

sparwood livability study

Winter 2020



SPARWOOD
★
YOURS AND MINE

List of Acronyms

A - Agree

BRE - Baldy Ridge Extension

D - Disagree

DOS - District of Sparwood

EAO - Environmental Assessment Office

EVO - Elkview Operations

SA - Strongly Agree

SCEEAC - Socio-Community and
Economic Effects Advisory Committee

SCEEMP - Socio-Community and
Economic Effects Management Plan

SD - Strongly Disagree

SLS - Sparwood Livability Study



Sparwood Livability Study

Adopted by District of Sparwood Council December 2019.
Prepared by Intelligent Futures, 2018 - 2020.
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136 Spruce Avenue
Sparwood, British Columbia



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the sparwood livability study

The Sparwood Livability Study (SLS) was developed to define, understand and measure elements of our community and mining, through Teck's Baldy Ridge Extension (BRE) and other developments that can have positive or negative impacts on our quality of life. Developed between August 2018 and September 2019, this Study is a collaborative effort by the District of Sparwood and the local community. This Study was commissioned as a condition of the Provincial Government's Environmental Assessment Certificate #M16-01 for the BRE project.

Livability Indicators

Vibrant Sparwood

Goal: Sparwood is an inclusive and connected community, where people feel engaged and inspired to participate in civic life.

INDICATORS

- a. Lifelong learning.
- b. Gathering space
- c. Community involvement and volunteerism
- d. Connection and inclusion

Prosperous Sparwood

Goal: Sparwood is home to a growing diversity of economic sectors and markets, and a range of affordable and suitable housing options for all of its residents' needs.

INDICATORS

- a. Economic diversification
- b. Housing affordability
- c. Housing diversity

Healthy Sparwood

Goal: Sparwood is a community that prioritizes human and environmental health, where people can rely on and enjoy robust health and ecosystems.

INDICATORS

- a. Trails and Recreation
- b. Water quality
- c. Air quality
- d. Health Care Access
- e. Child Care

Beautiful Sparwood

Goal: Sparwood is an attractive and clean community, with stunning mountain views and visually appealing neighbourhoods and public spaces.

INDICATORS

- a. Views
- b. Aesthetic appeal
- c. Dust and dirt

BRE/EVO-specific Indicators

Goal: Sparwood is left better than before as a result of the Baldy Ridge Extension to Elkview Operations.

INDICATORS

- a. Teck social investment dollars spent in Sparwood
- b. Elk Valley Operations Demographics
- c. Elkview Operations Demographics
- d. Feedback
- e. Carwash Uptime
- f. 4x4 Shift
- g. Reclamation

About the Study

The Livability Study is the result of a three-phase process that combined extensive community engagement and rigorous research. Key inputs into the development of the livability indicators found within this Study included:

1. The current state of livability in Sparwood
2. Ideas and views of the community through consultation
3. Insights of subject matter experts in the Sparwood area
4. Learnings from leading jurisdictions
5. Local priorities and policies
6. Academic and institutional standards on livability

INDICATOR	OBJECTIVE MEASURE	OBJECTIVE RESULTS	SUBJECTIVE MEASURE	SUBJECTIVE RESULTS*	COMPARABLE DATA
★ VIBRANT ★					
A. Lifelong Learning	# of extra-curricular formal learning and skill development opportunities in Sparwood for Adults per population over 20	3.76 adult learning opportunities per 1,000 residents (10 total)	There are interesting and accessible opportunities for extra-curricular learning and skill-development in Sparwood.	SD 12.7%, D 51.5%, A 33.3%, SA 2.5%	217.9 per 1000 Canadian residents [Statistics Canada Report 2001]
B. Gathering Space	# of entertainment-related venues per population	5.29 entertainment venues per 1,000 residents (20 total)	There is a variety of entertainment venues and events in Sparwood.	SD 22.6%, D 53.6%, A 22.2%, SA 1.7%	No benchmark / comparable available
C. Community Involvement & Participation	Self-reported participation in volunteerism	Number of times survey respondents reported volunteering in the past year: mean (13), median (2), mode (0), % respondents who had volunteered in one or more times: 71%	There are equal opportunities for all residents of Sparwood to participate in community activities that foster both individual and community well being.	SD 8.4%, D 31.0%, A 54.8%, SA 5.9%	44% of Canadians volunteered at least once in the previous year [Statistics Canada Survey 2013]
D. Connection & Inclusion	Self-reported contact with friends/family members	SD 4.2%, D 13.5%, A 59.5%, SA 22.8%	I feel like I belong in Sparwood and am an important part of the community.	SD 8.8%, D 31.8%, A 51%, SA 8.4%	66.4% of Canadians report feeling somewhat strong or very strong sense of belonging to their community [Statistics Canada 2014]
★ PROSPEROUS ★					
A. Economic Diversification	Employment industry type - % of non-mining/direct non-mining	Mining, quarrying and oil extraction 34%, Other 66%	There are a lot of different ways to make a living in Sparwood.	SD 18.2%, D 45.8%, A 35.6%, SA 0.4%	No benchmark/ comparable available
B. Housing Affordability	Percentage of households with shelter expenses (include electricity, oil, gas, coal, wood or other fuels, water and other municipal services, monthly mortgage payments, property taxes, condominium fees, and rent) that are 30% or more of household income.	Owner households- 8.3% Tenant households- 35.4%	There is affordable housing in Sparwood that meets the needs of me and my family (if applicable).	SD 18.1%, D 38.0%, A 39.8%, SA 4.1%	24.1% spend 30% or more on shelter [2016 Census Canada-Wide]
C. Housing Availability	Residential land use mix	Single - 845 (51%), Semi - 110 (7%), Row - 105 (6%), Apt - 225 (14%), Mobile - 365 (22%) (TOTAL - 1655)	There are diverse housing options in Sparwood (i.e tenure, square footage, type, # of rooms...).	SD 18.9%, D 45.1%, A 35.2%, SA 0.9%	Single - (53.5%), Semi - (5%), Row - (7%), Apartment (33.5%), Mobile (1%) [2016 Census Canada-wide]

* SD = Strong Disagree | D = Disagree | A = Agree | SA = Strongly Agree

INDICATOR	OBJECTIVE MEASURE	OBJECTIVE RESULTS	SUBJECTIVE MEASURE	SUBJECTIVE RESULTS	COMPARABLE DATA
★ HEALTHY ★					
A. Trails & Rec. Access	Per capita length of maintained public trails	8.73km of trails per 1,000 residents	Sparwood has a high-quality public trail system.	SD 3.0%, D 19.9%, A 66.7%, 10.4%	2.14 km per 1000 population [BC Ministry of Tourism, Sport and the Arts Report 2006 data]
B.1 Water Quality	Compliance with guidelines for District wells	9 testings exceeded provincial standards (all Well #3)	Sparwood has high quality and safe drinking water.	SD 6.8%, D 11.1%, A 55.3%, SA 26.8%	Selenium: 0.01 mg/L
B.2 Water Quality	Compliance with guidelines re: selenium/nitrate/sulphate/cadmium in the surface water	0 Elkview order stations exceeding site performance objectives for selenium, nitrate, sulphate, cadmium levels	Sparwood has clean and uncontaminated rivers.	SD 9.1%, D 33.9%, A 47.8%, SA 9.1%	
C.1 Air Quality	Annual Mean of Particulate Matter Concentrations (PM2.5) at Sparwood Downtown Air Monitoring Station (DTAM) + number of days above daily BCAAQO.	2018: 7.8 mean, day above standard 16	The air I breathe in Sparwood is clean and healthy.	SD 31.6%, D 42.0%, A 22.9%, SA 3.5%	8.0 micrograms per cubic metre (µg/m3) or lower
C.2 Air Quality	Highest concentration of PM2.5 in previous year: 2018 Highest concentration:	102.44 ug/m3, August 19, 2018			
D.1 Health Care Access	Number of GPs (full time equivalent) per head of population	3	Myself and my dependents (if applicable) can access a GP in a timely fashion, when required.	SD 20.5%, D 32.1%, A 39.7%, SA 7.7%	2.61 physicians per 1,000 population [World Health Organization Report 2017 data]
D.2 Health Care Access	Hours of available access	Hours of operation: 8:30am-4:30pm Monday to Friday - 8 hours a day/40 hours weekly. Emergency Hours: 8am-7pm daily - 11 hours daily/77 hours weekly	Myself and my dependents (if applicable) can access emergency care in a timely fashion, when required.	SD 17.9%, D 34.6%, A 41.9%, SA 5.6%	No benchmark/comparable provided due to variability across jurisdictions.
E. Child Care Access	Available spots for childcare (under 5 years of age) vs demand	49 childcare spots with no vacancy and 126 children on waitlists	Only answer if you have children in or in need of childcare: There is a sufficient amount of quality childcare in Sparwood.	SD 50.0%, D 40.8%, A 9.2%	28.7 spaces per 100 children 5 and under [Childcare Resource and Research Unit 2016 data]
★ BEAUTIFUL ★					
A. Views	Attractiveness scores for public locations characterized by having a significant open view of a natural object or scene (4 predetermined locations, in-town)	Centennial Square (looking east): 1.33, Sparwood Heights Drive/Ponderosa Drive Intersection (looking north): 2, Highway 43/Michel Creek Road (looking south): 2	Sparwood has attractive views.	SD 8.1%, D 18.7%, A 57.0%, SA 16.2%	No benchmark/comparable available
B. Aesthetic Appeal	Attractive features score, beyond nature to include the physical and built environment (i.e buildings, art, noise)	14 out of a possible 21	Downtown Sparwood is visually attractive and interesting.	SD 21.7%, D 40.0%, A 34.5%, SA 3.8%	No benchmark/comparable available
C. Dust/Dirt	Number of annual 'Public Feedback' Instances re: dust and air quality OR Total Suspended Particles (TSP) at DTAM	101 pieces of feedback in 2018	The mine-related dust in Sparwood is affecting my quality of life.	4.2%, D 22.0%, A 34.7%, SA 39.0%	No benchmark/comparable available

★ SD = Strong Disagree | D = Disagree | A = Agree | SA = Strongly Agree

INDICATOR	OBJECTIVE MEASURE	OBJECTIVE RESULTS	SUBJECTIVE MEASURE	SUBJECTIVE RESULTS	COMPARABLE DATA
★ BRE/EVO-SPECIFIC ★					
A. Teck social investment dollars spent in Sparwood	Teck's organizational social expenditures within Sparwood but outside of their obligations (i.e. operations or commitments as part of environmental assessment processes). Examples might include sponsorships, or capital projects (i.e. Sparwood Skatepark or Dog Park).	For 2018, Teck reported the following total community investment: Sparwood: \$193,910, Elk Valley-wide: \$232,829	N/A	N/A	No benchmarks were obtained for BRE/EVO-Specific indicators. Year-over-year results will provide comparison.
B. Elk Valley Operations Demographics	Percentage of Elk Valley Operations staff and hourly employees living in Sparwood, Number and percentage of Sparwood-based Elk Valley employees on 4 x 4 shift	Percentage of Elk Valley Operations staff and hourly employees living in Sparwood: 18.25% (approximately 802 out of 4457) Number of Sparwood-based Elk Valley employees on 4 x 4 shift: 549, (approximately 12.3% of 4457)	N/A	N/A	N/A
C. Elkview Operations Demographics	Percentage of Elkview Operations staff and hourly employees living in Sparwood, Number and percentage of Sparwood-based Elkview employees on 4 x 4 shift	Percentage of Elkview Operations staff and hourly employees living in Sparwood: 22.8% (approximately 260 out of 1139) Number of Sparwood-based Elkview employees on 4 x 4 shift: 248 (approximately 21.7% of 1139)	N/A	N/A	N/A
D. Feedback	Percentage of Teck feedback complaints received from Sparwood residents / Total complaints received for all Elk Valley Operations, Number of complaints received in 2018	Percentage of Teck feedback complaints received from Sparwood residents / Total complaints received for all Elk Valley Operations: 90% Number of complaints received in 2018: 109	N/A	N/A	N/A
E. Carwash Uptime	Percentage of uptime for Elkview Operations carwash or other proposed measurement for trucks dropping coal.	~95% for 2018 season	N/A	N/A	N/A
F. 4x4 Shift	Which of the following best describes your employment schedule?	4 x 4 shift or similar: 24.4% of survey respondents, 9 to 5 shift: 49.4% of survey respondents	Do you think the 4 x 4 shift schedule influences the Sparwood community?	55% of respondents indicated they felt the 4x4 shift schedule had either a negative or very negative impact on the community, and 31% were neutral.	N/A
	How much of your disposable household income (not including your mandatory expenses like rent and food) do you spend in Sparwood?	Respondents who report spending 50% or less of their disposable income in Sparwood: 9-5 shift: 83%, 4x4 shift: 63%	N/A	N/A	N/A
	Do you rent out a bedroom(s) to any mine workers on a temporary basis?	95.6% of respondents indicated they do not rent out any bedrooms to workers on a rotational basis.	N/A	N/A	N/A
G. Reclamation	Area of land reclaimed by EVO and Elk Valley Operations	EVO (2018): 12 ha reclamation related work completed (1164 ha reclaimed at EVO to date) Elk Valley (2018): 950.1 reclamation related work completed (3041.8 ha reclaimed land in the valley to date)			

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1.0 introduction

1.1 What is the Sparwood Livability Study?

The SLS was developed to define, understand and measure elements of our community and the Baldy Ridge Extension, as well as other operations or developments that impact our quality of life. Developed between August 2018 and September 2019, the SLS is a collaborative effort by the District of Sparwood and the local community. This Study is the result of an extensive research and community engagement process and includes a made-in-Sparwood definition of livability, a set of quality of life indicators, and a method for monitoring and responding to the indicators in the future.

1.2 Background

The Livability Study was managed by the District of Sparwood, with support by Teck, and was developed and delivered by Intelligent Futures. Teck applied for an Environmental Assessment Certificate in 2014 for their Baldy Ridge Extension (BRE) project for Elkview Operations. Approved in 2016 with operations starting in 2017, BRE extends the coal mining area and related activities on Sparwood's Baldy Ridge and will increase the operation's disturbance area by 862 hectares.



BRE will bring Teck's active operations closer to the community of Sparwood than ever before, but it will also allow for mining activities and associated job creation to continue within the Elk Valley region for an estimated additional 25 years. Teck's production capacity will be expanded by up to 10 million tonnes/year as a result of BRE. Over the 29-

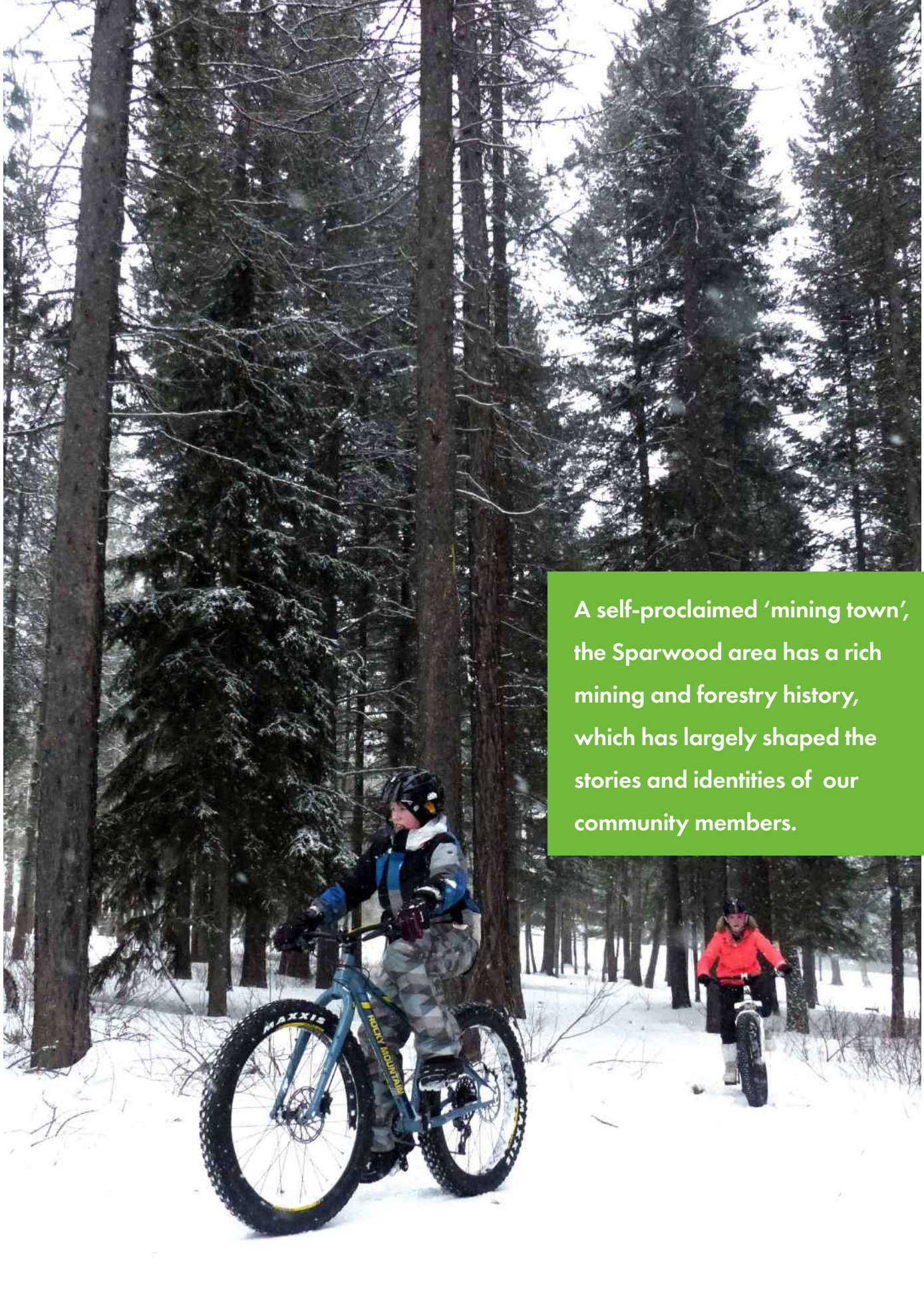
year life of the BRE Project, operations activities are expected to generate an estimated 31,304 person-years of direct employment (over 1,000 full-time-equivalent employees annually) at EVO, creating \$3,860 million in direct employment income.

1.3 About the Report

This Livability Study is designed to understand, measure, and monitor the quality of life for residents of Sparwood. This report results from a collaborative approach with the District of Sparwood, Teck, the SCEEAC and the residents of Sparwood. Academic and institutional standards, learnings from other jurisdictions, local priorities and policies, and subject matter expert opinions have also informed this Study. Having a variety of data sources has ensured that this Study is a comprehensive approach to livability, yet is rooted in the Sparwood context.

The report is structured into four key sections:

1. Section 1 provides relevant background information related to the SLS, BRE and the context in Sparwood
2. Section 2 describes the approach taken to develop the Livability Study
3. Section 3 includes the community-developed definition and indicators for livability. Each livability indicator includes a definition, a description of the indicator, current data, community feedback and historical contextual information (where available)
4. Section 4 outlines the suggested approach to continue measuring these indicators over time, along with recommendations for using the Livability Study to inform action



A self-proclaimed 'mining town', the Sparwood area has a rich mining and forestry history, which has largely shaped the stories and identities of our community members.

As part of the environmental approval for BRE, the British Columbia Environmental Assessment Office (EAO) included Condition 21 to better understand and monitor the social and economic impacts that the project could have on the Sparwood community. Condition 21 of the Provincial Government's Environmental Assessment Certificate #M16-01 states:

“Teck to develop a Socio-Community and Economic Effects Management Plan in consultation with the District of Sparwood (DOS).”

Condition 21 also includes a requirement for Teck to support the development of this Livability Study, as well as the launch of the District of Sparwood-led Socio-Community and Economic Effects Advisory Committee (SCEEAC). The Livability Study and the SCEEAC are both described in the Socio-Community and Economic Effects Management Plan.

The Livability Study represents a new strategic direction for the District of Sparwood, Teck and the community of Sparwood. The Study intends to clearly articulate what the community values regarding livability and to monitor these aspects over time. As changes occur through BRE, and other community developments, this Study can be used to inform actions that need to take place to make Sparwood the most livable town it can be.

1.4 About Sparwood

A thorough review of the local context has been completed in order to ensure the Sparwood Livability Study meets the specific and evolving needs of the community. possible “urban renewal’ landing site, meant to take in residents from the smaller communities nearby.

1.4.1 Geography and Place

The District of Sparwood is located at the heart of the Elk Valley in the East Kootenay region of British Columbia. Sparwood is surrounded by alpine forests, a wide variety of wildlife, beautiful mountains and glacier-fed rivers. Sparwood is also located in the traditional territory of the Ktunaxa Nation, which covers approximately 70,000 km² of southeastern British Columbia and which has historically included parts of Alberta, Montana, Washington and Idaho.¹ From a 2015 report describing Ktunaxa land use:

“Oral and written histories indicate that the area around kaqawakanmituk (Michel Prairie), where the town of Sparwood is now, was a central village area of the easternmost branch of the Ktunaxa...”²

A self-proclaimed ‘mining town’, the Sparwood area has a rich mining and forestry history, which has largely shaped the stories and identities of community members.³ The fact that Sparwood exists and thrives economically is largely due to the enormous amount of metallurgic coal seams found in the surrounding mountains. Today, Sparwood’s residents and industries support the mining operations of four nearby mines, all of which are all operated by Teck Resources. The closest of these mines is Elkview Operations (EVO), which includes BRE, and which is located two kilometres from the Sparwood townsite and is within view of downtown Sparwood.

1.4.2 Town History

Development of coal resources in the region began in the 1800s in earnest. After the Crowsnest Coal Company was founded in 1889, people from across Canada, Europe and beyond began to flock to the region. Needing a place to stay and access basic services, a series of communities emerged to support coal mining activities. Sparwood settled last and furthest from the mines, with the communities of Michel, Middletown and Natal preceding it, and kaqawakanmituk before those.⁴ The community of Sparwood is situated directly between the two mountains along Highway 3 that were being actively mined by the Crowsnest Coal Company.⁵

Designed to house settlers near the mining operations between 1899 and 1938, these communities were challenging places to live. The work was dangerous and the workers and their families endured continual boom and bust cycles that were dependent upon coal’s trading prices.⁶ During the post World-War II industrial boom, however, Japan’s increased demand for metallurgical coal resulted in steady growth and prosperity as mining operations in the region continued to boom. The growing coal mines and associated operations eventually infringed on the surrounding communities, and the living conditions became quickly contaminated with mining-related pollution. Sparwood became the focus for a possible “urban renewal’ landing site, meant to take in residents from the smaller communities nearby.⁷

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1. Yaqaan Nukiy, Lower Kootenay Band. “Our History” Retrieved from <http://lowerkootenay.com/our-community/our-history/>
 2. The Firelight Group. Ktunaxa Nation Community Report 2015.
 3. District of Sparwood. 2016. “Community Profile” Sparwood..
 4. The Firelight Group. Ktunaxa Nation Community Report 2015.
 5. Kinnear, John. n.d. Elk Valley Coal News . Accessed March 20, 2019. <https://elkvalleycoal.com/history/>.
 6. Sparwood 50th Anniversary Committee. 2016. “Sparwood Mining History and Heritage.” Sparwood Celebrating 50 Years
 7. Scott, Michael (Director). 1970. _That’s the Price_. National Film Board.

Urban renewal schemes were conducted across Canada during the late 1950s to the late 1960s, focusing on fixing, moving or abolishing towns experiencing urban decay. The Institute of Urban Studies notes that:

“Initially conceived in terms of the problem of bad housing conditions, [urban renewal policy] was intended to address the needs of those Canadians who were living in houses that were thought to be unsafe and unhealthy.”⁸

In 1966, the federal, provincial and local governments organized and funded an urban renewal approach to relocate the residents of Michel and Natal to Sparwood. Although grant funding was offered to help with relocation costs, land prices were high. When forced to move to Sparwood, many Michel/Natal residents struggled to afford new land and housing that was comparable to what they had in their previous villages.⁹

The relocation did, however, create a more central location in which mine workers could live, and allowed for more services to be centralized in one hub at the centre of all mining operations.¹⁰

1.4.3 Economy

Sparwood is the central location for mining operations and mining staff residences in the Elk Valley, with many industries choosing to locate nearby to support both mining operations and Sparwood’s residents. As a result of the move and the expansion of mining operations, Sparwood has grown significantly over the years, but the community, its residents and economy remain resource-dependent. While the companies that manage the mines have shifted over the decades, Teck is currently the largest employer in the region, operating four mines in the surrounding area, and employing nearly 5,000 people. The industry’s shift to ‘four-on-four-off’ scheduling for many operations staff has resulted in a significant increase in transient and temporary residents, as the shift change allows for people to work in the nearby mines for four days, and then return to their home communities for their four days off.¹¹

Tourism is expanding gradually in the region, due largely to the proximity of Fernie and the growing popularity of the East Kootenays region as a recreation destination. Sparwood is expanding the audience for its many outdoor recreation and tourism opportunities, including hiking, biking, camping, fishing and motorsports.¹²

1.4.4 Community Snapshot

- 3,784 people live in the District Municipality of Sparwood. While the overall growth trend has been decreasing by -0.04% per year over the past 15 years, Sparwood’s population grew by 117 people between 2011 to 2016.¹³
- The average age in Sparwood is 39.2 years. Of the total population, 67.73% of Sparwood’s residents are within the ‘working-age population’ (between the ages 15 to 64 years old). 19.26% of residents are below the age of 15, and 13.2% are above the age of 65.¹⁴
- 240 people in Sparwood are visible minorities and 275 people are aboriginal.¹⁵
- The 2019 median house price in Sparwood was \$292,000, down \$14,000 from 2015. The average assessed value of a single-family house in Sparwood is approximately 10% higher than in Elkford, and about half that of a single-family house in Fernie.¹⁶
- 73.5% of men in Sparwood are employed, earning a median income of \$93,760 (BC average for men: \$39,186), while 55.3% of women are employed, earning a median income of \$25,963 (BC average for women: \$26,034).¹⁷
- The median household income in Sparwood is \$103,538 (BC average: \$69,995).¹⁸

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8. Smith, P.J. 1985. *Comprehensive Planning Theory and the Urban Renewal Program in Canada*. Winnipeg: The Institute of Urban Studies, University of Winnipeg.
 9. Scott, Michael (Director). 1970. *That’s the Price*. National Film Board.
 10. *ibid.*
 11. The Districts of Elkford & Sparwood. 2012. “Housing Needs & Demand Assessments.” Sparwood and Elkford.
 12. *ibid.*
 13. Townfolio. 2017. Sparwood, BC. Accessed March 20, 2019. <https://townfolio.co/bc/sparwood/demographics>.
 14. *ibid.*
 15. *ibid.*
 16. BC Assessment. 2019. Kootenay Columbia 2019 Property Assessments in the Mail. Accessed March 20, 2019. https://info.bcassessment.ca/news/Pages/Kootenay_Columbia_2019_Property_Assessments_in_the_Mail.aspx.
 17. Statistics Canada. 2019. 2016 Census - Sparwood, District Municipality. Accessed March 20, 2019. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Tab=1&Geo1=CS-D&Code1=5901006&Geo2=PR&Code2=01&Data=Count&SearchText=Low&SearchType=Begins&Search-PR=01&B1=All&TABID=1&>
 18. *ibid.*

- One-third of the Sparwood labour force works directly in mining, a rate much higher than surrounding communities.¹⁹ The top five categories of employment include:
 - » 33.6% mining
 - » 8.7% retail
 - » 7.5% health care
 - » 7.0% construction
 - » 5.9% wholesale
- In Sparwood, 36% of the population has a post-secondary education (degree, diploma or apprenticeship). This is 10% less than the provincial average of 46%²⁰
- Insights from the Community Grading Survey included:
 - » 67.9% agree or strongly agree that Sparwood is an ideal place to live
 - » 76.5% agree or strongly agree that they feel a sense of ownership and caring about Sparwood
 - » 69.6% agree or strongly agree that they are satisfied with their overall quality of life in Sparwood
 - » 73.6% disagree or strongly disagree that the air they breathe in Sparwood is clean and healthy

1.5 Council Strategic Priorities

District of Sparwood Council established Strategic Priorities for 2019-2022, which includes a Vision Checklist. The Vision Checklist outlines some existing conditions that work well in Sparwood, and areas of attention within five distinct facets of community sustainability. These facets are identified below, each with an icon to represent that facet.

1. Environment - maintaining a healthy and natural environment through responsible use, protection and sustainable practices
2. Infrastructure - well maintained infrastructure and facilities that meet community needs and allow growth and development for prosperity
3. Economy - building a strong and vibrant community by attracting, supporting and retaining businesses and residents
4. Social - building social capital and engaging citizens and partners to improve the well-being and diversity of the community
5. Governance - fiscally sustainable government focused on strategic decision-making, transparency and inclusiveness

For each of these facets, Council has identified their own thoughts on “What Works Well”, and “Areas for Attention”. A full list of these can be reviewed in Council’s Strategic Priorities Document Appendix 1, available on the District’s website. In Section 3 of this report, these facets will be used to identify where an indicator aligns with an aspect of the Vision Checklist. For example, an indicator may align with an aspect of the Economy facet that Council thinks is an Areas for Attention, such as Community promotion.

19. Townfolio. 2017. Sparwood, BC. Accessed March 20, 2019. <https://townfolio.co/bc/sparwood/labour-force>

20. *ibid.*


A winter landscape featuring a large, snow-covered mountain in the background under a blue sky with scattered white clouds. The foreground shows a snow-covered field with a line of bare trees and a dark wooden truss bridge crossing a stream. The text '2.0' is in green and 'proces' is in white on a green background.

2.0 proces

2.1 The Livability Study Approach

The Livability Study has been conducted in a three-phase process, from August 2018 to September 2019.

Phase One: Orientation and Analysis (August 2018 to March 2019)



This first phase focused on extensive research related to Sparwood through comprehensive public engagement and an examination of the concept of livability in general. Research including from academic studies, institutions and other communities was combined with community feedback to gain insights on the current state of livability in Sparwood. At the end of this phase, a set of focus areas were established to categorize indicators for monitoring quality of life in Sparwood.

During this phase, members of the community had a chance to add their voice to discussions around livability. Considerable efforts were made to unearth and understand local issues and assets, as well as citizens' hopes for the future. While the Study has been informed by relevant external data and contextual research on livability, it is primarily rooted in the unique local perspectives that affect the lives of Sparwood's residents. The results reflect the definition of livability, included in Section 3 of this Study, for Sparwood today. The Phase One process included close to 1,200 community member interactions (a combination of survey responses, in-person conversations, workshop attendance) over two months. The results of Phase One, outlined in the What We Learned Report (Appendix A of this report), laid the groundwork for the development of this Study.

Phase Two: Development of Livability Definition and Indicators (April 2019 to May 2019)

The second phase of the Livability Study was initiated following the development of the What We Learned Report. It was designed to serve as a check-in period, allowing for a focused review of the findings to date. The public, District council, the SCEEAC and project team members provided feedback on draft livability focus areas along with any other insights that resulted from Phase One.

Once compared with stakeholder and community input, the data was refined using learnings from other jurisdictions, local priorities and policies, academic and institutional standards, and the current state of Sparwood. Together, these inputs formed the draft livability package, which included a unique 'made in Sparwood' livability definition, goals, and indicators, and provided the foundation for this report. The results of Phase Two public engagement can be found in the Appendix B: Check-In Engagement Survey Results.

Phase Three: Feedback and Completion (May 2019 to September 2019)

The final phase of the Livability Study focused on refining the indicators and measurements through consultation with the District of Sparwood, the SCEEAC and Sparwood residents. Although our check-in survey was meant for residents only, 6% of respondents live outside of Sparwood, mostly in the Elk Valley, and all work in Sparwood.

Use the baseline measures uncovered through this process, the District will be able to measure progress and flag areas of concern for the community over time. The current baseline was created through data collection and community input. The data collection process resulted in objective data to associate with the indicators generated in Phase Two.

The community input provided subjective input, and was collected through a Community Grading Survey on the current state of livability in Sparwood. The results of the Survey can be found in Appendix C of this report. The final product of this phase is this report, which can be used to inform future decisions and actions around livability.

3.1 Defining Livability in Sparwood

Our Sparwood is a vibrant and connected community, providing housing and employment options that help our residents thrive. We support the health of our people and the land, committing to a clean and safe environment. We celebrate the natural beauty of our surroundings.



3.0 livability sparwood

3.2 Indicator Snapshot

The following indicators were developed through the process described in Sections 2.0 and 3.3 in order to monitor the livability of Sparwood over time.

Vibrant Sparwood

Goal: Sparwood is an inclusive and connected community, where people feel engaged and inspired to participate in civic life.

INDICATORS

a. Lifelong learning: The number of extracurricular, formal learning and skill development opportunities available to adults in Sparwood, per person 20 years of age and older

b. Gathering space: The number of entertainment-related venues per 1,000 people

c. Community involvement and volunteerism: The self-reported number of times residents have participated in an unpaid, volunteer activity to help others and/or help solve a problem in Sparwood in the last 12 months

d. Connection and inclusion: The self-reported sense of residents that they can get help from friends, family and neighbours in Sparwood when needed

Prosperous Sparwood

Goal: Sparwood is home to a growing diversity of economic sectors and markets, and a range of affordable and suitable housing options for all of its residents' needs.

INDICATORS

a. Economic diversification: Employment industry type, categorized as percentage of direct mining and resource extraction to non-extraction industry types

b. Housing affordability: The percentage of households with shelter expenses that are 30% or more of their household income

c. Housing diversity: The mix of dwelling types in Sparwood

Healthy Sparwood

Goal: Sparwood is a community that prioritizes human and environmental health, where people can rely on and enjoy robust health and ecosystems.

INDICATORS

a. Trails and Recreation: The length of maintained public trails (including trails, paths, laneways) per 1,000 people

b. Water quality: Drinking wells (concentration of selenium in drinking water); Surface water (selenium, nitrate, sulphate and cadmium levels)

c. Air quality: The annual and daily monitoring of PM2.5.

d. Health care access: The number of general practitioners per resident; The hours of available health care access

e. Child care: The number of spots available (for children under 5); The demand, or wait list, for child care spots (for children under 5)

Beautiful Sparwood

Goal: Sparwood is an attractive and clean community, with stunning mountain views and visually appealing neighbourhoods and public spaces.

INDICATORS

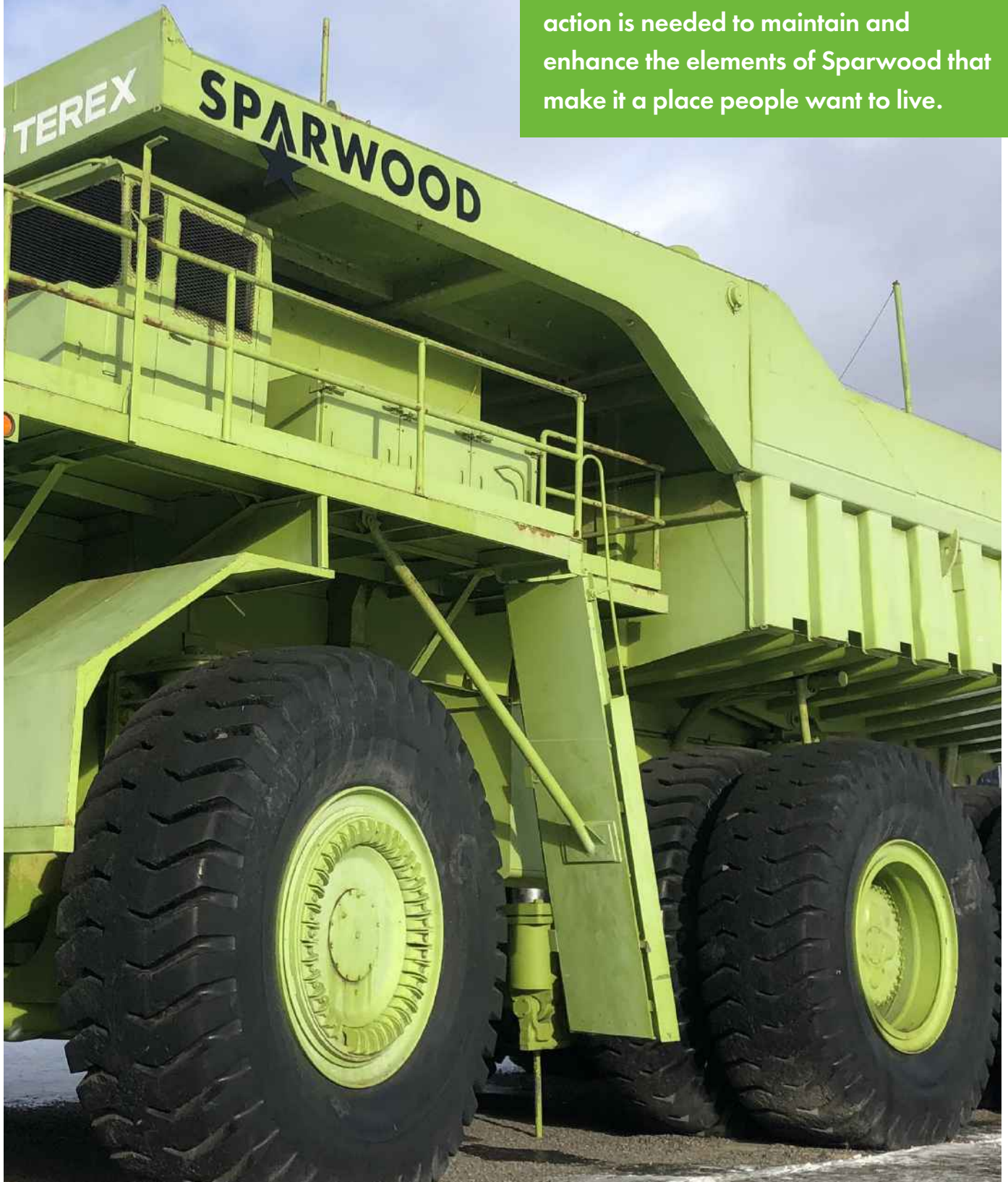
a. Views: In the near future, this measure will be collected by SCEEC as part of the Visual Quality Management Plan

b. Aesthetic appeal: The SCEEC group will be tasked with refining this measure, based on the development of the Visual Quality Management Plan.

c. Dust and dirt: The Instances of Feedback received by Teck around visible dust. This measure will also include reporting on Teck's dustfall measures, when available.



As BRE progresses, and other changes occur to our community, reassessment of these indicators will provide information to the District, Teck, local organizations and community members as to where action is needed to maintain and enhance the elements of Sparwood that make it a place people want to live.



The following Baldy Ridge Extension indicators were developed by the District of Sparwood.

BRE/EVO-Specific Indicators

Goal: Sparwood is left better than before as a result of the Baldy Ridge Extension to Elkview Operations.

INDICATORS:

a. Teck social investment dollars spent in Sparwood:

Teck's organizational social expenditures within Sparwood, outside of obligations. Examples include sponsorships, skatepark support, dog park support, etcetera.

b. Elk Valley Operations Demographics:

- i. Percentage of all of Teck's Elk Valley Operations staff and hourly employees who reside in Sparwood
- ii. Number of Sparwood-based Elk Valley employees on 4 x 4 shift

c. Elkview Operations Demographics:

- i. Percentage of Elkview Operations staff and hourly employees who reside in Sparwood
- ii. Number of Sparwood-based Elkview Operations employees on 4 x 4 shift

d. Feedback:

- i. Percentage of Teck feedback complaints received from Sparwood residents divided by total complaints received for Elk Valley Operations
- ii. Number of complaints received in previous year

e. Carwash Uptime: percentage of uptime, or availability, for Elkview Operations carwash

f. 4x4 Shift: Community Grading Survey responses around the impact of 4x4 shifts on the Sparwood community

g. Reclamation: Area of land reclaimed by EVO and Elk Valley Operations

The baseline measures found in Section 3 are reflective of the most current data as of July 2019. Some data is static for years, as it comes from sources such as the census, which only occur every four years.

3.3 The Approach to Developing Livability Indicators

3.3.1 How the Indicators Were Developed

The overarching objective of the Livability Study is to develop indicators for quality of life in Sparwood and a methodology to facilitate reassessment over time to inform our understanding of the livability of Sparwood and direct actions to support improvements where necessary. There were six key inputs that informed the development of the indicators that follow in this section:

1. Current state: The current conditions in Sparwood, as understood through available data, existing indicators and community engagement
2. Community consultation: The concerns, thoughts, feelings and ideas of the public
3. Local expert insights: Relevant information, thoughts and ideas that emerged during interviews and resource-sharing with local experts and institutions

4. Learnings from leading jurisdictions: The methodologies used by other towns and cities—either leaders in the field of livability or in jurisdictions with similar context—to set livability goals, measure progress and achieve outcomes
5. Local priorities and policies: The policies at the federal, provincial and district levels which influence, align with and/or impact livability outcomes
6. Academic and institutional standards: Standards inspired by peer-reviewed and institutional research related to livability

In addition to the above inputs, the District of Sparwood developed a set of indicators to monitor the Baldy Ridge Extension/Elkview Operations over time. These provide insights into specific aspects of mining operations and Teck's involvement in the community.

3.3.2 How the Indicators Will Be Used

To support the ongoing monitoring of livability indicators, the District of Sparwood, with support from Teck, has committed to investing the time and resources required to collect and update data for the indicators. Section 4 provides a description on recommended repetition of the study.

The indicators will be used to illustrate positive or negative trends over time. They will facilitate planning and decision making at the community level throughout the Baldy Ridge Extension project. Experts suggest livability indicators:

“must be measurable and quantifiable using valid data sources, defined explicitly, linked to theory, and be sensitive to changes in public policy.”²¹

In addition, both subjective (community feedback) and objective (research-based) data are important for informing indicators when it comes to livability. This ensures that a balance of concrete facts and individual beliefs or perceptions about the local environment are considered in tandem.²²

Data year is noted, and any survey results reported are from the survey conducted in 2019. Quotes provided in each indicator are not meant to be representative of facts and are instead provided to include some examples of perceptions that are present in Sparwood.

21. Lowe, Melanie et al. May 2013. “Liveable, Healthy, Sustainable: What are the Key Indicators for Melbourne Neighbourhoods?” Research Paper, Place, Health and Liveability Research Program, State Government of Victoria; University of Melbourne.

22. Ibid.

COMMUNITY-WIDE LIVABILITY INDICATORS

The indicators that follow are structured using a ‘report card’ approach, which allows for a consistent understanding of these varied measures. The full report card can be found as an appendix to this report. Due to this report being in its inaugural year of measurement, there are no year-over-year changes to report. The template on the following page illustrates the indicator reporting structure.



EXAMPLE

Indicator Name

THIS SECTION INCLUDES A DESCRIPTION of why this indicator matters to the livability of Sparwood.

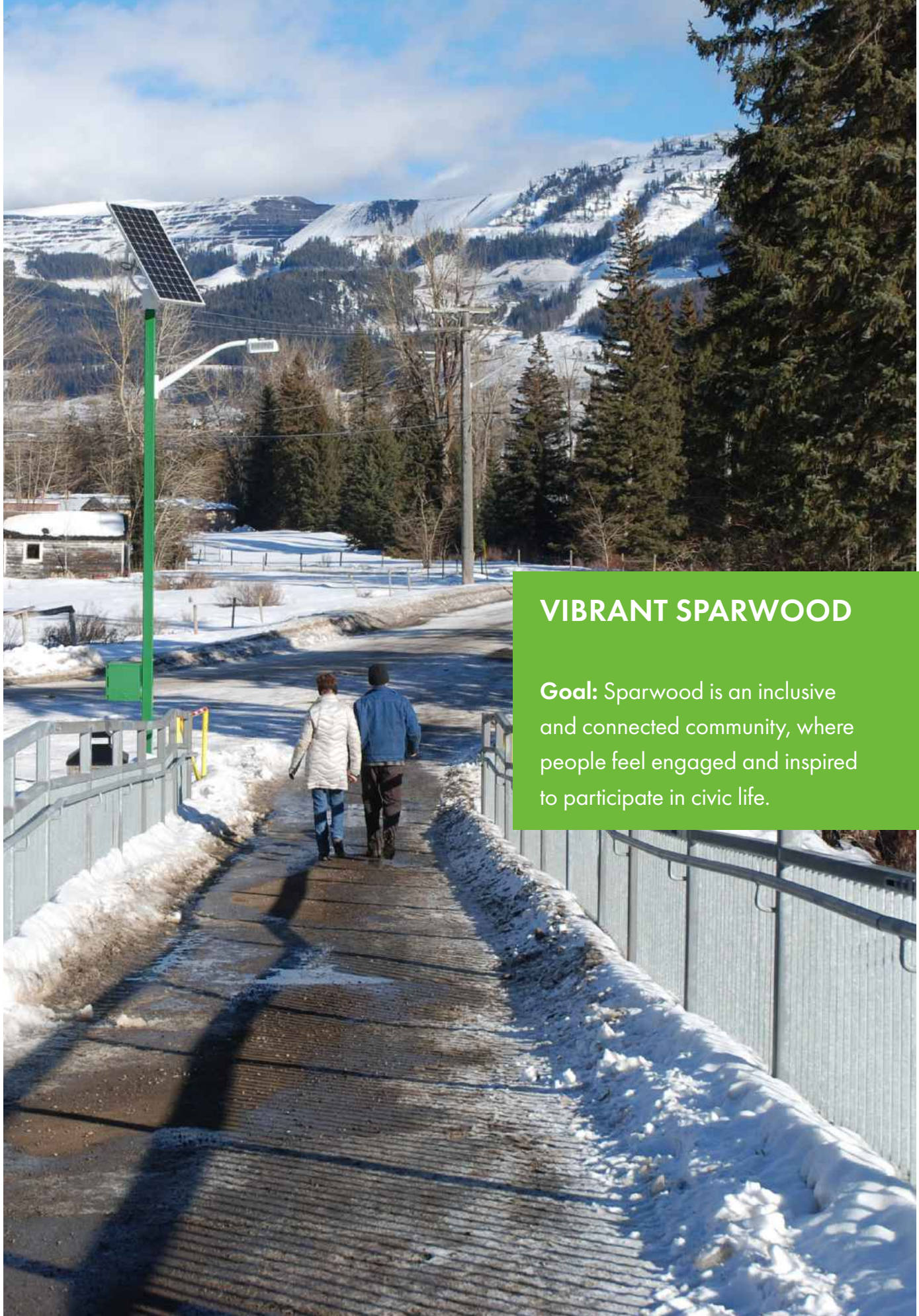
What we are measuring:	A description of the indicator.
The data tells us:	The objective data available on the indicator.
What the community is saying:	The subjective data available on the indicator, based on community feedback through 'Community Grading Survey' during the Livability Study process. ²³
A historic look:	A description of the historical context as it relates to each indicator. Since not all indicators have related historical information, not every indicator has this section.
Alignment with Council Strategic Priorities	Identifies which of the five distinct areas of a sustainable community this indicator aligns with, and any alignment with Vision Checklist items. The two main status identifiers are: <ul style="list-style-type: none">⚠ Area of Attention✅ What Works Well



“Quote related to the indicator.”

This could be by a famous person or a local resident.

23. In 2019 the survey received 272 responses with an 86% completion rate. Surveys were provided both online and in print.



VIBRANT SPARWOOD

Goal: Sparwood is an inclusive and connected community, where people feel engaged and inspired to participate in civic life.

Lifelong Learning

LIFELONG LEARNING is an important element of community life. It provides residents with the opportunity to develop new skills and knowledge, making individuals more adaptable to changes in the workplace. Lifelong learning also provides opportunities to explore areas of personal interest, resulting in a more satisfying life. Those learning opportunities that exist outside of K-12 school system reflect the opportunities for adult learning in Sparwood.

We are measuring:

The number of extracurricular, formal learning and skill development opportunities available to adults in Sparwood, per person 20 years of age and older.

These learning opportunities are measured by the number of classes, workshops, training programs, conferences and speaker series open to all members of the public.

The data tells us:

In 2019, there are **3.76 adult learning opportunities per 1,000** residents in Sparwood (10 opportunities for 2,660 residents over the age of 20).

The community is saying:

64% of participants disagree or strongly disagree that there are interesting and accessible opportunities for extracurricular learning and skill-development in Sparwood, with 2.5% of respondents strongly agreeing that these types of activities are available.

A historic look:

In the early 1980s, when Sparwood was anecdotally considered to be particularly vibrant, there were 19 formal learning opportunities (almost double the number available today). The population at this time was 4,157, about 9% greater than it is in 2019. Assuming a similar distribution of age groups, the learning opportunities per adult resident would be 6.50 opportunities per 1,000 residents - approximately 73% higher than today.

Alignment with Council Strategic Priorities:

Social

✔ Program for All Age Groups



“Anyone who stops learning is old, whether at 20 or 80. Anyone who keeps learning stays young.”

- Henry Ford

Gathering Space

GATHERING SPACES are important for community livability in many ways. These are the places where community members can meet and connect with one another. While most people spend the majority of their lives at home and at work, these ‘third spaces’ create shared experiences for residents. As our community grows and evolves over time, these gathering spaces allow us to meet old friends and get to know new neighbours.

“It really helps having community events like Winterfest where everyone can come out & hang together.”

- Sparwood community member

<p>We are measuring:</p>	<p>The number of entertainment-related venues per 1,000 people.</p> <p>Entertainment-related venues are formal areas for gathering people together to socialize and/or enjoy exposure to entertainment or the arts. Venue types may include but are not limited to restaurants, cafes, pubs, formal sport facilities and museums.</p>
<p>The data tells us:</p>	<p>In 2019, there are 5.29 entertainment venues per 1,000 residents in Sparwood (20 venues for 3,784 residents).</p>
<p>The community is saying:</p>	<p>76% of those surveyed disagree or strongly disagree that there are a variety of appealing entertainment venues, activities and events in Sparwood, with less than 2% of all responses noting they strongly agree.</p>
<p>A historic look:</p>	<p>Today, there are 9 restaurants in Sparwood. Looking back to the mid-1980s, the District had 8 restaurants.</p>

Alignment with Council Strategic Priorities

Infrastructure

- ✔ Recreation Facilities
- ⚠ Community Hall

Economy

- ⚠ Downtown Revitalization
- ✔ Titan Park

Social

- ✔ Recreation Facilities



Community Involvement

COMMUNITY INVOLVEMENT is a reflection of how much residents care and are committed to a place. While financial contributions are an important way to address community needs, the sharing of one’s time creates the opportunity for improved community relationships and commitment over time. Measuring how people are volunteering their time in Sparwood is a way of understanding their commitment to improving life in the community.

“It really helps having community events like Winterfest where everyone can come and hang out together.”

Community Member

We are measuring: The self-reported number of times residents have participated in an unpaid, volunteer activity to help others and/or help solve a problem in Sparwood in the last 12 months.

Volunteer activities are defined in the community survey as unpaid hours helping with non-profit or for-profit organizations, political and/or government organizations, educational institutions and/or religious groups or organizations, among others.

The data tells us: 2019 responses with specific numbers to ‘Number of Times Participating in Volunteer Work per Year’

- Mean (the average number): 13
- Median (the ‘middle’ number of all the responses received): 2
- Mode (the number that occurred the most in the responses): 0
- Percent of 2019 survey respondents to report volunteering one or more times per year: 71%

The community is saying: 61% of participants agree or strongly agree that equal opportunities exist for all residents of Sparwood to participate in community gatherings and activities that foster well-being.

A historic look: In 2019 we have 68 volunteer organizations, in 1979 we had 50.

Alignment with Council Strategic Priorities	Social	
	✔ Recreation programming	⚠ Volunteer base
	✔ Program for all age groups	⚠ Council attendance at events
	✔ Networks and clubs	⚠ Heritage volunteers

Connection and Inclusion

CONNECTION AND INCLUSION are important in any community and even more so in Sparwood, given the area's unique economics and demographics. Understanding how the community feels connected and supported will help us understand the community bonds that are an essential part of a livable community. Those learning opportunities that exist outside of K-12 school system reflect the opportunities for adult learning in Sparwood.

We are measuring:

The self-reported sense of residents that they can get help from friends, family and neighbours in Sparwood when needed

This measure of contact with friends, neighbours and family members is explored on a scale of strongly disagree / disagree / agree / strongly agree

The data tells us (and the community is saying)

82% of participants agree or strongly agree they can get help from friends, family and neighbours in Sparwood when needed

About 59% of participants agree or strongly agree that they feel like they belong in Sparwood, and feel like they are an important part of the community. Close to 41% say they feel excluded or of less importance to the community.

Alignment with Council Strategic Priorities:

Social

- ✔ Recreation programming
- ✔ Program for all age groups
- ✔ Networks and clubs

Infrastructure

- ⚠ Community Hall

Governance

- ✔ Community consultation processes



“We don’t accomplish anything in this world alone...and whatever happens is the result of the whole tapestry of one’s life and all the weavings of individual threads from one to another that creates something.”

- Sandra Day O’Connor, US Supreme Court Justice

PROSPEROUS SPARWOOD

Goal: Sparwood is home to a growing diversity of economic sectors and markets, and a range of affordable and suitable housing options for all of its residents' needs.



Economic Diversification

RELYING ON A SINGLE INDUSTRY can lead to dramatic shifts in the local economy. Economic diversity is an important measure for community livability, as it helps to highlight how resilient the economy can be to changes in the coal industry. As the Baldy Ridge Extension operation proceeds, the town will benefit economically, but residents should also be mindful of how we can explore new economic opportunities to ensure our community is livable now and in the future.

“Don’t put all your eggs in one basket.”

- Traditional saying

We are measuring: Employment industry type, categorized as percentage of direct mining and resource extraction to non-extraction industry types.

The data tells us: Employment By Industry Type:

- Mining, quarrying and oil extraction: 34%
- All other industries: 66%

(Note: The national census data groups mining, quarrying and oil resource extraction data together, and as a result separate employment data for just the mining industry is not available.)

The community is saying: 64% of respondents disagree or strongly disagree that there are a lot of different ways to make a living in Sparwood.

A historic look: The District of Sparwood monitored occupation type in the late 1980s. In 1989, the other primary industry was agriculture, making up 14% of the workforce. This data also references the fabrication, construction and transportation categories of labour as being much higher than the B.C. average at the time. That year, a combined 31% of workers were employed in such sectors. Comparatively, overall the province had just 16% of its 1989 labour force working in these categories.

Alignment with Council Strategic Priorities:

Economy

- | | |
|--------------------------------|---------------------------|
| ✓ Revitalization tax exemption | ⚠ Downtown revitalization |
| ✓ Industry growth | ⚠ Business expansion |
| ✓ Tourism attraction | ⚠ Community promotion |
| | ⚠ Job diversification |

Housing Affordability

ACCESS TO AN AFFORDABLE HOME is a central element to livability in Sparwood. Affordable housing has a wide range of social, health and economic benefits, not only for individuals and families, but for the community at large. Monitoring housing affordability in our community will allow us to understand the impacts of significant changes to our community, like the Baldy Ridge Extension.

We are measuring: The percentage of households with shelter expenses that are 30% or more of their household income

The 30% housing cost is recognized by Canada Municipal Housing Corporation as the standard for affordability. Direct rent or mortgage costs plus electricity, oil, gas, coal, wood or other fuels, water and other municipal services, property taxes and condominium fees are included in this 30%.

The data tells us: Households with 30% or more of their household income going to shelter expenses:

Owner households: 8.3%

Tenant households: 35.4%

The community is saying: 56% of survey respondents disagree or strongly disagree that there is affordable housing in Sparwood that meets their needs and the needs of their family

Alignment with Council Strategic Priorities:

Economy

- ✔ Industry growth
- ⚠ Business expansion



“More affordable homes that can be rented by families. The mine employs 1000s of people yet cannot—no will not—provide adequate housing”

- community member

Housing Diversity

IN ADDITION TO AFFORDABILITY, it is important to understand the diversity of housing options available to residents in Sparwood. Varying dwelling types allow a community to meet different housing needs—from seniors to families to single individuals. As Sparwood’s demographics change, we will need to monitor the housing that is available to residents to ensure it is meeting community needs.

“Housing options—for unfurnished, for long-term renters where you don’t share a house—more townhouses, duplexes, single family homes, etc.”

- community member

We are measuring: The mix of dwelling types in Sparwood

The data tells us:

Dwelling Units in Sparwood, 2019		
Single detached	845	51%
Semi-detached	110	7%
Row House	105	6%
Apartment	225	14%
Mobile/moveable dwellings	365	22%
Total dwellings	1655	100%

The community is saying: 64% of participants disagree or strongly disagree that diversity exists in housing options (owner/renter choices, size, type, number of rooms and location).

0.9% of residents responding strongly agree to a diversity of housing options.

A historic look:

Dwelling Units in Sparwood, 1979		
Single detached	535	43%
Semi-detached	85	7%
Row House/apartment	290	23%
Mobile/moveable dwellings	335	27%
Total	1245	100%

Alignment with Council Strategic Priorities

Economy

-  Industry growth
-  Business expansion



HEALTHY SPARWOOD

Goal: Sparwood is a community that prioritizes human and environmental health, where people can rely on and enjoy robust health and ecosystems.

Trails and Recreation

THE TRAILS AND OUTDOOR RECREATION OPPORTUNITIES in Sparwood are an important and valued part of what makes our community livable. Physical, economic and demographic changes will come to our community over time. As these changes occur, it is important for us to ensure that these resources are maintained and expanded.

We are measuring: The length of maintained public trails (including trails, paths, laneways) per 1,000 people.

The data tells us: In 2019, there are **8.73km of trails per 1,000 residents** in Sparwood.

The community is saying: 77.1% of survey participants agree or strongly agree that Sparwood has a high-quality public trail system.

Alignment with Council Strategic Priorities:

Environment

- ✔ Active transportation network
- ⚠ Trail and wayfinding

Infrastructure

- ✔ Parks and trail infrastructure
- ⚠ Trail amenities

Economy

- ✔ Tourism attraction
- ⚠ Community promotion

Social

- ✔ Trail network for active living



“In all things of nature there is something of the marvelous.”

- Aristotle

Water Quality

CLEAN WATER is often taken for granted in Canada, yet it is a key factor in making life in a community livable. As changes come to Sparwood, we need to be vigilant in monitoring and protecting this vital resource.

“(It is) impossible to open pit mine and not affect air and water quality.”

- community member

We are measuring: There are two measures for water quality: drinking water (wells) and surface water (river).

The data tells us: Drinking Water
Number of exceedances (0.01 mg/L) of selenium concentration in District wells.*

	Well #1	Well #2	Well #3	Well #4
2018	0	0	9	n/a

Surface Water
Zero (0) Elkview order stations exceeded site performance objectives for selenium, nitrate, sulphate, and cadmium levels in 2018.

For drinking wells, water quality results are based on the concentrations in drinking water at all District well sources. Standards for Selenium are set by the BC Drinking Water Guidelines at 0.01 mg/L. Maximum Allowable Concentration.

For surface water, water quality results reflect guidelines around selenium, nitrate, sulphate and cadmium levels in the Elk River at the town monitoring site

The community is saying: 82.1% of participants agree or strongly agree that Sparwood has high quality and safe drinking water.

56.9% agree or strongly agree that Sparwood has clean and uncontaminated rivers.

*The District collects monthly samples to test for selenium to ensure our water is within guidelines. If any of the water sources are shown to be above the maximum allowable selenium amount (0.01 mg/L), the well is immediately turned off until the water samples indicate the selenium levels have dropped to within the guidelines. Well #3 was shut off in 2018 for the months of January to May, and September to December. At the time of this reporting, As of the writing of this report Well #4 not yet operational and therefore data is not being reported.

Alignment with Council Strategic Priorities:

Environment

- ✔ Water Quality
- ✔ Fishing in Elk River
- ⚠ Stormwater discharge
- ⚠ Water and selenium

Infrastructure

- ⚠ Douglas Fir water and sewer
- ⚠ Preventative maintenance

Air Quality

CLEAN AIR is essential to all life in our community. Another fundamental element of community livability, clean air contributes to human and environmental health. Decreased air quality can lead to significant impacts in the health of residents and the surrounding ecosystem.

We are measuring:

The annual mean of particulate matter concentrations (PM_{2.5}*) at Sparwood’s downtown air monitoring station.

The number of days particulate matter concentrations (PM_{2.5}*) are above daily British Columbia Ambient Air Quality Objectives.

The British Columbia Ambient Air Quality Objective for PM_{2.5}* is achieved when annual levels of PM_{2.5} are 8.0 micrograms per cubic metre (µg/m³) or lower. Additionally, the daily levels must be below 25 µg/m³.

*PM_{2.5} is atmospheric particulate matter that is less than 2.5 micrometers in diameter.

The data tells us:

2018 Measures:

Annual mean of particulate matter concentrations (PM_{2.5}) at Sparwood’s downtown air monitoring station: 7.8 µg/m³.

Number of days particulate matter concentrations (PM_{2.5}) are above the provincial daily objective: 16

Highest reported daily concentration: 102.44 ug/m³, August 19, 2018.

The community is saying: 75.4% of survey respondents either disagree or strongly disagree that the air they breathe in Sparwood is clean and healthy

Alignment with Council Strategic Priorities:

Environment

ⓘ Dust from mining – air quality



“There are some things we value as a public good that the market can’t deliver, like clean air.”

- Eric Maskin, Economist

Health Care Access

“Access to health care for me and my kids. Even in the evening.”

- community member

HEALTH CARE ACCESS is of particular interest in Sparwood, and is largely focused on the availability and quality of health services within the community. A community with sufficient access to health care has affordable, accessible and adequate health services to meet the needs of their residents.

We are measuring: The number of general practitioners per resident.
The hours of available health care access.

The data tells us: Health Care Measures in Sparwood

- General practitioner (full-time equivalent): 3.
- General practitioners per resident: 0.79 practitioners per 1,000 residents (or 1 practitioner per 1261 residents).
- General Services: 40 hours per week.
- Emergency Services: 77 hours per week.

General practitioners are calculated by full-time equivalent positions. In some instances, two or more general practitioners may share one full-time equivalent position (a 40-hour work week), as one practitioner could work two days per week and another three days per week. This measure is based on total hours worked by doctors, not the number of doctors practicing in Sparwood.

The community is saying 54.9% of survey participants disagree or strongly disagree they can access a general practitioner in a timely fashion.
65.4% of respondents disagreed or strongly disagree they have access to emergency care in a timely fashion.

Hours of available access reflect the hours the primary health centre’s doors are open. This indicator is defined by hours for general services and hours for emergency care.

A historic look In the past, the number of general practitioners per resident has shifted to reflect the community’s size, needs and health care priorities of the time. Looking back to 1979, when Sparwood had 4,157 residents, the number of full-time equivalent general practitioners was 4, or 0.96 practitioners per 1,000 residents (or one doctor for every 1039 residents).

Alignment with Council Strategic Priorities:

Social

ⓘ Health Services access

Child Care

CHILD CARE is an important contributor to quality of life in a community, as it provides benefits to families and to the local economy. When adequate child care options exist, families have greater employment opportunities and local businesses have access to a greater pool of labour.

We are measuring: The number of spots available (for children under 5).

The demand, or wait list, for child care spots (for children under 5).

The data tells us: The number of spots available (for children under 5): 49 spots between two formal operations.

The demand, or wait list, for child care spots (for children under 5): approximately 126 children between two formal operations.

The community is saying: Over 90% of responses disagree or strongly disagree that there is a sufficient amount of quality child care in Sparwood.

Alignment with Council Strategic Priorities: N/A



“Child care is an invisible part of the economy.”

- Ellen Galinsky, President, Families and Work Institute



BEAUTIFUL SPARWOOD

Goal: Sparwood is an attractive and clean community, with stunning mountain views and visually appealing neighbourhoods and public spaces.

Views

THE VISUAL ATTRACTIVENESS of any community is important. Sparwood residents expressed particular interest in maintaining views, as many choose life here for its proximity to the mountains, as well as the open views.

We are measuring: Attractiveness scores for public locations characterized by having a significant open view of a natural object or scene (3 predetermined locations, in-town).

The data tells us:

- Centennial Square (looking east): 1.33 out of 3.
- Highway 43/Michel Creek Road Intersection (looking south): 2 out of 3.
- Sparwood Heights Drive/Ponderosa Drive Intersection (looking north): 2 out of 3.
- Corner of Pine Avenue and Red Cedar Drive (looking west): 3 out of 3.

(averaged between three auditors)

The community is saying: 73.2% of survey participants agree or strongly agree that Sparwood has attractive views of natural features and settings.

Alignment with Council Strategic Priorities:

Environment

- ⚠ Mining visual impact
- ⚠ Investment in aesthetics
- ✅ Abundant green spaces

Infrastructure

- ✅ Clean community



“I am worried that the BRE will have an affect on air, noise and water quality as well as a visual effect on future livability.”

- community member

Aesthetic Appeal

VIBRANT COMMUNITIES have a variety of interesting, attractive and compelling spaces that nurture the development of strong, active, and inclusive relationships. These appealing aesthetics foster individual and collective well-being in a community.

We are measuring: Attractive features score, beyond nature to include the physical and built environment (i.e buildings, art, noise) of Centennial Square.

The data tells us: 14 out of a possible 21 for Centennial Square (averaged between three auditors).

The community is saying: 61.7% of respondents disagree or strongly disagree that Downtown Sparwood is visually attractive and interesting.

Alignment with Council Strategic Priorities:

Environment

- ⚠ Mining visual impact
- ⚠ Investment in aesthetics
- ✅ Abundant green spaces

Infrastructure

- ✅ Clean community

Economy

- ✅ Revitalization tax exemption
- ⚠ Downtown revitalization

“Further destruction from the mines. It seems that water and air quality are a constant concern, as well as the compromised aesthetics of Sparwood and other environmental concerns. In no way do I want the mines to be shut down, my only wish is that we could be more innovative with our approach.”

- community member



Dust and Dirt

THE PRESENCE AND IMPACT OF COAL DUST in and around Sparwood is a common concern. Bad air quality and high dust levels affect the local physical environment, wildlife, water and soil. They also have implications for lung health. As the Baldy Ridge Extension operation proceeds, our town will continue to feel the impact of dust and dirt, and we must be mindful about how this impacts our enjoyment of life in Sparwood.

We are measuring: The Instances of Feedback received by Teck through their Feedback Mechanism that specifically refer to visible dust.

This measure will also include Teck’s dustfall monitoring results, when available.

The data tells us: 101 individual pieces of feedback about fugitive dust and air quality were received by Teck through their Feedback Mechanism in 2018.

The community is saying: 73.7% of survey respondents agree or strongly agree that mine-related dust in Sparwood is affecting their quality of life, with 4.2% noting they strongly disagree.

Alignment with Council Strategic Priorities:

Environment

- ⚠ Debris – coal dirt into town
- ⚠ Dust from mining – air quality

Infrastructure

- ✅ Clean community



“The air quality is not great. The dust coming off the mine settles all over the house.”

- community member

BRE/EVO-SPECIFIC INDICATORS

The following indicators were developed by the District of Sparwood. These indicators are intended to monitor specific aspects of Teck's BRE/EVO operations that have impacts on the Sparwood community. These follow the same general indicator structure as used in the Community-Wide Indicators (Section 3.5), with the intention of creating a consistent understanding of these measures.



Teck social investment dollars spent in Sparwood

THIS ILLUSTRATES FINANCIAL CONTRIBUTIONS by Teck to the Sparwood community, outside of their operations or obligations through the Environmental Assessment process.

We are measuring: Teck’s organizational social expenditures within Sparwood but outside of their obligations (i.e. operations or commitments as part of environmental assessment processes). Examples might include sponsorships, or capital projects (i.e. Sparwood Skatepark or Dog Park).

The data tells us: For 2018, Teck reported the following total community investment:

Sparwood: \$193,910

Elk Valley-wide: \$232,829

Alignment with Council Strategic Priorities:

Governance

ⓘ Condition 21 impacts

Elk Valley Operations Demographics

THIS HELPS US UNDERSTAND HOW MANY EMPLOYEES choose to reside in Sparwood across all of Teck's operations in the Elk Valley, and if those employees are on 4x4 or other shifts.

We are measuring:

There are two measures for Elk Valley Operations. These include on- and off-site employees within the Coal Business Unit.

Percentage of Elk Valley Operations staff and hourly employees living in Sparwood.

Number and percentage of Sparwood-based Elk Valley employees on 4 x 4 shift.

The data tells us:

Percentage of Elk Valley Operations staff and hourly employees living in Sparwood: 18.25% (approximately 802 out of 4457)

Number of Sparwood-based Elk Valley employees on 4 x 4 shift: 549, (approximately 12.3% of 4457)

Alignment with Council Strategic Priorities:

Economy

ⓘ Community promotion

Social

ⓘ 4x4 shift



Elkview Operations Demographics

THIS HELPS US UNDERSTAND HOW MANY EMPLOYEES CHOOSE to reside in Sparwood from Teck’s Elkview Operation, and if those employees are on 4x4 or other shifts.

We are measuring: There are two measures for Elkview Operations. These include on- and off-site employees within the Coal Business Unit.

Percentage of Elkview Operations staff and hourly employees living in Sparwood.

Number and percentage of Sparwood-based Elkview employees on 4 x 4 shift.

The data tells us: Percentage of Elkview Operations staff and hourly employees living in Sparwood: 22.8% (approximately 260 out of 1139)

Number of Sparwood-based Elkview employees on 4 x 4 shift: 248 (approximately 21.7% of 1139)

Alignment with Council Strategic Priorities:

Economy

❗ Community promotion

Social

❗ 4x4 shift



Feedback

THIS HELPS US UNDERSTAND HOW SPARWOOD RESIDENTS have concerns related to Teck’s operations, as a proportion of all feedback received. This will help to illustrate how the Sparwood community is impacted by operations, compared to other communities.

We are measuring: Percentage of Teck feedback complaints received from Sparwood residents / Total complaints received for all Elk Valley Operations.

Number of complaints received in previous year.

The data tells us: Percentage of Teck feedback complaints received from Sparwood residents / Total complaints received for all Elk Valley Operations: 90%

Number of complaints received in 2018: 109

Alignment with Council Strategic Priorities:

Governance

ⓘ Condition 21 impacts



Carwash Uptime

THIS HELPS US UNDERSTAND HOW AVAILABLE Teck's EVO car wash infrastructure is for ensuring coal/mining-related mud is not spread through our community from vehicles leaving operations.

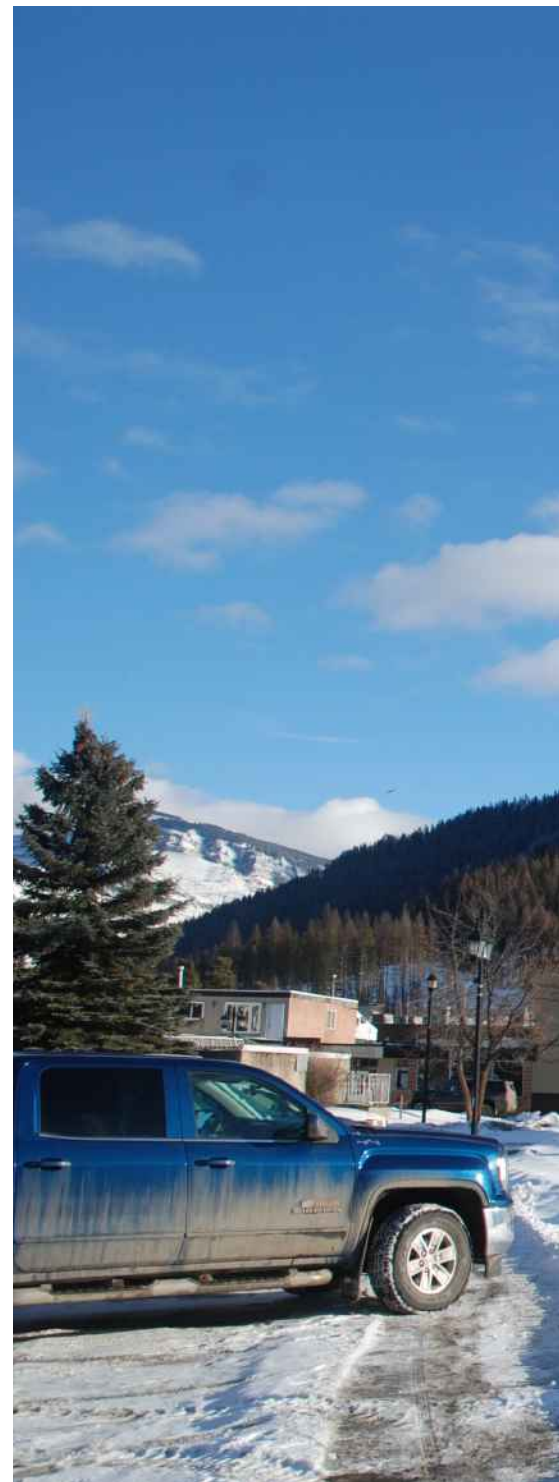
We are measuring: Percentage of uptime, or availability, for Elkview Operations carwash or other proposed measurement for trucks dropping coal/mining-related mud. Uptime is availability of the carwash and only applies to days above zero degrees.

The data tells us: ~95% daily availability uptime for Elkview Operations carwash in 2018 season

Alignment with Council Strategic Priorities:

Environment

- ⓘ Investment in aesthetics
- ⓘ Debris - coal dirt into town



4 x 4 Shift

THIS HELPS US TO UNDERSTAND THE IMPACT and perception of the 4x4 shift in the community.

We are measuring: Responses to the Community Grading Survey on questions specific to 4x4 shifts.

The data tells us: Which of the following best describes your employment schedule?

- 4 x 4 shift or similar: 24.4%
- 9 to 5 shift: 49.4%

How much of your disposable household income (not including your mandatory expenses like rent and food) do you spend in Sparwood?

- 83% of those respondents who work 9-5 report spending 50% or less of their disposable income in Sparwood.
- 63% of those respondents who work a 4x4 shift report spending 50% or less of their disposable income in Sparwood.

Do you think the 4 x 4 shift schedule influences the Sparwood community?

- 55% of respondents indicated they felt the 4x4 shift schedule had either a negative or very negative impact on the community, and 31% were neutral.

Do you rent out a bedroom(s) to any mine workers on a temporary basis?

- 95.6% of respondents indicated they do not rent out any bedrooms to workers on a rotational basis.

Alignment with Council Strategic Priorities:

Economy

- ⓘ Community promotion

Social

- ⓘ 4x4 shift



Reclamation

THIS HELPS US UNDERSTAND HOW TECK IS restoring lands disturbed by operations.

We are measuring: There are two measures for Reclamation:

Area of land where reclamation work was completed at Elkview Operations.

Area of land where reclamation work was completed at Elk Valley wide Operations.

The data tells us: EVO (2018): 12 ha reclamation related work completed (1164 ha reclaimed at EVO to date)

Elk Valley Wide (2018): 950.1 reclamation related work completed (3041.8 ha reclaimed land in the valley to date)

Alignment with Council Strategic Priorities:

Governance

ⓘ Condition 21 impacts







4.0

using the
study

4.1 Reporting to the Community

To maintain the momentum of the Livability Study it is recommended that the Livability Indicator Report Card be updated on an annual basis. This gives the District of Sparwood, Teck, local organizations and residents a consistent and ongoing look at how indicators are changing over time. Despite some data remaining static for years (i.e. census data), the Livability Indicator Report Card update will still benefit from identifying those measures that do change more frequently. This holds especially true for the Community Grading Survey, which highlights the perceptions and opinions of people living and working in Sparwood.

4.2 Using the Results

The Livability Study represents a new strategic direction for the District of Sparwood. The Study reflects what the community values and will set the direction for monitoring these aspects of life in Sparwood for years

to come. Monitoring key indicators is an important aspect of creating ongoing learning to inform improved planning and decision-making. As change occurs over time, monitoring what is most important to the community allows Council, business and the community to understand if we are on the right path to improve livability in Sparwood or if we are seeing a decline in measures that matter to our residents. Decision makers can choose to take action in response to changes, and then those actions will lead to new results, which will inform future actions. A systematic version of this cycle is often referred to as adaptive management, which is illustrated on the following page.

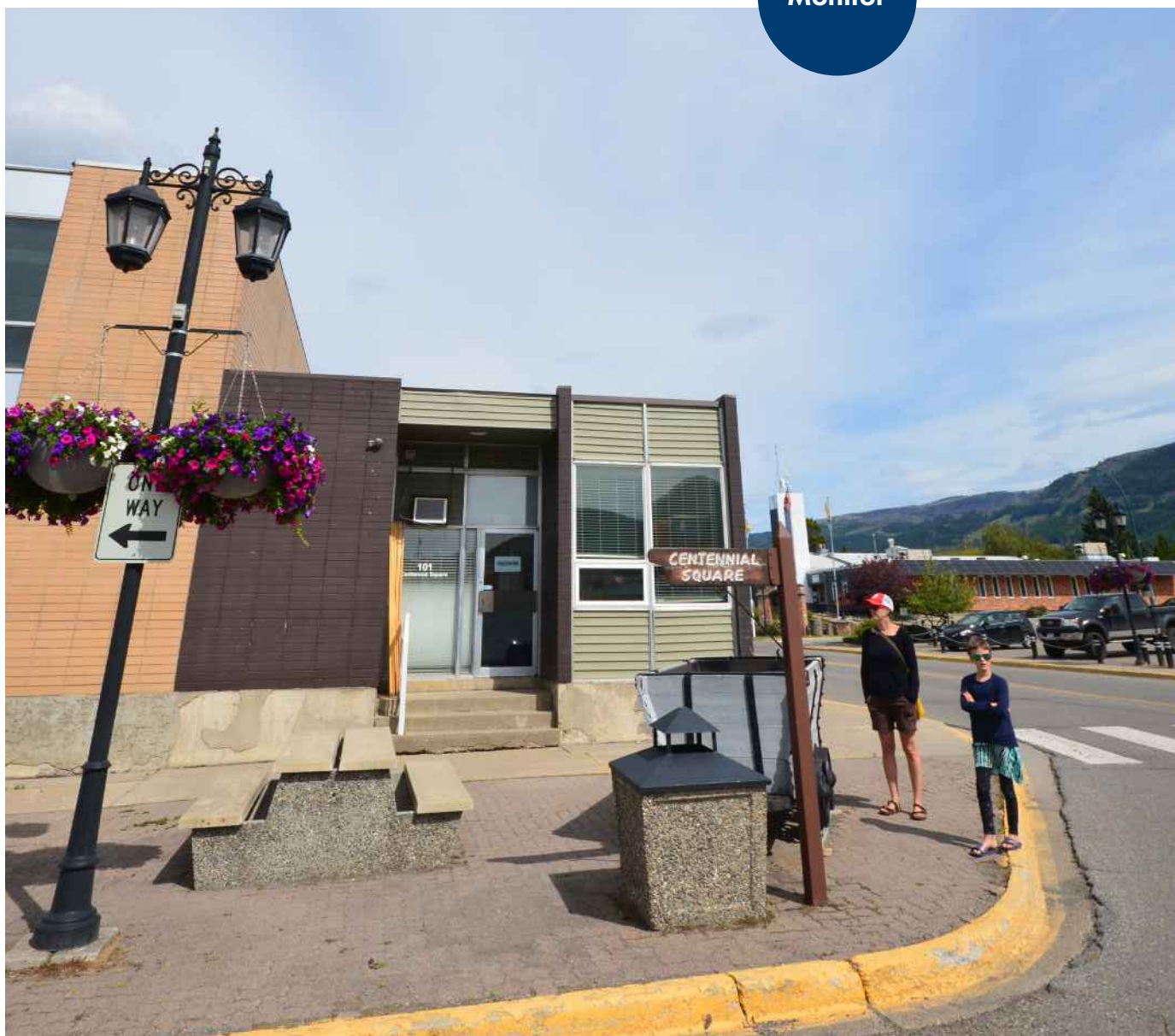
Adaptive management is built into the Socio-Community and Economic Effects Management Plan (SCEEMP). The results of the Livability Study and subsequent annual reporting should inform updates to the SCEEMP and the development of mitigations for related impacts from BRE. This could align with the SCEEMP updating, which occurs at least every three years.

The steps of adaptive management are described in detail in the SCEEMP document. As results of the Livability Study are reported year-over-year, the adaptive management cycle continues by using those results to develop and implement new mitigations, and then the cycle is repeated. Indicator results can help us understand the socio-community and economic effects impacts of both broad community development and specific progress within BRE. It is intentionally both broad (Community-Wide Indicators) and specific (BRE/EVO-Specific Indicators) so that it may be used for a variety of purposes.



As changes occur through BRE, and other community developments, these measures will provide information to the District, Teck, local organizations and community members as to where livability is being impacted and where actions are most needed.

These indicators not only distinguish what areas of livability require attention, they also enable the community to understand the direction and magnitude of change over time. This gives our community leaders and decision-makers insights into the level of effort and resourcing required to address change and develop actions over time. In this way, we can ensure that we are continually moving toward a more livable community.



a.a

appendix a

What we Learned Report



Sparwood Age Friendly Plan

One of the prominent themes highlighted in the key issues affecting local seniors is the challenge of creating a “sense of community”. Despite the fact that ‘strong social connections’ were reported as one of the top reasons people stay in Sparwood as they age, it was also cited as one of the top concerns for younger people as they get older. In order to combat this, there are a set of actions outlined to create more senior-specific and intergenerational activities and programs to keep people active as they age.

District of Sparwood Community Sustainability Plan

Social engagement is supported in two key pillars built into the *Community Sustainability Plan*: Cultural and Social. The cultural pillar focuses on generating a sense of community, building on the heritage of the community and bolstering the arts and other cultural activities. The social pillar promotes inclusive social activities, intergenerational learning and more emphasis on civic events and knowing the community. These pillars are supported by an extensive list of action items extending to 2025 and beyond.

District of Sparwood Official Community Plan

Social engagement and cohesion are supported by one of the goals of the *Official Community Plan*: “Support a healthy, safe and engaged community through social development, community services and civic engagement.” A list of 10 non-binding actions are attached to this goal, which offer direction to support, explore and encourage various actions to bolster civic engagement.

Focus Area B - Environmental Sustainability

Concern about the environment in which citizens live, work and play was a key theme in the Phase One engagement process. Many who provided feedback expressed comments about the importance of the natural environment and their connection to it, and concerns related to the quality of air and water in Sparwood. Several participants expressed specific concerns about mining impacts and land stewardship.

What We Heard in Sparwood

Air Quality. Raised more often than any other topic throughout the engagement period, numerous stakeholders are concerned about the coal dust and air quality in and around Sparwood. Many stakeholders cited concerns about the visibly dirty streets, decks and patios, and wondered how the bad air quality and high dust levels are also affecting the local physical environment, wildlife, water and soil.

“The lack of concern about the air pollution.”

“My concern is that the Valley creeks and rivers and air quality will become so poor that we are not able to recreate in it.”

“Pollution and air quality is getting bad. There is a thick layer of coal dust that sticks to the snow that make you wonder what is in our lungs.”

Water Quality. Several stakeholders referenced concern related to both drinking and surface water quality. Many outdoors enthusiasts who take part in water-based recreational activities had a targeted concern related to the environmental state of local water bodies. Some noted the connection between river health and fish health, particularly with regard to selenium levels.

"We no longer have a hospital in Sparwood nor do we have a working inter-provincial healthcare network. Being sent to Vancouver or Kelowna is not affordable nor is it a safe journey."

"Lack of medical care for my family and I. If something happens to my children, I have to drive to Fernie or Cranbrook. When the roads are bad this puts all of us at risk."

"...The lack of an emergency healthcare facility puts us at huge risk as well. Accidents don't only happen during regular business hours when the town's biggest industry works 24/7"

"I wish we had a better health care system here."

Many stakeholders also noted long wait times for seeing a general practitioner (GP) in Sparwood, while some individuals indicated they were unable to find a GP at all. Resolving problems around access to GP was a priority across all age ranges.

"Need to pay doctors more and incentives."

"Waiting weeks to get into see doctor or resources available at the health care having to travel/take day off to see any sort of specialist."

"Can't get a local doctor. Have to travel to Cranbrook for one."

Collaborative Care. Several comments were made about challenges accessing Alberta Health Services (AHS) doctors in specialists, as well as emergency health care in Alberta. Other participants raised concerns about the long travel and wait times for appointments in Fernie, Cranbrook, Kelowna and Vancouver, especially when Alberta is so much closer. The desire for a stronger and more comprehensive services partnership between the provinces was raised by the public and professionals alike.

"Had to go to Fernie for my doctor, have to go to Cranbrook for CTs, MRIs, ultrasound, surgery, specialists or have to go Lethbridge, Calgary for specialists. Had to go to Fernie emergency for intravenous treatments more than once @ 11 & 12 pm!!"

"Being sent to Kelowna when we have 2-3 hour access in Alberta."

Mental health. Participants emphasized the overall importance of mental health when it came to their quality of life and wellbeing. They also spoke to a shared ability to nurture and care for mental health by being proactive (building strong social networks or getting outside) whenever possible. For those who experience mental health challenges, accessing counselling services appears to be a common issue.

"Physical and mental health are both very important. For me that means being able to get outside and enjoying nature with my family."

"My primary concern is our mental health. Long winters and lack of community may have negative affects on our mental health."

"Need more psychologists in the valley to help with the growing number of patients. The wait for appointments is insane."

"I do believe there could be more publicly accessible health practitioners and access for psychological well-being. There is such a high need for counselling services. The wait lists are long and you may only be accepted if you are critically failing."

Respiratory Health. Many comments were received about air quality and the impact of coal dust on respiratory health. Some questioned the validity of local respiratory disease data that has been shared, suggesting that incidences of respiratory problems may be under-reported as workers often access health care in other communities. Many cited the lack of access to physicians, and personal / family struggles with asthma.

"There is so much dust these days, it can't be good for our lungs if we have to wear respirators at the mines."

"Having already had cancer I am concerned about the amount of nuisance dust in our environment. I am frustrated because Teck cannot seem to find a solution to the issue. My stress level (is higher) because of my concern about our quality of life with regards to Baldy Ridge Expansion."

"My lungs and my family's lungs. Some of us have developed asthma."

"People with health issues have left the area so they are not in [Fernie Health Area] catchment area"

"Undiagnosed people 'accept' [asthma] as part of living here."

"I have been diagnosed with severe allergies and asthma in the last few years."

Seniors Care. Although care for the elderly was mentioned infrequently, some expressed serious concern about seniors access to health and social services. Several participants indicated that what mattered most to their health was being healthy and independent into their old age.

"[It's most important] That I'll be able to live here comfortably once my health starts to deteriorate."

What the Research Says

Health is a wide-ranging concept and policy area, with a number of associated indicators. Healthcare access, an issue of particular importance in Sparwood, is a more specific issue focused on the availability and quality of health services within a community. A community with sufficient access to healthcare has affordable, accessible and adequate health services for their population. To achieve good outcomes related to healthcare access, a community must also offer services that align with the different perspectives and health needs that exist within their local context, that are widely utilized by all community members who needs them, and that lead to 'satisfactory health outcomes'.⁴²

Beyond access, Healthy populations and communities also have high overall health outcomes and statuses. For this to occur, more than good health care services need to be in place. Rather, the range of factors that influence health in a community must be considered and maintained, and their connection to health outcomes understood. Some examples of these determinants include how "food is distributed and priced, how houses are constructed and located, how urban transportation is designed, how accessible health care and recreational services are, and how we interact with the natural environment."⁴³

Healthcare—including access, life expectancy and health status—is considered a foundational aspect of livability by the majority of people and places we examined.

How Local Policy Aligns

Sparwood's Official Community Plan includes policy content and direction around health care in the community. The British Columbia Interior Health Authority's Healthcare Network manages the public health services in Sparwood, and as a result many of the Official Community Plan's actions are focused on working with Interior Health.

42 Gulliford M1, Figueroa-Munoz J, Morgan M, Hughes D, Gibson B, Beech R, Hudson M. 2002. "What does 'access to health care' mean?" *Journal of Health Services Research & Policy* 7 (3).

43 Canadian Index of Wellbeing, University of Waterloo. n.d. "Healthy Populations." Accessed March 22, 2019. <https://uwaterloo.ca/canadian-index-wellbeing/reports/2016-canadian-index-wellbeing-national-report/healthy-populations>

The following example indicators are commonly used to measure healthcare quality, and may prove appropriate for the Sparwood context:¹

- Percentage of people with a regular medical doctor
- Availability of private and public healthcare
- Proximity/distance to healthcare facilities
- Number of GPs per population (1000 ppl)
- Number of physician specialists (1000 ppl)
- Number of Cat Scanners per population
- Elderly care facilities per population
- Distance of census subdivision to nearest hospital

1 Canadian Index of Wellbeing, University of Waterloo. n.d. "Domains and Indicators." Accessed March 22, 2019. <https://uwaterloo.ca/canadian-index-wellbeing/what-we-do/domains-and-indicators>.

Lowe, Melanie et al., May 2013. "Liveable, Healthy, Sustainable: What are the Key Indicators for Melbourne Neighbourhoods?" *Research Paper, Place, Health and Liveability Research Program, State Government of Victoria; University of Melbourne & Government of Canada.* 2009.

Government of Canada. 2009. "The Atlas of Canada Quality of Life Model."