 presents the overall educational attainment levels for residents aged 15-years and older in each of the social LSA communities.

Table 22: Overall Education Levels for Communities in the LSA, 2011 and 2016

Education Level	Sparwood		Elkford		Fernie			Cranbrook		Crowsnest Pass		RDEK Electoral Area A	
	#	%	#	%	#	%		#	%	#	%	#	%
	2016												
Total >15-years of age	3,070	-	1,885	-	4,195	-		16,340	-	4,720	-	1,645	
No certificate, diploma or degree	555	18.1%	285	15.1%	390	9.3%		2,845	17.4%	990	21.0%	235	14.3%
Secondary school diploma or equivalent	1,015	33.1%	645	34.2%	1,010	24.1%		5,230	32.0%	1,280	27.1%	460	28.0%
Post-Secondary certificate, diploma, or degree	1,500	48.9%	955	50.7%	2,790	66.5%		8,270	50.6%	2,455	52.0%	945	57.4%
<i>-Apprenticeship, Trades</i>	485	15.8%	360	19.1%	590	14.1%		2,015	12.3%	640	13.6%	265	16.1%
<i>-College, Other non-university</i>	610	19.9%	380	20.2%	880	21.0%		3,725	22.8%	1,120	23.7%	410	24.9%
<i>-University below bachelor level</i>	75	2.4%	60	3.2%	140	3.3%		380	2.3%	125	2.6%	30	1.8%
<i>-University at or above bachelor level</i>	325	10.6%	150	8.0%	1,175	28.0%		2,150	13.2%	575	12.2%	240	14.6%
	2011												
Total >15-years of age	3,010	-	2,020	-	3,665	-		15,595	-	4,740	-	n/a	n/a
No certificate, diploma or degree	560	18.6%	315	15.6%	415	11.3%		3,505	22.5%	860	18.1%	n/a	n/a
Secondary school diploma or equivalent	900	29.9%	660	32.7%	1,090	29.7%		4,190	26.9%	1,265	26.7%	n/a	n/a
Post-Secondary certificate, diploma, or degree	1,550	51.5%	1,040	51.5%	2,170	59.2%		7,900	50.7%	2,615	55.2%	n/a	n/a
<i>-Apprenticeship, Trades</i>	435	14.5%	355	17.6%	435	11.9%		2,900	18.6%	885	18.7%	n/a	n/a
<i>-College, Other non-university</i>	585	19.4%	425	21.0%	455	12.4%		4,465	28.6%	1,075	22.7%	n/a	n/a
<i>-University below bachelor level</i>	40	1.3%	45	2.2%	80	2.2%		675	4.3%	120	2.5%	n/a	n/a
<i>-University at or above bachelor level</i>	240	8.0%	210	10.4%	805	22.0%		2,510	16.1%	530	11.2%	n/a	n/a

Education Level	Sparwood		Elkford		Ferne			Cranbrook		Crowsnest Pass		RDEK Electoral Area A	
	#	%	#	%	#	%		#	%	#	%	#	%
	2006												
Total >15-years of age	2,915		2000		3,540			19,665		4,875		1,540	
No certificate, diploma or degree	760	26.1%	390	19.5%	760	21.5%		4,430	22.5%	1,580	32.4%	310	20.1%
Secondary school diploma or equivalent	905	31.0%	695	34.8%	1,010	28.5%		5,735	29.2%	1,380	28.3%	460	29.9%
Post-Secondary certificate, diploma, or degree	1,255	43.1%	905	45.3%	1,765	49.9%		9,500	48.3%	1,915	39.3%	760	49.4%
<i>-Apprenticeship, Trades</i>	555	19.0%	365	18.3%	460	13.0%		2,720	13.8%	700	14.4%	330	21.4%
<i>-College, Other non-university</i>	435	14.9%	360	18.0%	715	20.2%		4,295	21.8%	765	15.7%	280	18.2%
<i>-University below bachelor level</i>	70	2.4%	65	3.3%	165	4.7%		715	3.6%	105	2.2%	15	1.0%
<i>-University at or above bachelor level</i>	195	6.7%	115	5.8%	425	12.0%		1,770	9.0%	345	7.1%	135	8.8%

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

The communities of Sparwood and Elkford have the highest percentage of individuals with apprenticeship or trades certification (37.7% and 32.3%, respectively) when compared to the other social LSA communities, and much higher than the RDEK (26.1%). The high proportion of trade workers is likely due to the presence of the mining sector which relies on skilled tradespeople for a variety of construction and operation activities. Other categories of post-secondary education levels for the social LSA communities are relatively close to the percentages for the RDEK as a whole, with the exception of credentials at or above the bachelor level: Elkford's percentage is nearly half of the RDEK, whereas the City of Fernie surpassed the RDEK by over 14% in 2016.

The proportion of residents in Fernie with a post-secondary degree or equivalent in 2016 was 66.5% which was 12% higher than the RDEK, and an increase of over 7% since 2011. Fernie also had the lowest proportion of residents without a secondary school diploma (9.3%), much lower than the RDEK (15.8%). The higher levels of education in Fernie may, in part, be due to the presence of residents retiring in the area as higher levels of disposable income and secondary properties (of which there are many in Fernie), correlates with higher levels of education.

Education levels in Cranbrook are similar to Sparwood and Elkford where approximately 20% of the population has not completed high school, 30% has high school as their highest degree or diploma and 50% has completed additional education. Cranbrook has more college or university educated community members than Sparwood or Elkford while Sparwood and Elkford have more tradespeople. This may be due to the diversified nature of Cranbrook's economy offering a variety of employment opportunities while Sparwood and Elkford have a larger mining sector presence which has a higher demand for tradespeople.

The proportion of residents in the Municipality of Crowsnest Pass without a certificate, diploma or degree rose by almost 3% since 2011, making it the highest when compared to other social LSA communities in 2016 at 21%, and over 5% higher than the RDEK. Over half of the population in Crowsnest Pass held a post-secondary credential(s); however, there was a 3.2% decline in this figure from 2011 to 2016 (55.2% and 52.0%, respectively).

4.8.2.2 Indigenous Communities Education

Two member nations of Ktunaxa Nation offer primary schooling to community members. The ᐱa'q'amnik Primary School (49 students, grades K through 6) is an accredited independent elementary school located in Cranbrook also within School District 5 that is operated by the ᐱa'q'am (ᐱa'q'am First Nation, 2019a; British Columbia, 2019b). The Yaqan Nukiy School is a Band-operated independent educational institution located on the Lower Kootenay Reserve. The school offers education opportunities for preschool through grade 7 for approximately 40-60 students per year (Lower Kootenay Band, 2019c).

Table 23 provides an overview of the education levels of the four Ktunaxa Nation communities in the LSA.

Table 23: Overall Education Levels for Ktunaxa Nations Communities in the LSA, 2016

Education Level	ʔAkisq'nuk		ʔaąam		Lower Kootenay		Tobacco Plains		Ktunaxa Nation	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	#	% ¹
Total >15-years of age	115	-	135	-	90	-	60	-	400	-
No certificate, diploma or degree	30	26.1%	40	29.6%	30	33.3%	15	25.0%	115	28.8%
Secondary school diploma or equivalent	35	30.4%	25	18.5%	20	22.2%	20	33.3%	105	26.3%
Post-Secondary certificate, diploma, or degree	50	43.5%	75	55.6%	40	44.4%	45	75.0%	180	45.0%
- Trades/apprenticeship or other non-university certificate ²	40	34.8%	55	40.7%	40	44.4%	25	41.7%	155	38.8%
-University certificate below bachelor level	0	0.0%	10	7.4%	0	0.0%	10	16.7%	10	2.5%
-University degree (bachelor level or higher)	10	8.7%	10	7.4%	0	0.0%	10	16.7%	15	3.8%

Source: INAC, 2019m; INAC, 2019n; INAC, 2019o; INAC, 2019p

1. Percentages are of the total >15 years of age
2. Includes college, college education levels are not separate within INAC's reporting.

Overall, educational attainment for Indigenous people is lower than non-Indigenous people within the social LSA. This is typical for Indigenous people throughout Canada. As described in **Section 4.6.2.2**, Indigenous people tend to be less educated than non-Indigenous people and are underrepresented in higher education. The lower educational attainment of Indigenous people can be attributed to a variety of socio-economic factors including discrimination, socio-economic status, colonial history and geography (**Section 4.7.2.2**).

In general, between one-quarter to one-third of those over the age of 15 for all four Ktunaxa Nation communities did not hold a certificate, diploma or degree of any kind in 2016, which was close to double that of most of the other social LSA communities, as well as the RDEK. The proportion of community members in the four Ktunaxa Nations with a high school diploma or equivalent in 2016 was much higher than the RDEK, with 75% of Tobacco Plains Indian Band residents holding this credential. The percentage of individuals living in the Ktunaxa Nation communities with apprenticeship, trades or other

non-university certificates in 2016 was also much higher than the RDEK and other LSA communities: 34.8% for the ʔAkisq'nuk First Nation, to as high as 44.4% for the Lower Kootenay Band where trades accounted for all post-secondary credentials recorded in 2016.

4.9 Housing and Accommodations

Housing in the region faces demand from people external to the region. These include tourists, seasonal residents and mine workers. This increases the demand for housing within the region. Housing is described as part of baseline conditions because the Project has the potential to place additional strain on the housing market within the region, particularly the social LSA. The presence of additional mine workers may increase the demand for rental housing while increasing in income may increase the price of housing stock. There are no known permanent residences in close proximity to the Project site, and the presence of temporary or seasonal residences in close proximity to the Project is currently unknown.

Primary research will be conducted to confirm and validate the secondary-source information presented in the following sections.

4.9.1 Regional Study Area

Regional District of East Kootenay

Table 24 provides a summary of dwelling characteristics in the RDEK. British Columbia is also included to provide context. Growth in the number of dwellings in the RDEK has increased at a similar rate as the province, 14.9% and 15.4% between 2006 and 2016, respectively. Price increases have been approximately 30% below the provincial norm. This may be due to the rapid price increase in the Vancouver housing market which contains most of BC's housing stock. The cost of the average dwelling in the RDEK is approximately half of the provincial average as rural areas tend to have lower home prices. In the RDEK the rental rate (16.6%) is approximately 13% below the provincial average (29.0%). Shelter costs, often tied to home prices, are also below the provincial average in the RDEK.

Table 24: Dwelling Characteristics – RDEK, 2006 to 2016

	Regional District of East Kootenay	British Columbia
Number of Private Dwellings		
2016	34,197	2,063,417
2011	33,081	1,945,365
2006	29,767	1,788,474
Change in Number of Private Dwellings (%)		
2006 – 2016	14.9%	15.4%
2011 – 2016	3.4%	6.1%
2006 – 2011	11.1%	8.8%

	Regional District of East Kootenay	British Columbia
Average Value of Dwelling		
2016	\$366,869.00	\$720,689.00
2011	\$358,458.00	\$543,635.00
2006	\$259,738.00	\$418,703.00
Change in Average Value of Dwelling (%)		
2006 – 2016	41.2%	72.1%
2011 – 2016	2.3%	32.6%
2006 – 2011	38.0%	29.8%
Rented (%)		
2016	16.6%	29.0%
2011	15.2%	27.0%
2006	16.2%	27.6%
Median Monthly Shelter Costs – Owned		
2016	\$881.00	\$1,149.00
2011	\$844.00	\$1,023.00
2006	\$653.00	\$876.00
Median Monthly Shelter Costs – Rented		
2016	\$876.00	\$1,036.00
2011	\$750.00	\$903.00
2006	\$592.00	\$752.00

Source: Statistics Canada, 2007a; Statistics Canada, 2012a; Statistics Canada, 2013a; Statistics Canada, 2013g; Statistics Canada, 2017a; Statistics Canada, 2017b

The Kootenay Real Estate Board (KREB) is an association of realtors that live and work in the east, west and boundary areas of the Kootenay region (Kootenay Real Estate Board [KREB], 2019). According to KREB, home sales decreased by 15.1%, with the average price of \$327,848 representing a 9.7% increase during the first quarter of 2019 when compared to the first quarter of 2018. There were 1,797 active residential listings (units) reported at the end of April 2019, an increase of 5.8% from April 2018, but below the 10-year average of over 2,500 listings (The Canadian Real Estate Association [CREA], 2019).

Availability of rental housing was identified as concern during previous EAs in the region (Golder Associates Ltd., 2015). Near the Project, rental costs are similar to or have previously exceeded the costs of ownership. Shift work at the mine sites in the social LSA are viewed as the driver of the high costs of rentals and shelter overall. During shifts, mine employees will temporarily reside within the social LSA. These workers may undertake the practice of 'hot bedding' where workers on different shifts rotate the use of a bed allowing larger numbers of workers to share an apartment and split the associated costs. In

addition, these workers earn higher wages allowing them to push up the price of rental units (Golder Associates Ltd., 2015).

A housing study was conducted for the region in 2012. The study identified challenges for housing faced by communities in the region. These include affordable rental accommodation, affordable senior accommodation, affordable homeownership for young people and modest income families and support for contract workers. These housing issues are often driven by income inequalities between those in the mining sector and other community members as mining employees have higher wages and can afford to spend additional income on housing. This inflates the price of shelter for community members negatively impacting them (Housing Strategies Inc., 2012).

4.9.2 Local Study Area

Within the social LSA, there are a variety of users requiring housing including the local population, seasonal community members and mine workers. These demographics have different shelter requirements and can often provide drastic influence on the housing market. Housing in the social LSA is characterized by high variance in dwelling value across time, in part due to the demand driven by the mining sector. Within the social LSA, shelter costs do not vary much for renters and owners.

There are no permanent residences in close proximity to the proposed mine site although there are some residences in proximity to the project access road and rail loading facility. The presence of temporary or seasonal residences in proximity to the Project needs to be confirmed. Please refer to the Land Use baseline report for mapping that shows locations of known residences in proximity to the Project.

4.9.2.1 Local Community Housing and Accommodations

Table 25 provides the dwelling characteristics for non- Indigenous social LSA communities.

Table 25: Dwelling Characteristics – Social LSA, 2006 to 2016

	Sparwood	Elkford	Fernie	Cranbrook (CMA)	Crowsnest Pass	RDEK Electoral Area A	RDEK
Number of Private Dwellings							
2016	2,130	1,521	3,032	11,637	3,225	1,320	34,197
2011	1,953	1,437	2,848	11,172	3,234	1,430	33,081
2006	1,914	1,383	2,627	10,424	3,004	1,321	29,767
Change in Number of Private Dwellings (%)							
2006 – 2016	11.29%	9.98%	15.42%	11.62%	7.4%	-0.1%	14.9%
2011 – 2016	9.06%	5.85%	6.46%	4.12%	-0.3%	-7.7%	3.4%

	Sparwood	Elkford	Fernie	Cranbrook (CMA)	Crowsnest Pass	RDEK Electoral Area A	RDEK
2006 – 2011	2.04%	3.90%	8.41%	7.18%	7.7%	8.3%	11.1%
Average Value of Dwelling							
2016	\$268,952	\$266,128	\$487,273	\$351,904	\$284,109	\$419,085	\$366,869
2011	\$286,515	\$256,595	\$443,079	\$328,951	\$312,167	n/a	\$358,458
2006	\$158,017	\$142,362	\$317,912	\$229,145	\$171,511	\$421,313	\$259,738
Change in Average Value of Dwelling (%)							
2006 – 2016	70.2%	86.9%	53.3%	53.6%	65.7%	-0.5%	41.2%
2011 – 2016	-6.1%	3.7%	10.0%	7.0%	-9.0%	n/a	2.3%
2006 – 2011	81.3%	80.2%	39.4%	43.6%	82.0%	n/a	38.0%
Rented (%)¹							
2016	415 (25.2%)	155 (14.9%)	605 (27.3%)	2,495 (21.4%)	455 (17.7%)	90 (10.8%)	5,670 (21.9%)
2011	420 (26.4%)	165 (16.7%)	530 (26.7%)	2,085 (18.7%)	500 (19.3%)	n/a	5,040 (21.0%)
2006	410 (26.4%)	140 (13.9%)	465 (24.8%)	2,175 (21.9%)	380 (14.4%)	85 (10.8%)	4,835 (20.6%)
Median Monthly Shelter Costs – Owned							
2016	\$1,085	\$1,108	\$1,369	\$868	\$679	\$776	\$881
2011	\$499	\$793	\$1,179	\$921	\$621	n/a	\$844
2006	\$553	\$720	\$776	\$724	\$529	\$763	\$653
Median Monthly Shelter Costs – Rented							
2016	\$889	\$1,007	\$984	\$840	\$976	\$1,043	\$876
2011	\$743	\$872	\$735	\$725	\$726	n/a	\$750
2006	\$526	\$540	\$530	\$589	\$608	\$636	\$592

Source: Statistics Canada, 2007a; Statistics Canada, 2007b; Statistics Canada, 2007c; Statistics Canada, 2007d; Statistics Canada, 2007e; Statistics Canada, 2007f; Statistics Canada, 2007g; Statistics Canada, 2012a; Statistics Canada, 2012b; Statistics Canada, 2012c; Statistics Canada, 2012d; Statistics Canada, 2012e; Statistics Canada, 2012f; Statistics Canada, 2013a; Statistics Canada, 2013b; Statistics Canada, 2013c; Statistics Canada, 2013d; Statistics Canada, 2013e; Statistics Canada, 2013f; Statistics Canada, 2017a; Statistics Canada, 2017b; Statistics Canada, 2017c; Statistics Canada, 2017d; Statistics Canada, 2017e; Statistics Canada, 2017f; Statistics Canada, 2017g

1. Percentages are of total private dwellings occupied by usual residents.

District Municipality of Sparwood

There are 2,130 private dwellings in Sparwood. The number of dwellings has increased below the regional rate between 2006 and 2016; however, the rate of housing expansion has outpaced the region by approximately 6.7% between 2011 and 2016. Home values have increased by over 70% in the last ten years, which is 30% higher than the region. Home prices have declined by approximately 6% between 2011 and 2016. Teck's expansion projects likely drove the price increase, while the price decrease was

likely driven by the coal demand decline and the commodity downturn (**Section 4.5**). In Sparwood, 25.2% of homes are rented. The number of rental homes in the community has declined by 1.2% between 2011 and 2016. An analysis of housing supply conducted in 2012 found that the existing supply of housing is meeting the population's needs; although, more housing for singles, seniors and empty nesters may be required in the future (Housing Strategies Inc., 2012). A recent report to council noted a 2.3% vacancy rate, but in recent years this rate was 17% (District of Sparwood, pers. comm., 2020).

As of November 2020, there were 37 residential properties listed for sale in the Sparwood area, ranging in price from \$51,900 (1-bedroom condominium) to \$1.7M (2.4-acre vacant site). Five (5) of the residential listings were condominiums ranging in price from \$51,900 to \$119,900; fourteen were vacant land properties ranging in price from \$67,500 (less than 1 acre) to \$1.68M (between 1-5 acres); and eighteen single family residential listings ranging in price from \$67,500 (less than 1 acre, mobile home) to \$639,900 (less than 1 acre), with one large single family residential property between Sparwood and Elkford listed at \$1.6M (120 acres with a Sparwood address) (CREA, 2020a). According to the Municipality of Sparwood, realtors have indicated that purchase of homes has remained local (District of Sparwood, pers. comm., 2020)

The District Municipality of Sparwood noted that there is an assumed demand for more affordable housing in the community (according to the Elk Valley Family Society); a housing needs assessment has been identified as one of council's strategic priorities (District of Sparwood, pers. comm., 2020). It was also noted that there is a large migrant workforce associated with the mining industry, and hot bedding is occurring within the community (District of Sparwood, pers. comm., 2020).

District of Elkford

There are a total of 1,521 private dwellings in Elkford. The increase in private dwellings was approximately 5% below the regional average between 2006 and 2011. Similar to Sparwood, homes rapidly increased in value between 2006 and 2011 (80.2%). The price increases slowed between 2011 and 2016 (3.7%). The home price increases may be due to the Teck expansions in the first decade of the 21st century while the slowdown was likely caused by the declining demand for coal and the commodity slowdown of 2015. There is a high percentage of ownership of dwellings in Elkford with only 14.9% of the population renting.

The combination of Elkford's favourable location, active and diversifying economy, and changing demographic profile is having an impact on both the demand for and the availability of housing in Elkford. Its location in the RDEK, its proximity to major centres and to other recreation and tourist destinations such as Fernie has a significant impact on Elkford's growing popularity, and demand for recreation and investment properties (e.g. weekend homes) (Housing Strategies Inc., 2012). The higher-than-average incomes offered by the mines can contrast with the more modest incomes earned in the retail, service and tourist sectors. This creates an affordability gap brought on by factors commonly attributed to supply and demand (Housing Strategies Inc., 2012).

As of November 2020, there were 35 residential properties listed for sale in the Elkford area, ranging in price from \$23,900 (vacant land property) to \$453,000 (less than 1 acre single family residence). Three (3) of the residential listings were condominiums ranging in price from \$59,900 to \$79,000; fifteen were vacant land properties ranging in price from \$23,900 to \$59,750 (both properties less than 1 acre); and 17 single family residential listings ranging in price from \$110,000 to \$453,000 (both less than 1 acre), with one large single family residential property between Sparwood and Elkford listed at \$1.6M (120 acres with a Sparwood address) (CREA, 2020b). Although housing has increased in value over the past year, this has not been a year-over-year trend recently (District of Elkford, pers. comm., 2020). Housing is generally around the mean for affordability in Elkford. There is currently a low vacancy rate, with a high demand for rental housing which is low in supply. The practice of hot bedding is common in the community but not quantified (District of Elkford, pers. comm., 2020).

Elkford has several hundred vacant and fully serviced residential lots that are privately owned and are being developed over time (District of Elkford, 2009). The updated Official Community Plan designated new areas for residential development.

There is a relatively new temporary worker camp in the community but it is available to specific workers only and not available to workers of other projects. The District of Elkford anticipates an increase in and demand for temporary accommodations (District of Elkford, pers. comm., 2020).

City of Fernie

Fernie has seen a consistent increase in private dwellings between 2006 and 2016 similar to the regional average. The number of private dwellings has increased 15.4% in Fernie to 3,032. Prices have increased 53.2% between 2006 and 2016 with the largest increase occurring between 2006 and 2011. This increase is consistent with Sparwood and Elkford, though the increase was lower (39.4%). Fernie has a higher rate of rentals (27.3%) than the regional average. Rentals may be associated with tourism or tourism employees who require more seasonal accommodation. Fernie has the highest cost of shelter for owners. This may be due to the presence of second homes. The City of Fernie indicated that there is a lack of available market rentals, and that the costly homes being built are not affordable for Fernie's population of young families (City of Fernie, pers. comm., 2020). Although housing stock types are lacking in Fernie, the City is in the process of developing larger multi-family projects (e.g., condos, row housing), with a more diverse supply of housing – affordable and otherwise – anticipated to be available within the next year or so (City of Fernie, pers. comm., 2020). While there has been a sharp increase in the number of multifamily units built in the last decade, single-family detached homes remain the dominant form of housing in Fernie. As of 2016, over 65% of housing types were categorized as single family detached homes. Due to the high number of second homeowners in Fernie, almost 30% of all housing units are occupied on a part-time basis. As a result of Alberta's natural resource economy, Fernie has experienced a rise in second home ownership (RDEK, 2014a; Kootenay Business, 2015).

The City of Fernie estimates that approximately 30% of residents in the community are temporary/secondary residents/home owners. (City of Fernie, pers. comm., 2020). As result of the presence of seasonal residents, Fernie has seen an increase in home ownership and rental costs, beyond what is affordable for many full-time residents. The number one housing concern of residents in 2013 was the cost to buy a house in Fernie, followed by a lack of affordable lots and the increased cost of rental suites. The 2007 Affordable Housing Strategy identified low-income housing, housing for people with disabilities, and seniors' housing as the top priorities for affordable housing in Fernie (City of Fernie, 2007). The 2017 Affordable Housing Strategy Update provides an overview of the current housing needs and gaps in the City of Fernie and West Fernie, including limited housing availability and choices (City of Fernie, 2017).

As of November 2020, there were 65 residential properties listed for sale in the Fernie area, ranging in price from \$54,900 (condominium, time share) to \$3.3M (vacant property). Eighteen of the residential listings were condominiums ranging in price from \$54,900 to \$1.1M, with a portion of these properties listed below \$200,000 as time-shares (e.g., quarter, half year, etc.); 25 were vacant land properties ranging in price from \$120,000 (less than 1 acre) to \$3.3M (1-5 acres), with four (4) of these vacant properties listed as a potential mixed use and/or multi-family medium- to high-density development opportunities (1-5 acres) priced between \$649,000 and \$3.3M, and eighteen (18) of these vacant properties less than 1 acre in size ranging in price from \$120,000 to \$349,000; and 22 single family residential listings ranging in price from \$244,900 (mobile home) to \$2.95M (over 9 acres) (CREA, 2020c). Housing prices continue to rise within the community with the resale of new houses remaining steady (City of Fernie, pers. comm., 2020).

City of Cranbrook

Within Cranbrook, there are 11,637 private dwellings. The number of private dwellings has increased by approximately 11.6% between 2006 and 2016. The cost of the average private dwelling increased 53.6% between 2006 and 2016. The largest price increase occurred between 2006 and 2011 when home prices increased approximately 43.6%. Cranbrook has the lowest median cost of shelter for both renters and owners in the social LSA. The higher rate of unemployment and lower median income likely contributes to surpassing shelter prices within the community.

Municipality of Crowsnest Pass (in Alberta)

The number of private dwellings in Crowsnest Pass has increased by 7.4% between 2006 and 2016. However, the number of homes has declined between 2011 and 2016. Similar to Sparwood, home prices have increased drastically since 2006 with a large increase between 2006 and 2011 followed by a price decline from 2011 to 2016. The Municipality noted that rentals are difficult to obtain (Municipality of Crowsnest Pass, pers. comm., 2020). The costs of rental housing are higher than the cost of owned housing monthly. Rental prices have also increased by almost \$400 between 2006 and 2016. As Crowsnest Pass often provides a residence for mining and resource workers, this may drive up the costs of renting. Housing prices are not increasing (i.e., sale prices on average \$10,000 to \$15,000 less than

the asking price); however, there continues to be a lack of houses that are priced affordably (e.g., very few homes equal to or less than \$300,000) (Municipality of Crowsnest Pass, pers. comm., 2020). It is assumed that higher housing prices are a result of lack of local tradespeople, which have to be brought in from outside the community driving up housing costs (Municipality of Crowsnest Pass, pers. comm., 2020).

According to the Municipality, second home owners and part-time residents are estimated (based on anecdotal information as statistics are not available) to comprise approximately 40% of home-owners in the community (Municipality of Crowsnest Pass, pers. comm., 2020). The Municipality indicated that the option for temporary construction camp(s) are currently being explored (Municipality of Crowsnest Pass, pers. comm., 2020).

RDEK Electoral Area A

The number of homes in the RDEK Electoral Area A changed by one unit between 2006 and 2016 with an approximately 8% increase in the number of dwellings between 2006 and 2011 and a similar decrease between 2011 and 2016. Home prices within RDEK Electoral Area A higher than many other social LSA communities and are relatively unchanged between 2006 and 2011. Due to data suppression, it is unknown if they experience similar pricing spikes as other social LSA communities. Rental costs within RDEK Electoral Area A far exceed the costs of own shelter on a monthly basis. This may be due to the presence of mine workers who commonly increase demand, and thus price, for rentals.

4.10 Community Services

Community services are provided within the social LSA by a variety of service providers. These services are provided to community member and have the potential to be strained by the Project. Changes in population and demographics or social and economic well-being may change the use of community services.

4.10.1 Regional Study Area and Local Study Areas

The RDEK, or the social RSA, works in partnership with municipalities and electoral (rural) areas within the social LSA to provide and coordinate services. Some of the services the RDEK provide include: land use planning, water supply, sewage disposal, fire protection, recreation, street lighting, community parks, emergency management programs, solid waste and recycling, transit, 9-1-1, library grants, and regional parks (Trade and Invest British Columbia, 2018). Individual social LSA communities also provide social services including recreation, emergency services (EMS) and child care.

Ktunaxa Nation also provides a variety of community services to their members, including daycares, elementary schools, after school programs, community health and recreational activities

4.10.1.1

Health Services

The Province of British Columbia is divided into five regional health authorities, each governing healthcare services within a set geographic area (British Columbia, 2019d). The Regional District of East Kootenay is part of the East Kootenay Health Service Delivery Area (HSDA) which falls under the jurisdiction of the Interior Health Authority (IHA) (Interior Health Authority [IHA], 2019a). Specialized health services and provincial health programs are administered in coordination with the Provincial Health Services Authority (PHSA) (Provincial Health Services Authority [PHSA], 2019). The Provincial Ministry of Health also works with the BC's First Nations Health Authority (FNHA) to administer health programs and services to First Nations in BC (First Nations Health Authority [FNHA], 2019).

The East Kootenay HSDA covers close to 45,000 km², and serves over 78,400 residents in its six Local Health Areas (LHA) comprised of Cranbrook, Fernie, and Windermere (within the RDEK), as well as Creston, Kimberley and Golden (outside the RDEK) (IHA, 2019b). The East Kootenay HSDA includes the LSA communities of Cranbrook, Elkford, Fernie and Sparwood (IHA, 2019a).

The East Kootenay Regional Hospital located in the City of Cranbrook is the main healthcare facility in the RDEK, providing health services throughout the East Kootenay HSDA (RDEK, 2014a; IHA, 2019c). In 2016/2017, residents from the East Kootenay HSA visited the East Kootenay Regional Hospital most frequently (52%), with out-of-province hospitals accommodating 11% of visits from residents (IHA, 2019b).

District Municipality of Sparwood

Sparwood Primary Health Care Centre is one of ten Primary Health Care Centres available within Interior Health communities. It has an interdisciplinary healthcare team that provides a range of services including emergency services between 8:00 a.m. and 7:00 p.m., 7 days a week with 6 beds available (after hours are directed to Elk Valley Hospital in Fernie). The Sparwood Primary Health Care Centre includes a variety of on-site facilities, include lab and x-ray, visiting counselling services, diabetic, cardiac and respiratory therapy, physiotherapy and occupational therapy, mental health, nutrition, and pain management counselling (**Table 26**) (IHA, 2018a; IHA, 2019f).

Table 26: Health Care Facilities in the District Municipality of Sparwood

Facility	Services Provided
Sparwood Primary Health Care	Delivery of interdisciplinary services (see above)
Sparwood Primary Health Care Laboratory	Outpatient laboratory services
Sparwood Community Dialysis Clinic	Community dialysis, renal program Hemodialysis
Sparwood Diabetes Clinic	Diabetes education, awareness and prevention program; assistance with insulin management

Facility	Services Provided
Sparwood Mental Health & Substance Use	Mental health and substance use services (e.g., counselling and treatment, group counselling and education, overdose prevention, substance use outreach, seniors mental health and substance use)

Source: IHA, 2019f

The Elkford Health Centre operates Monday-Friday from 8:00 a.m.- 4:30 p.m. and provides emergency services, a medical clinic, ambulatory care, laboratory, home and community care, diagnostic imaging (x-ray), public health, primary care nursing, and visiting counselling services (IHA, 2018b). Elkford has five emergency beds available in the community. After-hour emergencies are handled by the Sparwood Medical Centre or the Elk Valley Hospital (IHA, 2018b).

District of Elkford

The Elkford Health Centre provides the community with a number of different services including a physician's clinic, lab and x-ray, substance and mental health counselling, and youth outreach, as well as on-site nursing staff and a part time physiotherapist. The community also has a public health nurse, part time optometrist and full time dentist (District of Elkford, 2020).

Table 27: Health Care Facilities in the District of Elkford

Facility	Services Provided
Elkford Health Centre	Community health care centre, general services
Elkford Health Centre Laboratory	Outpatient laboratory services

Source: IHA, 2019f

Fernie is the hub for healthcare services in this area (District of Elkford, pers. comm., 2020). There is currently not enough capacity to fill the healthcare needs in the District of Elkford. It is difficult to see a doctor, so residents have to go to Sparwood if facilities are open, Fernie or Cranbrook. Most emergency room visits attended tend to be contractors or subcontractors from mine sites.

Wait times for doctors can be very long (sometimes a patient will have to come back the next day). The temporary workforce accommodation/work camp in Elkford puts increased pressure on services. Mental health services are lacking in Elkford (District of Elkford, pers. comm., 2020).

City of Fernie

Elk Valley Hospital in Fernie is a Level 1 hospital with 20 beds offering services including inpatient, obstetrics, and 24 hour emergency services (IHA, 2019f). Within the Fernie-Elk Valley sub-region, over half of in-patients received treatment at Elk Valley Hospital in Fernie. Another 25% received treatment at East Kootenay Regional Hospital in Cranbrook, while 21% of the remaining 21.9% received treatment in Alberta hospitals such as Crowsnest Pass (IHA, 2010).

Table 28: Health Care Facilities in the City of Fernie

Facility	Services Provided
Elk Valley Hospital	Delivery of interdisciplinary services (see above)
Elk Valley Hospital Laboratory	Outpatient laboratory services
Fernie Health Centre	Community health care centre, general services
Rocky Mountain Assisted Living Village	Assisted living: 24 living suites (12 subsidized, 12 independent)
Rocky Mountain Care Village	Supports long-term care (61 suites within 4 “neighbourhoods”)

Source: IHA, 2019f

Healthcare services in Fernie are currently adequate and meet the needs of residents (i.e., hospital, inventory of doctors, surgeons, general practitioners), with some specialists lacking in the community where residents typically have to access services in Kelowna, or Alberta (Lethbridge and Calgary) (City of Fernie, pers. comm., 2020).

City of Cranbrook

The City of Cranbrook is situated within the Cranbrook LHA, which had a population of 26,527 in 2017 accounting for close to 34% of the total population in the East Kootenay HSDA (IHA, 2019b; IHA, 2019e). As noted above, the East Kootenay Regional Hospital in Cranbrook is the main healthcare facility in the RDEK (RDEK, 2014a; IHA, 2019c). Core health services provided by this facility include, but are not limited to: medical and surgical specialty services, physician specialties, 24-hour emergency and trauma, as well as acute and obstetrical care (IHA, 2019c). The East Kootenay Regional Hospital had 77 beds in operation during the 2017/2018 fiscal year: 55 medical/surgical beds, 10 psychiatric beds, six ICU/CCU beds, four obstetrical beds, and two pediatric beds (IHA, 2019d). In 2016/2017, residents from the Cranbrook LHA visited the East Kootenay Regional Hospital most frequently (82%), with out-of-province hospitals accommodating 10% of visits from Cranbrook residents (IHA, 2019e). There are approximately 100 physicians currently practicing in the City of Cranbrook consisting of 51 General Practice/Family Physicians, and 41 Specialist Physicians (College of Physicians and Surgeons of British Columbia [CPSBC], 2019; City of Cranbrook, 2019d).

In addition to the East Kootenay Regional Hospital, the City of Cranbrook has a number of health and specialty care facilities offering a wide variety and breadth of services as summarized in **Table 29** below.

Table 29: Health Care Facilities in the City of Cranbrook

Facility	Services Provided
Cranbrook Community Dialysis Clinic	Community (hemo)dialysis, renal program
Cranbrook Diabetes Clinic	Diabetes education, awareness and prevention program; assistance with insulin management
Cranbrook Developmental Disability Mental Health Services	Adult community support, short-term assessment and treatment; community residential and geriatric programs; crisis intervention; day and outpatient programs; addictions counselling; group therapy and peer support; after-hours mental health support
Cranbrook Mental Health	
Kootenay Clover House	
Cranbrook Family Connections	Health care and support services for residents who experience acute, chronic, palliative or rehabilitative conditions; home support services include assessment and case management, nursing, rehabilitation, palliative care
Cranbrook Home Support Services	
Cranbrook Health Centre	Variety of health services available: health (e.g., adult day services, community respiratory therapy, immunization services, social work services); wellness (e.g., Breathe Well Program, Pulmonary Rehabilitation)
Cranbrook Wellness Centre	
East Kootenay Area Heart Function Clinic	Outpatient clinic to support residents in Cranbrook and Kimberley who have experienced heart failure
Dr. F.W. Green Memorial Home	Provides long-term care, tertiary psychiatric services, and tertiary recovery and rehabilitation for adults no longer able to reside at home without assistance; 60-bed facility (53 long-term care beds)
Joseph Creek Assisted Living Village	Assisted living; 28 publicly-subsidized suites.
Joseph Creek Care Village	Supports long-term care (102 suites within 8 “neighbourhoods”)

Source: IHA, 2019f

Municipality of Crowsnest Pass

The Crowsnest Pass Hospital in Alberta is a full-service hospital with 24/7 emergency services, Acute Care, Continuing Care, an Operating Room, and visiting specialists (Alberta Health Services [AHS], 2018). Due to its proximity, it is possible residents from Sparwood and Elkford use these hospital services. The municipality currently has broad healthcare options available to residents (i.e., hospital, general practitioners, dental professionals, and other specialists [optometrist, chiropractor, mental health clinic, etc.]) (Municipality of Crowsnest Pass, pers. comm., 2020). Crowsnest Pass is located in the Shock Trauma Air Rescue Service (STARS) southwest zone – they evacuate from British Columbia to Alberta because Cranbrook is the next closest community (Municipality of Crowsnest Pass, pers. comm., 2020).

4.10.1.2**Ambulance Services**

Ambulance service in the RDEK is provided by the BC Ambulance Service (BCAS), with stations based in all of the social LSA communities which are located in BC (BC Ambulance Service [BCAS], 2019). RDEK provides support to BC Ambulance Services by supporting the patient until they can be transported by

BCAS (RDEK, pers. comm., 2020). Enhanced 911 service is available throughout the RDEK, with dispatch completed through a call centre located in Kelowna (RDEK, 2014a). Ground ambulance service for Crowsnest Pass has been provided by the Province of Alberta through Alberta Health Services since 2009 (AHS, 2019).

The Shock Trauma Air Rescue Service (STARS) provides emergency air ambulance service to rural areas in AB and BC including the RDEK, with bases located in Grande Prairie, Edmonton and Calgary (head office) (RDEK, 2014a; Shock Trauma Air Rescue Service [STARS], 2019a; STARS, 2019b). According to STARS, there were 13 missions flown to the following social LSA communities during the 2017/2018 fiscal year: Cranbrook (4), Fernie (5), Sparwood (2) and Elkford (2) (STARS, 2019c).

4.10.1.3

Fire and Emergency Services

Fire and Emergency Services in the RDEK are provided by the Columbia Valley Rural Fire and Rescue Service, and the Elk Valley and South Country Rural Fire and Rescue Service. The RDEK also has contracts with the following municipalities which provide fire service to the rural areas just outside their municipal boundaries:

- Electoral Area A – Fernie Rural Fire, and Upper Elk Valley Fire (Sparwood);
- Electoral Area C – Cranbrook Rural Fire;
- Electoral Area F – Invermere Rural Fire, and Wilmer/Lower Toby Benches Fire (District of Invermere); and
- Electoral Area G – Radium Golf Resort and Dry Gulch Fire, and Brownsville Fire (Village of Radium Hot Springs) (RDEK, 2019c).

Fernie Fire Rescue also receives support from RDEK with vehicle stabilization and traffic control (RDEK, pers. comm., 2020). The RDEK is experiencing a lack of volunteers (volunteer recruitment across all the fire stations in the Elk Valley communities), with monetary contributions down – funding is through taxation (RDEK, pers. comm., 2020).

The RDEK also has an active Emergency Program to provide support to emergency responders and coordinate activities during a major emergency (i.e., flooding, forest fire, hazardous materials spill, etc.).

There are three emergency program areas within the RDEK:

- Elk Valley and South Country – Electoral Areas A and B, municipal partners (municipalities of Elkford, Sparwood and Fernie), First Nations partners (Tobacco Plains Indian Band);
- Central Subregion – Electoral Areas C and E, municipal partners (municipalities of Cranbrook and Kimberley), First Nations partners (Aqam First Nation); and
- Columbia Valley – Electoral Areas F and G, municipal partners (municipalities of Radium Hot Springs, Invermere, Canal Flats), First Nation partners (Shuswap Indian Band, Akisqnuq First Nation) (RDEK, 2019d).

The Sparwood Fire Department is managed by a Fire Chief and Deputy who supervise firefighters from two stations. Their service area includes the District Municipality of Sparwood and road rescue services within 70.5km². Sparwood Fire Department responds to emergency incidents, including fires, motor vehicle accidents with injuries, and hazardous material spills. The department works closely with other emergency response partners such as BC Ambulance, Search and Rescue, Elk Valley Royal Canadian Mounted Police (RCMP) Detachment, and Dangerous Goods response teams (District of Sparwood, 2016d).

Elkford Fire Rescue has a full time Director and Deputy who oversee up to 30 volunteer firefighters from one hall. It is equipped with two pumper, one ladder, and one brush truck; an Emergency Transportation Unit, and a fully equipped Rescue Unit with heavy hydraulic tools (District of Elkford, 2010c). There are currently two paid fulltime positions (composite hall chief and deputy chief); most paid on-call responders are mine workers who work shifts (e.g., 4-on-4-off, or 5-day shifts). There is a reduced crew during the summer months (District of Elkford, pers. comm., 2020). The service area for Elkford Fire and Emergency Services (EMS) extends from 8 km south of Elkford, 5 km north of Elkford, and 8 km east of Elkford up the Fording Highway (District of Elkford, pers. comm., 2020).

Fire and emergency services provided in Elkford include fire suppression, wildland firefighting, first responders, motor vehicle extrication (for motor vehicle incidents [MVI]) (District of Elkford, pers. comm., 2020), while ambulatory services are provided by the BC Ambulance Service (District of Elkford, pers. comm., 2020).

The availability of emergency services in Elkford can be variable: sometimes availability of responders can be sporadic (i.e., sometimes there is enough coverage and other times there is not – it can depend on time of day) (District of Elkford, pers. comm., 2020). Current challenges with the provision of services include an apparent increase in emergency call-outs that are more specific to transient populations that do not live in Elkford: there is a notable demand for EMS and health services by non-residents/people that do not live in Elkford permanently (District of Elkford, pers. comm., 2020). There is an obvious trend in calls related to non-residents (e.g., drinking and driving) (District of Elkford, pers. comm., 2020).

The Fernie Fire Department has seven full-time firefighters including a Director of Fire and Emergency Services, Fire Prevention Officer, Training officer, two Lieutenants, and two Firefighters. The Road Rescue team is supported by 20 auxiliary firefighters. The Department provides fire suppression for Fernie and surrounding areas (defined by mutual aid agreements) and first responder services (motor vehicle extrication and rescue) (City of Fernie, 2013).

The Cranbrook Fire and Emergency Services (FES) functions at both emergency (e.g., firefighting, medical emergencies, rescue) and non-emergency (e.g., emergency program maintenance and management, inspections) levels (City of Cranbrook, 2017). Cranbrook FES consists of over 30 staff members providing emergency services to approximately 24,000 residents situated within the City of

Cranbrook as well as RDEK contract service areas (City of Cranbrook, 2019e; City of Cranbrook, 2019f). In 2017, Cranbrook FES answered approximately 1,800 emergency calls (City of Cranbrook, 2017).

Municipal Fire Rescue services are provided in the Municipality of Crowsnest Pass (Municipality of Crowsnest Pass, 2018a). The municipal fire service administers open burn permits and assists with highway closures between Crowsnest Pass and Sparwood during the winter months (Municipality of Crowsnest Pass, 2018a). There are also local conservation officers and public land officers available in the community, as well as emergency management for large scale events (Municipality of Crowsnest Pass, pers. comm., 2020).

Each member Nation is responsible for providing fire and emergency services on reserve, with support from Indigenous Services Canada. Fire and emergency services are supported by the First Nations Emergency Services Society of British Columbia (FNESS), who assists the communities to increase their overall level of fire protection (First Nations Emergency Services Society of British Columbia [FNESS], 2018). In 2017, the Cranbrook FES entered into a service agreement with the ʔaąam to provide emergency response and fire prevention services (City of Cranbrook, 2017).

4.10.1.4

Police and Protective Services

The Elk Valley Regional RCMP detachment has three locations in Elkford, Sparwood, and Fernie, servicing these locations as well as the communities of Hosmer, Elko, Baynes Lake, Grasmere, Roosville, Galloway and Tobacco Plains (Royal Canadian Mounted Police [RCMP], 2019b; RCMP, pers. comm., 2020). The Elk Valley RCMP covers an extensive service area: from the Canada – US border with Montana, north to the Alberta national park boundary, then east to the Alberta border and west to Jaffray (at the Sand Creek Bridge) (RCMP, pers. comm., 2020).

The main office for the Elk Valley RCMP is located in Sparwood, and which consists of one detachment commander, a staff sergeant, sergeant, three corporals (one vacant), 13 constables, and four Detachment Service Assistants (DSA's) (Elk Valley RCMP, 2017).

Generally, RCMP services are sufficient; however, due to their large catchment area, service may feel lower than expected (District of Elkford, pers. comm., 2020), and getting to all communities can be a challenge in the winter due to road and highway conditions (RCMP, pers. comm., 2020). In the past, it seemed like service was better when there was dedicated presence in Elkford (District of Elkford, pers. comm., 2020).

Police services in the City of Cranbrook are provided by the Cranbrook Detachment of the RCMP, which is comprised of 33 regular staff members (26 municipal, 6 provincial and 1 federal positions) and over 13 support positions (RCMP, 2019a; City of Cranbrook, 2019g). The detachment includes officers in the areas of general duty, serious crime, forensic identification services, crime prevention and community policing. Additionally, the detachment provides police dog services and victim services (City of

Cranbrook, 2019g). The First Nations Policing Unit liaises with and provides support to the Ktunaxa First Nations. In 2017, approximately 8,679 calls were made requesting RCMP services (City of Cranbrook, 2017).

The Municipality of Crowsnest Pass has an RCMP detachment which covers a service area that includes the communities of Bellevue, Blairmore, Burmis, Byron Creek, Chapel Rock, Coleman, Frank, Hillcrest, Lundbreck, Maycroft, MD of Ranchlands, Passburg, Sentinel, The Gap and Tod Creek (RCMP, 2019c).

Crime

Table 30 provides the crime rate within the social LSA. Crime rates within the social LSA have been relatively stable between 2015 and 2017 with the exception of Cranbrook. Within the Elk Valley and Fernie, crime rates are well below the provincial average.

Crime rates for Cranbrook per 1,000 inhabitants in 2017 were 88.9 and 36.1 for within the municipal boundary and outside the municipal boundary, respectively, which is higher than the provincial rate reported to be 74.2. There were 1,997 *Criminal Code* offences that occurred in Cranbrook in 2017, with 515 violent offences, 1,013 property offences and 103 drug offences reported. In 2017, the RCMP reported a decrease in the number of motor vehicle incidents relating to impairment, as well as a decrease in mental health-related calls and apprehensions. The increase in criminal activity may explain Cranbrook's disproportionate spending on policing as shown in **Section 4.5.2**.

Table 30: Crime Rates¹ – Total *Criminal Code* Offenses from 2015 through 2017 – RDEK

Jurisdiction	2015	2016	2017
Cranbrook, Municipal	78.0	73.4	88.9
Cranbrook, Provincial	34.2	36.3	36.1
Elk Valley, Provincial ²	43.8	46.1	41.6
Fernie, Municipal ³	-	-	43.8
British Columbia	78.1	77.3	74.2

Source: British Columbia, 2017.

¹Excludes drugs and traffic offences/crimes; reported for every 1,000 persons.

²Elk Valley RCMP is an integrated detachment, providing services to Elkford, Provincial; Fernie, Provincial; and Sparwood, Provincial.

³Fernie's population exceeded 5,000 and provision of RCMP Municipal services commenced in 2017. Prior to 2017, policing was administered by the Elk Valley detachment.

Crimes that are most prevalent in the District of Elkford include (in order of priority): assault (sexual, physical, domestic), substance use (drugs, alcohol), overdose (more of these occurring as mining drug tests only screen for alcohol and marijuana, but not barbiturates and cocaine), theft, and drinking and driving (District of Elkford, pers. comm., 2020). There seems to be a notable trend in fentanyl in communities (note: based on Nelson testing program for drugs that are in the communities) (District of Elkford, pers. comm., 2020).

There is a community police officer for Crowsnest Pass providing both bylaw and local traffic enforcement (Municipality of Crowsnest Pass, pers. comm., 2020).

4.10.1.5

Child Care Services

Affordable and accessible childcare is a challenge for all Elk Valley communities (District of Elkford, pers. comm., 2020). Lack of childcare has been identified as a potential barrier to female employment in the Elk Valley, particularly for the service sector (Fernie Childcare Society, pers. comm., 2020). Within the social LSA, there are varying levels of childcare available to community members.

There is one licensed family child care centre in Sparwood which offers flexible child care schedules and space sharing options for children ages birth to 12 years (Scotland, 2015). The Sparwood Treehouse Daycare Centre is a full-service certified child care facility offering full time, part time and drop in care. It provides 8 full time spaces for infant/toddler care (6-36 months), 8 licensed spaces for pre-school care (3 years to 5 years), and an after school program for children 5 to 12 years of age which accommodates approximately 17 children. Teck pays the utilities for the childcare facility (Scotland, 2015).

Elkford does not have a licensed childcare or a StrongStart early childhood development program. Preschool-aged children in Elkford can attend preschool part time, with 57 children registered in the 2015-2016 academic year (The Free Press, 2016).

There are major capacity issues surrounding demand for childcare in Fernie, and the situation is not getting any better (City of Fernie, pers. comm., 2020; Fernie Childcare Society, pers. comm., 2020). There are very limited licensed childcare facilities in Fernie, with one licensed group childcare facility that can provide care to infants and toddlers, with a capacity of 12 full time spaces. This facility also has spaces for 32 children aged 3 to 5 years old; it does not offer drop-in child care (Scotland, 2015; Fernie Childcare Society, pers. comm., 2020). Fernie Childcare Society recently added space, but there is still not enough to meet current demands, and further expansion would be sought if there was adequate funding available. There are a number of families living in Fernie, and coupled with recent 'baby booms' have contributed to increased demands for child care (Fernie Childcare Society, pers. comm., 2020). There are also challenges with recruiting and retaining staff: it is difficult to find enough qualified people (Fernie Childcare Society, pers. comm., 2020).

Childcare choices are greater in Cranbrook than in the other LSA communities. It is understood that childcare spaces in Cranbrook are limited (The Drive FM, 2018). There are currently 19 licensed childcare providers situated in the Cranbrook area (British Columbia, 2019ef). The East Kootenay Child Care and Resource Referral (EKCCRR) office is located in Cranbrook and provides referral services, training and other resources for those seeking childcare support and information (East Kootenay Child Care and Resource Referral [EKCCRR], 2019).

Crowsnest Pass has several licensed daycare providers. The Brighter Futures program provides a combination of free activities and services that provide personal support, and play and learning opportunities for parents with children ages 0 - 6. In addition, Brighter Futures offers many drop-in seasonal programs to help families learn and develop together including Little Picassos, Little Chefs, and Little Builders. Brighter Futures also offers sessions where parents can focus on the different challenges of parenting the 0-6 age group (Municipality of Crowsnest Pass, 2019a). Pre-school is provided by Kids Kollege Nursery School, which is a licensed pre-school program for children who are at least 3 years of age and toilet trained (Municipality of Crowsnest Pass, 2019a). there are also a variety of other drop-in child services within Crowsnest Pass (Municipality of Crowsnest Pass, 2019a).

4.10.1.6

Recreation Services

Social LSA communities provide a variety of recreation services to community members. These include community centres, sports complexes, arenas and other recreational features within communities. Outdoor tourism and recreation activities such as trails, hunting areas, and fishing access points are provided in the separate report prepared for the Land Use and Access VC.

Within Sparwood, indoor recreation facilities include a pool and leisure centre, an arena, and a curling rink. Sparwood also has numerous parks and playgrounds, sports fields, a spray park and a skateboard park (District of Sparwood, 2018).

Elkford recreation facilities currently meet the community's existing demand; however there is always a desire to increase and improve these services (District of Elkford pers. comm., 2020). Existing facilities and services include the Elkford Aquatic Complex, featuring four lanes for competitive swimming, a wading pool, hot tub and sauna; and the Elkford Recreation Centre which features a hockey arena and 3-sheet curling club, four ball diamonds, tennis courts, sports fields, a running track, and playgrounds. The Elkford skate park is degraded and is in need of upgrade or replacement. Elkford also has a golf course as well as trails in the local area for snowmobiles, ATVs and cross-country skiing. There is also a local downhill ski facility, the Wapiti Ski Hill. Additional recreation assets that are desired include a bike skills park/jump park, and possibly an off-road vehicle park (District of Elkford pers. comm., 2020). Fernie's existing recreation and parks facilities currently meet the needs of residents, and include the Fernie Aquatic Centre, a skateboard park, arena, curling club and a recreation centre; however, some existing facilities are ageing and may require replacement in the future (City of Fernie, pers. comm., 2020). There is a parks and recreation master plan and facilities master plan in progress (City of Fernie, pers. comm., 2020). Fernie has a well-used seniors' centre and three new dog parks. Fernie currently manages seven public parks. It also has an 18-hole golf course.

In Cranbrook, indoor facilities include three indoor arenas, including Western Financial Place which offers aquatic activities. There is a bowling alley, casino, curling centre, eight golf courses, and numerous playgrounds and sports fields. There are also 17 parks within the city limits maintained by the City of Cranbrook (City of Cranbrook, 2017)

The Municipality of the Crowsnest Pass owns and operates a number of recreational facilities including indoor facilities (ice arena, curling rink, skateboard park, climbing wall, multiple gymnasiums) and outdoor facilities (swimming pool, downhill ski and snowboard area, and mountain biking trails) (Municipality of Crowsnest Pass, 2018b). There is also a non-profit golf course, community paths, groomed snowmobile and cross-country trails, ATV trails, baseball diamonds and soccer fields (Municipality of Crowsnest Pass, pers. comm., 2020). The existing facilities currently meet the needs of the community (Municipality of Crowsnest Pass, pers. comm., 2020).

Ktunaxa Nation provides a variety of recreation facilities to its members, including sports fields and playgrounds. In 2017, the Akisqnuq First Nation broke ground on a 22,400 square foot sports complex located beside the Akisqnuq band office on Hwy 93/95. The completed recreation centre will include space for a full soccer field, basketball and volleyball courts, a weight room, and an indoor elevated running track around the perimeter of the facility. It will also have a 12,000 square foot multi-purpose floor area, large enough for regulation sized indoor soccer. There will also be opportunities for a wide array of traditional Ktunaxa activities, both indoor and outdoor, including horsemanship, archery, wild foods programs, and stick games. The facility is due to open in late 2018 (Columbia Valley Pioneer, 2017).

4.11 Community Health and Well-being

Community health and well-being is often a composite of a variety of social and economic issues relating to health, opportunity, crime, education and vulnerable groups, and the perception of these factors. Community health and well-being tends to be above the provincial medians within the social LSA and RSA, in part, due to the economic prosperity driven by the mining sector. However, these communities have social issues related to the rural character of the region and the mining sector. The Project may impact community well-being by changing the social and economic structures within the region impacting vulnerable populations most noticeably. Economic opportunity associated with the Project may aid in improving the community including health and well-being.

4.11.1 Regional Study Area

The last health survey completed for the region was done in 2013. **Table 31** provides the perceptions of health and well-being of residents within the East Kootenay Health Service Delivery Area based on this survey. This area is representative of the social RSA. Perceptions of health for community members in the RSA tend to be below the provincial averages. However, those within the social RSA are more likely to perceive a sense of community belonging. Overall, a lower proportion of community members are satisfied or very satisfied with their life when compared to BC.

Table 31: Perceptions of Health and Well-Being in the Social RSA, 2013

Well-being Factors	East Kootenay Health Service Delivery Area	BC
Perceived health, very good or excellent (%)	54.3	59.9
Perceived mental health, very good or excellent (%)	69.0	72.2
Perceived life stress (%)	21.8	23.2
Sense of community belonging (%)	69.2	65.4
Life satisfaction, satisfied or very satisfied (%)	87.3	92.3

Source: Statistics Canada, 2013i

Table 32 provides the health behaviours for the social RSA. Within the social RSA, there are higher rates of daily smokers and heavy drinkers. A 2013 survey of youth in the East Kootenay showed that they were more likely than their peers across the province to have tried tobacco, alcohol or marijuana; however, there were local improvements over time, including reductions in the use of all three substances across survey years (McCreary Centre Society, 2015).

Leisure time physical activity rates are higher in the social RSA than the province. This is likely due to the variety and number of the outdoor recreation activities available within the region.

The rate of suicide and self-inflicted injury is similar within the province and the social RSA. More recently, the East Kootenay HSDA had one of the highest rates of suicide deaths in BC in 2016, ranking 5th in the Province (The Columbia Valley Pioneer, 2018; British Columbia, 2018b)

There is a higher prevalence of doctors within the social RSA than the province. This could, in part, be due to the sparse population and distance to services within the region.

Table 32: Health and Well-Being Behaviours in the Social RSA, 2013

Health Behaviours	East Kootenay HSDA	BC
Current smoker, daily (%)	16.2	15.3
Heavy drinking (%)	23.1	18.2
Leisure-time physical activity, moderately active or active (%)	64.7	53.8
Suicides and self-inflicted injuries, deaths (per 100,000 population)	10.4	10.2
Doctors rate - General/family physicians (per 100,000 population)	150	106

Source: Statistics Canada, 2013i

4.11.2 Local Study Area

The social LSA is characterized by better community well-being outcomes than a majority of the province based on community well-being indices. Health and substance abuse; however, tend to be more similar to the provincial median. Data on the community health and well-being is not available for all specific social LSA communities as data is only available for local health authorities.

BC stats produces indices covering the socio-economic wellbeing of communities (Government of BC, n.d.). The indices are available for social districts, local health authorities and regional districts. The indices include an overall regional socio-economic index, indices covering specific topics and indices covering specific target groups (Government of BC, n.d.). The most recent indices available are from 2012. The overall community wellness indicator uses a set of 80 social indicators, which are categorized, weighted, and calculated into four key indices and two target groups making up the overall community wellness indicator (Government of BC, n.d.). The four areas and two target groups, including their respective weights, are:

- Index of Human Economic Hardship (0.3);
- Index of Crime (0.2);
- Index of Health problems (0.2);
- Index of Education Concerns (0.2);
- Target Group Children (0.05); and
- Target group Youth (0.05).

The scores of each index are weighted and ranked. The community with the lowest well-being is ranked number 1. Lower index values correspond with better socio-economic conditions. Indices are designed to be relative measures of well-being comparing communities. Therefore, temporal analysis is not intended for these indices (Government of BC, n.d.). **Table 33** provides a summary of socio-economic well-being Indices for social LSA and RSA communities.

Social LSA communities tend to be above the BC median across all indices considered. The only instance of below the median is health within Cranbrook. Overall, Fernie is ranked 69th highest out of 78 (10th best) within BC for overall community well-being. Fernie has scored highest relative to other communities in human economic hardship and youth which may be due to the high wages and opportunities in the mining sector. Fernie ranked very close to the median for health.

Cranbrook is ranked 54th highest out of 78 (24th best) in the province for overall community well-being. Cranbrook's indices are highest for crime and youth relative to other BC communities. The high crime index value may be due to the increased government spending on policing as described in **Section 4.5.2**. Similar to Fernie, Cranbrook ranked very close to the median for health.

Table 33: Well-Being Indices for Social LSA and RSA Communities

Index (and rank) ¹	Community ^{2,3}		
	Fernie ⁴	Cranbrook	RDEK ⁵
Overall Community Wellness	-0.43 (69)	-0.19 (54)	-0.48 (25)
Human Economic Hardship	-0.62 (71)	-0.1 (44)	-0.66 (25)
Crime	-0.54 (63)	-0.45 (61)	-0.64 (22)
Health	-0.01 (43)	0.02 (41)	-0.33 (22)
Education	-0.43 (62)	-0.31 (51)	-0.25 (18)
Children	-0.19 (53)	0.08 (33)	-0.21 (15)
Youth	-0.71 (75)	-0.24 (55)	-0.60 (26)

Source: BC Stats, 2012a; BC Stats, 2012b

1. Indices are the weighted average of the individual subject matter "composite indices". The Composite Index is the weighted average of the sub-indices. The sub-indices are calculated as the distance from the median value (standardized by the interquartile range). For example, a region with a +0.75 index means that region is 0.75 standard units worse than the median region; while a -0.75 index means that region is 0.75 standard units better than the median region. Indices >+1 are tempered by the power of 1/4.
2. Local health authorities are used as proxies for the social LSA communities. These areas do not completely overlap with the communities considered in other sections. Local health authorities are ranked out of 77 (or 78 for some sub-indices).
3. Crowsnest pass is not included as it is not within BC.
4. Fernie includes the communities of Fernie, Sparwood and Elkford.
5. Regional Districts are ranked out of 26.

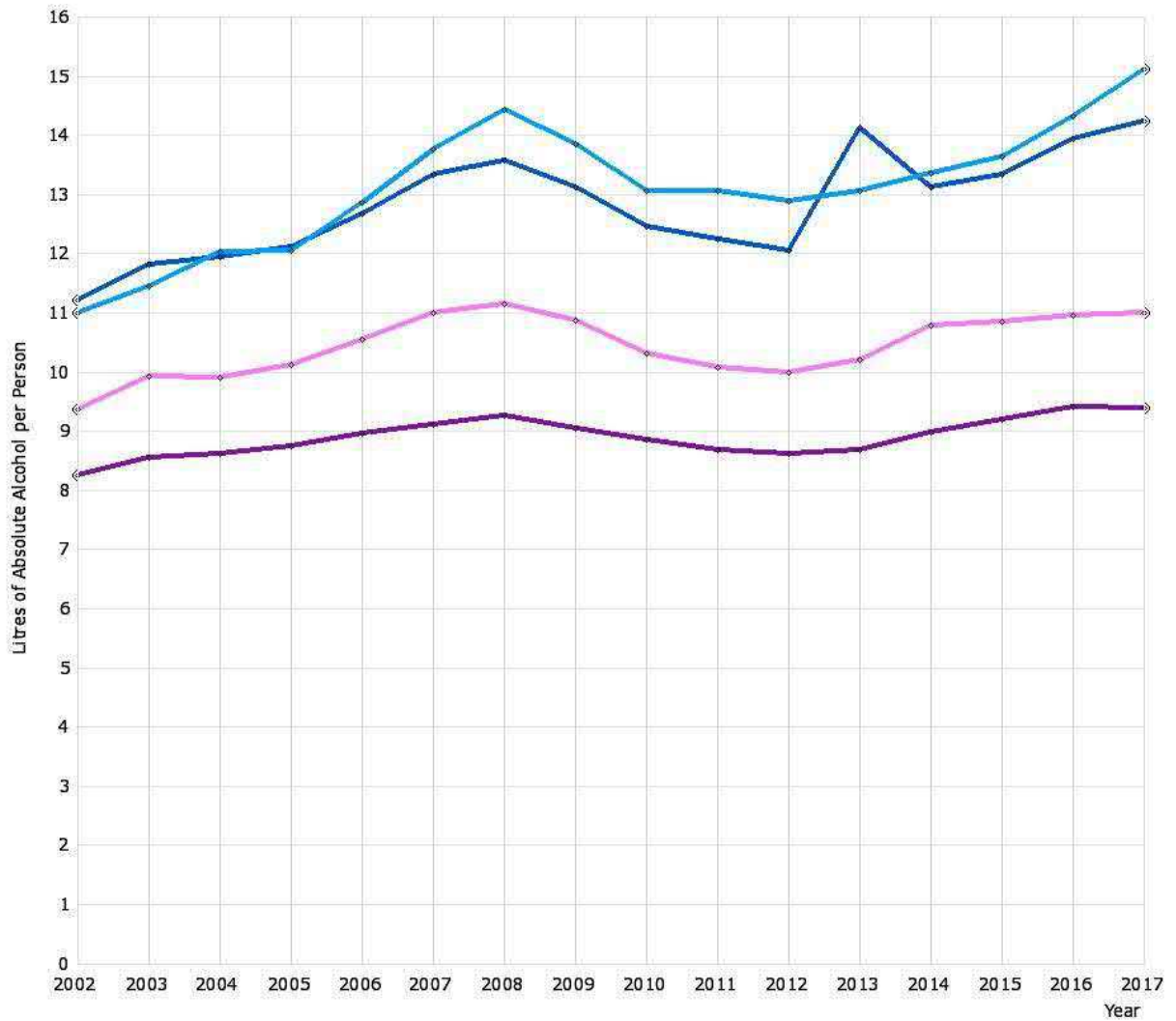
Contributing to overall well-being, a key issue in mining communities across Canada is substance abuse. As shown in **Table 32**, heavy drinking prevalence is approximately 5% higher in the social RSA than the provincial average. Alcohol consumption is a common concern in remote areas and communities with large temporary resident populations associated with employment opportunities such as mines. Within social LSA communities, alcohol consumption is above both provincial and regional averages as shown in **Figure 4**. The rate of alcohol consumption has also increase relative to the region and province. In 2002, social LSA communities consumed approximately 2 L more alcohol than regional average. As of 2017, the alcohol consumption per capita increased to between 4 L and 5 L more than the regional average. Overall trends in alcohol consumption within the social LSA are similar to the region and province.

The East Kootenay Addiction Services Society runs a treatment centre in Cranbrook. They also provide counseling services in Fernie (East Kootenay Addiction Services Society [EKASS], 2019). Little public information is available with respect to addiction services in the social LSA. As part of the primary research program, attempts were made to collect primary data on the topic; however, the program was unable to complete an interview with representatives knowledgeable on these services.

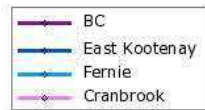
Within the social LSA, there are a variety of social and political organizations advocating on behalf of the community regarding specific issues. The social and political organizations include community, recreational, health, governance, industry, labour, arts and cultural organizations within the social LSA. These organizations allow individuals to form communities around specific issues and activities. The establishment of communities focused on improving quality of life through a variety of interactions provide social benefit to the community.

Figure 4: Per Capita Alcohol Consumption in the Social LSA and RSA

Per Capita Alcohol Consumption vs years (2002-2017)



1 Litre of absolute Alcohol = 58.65 Standard Drinks



Source: (University of Victoria Canadian Institute for Substance Use Research, 2018)

4.12 Community Infrastructure

Communities commonly provide water, waste water, and solid waste services in the region. The region also augments community solid waste services. Power and gas are provided by private sector companies throughout the region. Like community services, infrastructure may be strained by the Project as additional population within the community may strain existing community infrastructure.

4.12.1 Regional Study Area

Regional District of East Kootenay

Water, Wastewater and Solid Waste

There are ten water systems located within the RDEK, eight of which are operated by the Regional District and described below in **Table 34** (RDEK, 2019g). Water quality and monitoring in the East Kootenay is regulated and conducted by the IHA in compliance with applicable regulations (RDEK, 2017).

Table 34: Water Systems in the RDEK

Water System	Source Type (Location)	Supply Method	Treatment	Storage/ Reservoir ¹
Windermere	Surface (Lake Windermere)	Pumped, gravity	Yes (chlorine)	Yes (1,250 m ³ and 1,600 m ³)
Edgewater	Surface water (Lake Baptiste)	Gravity	Yes (chlorine, UV)	Yes (1,200 m ³)
Holland Creek	Groundwater well	Pumped, gravity	Yes (chlorine)	Unknown
Timber Ridge	Surface (Lake Windermere)	Pumped, gravity	Yes (conventional, chlorine, UV)	Yes (1 reservoir)
Rushmere	Surface (Lake Windermere)	Pumped	Yes (chlorine, ultrafiltration)	Unknown
Spur Valley	Groundwater well	Pumped, gravity	Chlorine	Yes (2 reservoirs)
Moyie	Groundwater well	Pumped, gravity	No	320 m ³
Elko	Groundwater well	Pumped	No	No, continuous operation

Source: RDEK, 2017; RDEK, 2019g

Total annual water consumption in the RDEK was reported as 656,000m³ in 2007/2008, with 1,542 residential equivalent connections (each connection equal to one residential connection) (RDEK, 2009).

Sewer systems for Edgewater and Holland Creek (Lakeview Meadows) residents are managed by the RDEK. The Baltac Sewer Collection System is owned but not operated by RDEK (RDEK, 2019h).

Solid waste and recycling collection is typically administered by each municipality, or through private contractors, in the RDEK. Where collection of garbage and recycling through the yellow bin program is not available (i.e., in some rural areas), the RDEK operates a number of transfer stations (five urban and 15 rural stations), two landfills and one recycling depot (RDEK, 2019e; RDEK, 2019f). The RDEK is currently in the process of reviewing their Regional Solid Waste Management Plan. The plan was prepared in 2003 to identify policies to guide waste management priorities over a 20-year planning horizon (RDEK, 2003).

Power and Gas Utilities

Electricity is provided to the RDEK by BC Hydro including all BC social LSA communities. Natural gas, provided by Fortis BC, is available in the social LSA communities of Cranbrook, Fernie, Sparwood, and Elkford (FortisBC, 2019). Natural gas service is unavailable for the Upper Columbia Valley. Residential developments through the regional district also use wood stoves as their main source of heat, with geothermal energy as another option where for some developments (RDEK, 2014a).

4.12.2 Local Study Area

Communities in the social LSA provide a variety of community infrastructure addressing access to utilities and waste collection. Many communities have partnerships with the RDEK addressing waste collection, often recycling waste.

District Municipality of Sparwood

Water, Wastewater and Solid Waste

Sparwood provides water, sewer and garbage collection for residents. Sparwood is metered on a voluntary basis with meters supplied by the municipal government and installed by the owner (District of Sparwood, 2019b). The Sparwood water supply is sourced from groundwater (3 wells) and it is understood that residences are sometimes directed to use bottle water due to selenium contamination in Well #3. It is understood that a new municipal well has been commissioned to replace Well #3 in response to this problem.

The majority of Sparwood is serviced with a wastewater system through the District Municipality of Sparwood's Wastewater Treatment Plant (WWTP). The WWTP was originally built in the early 1960s, with several modifications and upgrades over the years. The WWTP continues to provide the community with up-to-date services but has a capacity of 5,800 people, if the growth of the community continues a new WWTP will be required. Currently a location has been chosen, but areas south of Sparwood are currently being considered (District of Sparwood, 2019c; District of Sparwood, 2019d). Residential weekly garbage pick-up is provided with higher frequency in commercial areas where necessary. Recycling is a regional service provided through the Regional District of East Kootenay, with drop-off depots located throughout town.

According to the District, current community infrastructure is well-maintained, with upgrades planned in the near future for waste water infrastructure; the need for other component upgrades will be informed by the asset management plan which is currently underway (District of Sparwood, pers. comm., 2020). There was a large development that has not yet transpired and no population growth, so the current infrastructure is underutilized and has capacity to accommodate further demand (District of Sparwood, pers. comm., 2020).

District of Elkford

Water, Wastewater and Solid Waste

Elkford provides water, waste water and garbage collection. Elkford's water and sewer systems are designed to accommodate a population of 7,000 residents. Elkford's water distribution system provides the residents of Elkford with potable drinking water. Water is supplied from a system of three wells and chlorinated at the source. A separate system supplies the industrial park. Elkford operates a sewer facility including collection and treatment. The sewer system uses storm sewers to collect service runoff. Elkford's sewer system uses aerated lagoons for treatment. Although located near the Elk River, Elkford does not discharge effluent into the river. Residential, and commercial regular solid waste collection services is provided by Elkford. Waste collection includes compost (grass) while other compost is can be disposed of at the Elkford Transfer Station (all other yard waste). With Elkford, the RDEK administers the yellow bin recycling program (District of Elkford, 2019b; District of Elkford, 2019c).

The capacity of Elkford's water system is being studied in 2020, and sewer infrastructure capacity will be investigated in 2021 to determine demand and requirements (District of Elkford, pers. comm., 2020). Water pressure capacity was recently tested. In the interim, upgrades will continue to be completed on an as-needed basis (District of Elkford, pers. comm., 2020).

City of Fernie

Water, Wastewater and Solid Waste

Fernie provides water, wastewater and garbage collection services. Drinking water in Fernie is drawn primarily from the Fairy Creek watershed through the Fairy Creek springs. The City was planning to use two new production wells installed within James White Park to provide safe drinking water addressing drinking seasonal water quality issues (City of Fernie, 2019b). These wells were expected to be commissioned in the late summer of 2018 (City of Fernie, 2019b). Fernie operates and maintains a sewer collection and treatment system. Sewage is directed to the Main Lift Station where it is pumped to the Sewage Treatment Lagoons treatment (City of Fernie, 2019a). Fernie has focused on bringing infrastructure and systems up to higher standards in recent years in order to increase safety and service quality and reduce inefficiencies. Fernie has a new water reservoir and plans to upgrade the sewage treatment system (City of Fernie, 2019b). Fernie is also working on completing a liquid waste management plan to manage Fernie's liquid waste and meet all provincial and federal regulations for sewage treatment (City of Fernie, 2019a). Fernie provides regularly scheduled garbage collection and

provides bear-proof dumpsters throughout the City at three locations. A recycling program is operated by the RDEK. Additional services include composting at the Brenner Road Transfer Station; batteries and cellphone disposal at City Hall and the Fernie Aquatic Centre; and electronics, small appliances and sealed paint containers at the Fernie Bottle Depot.

The City of Fernie has recently completed modelling, and the Integrated Infrastructure Capital Plan (IICP) is in progress (City of Fernie, pers. comm., 2020). The ongoing IICP study will provide additional data to determine current capacity as well as current/forthcoming needs. A new water source has been developed in last few years. Waste and storm infrastructure are challenging in some areas (e.g., the floodplain of the Elk River). There is still capacity for existing infrastructure with room for growth. All core infrastructure in commercial and industrial areas is anticipated to be replaced, and is currently underway (City of Fernie, pers. comm., 2020).

City of Cranbrook

Water, Wastewater and Solid Waste

Cranbrook's water is supplied primarily by two surface-water sources: Joseph and Gold creeks. Water from these surface-water sources are diverted to the Phillips Reservoir (which has a capacity of 2.3 billion litres) before being transferred to a treatment facility. Ground-water wells have also been established by Cranbrook to supplement the water supply when demand is higher seasonally during the summer months. Water is distributed throughout the city via approximately 160-km of watermains (City of Cranbrook, 2019h). The sewer system uses an underground collection system to transport wastewater to treatment lagoons north of Cranbrook. The lagoons use a natural process at the facility then transport the sewage to the spray irrigation property where it is stored (City of Cranbrook, 2019i). The treated effluent is then used to irrigate the property which is used for crop production and cattle grazing. Cranbrook recently upgraded its existing wastewater treatment and spray-irrigation system. The storage capacity of the system had become insufficient so in 2009 the city built an outflow station so that excess effluent from the storage ponds could be highly treated and discharged into the Kootenay River (Kootenay Business, 2018b). Cranbrook provides regular waste collection services while recycling is undertaken by the RDEK. Community recycling depots are also located at the Cranbrook Transfer Station, College of the Rockies parking lot, Memorial Arena parking lot and the Cranbrook Bottle Depot (City of Cranbrook, 2019j).

Municipality of Crowsnest Pass

Water, Wastewater and Solid Waste

Crowsnest Pass provides water, and wastewater services to community members. Water is produced from eight wells and is treated at four treatment plants located in Coleman, Blairmore, Bellevue and Hillcrest. Water stored in one of four concrete reservoirs and distributed to the community. Water is also produced and stored in the Sentinel area west of Coleman for fire protection purposes (Municipality of Crowsnest Pass, 2019b). Wastewater is collected from throughout the community and is

fed to two treatment facilities through a collection system. There is an Extended Aeration Treatment Plant located in the Frank Industrial Park, a mechanical plant, which will treat wastewater from Coleman, Blairmore and Frank. Wastewater from Bellevue and Hillcrest is fed into Extended Aeration Lagoons that are located between these two communities (Municipality of Crowsnest Pass, 2019c). Crowsnest Pass has a regional solid waste disposal system with solid waste presently being disposed of at the Crowsnest - Pincher Creek Landfill. Residential solid waste is collected on a weekly basis by the Municipal. The Municipality does not provide pickup for commercial or industrial customers (Municipality of Crowsnest Pass, 2019d). Recyclable materials such as paper products, plastics, tin, and glass are accepted at the Pass Beverage Bottle depot. Recycling must be sorted and delivered to the Pass Beverages Bottle Depot (Municipality of Crowsnest Pass, 2019e).

There is currently room to expand capacity for infrastructure in Crowsnest Pass, with plans to update wastewater treatment facilities in the near future (Municipality of Crowsnest Pass, pers. comm, 2020). There is a long-term plan for revitalization of infrastructure (utility replacements and landscape upgrades), with an infrastructure capacity study anticipated to get underway in the coming year (Municipality of Crowsnest Pass, pers. comm, 2020).

Power and Gas Utilities

Electricity is provided to Crowsnest Pass by FortisAlberta (FortisAlberta, 2019). Natural gas service is provided by ATCO gas (ATCO Gas, 2019).

4.13 Transportation

Transportation systems provide access to the region and beyond for community members and land users. Access to the economic LSA and social LSA is provided primarily by highway networks. The Project will utilize these transportation networks for the movement of goods, labour and services throughout the lifecycle of the Project. This may affect the use of transportation infrastructure by other users in the region.

4.13.1 Regional and Local Study Areas

Roads and Highways

Transportation infrastructure in the RDEK is maintained by the BC ministry of Transportation and Infrastructure. The Ministry of Forests companies maintain forestry roads seasonally (RDEK, 2019a). In Crowsnest Pass, transportation infrastructure is designed, constructed and maintained by Alberta Transportation. Roads built for strata developments are constructed, owned and operated by the strata operation (RDEK, 2019a).

Highway 3 (Crowsnest Highway in BC) is the major east-west highway through the south part of the province from Hope (linked to Vancouver via the Trans-Canada Highway/Highway 1). Highway 3 passes

through Cranbrook and continues to Lethbridge and Medicine Hat, Alberta. At Medicine Hat, Highway 3 reconnects to the Trans-Canada Highway. Highway 3 is also connected to the social LSA communities of Sparwood, Fernie and Crowsnest Pass.

As described above, all social LSA communities, except for Elkford, are located along the major highway network. Elkford is located along Highway 43, approximately 35 kilometres north of Sparwood where Highway 43 intersects with Highway 3.

The Ministry of Transportation and Infrastructure's Traffic Data Program monitors traffic at various locations throughout BC. Traffic data collection is used to determine current traffic patterns and help predict future traffic trends. The Ministry uses the information to help support planning, design, construction, and operation of the ministry road network (British Columbia, 2019g). Traffic volumes between 2012 and 2016 for provincial routes and highways in the RDEK and social LSA communities are presented below in **Table 35**.

Traffic within the social LSA is highly seasonal. On average, monitoring locations recorded approximately 48% more traffic during the summer period than the annual average. No data is available for the monitoring location closest to the Project, 36-009NS. To the east of the Project (P-36-1EW), the average traffic is 4,615 vehicles which has increased between 2012 and 2016. In the summer months, the traffic increases to 6,962 vehicles. To the west of the Project (36-005EW), the average traffic is 5,802 vehicles daily which has declined since 2012. In the summer months, traffic increases to 9,810 vehicles daily. These areas along Highway 3 provide important transportation routes for mine workers within the region and are often used to access recreation and tourism features within the social LSA. As shown by P-35-4EW, traffic volumes near the regional service area are higher which is to be expected given its role as a regional service centre.

Table 35: Traffic Volumes for Provincial Routes and Highways in the RDEK and LSA Communities, 2013 – 2016

Highway / Route	Location	Year	Annual Average Daily Traffic	Summer Average Daily Traffic
3	East of Cranbrook: east of 93/95 (P-35-4EW)	2012	5,141	7,197
		2013	5,150	7,248
		2014	5,093	7,218
		2015	5,222	7,266
		2016	5,369	7,581
3	Fernie: west of East Fernie Bridge (temp) (36-011EW)	2012	8,198	11,133
		2015	9,567	13,074
	East of Fernie: west of Hosmer Bridge (temp) (36-005EW)	2012	5,932	10,059
		2015	5,802	9,810

Highway / Route	Location	Year	Annual Average Daily Traffic	Summer Average Daily Traffic
43	North of Sparwood: north of 3 (temp) (36-009NS)	N/A	N/A	N/A
3	Crowsnest Pass: west of BC/AB border (P-36-1EW)	2012	4,488	6,760
		2013	4,484	6,722
		2014	4,505	6,823
		2015	4,487	6,705
		2016	4,615	6,962

Source: British Columbia, 2019g

Roadways within the LSA communities in general are sufficient; however, impacts on residential roads from industrial operations and resource extraction vehicles are an issue in Fernie (City of Fernie, pers. comm., 2020), and replacement of some roadways and infrastructure is required in Elkford (District of Elkford, pers. comm., 2020). Highway 3 can be a concern with regards to traffic, especially during the summer months (City of Fernie, pers. comm., 2020; Municipality of Crowsnest Pass, pers. comm., 2020).

Air

Canadian Rockies International Airport, owned by the City of Cranbrook and operated by Elevate Airports Inc., is the only commercial airport in the region (Elevate Airports Inc., 2019). An expansion to the airport terminal building was completed in 2008 (RDEK, 2019a). The airport services over 135,000 passengers annually (Kootenay Business, 2018a) on two major commercial carriers (Air Canada and WestJet) and one small carrier (Pacific Coastal Airlines). The airport offers daily scheduled flights to Calgary, Alberta, as well as Victoria, Vancouver and Kelowna, British Columbia (Canadian Rockies International Airport, 2019). Additionally, newer connections from Cranbrook to the communities of Lethbridge and Medicine Hat, Alberta and Prince George, British Columbia are available through WestJet (Cranbrook Tourism, 2019).

The Regional District administers the Elk Valley Regional Airport, located north of Sparwood off of Highway 43. This airport is for charter service and recreational aircraft. The airport is open year round with limited winter maintenance (RDEK, 2019i). The Invermere Airport offers flights via Airspan Helicopters and Babin Air, gliding activities through the Invermere Soaring Centre, and a certified flight school – SkyRide Aviation (Kootenay Business, 2018a).

Rail

Major railway lines situated within the RDEK follow the Highway 3 and Highway 95 corridors, connecting to the Canadian Pacific mainline in Golden, BC, to communities located in the south through the Crowsnest Pass and to the west in Vancouver. Coal is the primary shipment transported from the Elk Valley region to various terminals for export to various markets, including Asia via Roberts Bank in Delta, BC, and as well as central and eastern United States via terminals in Thunder Bay, Ontario. Other mining and forestry operations in the region are also supported by rail transportation (RDEK, 2014a).

Public Transit

The RDEK offers transit services through Columbia Valley Transit (Canal Flats-Fairmont-Invermere and Edgewater-Radium-Invermere routes), Elk Valley Transit (stops in Elkford, Sparwood and Fernie) and the Health Connections Transit Service in partnership with BC Transit and the Transit Service Operators (RDEK, 2014a; 2019j). The Health Connections Transit Service offers transport from RDEK communities for people seeking non-emergency medical services in Cranbrook (RDEK, 2019k).

Taxi services are available throughout the region from companies operating in the municipalities. Airporter service is also provided to and from the Canadian Rockies International Airport (REDK, 2014a).

5.0

Summary of Socio-economic Conditions

Mining is the core industry in area of the Project, with social and economic LSA communities dependent upon the sector as the primary industry and source of demand for other businesses within the community. Currently, there are four operating mines within the region with planned mines at various stages of the development process. Tourism has become an emerging sector within the socio-economy employing many members of local communities and attracting people to the region. Overall, the mining sector continues to be the primary driver of the local economy.

The population of the local area includes a variety of small communities in BC and Alberta including Sparwood, Elkford, Fernie, and Crowsnest Pass. Individuals also live in the RDEK including Electoral Area A. The community of Cranbrook is also considered as a regional service centre for the Project. Local communities such as these are likely to provide workers and house new workers and potentially their families either permanently or temporarily. Local communities in the social LSA in BC can be characterized as having a relatively larger working age population when compared to the RDEK, Cranbrook, and Crowsnest Pass. These communities also have a lower median age. The RDEK also has a large temporary or seasonal population. Temporary and seasonal populations enter the economic LSA and social LSA for a variety of reasons including recreation, tourism, and working in the mining sector.

Mining is the primary industry in the region with disproportionate employment shares relative to the Province. Sparwood and Elkford, the two economic LSA communities closest to the site, were established as mining communities. Currently, Teck has four coking coal mines operating within the Elk Valley region (British Columbia Mine Information, 2019; Teck Resources Ltd., 2019). 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 Creek/Loop Ridge (North Coal Ltd.), Coal Mountain Phase II (on hold; Teck), and Bingay Creek (Centermount Coal Ltd.). There is also the Teck Castle Project which is a proposed extension of Teck's Fording River Project. As result, mining plays a central role in the regional economy, which can be expected to continue due to future developments.

At the regional level, a variety of planning initiatives have been undertaken to support mine development. The Government of British Columbia aims to support the sector within the province and enhance the positive economic benefits. More locally, there are a variety of regional economic planning initiatives including the Columbia Valley Economic Development Strategy, Columbia Basin Trust, Elk Valley Economic Initiative, Community Futures East Kootenay, and the Kootenay Aboriginal Business Development Agency either directly address mining issues or may assist business who could benefit from mining activities. Regional initiatives such as the Columbia Valley Economic Development Strategy, Columbia Basin Trust and Elk Valley Economic Initiative aim to increase economic diversity and reduce leakage. These plans commonly identify tourism as a growth sector to offset the dependence on the

mining sector. Community Futures East Kootenay and the Kootenay Aboriginal Business Development Agency provide support to small businesses by providing financial resources, services, and other supports. Initiatives like these may aid individuals in capitalizing on the new economic opportunities associated with the mining sector. Within local communities, businesses supporting the mining sector are common. For example, in Sparwood, Elkford and Crowsnest Pass, Teck has and continues to play a prominent economic role including as a primary employer. Businesses in these communities commonly support mining while retail business is a supporting sector driven by demand from mining employees

Employment and income in the region is 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 a region to fill roles at these sites which often account for a significant portion of job opportunities in the region.

Mining provides an important source of tax revenue to provincial, regional, and local government. Taxes on mining include land taxes, property taxes, mineral taxes and inspection taxes. Mine operations in BC are responsible for paying three major taxes: the Mineral Land Tax, the Mineral Tax and the Mine Inspector Fee. Specific to the Project, some municipalities and the regional district in the economic LSA undertake tax sharing for coal properties. 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.

Housing characteristics in the social LSA and RSA are defined by movements in the mining sectors with values corresponding to the sector's performance. Availability of rental housing was identified as concern through primary data collection. Near the Project, rental costs are similar to or have previously exceeded the costs of ownership. Shift work at the mine sites in the social LSA is viewed as the driver of the high costs of rentals and shelter overall. Housing issues are often driven by income inequalities between those in the mining sector and other community members as mining employees have higher wages and can afford to spend additional income on housing. This inflates the price of shelter for community members negatively impacting them.

Community services considered health, ambulance, fire and emergency, police and protective, child care, and recreation services. Health services overall are lacking in social LSA communities, with residents known to seek health care services elsewhere (outside of the community) and in some cases, moving to other communities in order to receive the services they need. Ambulatory, fire and emergency services in the social LSA communities were identified as adequate. Despite the large catchment/service area served by the Elkford detachment of the RCMP, policing services are generally sufficient for the social LSA communities.

There is an overarching lack of sufficient child care in the social LSA communities, especially with the growing number of families in the area having children. Aside from some ageing infrastructure, community indoor recreation facilities and infrastructure are adequate in social LSA communities, and there is an overall desire to maintain and improve recreation facilities. Through the primary research program, key informants indicated that there are no significant capacity issues with existing indoor and municipal recreation facilities and infrastructure.

Community infrastructure considered water, waste water, solid waste, electricity and natural gas services. No specific issues related to capacity and performance of infrastructure was noted within these communities; however, some communities are in the process of studying infrastructure capacity. Transportation was also considered. It was noted by a number of key informants that industrial traffic does place a burden on road transportations systems within the social LSA. Traffic concerns are enhanced in the summer months with seasonal tourism. No transportation issues were identified with respect to rail or air travel.

Social LSA communities tend to be above the median for community well-being according to BC Stats indices. Fernie is ranked 68th highest out of 78 (10th best) within BC for overall community well-being while Cranbrook is ranked 54th highest out of 78 (24th best). Perceptions of health for community members in the RSA tend to be below the provincial averages; however, those within the social RSA are more likely to perceive a sense of community belonging. Overall, a lower proportion of community members are satisfied or very satisfied with their life.

6.0

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Appendix A

Primary Research Materials

**CROWN MOUNTAIN COAL PROJECT ENVIRONMENTAL ASSESSMENT
Primary Research Program - Key Informant Contact List**

Organization	Department	Title
STAKEHOLDER CONTACT LIST		
Canyon Raft Company		
City of Fernie	Chief Administrative Officer	Chief Administrative Officer
City of Fernie	Financial & Computer Services	Director
City of Fernie	Planning	Manager
College of the Rockies (COTR)	Board of Governors	Chair
District of Elkford	Municipal Office	Director, Financial Services
District of Elkford	Planning	Director
District of Elkford		Chief Administrative Officer
District of Elkford	Fire Rescue and Emergency Services	Director
District of Sparwood	Chief Administrative Officer	Chief Administrative Officer
District of Sparwood	Community & Facility Services	Director
District of Sparwood	Planning	Director
District of Sparwood	Finance	Director of Finance
East Kootenay Addiction Services Society	Fernie Office	Youth Substance Use Counsellor
East Kootenay Addiction Services Society	Fernie Office	Executive Director
Elk River Alliance	Team	Founder & Senior Advisor
Elkford ATV Club		President
Elkford Chamber of Commerce		Executive Director
Elkford Snowmobile Club		President
Fernie Chamber of Commerce		Executive Director
Fernie Child Care Society	Staff	Manager
Fernie Wilderness Adventures		
Fernie Rod and Gun Club	Executive	President
Fernie Women's Resource Centre		
Great Divide Trail Association		
Interior Health	Elk Valley Hospital	
Interior Health	East Kootenay Regional Hospital	
Interior Health	Mental Health & Substance Abuse Services	Team Lead
Mountain High Adventures		
Municipality of Crowsnest Pass		Chief Administrative Officer and Director of Development and Engineering and Operations
Municipality of Crowsnest Pass	Economic Development Committee	Chairperson
Nature Conservancy of Canada	Invermere Office	Director of Conservation
Packhorse Creek Outfitters		
Crowsnest Pass (CNP) Quad Squad		Director, Board of Directors
RCMP	Elk Valley Detachment	
Regional District of East Kootenay (RDEK)	Office of the CAO	Chief Administrative Officer
Regional District of East Kootenay (RDEK)	Electoral Area A	Director
Regional District of East Kootenay (RDEK)	Fire	Fire Chief Elk Valley/South Country
Royal LePage	Elkford	Real Estate Agent
Royal LePage	Fernie, Sparwood	Real Estate Agent
School District 5	Board of Education	School Board Chair
School District 5	Board of Education	Trustee
School District 5	Board of Education	Trustee
Sierra Club BC	Staff	Sierra Club BC's Flathead Outreach Coordinator
Sparwood Chamber of Commerce		Executive Director
Sparwood Fish and Wildlife	Executive Board	President
Tourism Fernie	Staff	Executive Officer
Wildsight Society	Elk Valley	Regional & Elk Valley Director
Women in Mining	Elk Valley	
Columbia Basin Trust	Board of Directors	Board Chair
OTHER STAKEHOLDERS CONSIDERED		
Elk River Guiding Company		
Elk Valley Integrated Task Force		
The Nature Trust of BC		
BC FLNRO & RD	Cranbrook Office	Manager, FrontCounterBC
BC FLNRO & RD	Cranbrook Office	Natural Resource Specialist Supervisor
Canadian Pacific Railway		
Canadian Parks and Wilderness Society		
CanWel Building Materials Group Ltd. (CanWel)	British Columbia and Alberta	Division General Manager
City of Fernie	Office of the Mayor	Mayor
City of Fernie	Councillors	Councillor
City of Fernie	Councillors	Councillor
City of Fernie	Fire & Emergency Services	Director
Crowsnest Conservation Society		
Crowsnest Forest Stewardship Society		
District of Elkford		Mayor
District of Elkford		Councillor
District of Sparwood	Office of the Mayor	Mayor
District of Sparwood	Councillors	Councillor
District of Sparwood	Councillors	Councillor
District of Sparwood	Councillors	Councillor
District of Sparwood	Councillors	Councillor
Kootenay Fly Fishing		
Municipality of Crowsnest Pass		Mayor
Municipality of Crowsnest Pass		Councillor
ReMax	Fernie	Manager
School District 5		Superintendent of Schools
Sparwood Chamber of Commerce	The Board	President
Special Use Permit Holder in Alexander Creek (Podraskis)		
Summit Natural Rock Inc.		President
Yellowstone to Yukon Conservation Initiative		

**CROWN MOUNTAIN COAL PROJECT ENVIRONMENTAL ASSESSMENT
Primary Research Program - Interviews Completed**

Confidentiality	Prefix	First name	Last name	Organization	Position	Date Interviewed
YES				City of Fernie	Representative	July, 2020
YES				City of Fernie	Representative	July, 2020
YES				College of the Rockies	Representative	July, 2020
YES				WildSight	Representative	July, 2020
NO	Mr.	Trevor	Madsen	District of Elkford	CAO	July, 2020
NO	Mr.	Corey	Kortmeyer	District of Elkford Fire and EMS	Elkford Fire and Rescue	July, 2020
NO	Mr.	Jeremy	Johnston	District of Elkford	Director, Planning and	July, 2020
YES				Fernie Child Care Society	Representative	July, 2020
YES				Crownest Pass Quad Squad	Representative	July, 2020
YES				Alberta Off-Highway Vehicle	Representative	
NO	Staff	Trevor	Tribes	RCMP, Elk Valley Detachment	Staff Sergeant	July, 2020
YES				Sparwood Chamber of	Representative	July, 2020
NO	Ms.	Lee-Anne	Walker	Elk River Alliance	Founder & Senior Advisor (at the time of interview)	June, 2020
NO	Ms.	Shawna	Bryant	Elkford Chamber of Commerce	Executive Director	June, 2020
NO	Mr.	Brad	Parsell	Fernie Chamber of Commerce	Executive Director	June, 2020
NO	Mr.	Brad	Vaillancourt	Great Divide Trail Association	President	June, 2020
NO	Mr.	Patrick	Thomas	Municipality of Crowsnest Pass	CAO	June, 2020
NO	Mr.	Oliver	Strickland	Municipality of Crowsnest Pass	Chair of Economic	June, 2020
NO	Mr.	Dave	Boreen	RDEK	Fire Chief	June, 2020
NO	Mr.	Frank	Lento	School District No. 5	Chair	June, 2020
NO	Ms.	Bev	Bellina	School District No. 5	Trustee (Sparwood)	June, 2020
NO	Mr.	Matt	Huryh	Sparwood Fish and Wildlife	President	June, 2020
YES				Interior Health, Mental Health	Representative	June, 2020
YES				Municipality of Sparwood	Representative	August, 2020
YES				Municipality of Sparwood	Representative	August, 2020
NO	Mr.	Shawn	Tomlin	RDEK	CAO	July, 2020

CROWN MOUNTAIN COAL PROJECT ENVIRONMENTAL ASSESSMENT Primary Research Program - Interviews not Completed

Organization	Department	Title
Canyon Raft Company		
City of Fernie	Financial & Computer Services	Director
City of Fernie	Planning	Manager
District of Elkford	Municipal Office	Director, Financial Services
District of Sparwood	Finance	Director of Finance
District of Sparwood	Community & Facility Services	Director
East Kootenay Addiction Services	Fernie Office	Youth Substance Use Counsellor
Elkford Snowmobile Club		President
Fernie Wilderness Adventures		
Fernie Rod and Gun Club	Executive	President
Fernie Women's Resource Centre		
Interior Health	Elk Valley Hospital	
Interior Health	East Kootenay Regional Hospital	
Mountain High Adventures		
Municipality of Crowsnest Pass		Councillor
Nature Conservancy of Canada	Invermere Office	Director of Conservation
Packhorse Creek Outfitters		
Regional District of East Kootenay	Electoral Area A	Director
Royal LePage	Elkford	Real Estate Agent
Re/Max	Fernie, Sparwood	Real Estate Agent
School District 5	Board of Education	Trustee
Sierra Club BC	Staff	Sierra Club BC's Flathead
Tourism Fernie	Staff	Executive Officer
Women in Mining	Elk Valley	
Women in Mining	BC	
Columbia Basin Trust	Board of Directors	Board Chair
East Kootenay Addiction Services	Fernie Office	Executive Director
Elkford ATV Club		President



Crown Mountain Coking Coal Project

Primary Research Program Interview Guide

1.0 Introduction

This interview guide is designed to act as both a script and guide for interviews conducted by the Project team. The introductory text will be provided to participants by email and/or over the phone.

Participants will not be asked all questions presented in the guide, but rather information in specific subsections relevant to each participant's particular specialty area will be presented to each participant. For example, a guide outfitter may be provided with the outdoor tourism and recreation section and specific questions from the visual quality section; while an economic development officer may be presented with questions in sections on regional economy, economic development, municipal finances and labour force. All participants will be provided with the information outlined in the introductory and concluding sections. No participants will be provided with questions from more than six sections: most questions will be taken from four or fewer sections.

2.0 Email and In-Person Interviews

Interviewer collected the following information at the start of each interview.

Name of Interviewee:

Organization, Position:

Confidentiality: Yes/No – if confidentiality is requested, your information will be included as a representative of your organization.

Date of Interview:

3.0 Stakeholder Questions

3.1 Population and Demographics

Example Target Groups: City of Fernie, Manager - Planning and District of Elkford CAO

1. How does mining impact human migration in and out of your community? What is your attitude towards this migration? Population growth in general?
2. What is the demographic profile (e.g., age groups, families, etc.) of those who normally migrate into your community? Migrate out of your community?
3. How many seasonal residents do you estimate your community has? What season(s) do these residents typically come to the community?

4. Are there / have you noticed any trends or changes in population - shifts or fluctuations in overall numbers, as well as demographics, etc.?
5. Does your organization have any priorities related to population and demographics such as population growth or targeted population growth?
6. Have you completed any recent studies that may highlight population trends, which could be provided?

3.2 Regional Economy

Example Target Groups: District of Elkford, Director - Financial Services and District of Sparwood CAO

1. How does mining impact the demand for goods and services in the community?
2. What other sectors do you view as important to your community's economy? What is the approximate percent spread for contributions to the regional economy per sector?
3. Are there any economic trends you feel are influencing your community's economy?
4. Have you completed any studies that may inform the regional economy?

3.3 Economic Development

Example Target Groups: District of Elkford CAO and District of Sparwood CAO

1. What role does mining play in your economic development strategy?
2. What businesses in your community currently support the mining sector?
3. What economic development challenges is your community currently facing?
4. How does economic leakage (money leaving the local economy from workers) play a role in your community?

3.4 Government Finance

Example Target Groups: District of Elkford, Director - Financial Services and District of Sparwood, Director - Financial Services

1. How do mining activities, royalties, and tax revenues impact your community's fiscal position? Is there increased spending or revenues in your organization (beyond taxes paid by the mines) associated with the presence of these operations?
2. Are your tax revenues sufficient for your government to execute the spending it would like to undertake?

3.5 Labour Force and Income

Example Target Groups: City of Fernie CAO and District of Elkford CAO

1. What labour force challenges are currently faced by your organization? What types of labour are over supplied? Under supplied?
2. Does your community have any issues with unemployment? Income inequality?

3. Are there issues attracting labour to other sectors in your community due to the presence of mining jobs?
4. Is there an interest in mining related training opportunities and workforce development? Are there any existing programs?

3.6 Housing

Example Target Groups: Real Estate Agent and District of Sparwood, Director - Planning

1. Is your community facing any housing challenges such as supply or affordability in both ownership and renting?
2. Do you anticipate any changes to housing supply and demand within your community?
3. Municipal: Has your community completed any recent housing studies that could be provided?
4. Hot-bedding is a practice, often in rental accommodations, whereby multiple tenants share bed(room)s in shifts. Is “hot-bedding” common within your community?
5. Are there any trends in your community related to housing availability or price? What factors contribute to those trends?
6. What proportion of your community are seasonal residents and have seasonal residences (including camps and cabins) within your community?
7. What seasons are rental properties and temporary accommodation in the highest demand? How much capacity is available during these peak seasons?
8. Does your community have any past experience with construction camps?

3.7 Community Services

Example Target Groups: Fernie Child Care Society Manager and East Kootenay Addiction Services Counsellor

1. What health services does your organization provide? What is your service area, and/or what is your criteria for service? Are health services within your community sufficient? What health services challenges does your community face? Are there any plans on expanding services, and if so, which ones? Who are the most frequent users (demographically) of the hospital/health services? Are hours of service sufficient for local health care facilities? Are there any challenges with hours of operation?
2. What types of emergency services (including fire and ambulance) are provided in your community? What is your emergency service area, and/or what is your criteria for emergency service? Are emergency services within your community sufficient? What challenges does your community face? Do you have any plans on expanding services? What is/are your service area(s)?
3. What policing services do you provide? What is your policing service area? Are policing services within your community sufficient? What challenges does your community face? Do you have any plans on expanding services? What types of crime are most prevalent in your community, and are there any notable trends?
4. Are child care services within your community sufficient for current demand? What challenges does your community face related to child care services? Does your community have any plans on expanding child care services?

5. Is the availability of recreation spaces such as recreation centres and sports fields within your community sufficient for current demand? What challenges does your community face? Do you have any plans on expanding services?

3.8 Community Well-Being

Example Target Groups: Fernie Women's Resource Centre and East Kootenay Addiction Services Counsellor

1. How would you describe the general feeling about the community? Do people generally enjoy living in the community?
2. What social and political organizations (community, recreational, health, governance, industry, labour, arts and cultural) are active in your community?
3. Are there any social or health issues prevalent within your community?
4. Are there currently sufficient services to support any issues apparent within the community?

3.9 Community Infrastructure

Example Target Groups: Municipality of Crowsnest Pass CAO and Regional District of East Kootenay Director

1. What is the capacity of your community infrastructure (i.e., waste, waste water, storm water, water, etc.)?
2. How much of the capacity is utilized by existing demand?
3. Is your community planning any infrastructure improvements? If so, when and what infrastructure?
4. Are roadways sufficient within your community? Is congestion an issue? Highway safety?
5. Have you completed any recent community infrastructure capacity studies that could be provided?

3.10 Outdoor Tourism and Recreation

Example Target Groups: Packhorse Creek Outfitters and Quad Squad Association President

1. Can you identify areas you and your group utilize in the yellow and orange coloured areas on the map provided (both formal and informal)? What are the types of use?
2. Can you please identify any trails (e.g. hiking, atv, snowmobile, etc.) utilized by outdoor recreationists within the yellow and orange coloured areas of the map provided (for guide outfitters/tourism operators: identify any roads/trails you use to access your operational areas)? Are there challenges with access to these areas?
3. How long have you been utilizing the yellow and orange coloured areas? how many trips do you host per year? What seasons/months do you use these areas in (and which ones are the most popular)? What are the common activities undertaken (e.g., hunting, hiking, backcountry skiing, etc.)?
4. If relevant (hunting, trapping, fishing): What are common target species?

5. If relevant (hunting, trapping, fishing): have you noticed any trends / changes over time in species composition, goals (i.e., trophy, food, hides, etc.) of hunters, and harvest results?
6. What are some of the challenges and opportunities you encounter when using the area? Can you describe any conflicting uses of the lands/tenure areas/recreation areas, and identify where these may occur in the yellow and orange coloured areas on the attached map?
7. How would you describe the character of the region?
8. Has there been a notable effect on outdoor recreation areas/guide outfitter areas from other industries operating in and around the yellow and orange areas, and if so, can you describe these effects?

3.11 Visual Aesthetics

Example Target Groups: Packhorse Creek Outfitters and Quad Squad Association President

1. Can you describe the visual character of the region?
2. Are there any formal/informal viewpoints you are aware of in the orange area or within the yellow coloured area?
3. Are there any sensitive locations that you can identify in the orange area or within the yellow coloured area? For example, formal/informal campsites, cabins, staging areas, viewpoints/lookouts, etc.

3.12 Closure

1. Is there any information you have not provided that you think would be relevant to the Project?
2. Do you have any suggestions on others we may want to connect with regarding this research program?
3. Do you have any questions about the Project I can help you with at this time?

Thank you for taking the time to complete this interview! We appreciate your contributions. If you have any questions, please do not hesitate to contact me.