LNG Canada
Community Level Infrastructure and Services Management Plan
Annual Report 2019

May 28, 2020

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Executive Summary

LNG Canada is committed to managing socio-economic effects associated with the construction and operation of its liquefied natural gas (LNG) facility and marine terminal (the Project). LNG Canada began implementation of its Community Level Infrastructure & Services Management Plan (CLISMP) on April 1, 2019. The CLISMP entails Social Management Plans (SMP) that outline actions to mitigate the Project's adverse direct effects on community-level infrastructure and services, community engagement mechanisms, socio-economic monitoring and reporting over the duration of construction and two years into operations. CLISMP scope focuses on communities near the LNG Plant footprint, namely: District of Kitimat (DOK), City of Terrace (COT), Regional District of Kitimat-Stikine (RDKS), Haisla First Nation, Kitselas First Nation and Kitsumkalum First Nation.

This Annual Report is intended to inform the BC Environmental Assessment Office (BC EAO), BC Ministry of Municipal Affairs and Housing and other stakeholders of project updates, CLISMP reporting metrics, mitigation effectiveness, and adjustments or adaptive mitigation measures during implementation from April 1–December 31, 2019. SMP monitoring data and highlights from Social Management Roundtable meetings have been captured in quarterly updates, which include information on mitigation measures and adaptive management. A final plan report will be provided, which will include a summary of the Plan's effectiveness in achieving socio-economic objectives, and a summary of each Annual Report submitted during construction (LNG Canada 2019).

Project Activities

Due to increasing size of the workforce mobilized to support early works, LNG Canada commenced CLISMP implementation in April 2019. LNG Canada, together with its prime contractor JGC Fluor BC LNG JV (JFJV), began to implement SMPs to limit direct adverse effects that could result from Project activities interacting with the following = areas of community level infrastructure and services: housing and accommodations, traffic, emergency response, community health, community health, education, and utilities.

Kitimat, Terrace and surrounding communities have a long history intertwined with industrial development and cycles of boom and bust. During CLISMP development in 2015, consultation and engagement efforts by LNG Canada incorporated learning from pertinent experience into the design of mitigation strategies and the monitoring metrics captured in SMPs. An overarching mitigation has been an emphasis on preferential hiring of qualified local workers to reduce the number of non-local workers mobilized to Kitimat. Several strategies are actively deployed to accommodate non-local workers in dedicated workforce accommodation centers, including the policy of not paying living out allowance (LOA), thereby limiting direct demand on local housing markets and overall community infrastructure and services, as was experienced with previous project developments.

Project activities in Kitimat over the course of April to December 2019 included marine activities (dredging, construction of Rio Tinto terminal A wharf extension, salt marsh activities); site preparation (top soil removal, rough grading, hauling of aggregate), delivery of marine and road shipments (trailers and dorms, steel piles, rebar) and early construction activities to progress work at Cedar Valley Lodge and the Material Offload Facility among others.

In 2019, the Project experienced its highest activity level from October to December. During this period the Project provided accommodation for a peak of 1,550 non-local workers through a combination of workforce open lodges and exceptional temporary use of hotels in Kitimat and Terrace. A peak of 1,418 non-local workers stayed at Kitimat open lodge workforce accommodations and hotels, while a peak of 132 non-local workers stayed at hotels in Terrace. In the same time period, the Project employed a peak of 566 workers from local communities. LOAs were not paid to workers at any time in 2019.

Summary of Project Effects

Overall, the Project had limited direct impacts on community level infrastructure and services in 2019. However, an increase in indirect and induced effects was noted in surrounding communities and attributed to the increase in economic activity in the region. Table 1 summarizes the direct Project effects on community infrastructure and services measured in 2019 and evaluates the effectiveness of mitigations.

Table 1   Summary of Direct Project Effects April–December 2019

Social Impact Category	Measurable changes	Effectiveness of Mitigations
Housing & Accommodations	A peak of 1,550 non-local Project workers housed in Kitimat open lodge accommodations and, exceptionally, in Kitimat and Terrace hotels while on rotation. 31 accompanied Project employees relocated to Kitimat with 10 partners and 8 children.	By prioritizing hiring from the local area, providing housing for non-local workers in open lodges and local area hotels, and not paying living out allowances (LOA) to the workforce, the Project has limited demand on market housing.
Community Health	There were 16 occupational injuries and illnesses and 47 non-occupational injuries and illnesses requiring treatment in local hospitals in 2019 Q2–Q4. This is the equivalent of 0.6% of the emergency room (ER) visits to Kitimat General Hospital	By providing a full range of medical services at the Project site and Sitka Lodge, continued communication and coordination with Kitimat General Hospital and an Occupational First Aid (OFA) person available day/night at Crossroads Lodge, the Project has limited direct demand on local medical services.
Air Traffic	5% increase in commercial airport traffic, directly attributable to the Project	By using chartered flights for a proportion of the workforce, Project direct effects on Northwest Regional Airport were limited.
Road Traffic	6% increase in overall road traffic on Hwy 37 north of Kitimat (estimated from MOTI Traffic Data) directly attributable to the Project movement of workers (based on 2019 Q2 traffic volumes), with additional road use associated with delivery of materials and equipment.	By transporting workers to and from the airport, open lodges, local area hotels, and Project site on company-provided shuttles, establishing Park & Ride lots, and enforcing shuttle transit for local workers, the Project has limited the use of personal vehicles on local roads.

Table 1   Summary of Direct Project Effects April–December 2019

Social Impact Category	Measurable changes	Effectiveness of Mitigations
Emergency Response Services	12 incidents required ambulance service calls and four incidents required RCMP response at the Project site. There were no fire service calls at Project site, nor were any medical evacuations required. Approximately 1.2% of Kitimat Emergency Response calls and 0.1% of RCMP calls for service were directly attributable to the Project in 2019 Q2–Q4.	By implementing the workers code of conduct and cultural awareness training, emergency response plans, the Safer Together Program, and providing on-site security at Sitka and Crossroads lodges, the Project has limited direct demand for local emergency services.
Community Amenities	There were no adverse changes in the available service capacity of community amenities providers that were attributable to the Project	By providing recreational facilities in Sitka Lodge and Crossroads Lodge, the Project is limiting direct demand on community amenities.
Education	Eight school age children relocated to the area accompanying Project employees with no notable impact on educational enrollment rates.	By limiting the number of employees relocated to Kitimat with accompanying family, Project direct effects on daycare facilities and education programs were limited. Some post-secondary institutions experienced inverse effects where students were leaving the programs to work on the project.
Utilities	In December 2019, the Project disposed 1,677 m^3 of non-hazardous solids and 12,695 m^3 of hazardous solids at the RDKS Forceman Ridge Landfill, and 5,750 litres of hazardous liquids outside of the region. No Project waste was disposed at the Kitimat municipal landfill in 2019. In 2019 Q4, Project solid waste disposal had an incremental impact on the estimated available capacity of the RDKS Forceman Ridge waste disposal site, whose design capacity exceeds 1.5 million m^3.	By implementing the Waste Management Plan (solid waste, wastewater), the Project has limited direct demand on municipal utilities.

Available socio-economic data for 2019 indicates that the Project has managed its direct demand on community level infrastructure and services. By limiting its direct demands, no adverse effects directly attributable to the Project were observed in 2019 and no adaptive management considerations are recommended regarding current mitigation strategies outlined in the CLISMP. The Project will continue to work with communities and government to understand and help address broader, complex challenges unfolding in the region

The Project implemented a temporary adaptive management strategy in the fall of 2019, when it experienced a short-term challenge in lodging a small proportion of its workforce. From October and December 2019, a peak of 210 workers (approximately 13.5% of the on-shift workforce) were accommodated in hotels and motels in Kitimat and Terrace. No living out allowances (LOAs) were provided to workers, which avoided potential impacts to the rental housing market. Transportation, accommodation and meal costs were directly provided by the Project. While this measure resulted in an increased utilization of hotels and motels during this period, vacancies were maintained at hotels to accommodate other guests. Overall, hotels indicated strong positive feedback for hotel use by the Project during low season. The Project concluded temporary use of area hotels in December 2019.

Summary of Community Trends

Monitoring of socio-economic metrics in 2019 show that the overall increase in economic activity and regional population changes have generally resulted in increased activity and/or demand for some infrastructure and services, such as social housing and RCMP services, while demand for other services has remained little changed. In several instances such as air traffic or utilities, increases in demand have not had a material impact on available capacity of services and infrastructure. Housing market impacts are occurring in both Kitimat and Terrace and have been evident as early as 2018, seemingly driven by real estate speculation with compounding effects on area demand for affordable and social housing. Feedback from some service providers suggests ongoing attrition of staff to higher paying Project-related opportunities with challenges attracting and backfilling positions due to high housing costs.

For 2019 the following community trends were observed, indicative of an overall increase in economic activity and population growth (percent changes year-over-year compared to 2018, unless otherwise stated):

REGION

- 9.4% increase in hotel/ motel occupancy and 15% increase in average daily rates (ADR);
- 21% increase in commercial passengers transiting through Northwest Regional Airport
- General attrition of staff, affecting the capacity to deliver services
- High housing costs and lack of available housing, affecting the ability to attract and retain service staff
- 1% increase in K-12 student enrollment
- 107% increase in total waste disposed at the Forceman Ridge landfill due to increased disposal of industrial and non-industrial waste.

KITIMAT

- Average 6.4% decrease in rental vacancy and 2% decrease in average rents, which continue to be significantly elevated. Kitimat's effective vacancy rate is likely lower than the 38% reported by CMHC, as it is genenerally understood that landlords are witholding a large number units from the market
- Residential house resale prices have increased 28%;
- Elevated demand for social housing and non-resident support services;
- 3% increase in total calls for service to Kitimat Fire and Ambulance Service (KFAS);
- 8% increase in calls for service to the RCMP;
- 9% increase in annual ER visits at Kitimat General Hospital in 2019;

- Small decline in utilization of community amenities (Riverlodge, Sam Lindsay Aquatic Centre + Tamitik Complex);
- 13% increase in peak potable water demand, and 8% increase in average daily wastewater flow

TERRACE

- Residential house resale prices increased 7%;
- Elevated demand for social housing/ support services, with general high proportion of full occupancy at temporary shelters
- Terrace housing rental market extremely tight, averaging 2.1% vacancy as of October 2019. Average rent increased 7% over 2018;
- Social housing operators unable to reach full capacity (e.g., due to staffing shortages and clients with mental health and addiction issues too severe for the transition house);
- Demand for licensed daycare spots substantially exceeds availability;
- 20% increase in Terrace Fire Department calls;
- Minimal change in the number of calls to Terrace ambulance (BC Emergency Health Services; and the number of transfers in/out of the region, however high shift vacancies exist for the Terrace unit;
- 14% increase in Terrace RCMP calls;
- 17% decrease in annual ER visits at Mills Memorial Hospital (MMH);
- Small decline in attendance to some community amenities (Sportsplex Complex);
- 4% increase in average potable water demand, and 2% decrease in average wastewater flow

Community monitoring data has shown that in its first year of construction, the mitigation and adaptive management measures implemented by the LNG Canada project have limited its direct effects on community infrastructure and services in Kitimat and Terrace, for all infrastructure and service areas covered by the CLISMP. It is also evident that the general economic activity occurring in the Kitimat and Terrace region, associated with the Project and other projects, has affected both the supply and demand for some services. Community monitoring efforts by the Project include quantitative data and anecdotal feedback which has enabled a meaningful level of awareness and discussion with communities and government. At the same time, quarterly data collection has proven to be a resource-intensive process and some data providers have been challenged to provide timely, accurate and/or complete data.

Social Management Roundtable

The Social Management Roundtable (SMR) serves as a quarterly engagement forum convened by LNG Canada and JFJV to evaluate the effectiveness of mitigation measures outlined in the CLISMP. The SMR follows a shared responsibility framework and participants include subject matter experts from the Project team, local government, regional and provincial agencies, nearby Indigenous communities, and local service providers. To support CLISMP implementation efforts for 2019, LNG Canada and its Prime Contractor JFJV convened four SMR sessions:

- SMR Kick Off (held on April 30, 2019 in Terrace)
- 2019 Q2 meeting(held on July 30, 2019) in Kitimat
- 2019 Q3 meeting (held on November 5, 2019 in Terrace)
- 2019 Q4 meeting (held on February 4–5, 2020 in Terrace)

The SMR meetings pulled together four working groups to review Project metrics and community monitoring trends, and to gather feedback and better understand the experiences of community. Working groups entailed: 1. Housing & Accommodations (quarterly); 2. Community Health (quarterly); 3. Traffic & Emergency Response (quarterly); and 4. Community Amenities, Utilities & Education (semi-annually).

Action items were identified for the Project team and other SMR participants, along with more complex items for follow up discussion by BC Government. A quarterly summary report evaluating mitigation effectiveness and capturing meeting highlights was prepared and published online after each session.

Abbreviations

ADR	average daily rate
BC	British Columbia
BC EAO	BC Environmental Assessment Office
BCEHS	BC Emergency Health Services
CGL	Coastal GasLink
CLISMP	Community-Level Infrastructure and Services Management Plan
CMHC	Canadian Mortgage and Housing Corporation
COT	City of Terrace
CWB	Community Well-Being
CY	City
CMSD	Coast Mountain School District
DM	District Municipality
DOK	District of Kitimat
EAC	Environmental Assessment Certificate
ECE	early childcare educator
ER	emergency room

FID	final investment decision
FNHA	BC First Nations Health Authority
HSDA	Health Service Delivery Area
HTC	Haisla Town Centre
IVMS	In-Vehicle Monitoring System
JFJV	JGC-Fluor BC LNG JV (Prime Contractor)
KGH	Kitimat General Hospital
KMP	Kitimat Modernization Project
KVI	Kitimat Valley Institute
LNG	liquified natural gas
LNGC	LNG Canada; the Project
MAH	Ministry of Municipal Affairs & Housing
MCFD	Ministry of Children & Family Development
MMH	Mills Memorial Hospital
MOTI	Ministry of Transportation and Infrastructure
NHA	Northern Health Authority
NHSDA	Northern Health Service Delivery Area
NTL	Northwest Transmission Line

PHSA	Provincial Health Services Authority
PST	Provincial Support Team
RDKS	Regional District of Kitimat-Stikine
RTA	Rio Tinto Alcan
SMP	Social Management Plan
SMR	Social Management Roundtable
ToR	Terms of Reference
WBF	Women Building Futures
YOY	year-over-year
YTD	year-to-date
YXT	Northwest Regional Airport

Glossary

Direct effects	An effect resulting from Project activities or related to the Project's temporary workforce.
Indirect or Induced effect	An effect not attributable to Project activities directly, but rather due to community changes brought about by change in economic activity indirectly associated with the Project.
Local Study Area	Refers to the local area of assessment identified in Section 6.2 Infrastructure and Services and Section 6.4 Community Health and Well-being of LNG Canada's EAC application.
Reporting metrics	Metrics used to measure and track the effectiveness and/or implementation of mitigation objectives.
Social Management Roundtable (SMR)	A quarterly forum convened by LNG Canada and JFJV, to provide Project updates and evaluate the effectiveness of mitigation measures. Participation is invite-only and includes local/ provincial government agencies, nearby Indigenous communities, and local service providers.
Social Management Plan (SMP)	Plans designed to manage the direct effects of the Project on local community services and infrastructure.

1. Introduction

LNG Canada is building a liquefied natural gas (LNG) export facility (the Project) located in northwest British Columbia (BC), in the District of Kitimat and the traditional territory of the Haisla Nation. The Project is comprised of an LNG facility and supporting infrastructure, including LNG storage and marine loading facilities, and temporary construction-related infrastructure and facilities. Project-related marine shipping passes through the traditional territories of Haisla Nation, Gitga'at First Nation, Gitxaala Nation, Kitselas First Nation, Kitsumkalum First Nation, Lax Kw'alaams Band and Metlakatla First Nation.

The Project is located on approximately 400 hectares (ha) of land within the District of Kitimat (DOK), on land zoned for industrial use. A large portion of the LNG Plant site is located on a former industrial site previously occupied by Methanex. At full build out, the LNG Canada facility will be comprised of a variety of buildings and equipment used to process and store LNG. Supporting infrastructure will also be in place, including power supply, water supply, and waste collection and treatment facilities.

LNG Canada is committed to planning, constructing and operating the Project in a manner that respects surrounding communities and the environment. The final investment decision (FID) for the Project was announced on October 1, 2018. On April 1, 2019, LNG Canada, together with its Prime Contractor JFJV, began implementation of its Community Level Infrastructure & Services Management Plan (CLISMP).

The CLISMP addresses the requirements of Condition #14 (Community Services and Infrastructure) of LNG Canada's Environmental Assessment Certificate (EAC) and the concerns raised by Indigenous Groups, local governments, community groups, and stakeholders over potential adverse socio-economic effects resulting from a sudden large population influx associated with the construction of a large project near lightly populated communities in BC. The CLISMP includes social management plans (SMPs) that outline actions to mitigate the Project's adverse direct effects on community level infrastructure and services, community engagement mechanisms, socio-economic monitoring and reporting requirements over the duration of construction and two years into operations.

The objectives of the CLISMP, as defined by LNG Canada (2016, revised 2019), are to:

- "Fulfill the regulatory requirements and standards relevant to implementing the plan;
- Identify relevant plans and/or initiatives that will prevent, manage or mitigate the potential direct adverse community-level infrastructure and service effects of the Project;
- Outline an engagement framework, including reporting and monitoring, for sharing information about project effects and status of mitigation plans with relevant stakeholders and Indigenous Groups; and
- Outline the adaptive management approach whereby mitigation measures can be adjusted, and new measures developed to address the project effects as necessary.

This Annual CLISMP Report is intended to inform the BC Environmental Assessment Office (BC EAO), BC Ministry of Municipal Affairs and Housing (MAH) and other stakeholders of project updates, reporting metrics, mitigation effectiveness, and adjustments or adaptive mitigation measures during implementation. Recognizing this is the first year of annual CLISMP reporting, an effort has been taken to provide additional baseline contextual information to support ongoing reporting efforts for the remainder of CLISMP implementation

The report is organized into the following sections:

- Methods: a description of data collection and analysis, role of the social management roundtable, means for assessing the effectiveness of mitigation measures, and reporting requirements
- Project Updates: summarizes construction activities taken place to date, workforce numbers, strategic local investments by LNG Canada and local partnerships, and economic benefits associated with employment, workforce development, contracting and procurement and municipal contributions
- Regional Overview: overview of the regions socio-economic conditions and changes in population
- SMP Report Updates: updates on the community level infrastructure and service areas addressed by the SMPs (housing and accommodation, traffic, emergency response, community health, community amenities, education and utilities), summary of project reporting and community reporting, SMR feedback on the effectiveness of the SMP and the need for new or modified mitigation measures

In addition to this annual report, quarterly updates are prepared and published summarizing SMP implementation and SMR highlights. A final report will be provided, which will include a summary of the Plan's overall effectiveness in achieving socio-economic objectives, and a summary of each annual report submitted during construction (LNG Canada 2019).

This report was prepared by LNG Canada and Stantec Consulting Ltd., with Project data input and review provided by JGC Fluor BC LNG JV. LNG Canada wishes to acknowledge the organizations who have provided data for this report and/or participated in Social Management Roundtable meetings. Participating organizations are identified in Appendix B, with other information providers identified in Section 13.

1.1. CLISMP Activity Summary

CLISMP activities from April to December 2019 included:

- Implementation of SMPs by LNG Canada and JFJV. These plans outline mitigation strategies to limit direct adverse effects that could result from Project activities interacting with the following areas of community level infrastructure and services: 1) Housing & Accommodations; 2) Community Health; 3) Traffic; 4) Emergency Response; 5) Community Amenities; 6) Education; and 7) Utilities. They also identify Project and community metrics for monitoring changes in demand in community infrastructure and services covered by the SMPs.
- Monthly Project monitoring (internal) to support SMP implementation
- Ongoing stakeholder and Indigenous engagement efforts pertaining to the CLISMP outlined in Section 2.2 below, including a community feedback process
- Community monitoring (external) established with baseline and ongoing data collection and analysis (data available quarterly or less frequently)
- Administrative updates to CLISMP filed with EAO (April), and shared with SMR participants
- SMR forum established, including development of a Terms of Reference (ToR) with involvement of SMR members and participant feedback surveys. One kick-off meeting and three quarterly sessions held in 2019
- Quarterly summary reports capturing SMR actions and highlights including information on mitigation implementation and adaptive management

- Annual Report submitted to EAO and MAH and shared with SMR participants, including project updates, reporting metrics, a summary of mitigation effectiveness and adjustments or changes made to mitigations during the implementation

1.2. CLISMP Scope Area

The CLISMP scope focuses on the following communities and Indigenous groups, which have higher potential to experience effects on infrastructure and services related to Project activities: District of Kitimat, City of Terrace, RDKS, Haisla Nation, Kitselas First Nation and Kitsumkalum First Nation. For effects on health services and infrastructure, the following additional Indigenous communities are included in the spatial scope: Gitxaala Nation and Gitga'at First Nation. Throughout this document, communities within the CLISMP scope area will be referred to as the Kitimat-Terrace area.

1.3. Engagement

LNG Canada's stakeholder and Indigenous engagement program to support CLISMP implementation is designed to:

- Improve awareness and understanding of the Project and its potential effects
- Minimize potential adverse effects and enhance Project benefits
- Develop and maintain relationships
- Address concerns, where possible

LNG Canada reviews its engagement mechanisms on an ongoing basis and revises its approach as needed. Table 1-1 outlines a range of LCISMP-related engagement activities carried out by LNG Canada and JFJV, during 2019. These activities are complemented by routine and frequent engagement with Indigenous groups, community organizations, and local governments, including key authorities and planning focal points. Additional engagement and consultation activities beyond the scope of the CLISMP are not reflected below.

Table 1-1   Project Community Engagement in 2019

Engagement Type	Activities During 2019
Regulatory	Meetings were held with both BC EAO and MAH in spring 2019 to gather initial feedback regarding CLISMP implementation plan, as well as a follow-up meeting with MAH in fall 2019 to gather feedback about the SMR process.
Community Feedback Process	From April to December 2019, 1,757 inquiries were received from the community and addressed. Of these, 44 were concerns or complaints, with 21 concerns or complaints related to infrastructure & services impacts, primarily traffic.
Project Website and Facebook page	www.jfjvkitimat.com provides online construction updates, employment and contract opportunities. **Follow JFJV Kitimat** on Facebook (1,800 followers) www.lngcanada.ca for online Project information. **Follow LNG Canada** on Facebook (31,700 followers)
Project Resource Centre	A walk-in Project information centre located in the Kitimat mall open Monday through Friday

Engagement Type	Activities During 2019
Social Management Roundtable	**SMR Kick Off**, Terrace, April 30, 2019: 52 Participants / 10 Project team **Q2 SMR meeting,** Kitimat, July 30, 2019: (4 working groups) 54 participants / 12 Project team representatives **Q3 SMR meeting,** Terrace, November 5, 2019 (3 working groups) 35 Participants / 13 Project team representatives **Q4 SMR meeting,** Terrace, February 4-5, 2020 (4 working groups) 56 Participants / 18 Project team representatives
Open Houses	**Spring Community Open House** held April 8, 2019 in Kitimat (150 participants) and April 9, 2019 in Terrace (200 participants). Both events included joint updates from LNG Canada, JFJV, Coastal GasLink (CGL) and Rio Tinto Alcan (RTA) **Fall Community Open House / Career Fair** held October 1, 2019 in Kitimat (350 participants) and October 2nd, 2019 in Terrace (275 participants). Both events included jointly delivered updates from LNGC, JFJV and CGL

2. Methods

2.1. Data Collection and Analysis

Project and community monitoring data relevant to the CLISMP was collected and presented at SMR meetings and summarized in quarterly reports. For the 2019 Q2 SMR meeting, Project and community monitoring data was presented at the meeting. Responding to feedback from participants, a pre-read package that summarized Project and community monitoring data was provided to SMR participants in advance of the 2019 Q3 and 2019 Q4 meetings.

The Project collected monthly data on metrics identified as "Reporting Metrics, LNG Canada team" in Appendix 4 of the CLISMP (SMPs). Counted in Project data is information collected by LNG Canada, JFJV, as well as data on accommodations usage by Project workers, provided by open lodge workforce accommodations facilities (Civeo, Horizon North). Appendix A lists Project metrics by SMP.

Community monitoring data is information that illustrates changes in infrastructure and service level demand at the community level. Most of the community data was collected from government agencies, service providers, and web-based information sources. Data on the rental housing market was supplemented with quarterly estimates of rental vacancy rates based on telephone surveys of rental accommodations providers, and an analysis of rental listings available on websites including Cragslist.ca and Kijiji.ca. Data was collected quarterly. The frequency of community data depended on the provider, with some data available on a monthly basis, and other information less frequent. Appendix A lists community data by source and frequency. In several instances, data sources were challenged to provide timely community data to support SMR timelines for 2019. Project and community data were summarized on a quarterly basis in 2019 for Q2 (April–June); Q3 (July–September); and Q4 (October–December).

Community data was analysed using a year-over-year (YOY) comparison method where 2019 data that represented the construction ramp up was compared with the same quarterly data from 2018, pre-construction. This technique enabled the identification of changes in community indicators that may be attributable to the Project. Comparing changes on a YOY basis removes seasonality effects. -

YOY comparisons were not made when 2018 data sets were not available, such as some of the emergency room data provided by Northern Health (see Section 8.4). YOY comparisons were also not made when there was a known change in data measurement procedures. The RCMP recently changed its coding process for recognizing founded[1] crimes, applying a more victim-centric approach. This resulted in the possibility that a larger number of incidents would be coded as a founded criminal incident in 2019 compared to 2018, which could inflate the YOY comparison, and thus make the YOY comparison of criminal incident data unreliable. Changes from 2018 to 2019 are also compared to appropriate longer-term data, presented on an annualized basis, in order to contextualize changes with respect of longer-term trends.

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[1] An incident is founded if, after police investigation, it has been determined that the reported offence did occur or was attempted, or there is no credible evidence to confirm that the reported incident did not take place.

2.2. Social Management Roundtable

The SMR is a forum that facilitates discussion of direct Project effects on infrastructure and services between the LNG Canada Project team, provincial and federal agencies, local and regional governments, and Indigenous communities. Appendix B lists organizations which were represented at 2019 SMR meetings. SMR working groups met either quarterly or semi-annually to be informed of Project activities, review Project and community data, discuss trends, issues, and concerns, and identify actions for follow up by the Project team or other SMR participants. The SMR is guided by a ToR which identifies CLISMP background, roles and responsibilities of SMR members and SMR activities.

Based on a shared responsibility framework, SMR working groups are comprised of a wide range of stakeholders that engage either quarterly or semi-annually to manage the Project's social effects, both adverse and positive. The SMR is supported by ongoing internal and external data collection and analysis, typically prepared ahead of time as a pre-read document and reviewed by participants prior to the meeting, in order to maximize efficiency of time and provide prompts for discussion.

During the 2019 reporting period, LNG Canada, together with JFJV, convened four quarterly SMR meetings to review Project data and socio-economic monitoring trends, and to gather feedback and better understand the experiences of the communities. Meetings took place on April 30, 2019 (kick off session to review baseline community monitoring data and the draft SMR ToR); July 30, 2019 (to review Q2 2019), November 5, 2019 (to review Q3 2019), and February 4–5, 2020 (to review Q4 2019). Working groups discussed the following community level infrastructure and service areas: Housing & Accommodations (quarterly); Community Health (quarterly); Traffic and Emergency Response (quarterly); and Community Amenities, Education and Utilities (semi-annually).

Monthly Project data from SMPs was provided alongside Project construction and workforce updates. To complement this, community monitoring data was collected from external parties and analyzed. A pre-read package with available internal and external data was shared with participants ahead of SMR meetings in November 2019 and February 20202 to facilitate data review. Working group feedback along with available monitoring data was used to help the Project understand if its efforts to mitigate direct effects on infrastructure and services were effective and if adaptive management was required. At each working group, several actions and discussion items were identified and assigned to the participants (i.e., Project Team, provincial and federal agencies, local and regional governments, and Indigenous communities). Feedback from the SMR meetings was captured and presented in the quarterly reports, along with actions and summary of data trends. Quarterly reports were sent to all participants and posted on the LNG Canada website.

A summary of SMR action items and their status can be found in Appendix C of this report.

Meeting venues accommodated in-person attendance and were equipped with teleconferencing systems to enable dial-in participation. Meetings were facilitated by professional facilitators retained by the LNG Canada team, who also summarized feedback from the meetings. Following meetings held in July and November, the LNG Canada Project Team distributed online surveys to gather participant views and suggestions for ways to improve the SMR process, many of which were incorporated.

2.3. Mitigation Effectiveness and Adaptive Management

The effectiveness of mitigation measures was evaluated in several ways. First, where applicable, project reporting data was compared with community reporting data to estimate the Project's direct contribution to the change in value of a community metric. For example, the percentage of emergency room (ER) visits directly attributed to the Project was estimated by dividing the number of Project workplace incidents requiring hospital visits within a quarter with the total number of ER visits to the KGH for that quarter If, through this calculation, it was determined that the Project was either not directly contributing a quantitative change in a community indicator, or contributing a very small proportion of a change, the mitigation measures were considered to be likely effective. The Project team also considered feedback received during the SMR meetings, and from the community feedback process to identify potential Project impacts and suggested mitigation measures. Adaptive management measures implemented by the Project are identified within each SMP report.

2.4. Reporting

Quarterly CLISMP summary reports were prepared after each SMR meeting. These summaries provide an overview of Project activities during the reporting period, including an update of construction activities, workforce data, summary of community engagements, and Project-specific metrics from across all SMPs. Reporting on the Utilities SMP data did not start until Q42019, when data became available. Quarterly reports also included community monitoring data, measured trends, and anecdotal feedback to help the Project assess effectiveness of its SMPs. These reports also summarize the discussion from SMR working group meetings and include follow-up actions and completion status, along with follow up items for BC Government discussion to capture complex topics raised during the meeting that go beyond the Project's direct influence. LNG Canada distributed the quarterly reports to SMR participants and provides the reports on its website at: https://www.lngcanada.ca/about-lng-canada/environmental-compliance-reporting.

This annual report has been prepared in accordance with requirements of Condition #14 of LNG Canada's EAC and the LNG Canada Community Level Infrastructure and Services Management Plan (June 2016).

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Joint venture companies

3. Project Updates

Phase 1 of the Project is anticipated to take approximately five years to complete. Between 2019 and 2021, Project construction will focus on site preparation, construction of the Cedar Valley Lodge (worker accommodation) and the marine terminal. Major construction will commence in 2022, involving assembly of the LNG plant and associated components.

In 2019 the Project undertook the following construction activities:

- Site preparation, including clearing, grubbing, grading and hauling of aggregate
- Commenced construction of the Cedar Valley Lodge (images provided below)
- Commenced construction of Material Offloading Facility (MOF)
- Initiated construction of module haul road, access road, and bridges
- Dredging for marine terminal
- Rio Tinto Alcan Terminal "A" extension—marine piling
- Environmental offset work—Anderson Creek fish ladder and Hospital Beach salt marsh

Additional information on LNG Canada's 2019 construction activities is available at: https://www.lngcanada.ca/construction/construction-updates/. Construction updates by JFJV are available at: https://jfjvkitimat.com/category/construction/.

Figure 3-1   Cedar Valley Lodge June 2019

Figure 3-2   Cedar Valley Lodge December 2019

3.1. Workforce

Analyzing the direct effects of the Project workforce on community infrastructure and services focuses on the temporary increase in population due to non-local workers lodged in the Kitimat-Terrace area. The Project requires all contractors and sub-contractors to follow a local hire first policy to help limit the number of non-local workers required. Figure 3-3 shows the number of workers hired from the local area[2], Project employees who have relocated to the Kitimat-Terrace area, as well as the peak number of non-local workers residing temporarily in dedicated workforce accommodations. The number of local workers increased from 339 persons in June 2019 to 566 by December 2019, while the number of non-local workers (monthly peak) increased from approximately 623 persons in June 2019 to 1,550 persons in December 2019. The total employed Project workforce, however, is greater than the sum of local and non-local workers present in the area because of a portion of the workforce is being rotated off-shift at any given time. The peak total workforce employed in December 2019 was over 2,800—this number represents workers both on and off rotation as well as those recently hired. The Project has a limited number of employees and families who have relocated to Kitimat. By December 2019, there were 31 relocated employees, who were accompanied by 18 family members.

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[2] Local workforce consists of workers employed by LNG Canada, JFJV, contractors or subcontractors who are: Kitimat or Terrace residents, Haisla, Kitsumkalum or Kitselas Nation members, or members of Gitga'at, Gitxaala, Lax Kwa'alams, Metlakatla Nations.
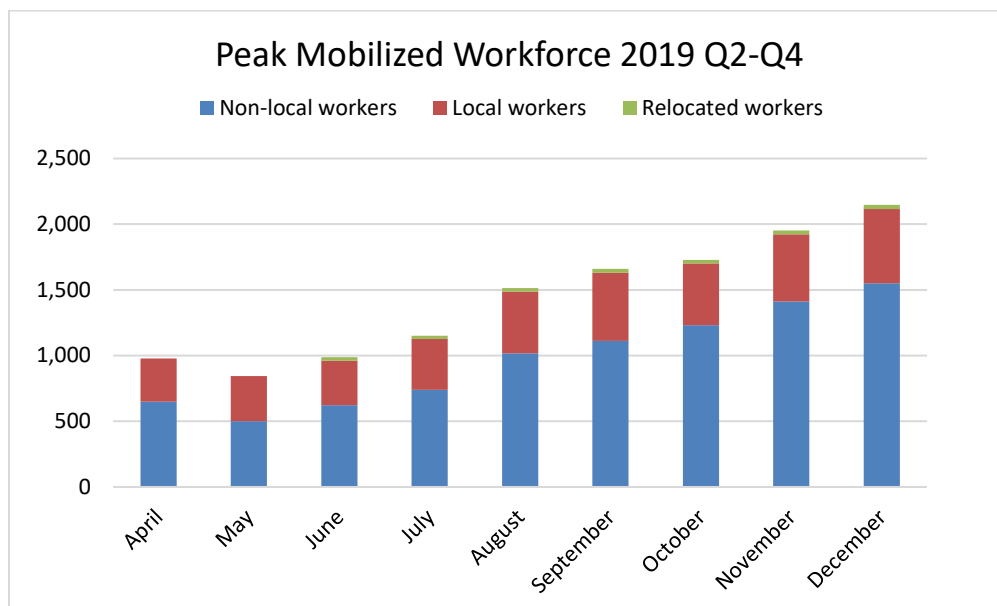
Figure 3-3   Peak Mobilized Project Workforce, 2019 Q2–2019 Q4

3.2. Strategic Social Investments

LNG Canada works closely with local municipalities, Indigenous communities and non-profit groups to partner on sustainable programs that strengthen community resilience and enhance CLISMP-related Project mitigation efforts where possible. Over $3 million has been contributed since 2013 with efforts continuing on an annual basis that are aligned with community needs. Some examples of strategic investments and commitments include:

HOUSING & ACCOMMODATIONS

- $250,000 funding commitment over 2019-2024 to Tamitik Status of Women and Kitimat Community Development Centre towards operational funds to support delivery of services to vulnerable groups.
- $270,000 since 2013 to Kitimat and Terrace community foundations

COMMUNITY HEALTH

- $200,000 commitment to support health care aid training, working with Kitimat Valley Institute
- $550,000 commitment over 2019-2021 towards construction of the Kitimat Pilot Dementia Home and to work with the KitimatValley Housing Society to increase community awareness for dementia,

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TRAFFIC

- $100,000 towards community driver safety training, road safety awareness and school bus safety initiatives in 2018-2019

EMERGENCY RESPONSE

- $90,000 in 2019 to support search & rescue organizations in both Kitimat and Terrace
- $150,000 since 2013 to support Kitimat Fire Department
- $500,000 commitment towards a replacement highway emergency response vehicle for Terrace Fire Department

COMMUNITY AMENITIES

- $150,000 contribution in-kind donation of Baily Bridges ($212,000 value) to support DOK Phase 1 Waterfront Access Park

EDUCATION

- $200,000 in 2019 towards a range of educational programs from science enrichment through Vancouver Aquarium (AquaVan) outreach in Kitimat and Terrace schools and communities, to subsidized access to summer camps for children in Kitimat
- $54,000 towards training of early childhood educators (ECE) in Kitimat-Terrace
- $150,000 since 2013 in annual trades scholarships for Kitimat and Terrace high school graduates
- $375,000 funding commitment over 2019-2021 towards educational bursaries and programs benefitting local Indigenous grooups

3.3. Economic Benefits

LNG Canada works with local municipalities, Indigenous groups, local organizations, the local business community and area residents to enable the realization of both direct and indirect benefits by communities in proximity to the Project.

EMPLOYMENT

As indicated in Section 3.1, 2,800 workers were employed by the Project by the end of Q4 2019, including local and non-local workers on the ground in Kitimat, workers off rotation and newly hired workers who have not yet mobilized to site. This overall workforce includes 252 Indigenous workers and 566 workers from the Kitimat-Terrace area. LNG Canada, JFJV, subcontractors and sub-subcontractors are all required to follow a local hire first policy that evaluates qualified applicants and prioritizes hiring of Haisla Nation members or their spouses, and residents from the Kitimat-Terrace area, including Kitselas First Nation and Kitsumkalum First Nation members. Next hiring priority is given to qualified BC residents including Gitga'at First Nation, Gitxaala Nation, Metlakatla First Nation and Lax Kw'alaams Band members, and then Canadians more broadly.

WORKFORCE DEVELOPMENT

LNG Canada has invested over $4 million in workforce development programs, focusing on trades training and development programs that are designed to increase the participation of local area residents, Indigenous communities, women and British Columbians overall. Several programs delivered in partnership with the BC Construction Association have promoted skilled trades development in BC. These include:

- LNG Canada Connect, which has provided 340 construction job placements for workers from the Kitimat-Terrace area
- Gear up Fund, which has contributedalmost $200,000 towards removing barriers to employment by funding tools, training, clothing and gear essential for those entering the construction industry;
- Trades Training Fund, which has funded the training of 1,382 apprentices in connection with 540 employers

Attracting more women to the construction trades in BC is an important part of LNG Canada's comprehensive workforce development strategy and commitment to hiring locally and within the province. In Q4 2019, the first cohort of 12 female apprentices completed LNG Canada's YOUR PLACE program, a four-week workplace readiness training program with employment supports designed to help women start—and succeed—in the skilled trades. Graduates have a direct line to employment an apprentice with JFJV or one of its subcontractors on the Project site in Kitimat, BC. Training is delivered at Kitimat Valley Institute (KVI), which increases accessibility to training for Indigenous groups and women in northern BC and introduces participants from other parts of the province to the realities of a fly-in-fly-out worksite. YOUR PLACE is delivered in partnership with the Women Building Futures (WBF) non-profit society and is only available to women residing in BC.

CONTRACTING & PROCUREMENT

The Project prioritizes contracting and procurement with the Haisla Nation and other Indigenous-owned businesses, and with local area businesses. As of Q4 2019, the Project has awarded contracts and procurement in excess of $2.1 billion to businesses in BC. Of this amount, over $1.4 billion has been awarded to local area and Indigenous businesses.

MUNICIPAL CONTRIBUTIONS

In 2019 LNG Canada paid over $1.5 million in municipal taxes and other municipal capacity contributions to the DOK. LNG Canada entered into a Revitalization Tax Exemption agreement with the DOK which commenced in 2019 with a schedule of increasing payments over a 10-year term (the LNG Plant site is located on a former industrial site previously occupied by Methanex). The defined schedule will help the DOK plan for longer term needs as the payments are known ahead of time.

Working together with the DOK, in 2019 LNG Canada was successful in obtaining a $55 million infrastructure investment from the Canadian Ministry of Finance to support the replacement of the aging Haisla Bridge in Kitimat.

Additionally, Open Lodge Operators in Kitimat paid a one-time Affordable Housing Tax contribution of $500 per unit, resulting in $709,000 of cumulative contributions to the DOK by the end of 2019, primarily attributed to LNG Canada Project activities.

4. Regional Overview

4.1. Socio-Economic Context

Kitimat's recent economic history has been closely tied to major industrial projects that have been built and operated within the district. Originally a village inhabited by the Haisla Nation, the construction of an aluminum smelter by the Aluminum Company of Canada (Alcan) in the 1950s established an industrial base in the area. By the 1970s this resulted in the development of other heavy industries, and growth in Kitimat's population, which peaked at approximately 14,500 residents in 1982. Competitive pressures resulted in the closure of the Methanex methanol plant in 2006 and the Eurocan pulp and paper mill in 2010, resulting in the loss of approximately 660 jobs and precipitating a population drop to 8,355 persons by 2011 (Ryser et al. 2018).

From 2011 to 2015, RTA (Rio Tinto purchased Alcan in 2007 to become RTA) undertook a $6 billion modernization of its aluminum smelter (Marowits 2018). At its construction peak in 2014, RTA's Kitimat Modernization Project (KMP), employed 4,000 persons. Construction of KMP overlapped with site development activities of the Chevron Kitimat LNG Terminal Project, which employed a workforce of 400 persons (Hoekstra 2014).

RTA's modernized aluminum plant commenced operations in 2016. While production increased following KMP, a combination of automation, improvement in technology, and retirement contributed to a decrease in overall workforce size at the aluminum plant. It is likely that many RTA workers impacted by KMP retired and remained in the Kitimat area, and it is also likely that some chose to relocate with their families, contributing to the 2.4% decline in Kitimat's population from 2011 to 2016 (Ens 2017). Census data show longer term declines in Kitimat area population since 2001 (Figure 4-1).
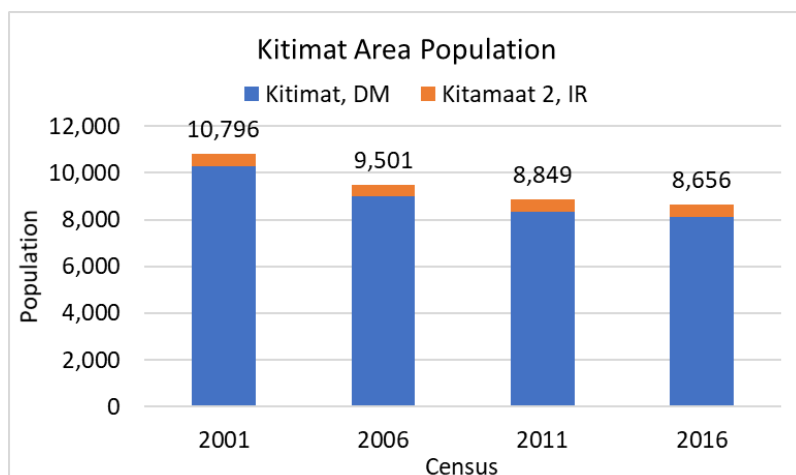
SOURCE: Statistics Canada 2017

Figure 4-1   Kitimat Area Population 2001–2016

In the early to mid 2010s, Kitimat, and other north coast BC communities were the Canadian focal points of a global rush of LNG development, with several LNG projects proposed in the area. The 70% drop in global oil prices that occurred from 2014 to mid 2016 impacted capital spending within Canada's oil and gas sector and resulted in a reduction of industrial development activities in Kitimat from 2015 to 2017 (Ryser et al. 2018).

In 2016 the District of Kitimat had a labour force participation rate of 62.9% and Kitamaat IR 2 (Kitamaat Village) had a participation rate of 40.7%, both lower than the provincial average of 63.9%. At the same time the unemployment rate for DOK and Kitamaat Village was 12.5% and 16.2%, respectively (Statistics Canada 2017). In 2016, the predominant industry in the Kitimat area was manufacturing, accounting for 20% (860 persons) of the local labour force, followed by the construction and retail trade industries, respectively. The majority of the workforce was employed in trades, transport and equipment operators and related occupations, followed by sales and service occupations and business, finance, and administration occupations (Statistics Canada 2017).

Since 2018, Kitimat and nearby areas have experienced a resurgence in industrial development activities, which have swelled the temporary worker population, and contributed to increased demand for community infrastructure and services. In addition to workforce directly hired for plant construction activities on the LNG Canada project, several other industrial developments were underway within or near Kitimat in 2019, each with its own complement of equipment and materials movement with local and non-local workers transiting through or residing in the area, in many cases at open lodges in Kitimat. These include Rio Tinto Kemano T2 project; Rio Tinto Pot Relining project; CGL project; and BC Hydro Minette Substation Upgrade (Leibel 2017; Leibel 2019; CGL 2019; Rio Tinto 2018).
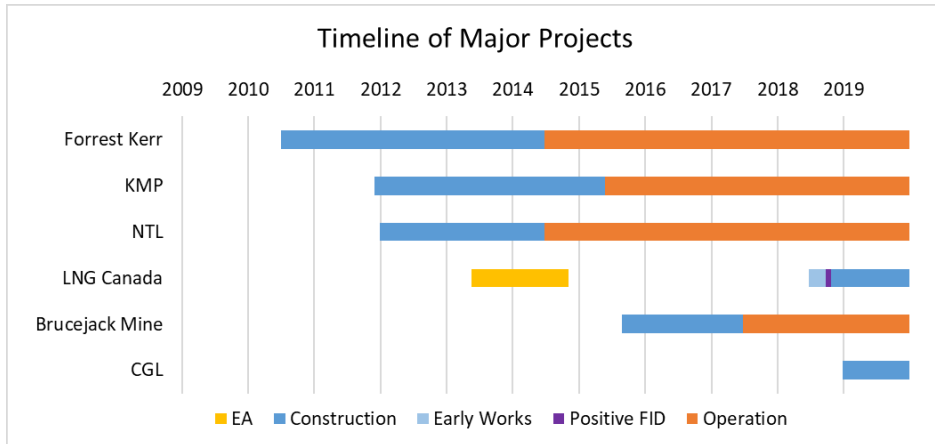
SOURCES: BC Hydro 2014; CBS 2018; CGL 2019; LNG Canada 2014; Power Technology 2020; Pretivm Resources Inc. 2020
Figure 4-2   Selected Major Projects Northwest BC 2009–2019

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Similar to Kitimat, the City of Terrace has experienced substantial fluctuations in its economic landscape. Located on the banks of the Skeena River, Terrace sits within the traditional territory of the Kitselas First Nation and the Kitsumkalum First Nation. This strategic location has facilitated Terrace's subsequent development as a regional transportation hub, with Highway 16, connecting Terrace both to the BC interior and Prince Rupert, and Highway 37 connecting Terrace both to Kitimat and locations north via the Stewart-Cassiar Highway, and to Northwest Regional Airport.

Terrace's forest products industry was the dominant economic driver in the region until the downturn of the forestry sector in the 1990s led to the closure of Skeena Cellulose mill in 2001, followed by Skeena Sawmill in 2007[3]. This contributed to the population decline in Terrace, which fell from 16,659 in 2001 to 15,569 in 2011 (Figure 4-3). Since the 2000's Terrace's economy has been based, primarily on its position as the services and business centre for northwest BC, on the government and service sectors which accounted for 82% of employment within the Terrace Agglomeration Area in 2016.
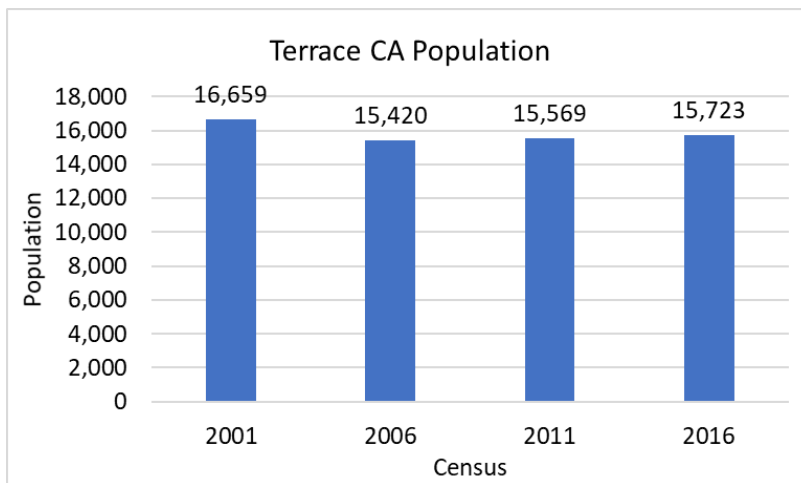
SOURCE: Statistics Canada 2017

Figure 4-3   Terrace area Population 2001–2016

In 2016, the labour force participation rate was 68.6% for the COT, 58.8% for Kitselas IR 2 and 64.2% for Kitsumkaylum IR 1 (Statistics Canada 2017). Both COT and Kitsumkaylum IR 1 had higher participation rates than the provincial average. Despite having high participation rates in the Terrace area, COT had an unemployment rate of 10.3%, and Kitselas IR 2 and Kitsumkaylum IR 1 had unemployment rates of 15% and 17.6%, respectively. In 2016, the retail trade sector was the biggest employer in Terrace, accounting for 15% (1,290 persons) of the total labour force (Statistics Canada 2017). The second and third largest industries were health care and social assistance, and accommodation and food service, respectively.

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[3] Skeena Sawmill restarted operations in 2013 (Kotrba 2019).

Ten year unemployment trends from the Labour Force Survey show the North Coast and Nechako region typically having higher unemployment rates compared to BC, with a long term trend of declining unemployment (Figure 4-4). The region's highest unemployment rate of 11.0% occurred during 2012 and the lowest unemployment rate of 5.8% occurred during 2017 (Statistics Canada 2019a).
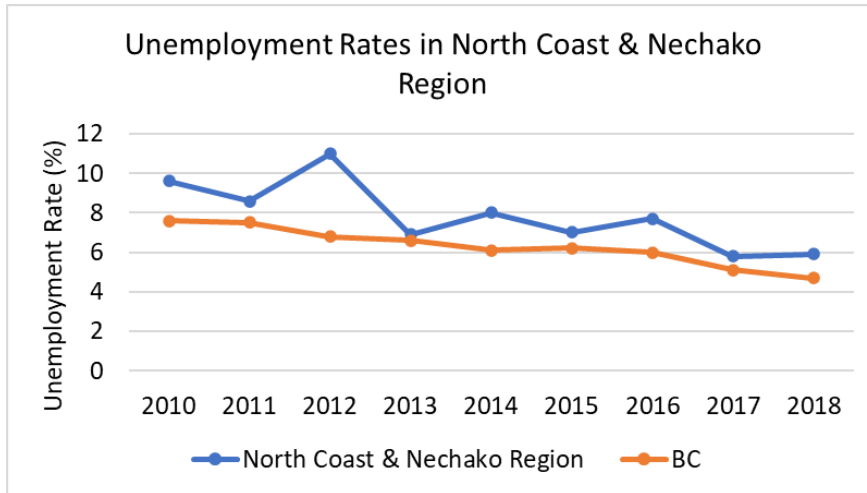
SOURCE: Statistics Canada 2019a
Figure 4-4   Regional Unemployment Rates

Terrace served as one of the staging areas during the construction of the Northwest Transmission Line (NTL) from 2012–2014. The NTL brings utility power to communities and resource operations along a 325 km corridor north from Terrace. Its completion facilitated the development of resource projects along the Stewart-Cassiar corridor, including the Brucejack Gold and Silver Mine, which commenced operations in 2017; the Red Chris copper/gold mine (constructed 2012–2014, and operations in 2015), and the Forest Kerr hydroelectric project (constructed 2011–2014). While these projects are located far to the north, similar to the LNG Canada project, they are connected to Terrace via Highway 37 and Northwest Regional Airport. Recent industrial and infrastructure projects constructed in Terrace during 2018-2019 include: Ministry of Transportation and Infrastructure Roundabout (Highway 16 and 37) Skeena BioEnergy pellet plant; and Qinhuangdao Economic and Technological Development Zone Civil Works (Skeena Industrial Park Development Project).

The construction of industrial and infrastructure projects in and around Kitimat and Terrace generate a variety of cumulative economic impacts and benefits to the region, including direct employment and subcontracting. In addition, indirect and induced (or spinoff) employment and other economic benefits are expected to result from the purchase of supplies and services, locally, by construction contractors, increased spending within the local communities by non-local workers, and increased spending by local households that have experienced higher household income resulting from direct project employment.

Selected Major Projects in Northwestern British Columbia 2009-2019
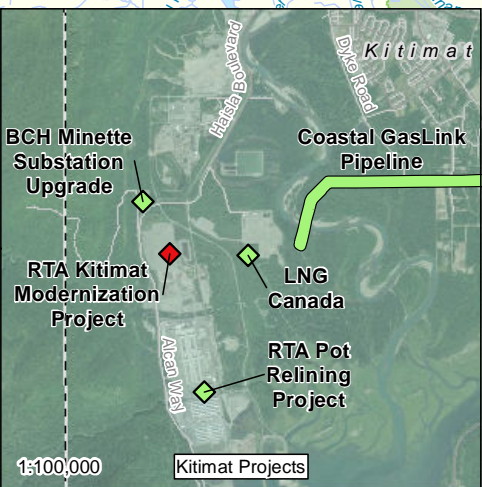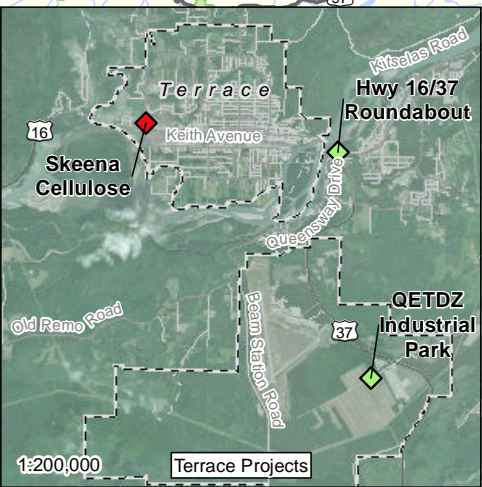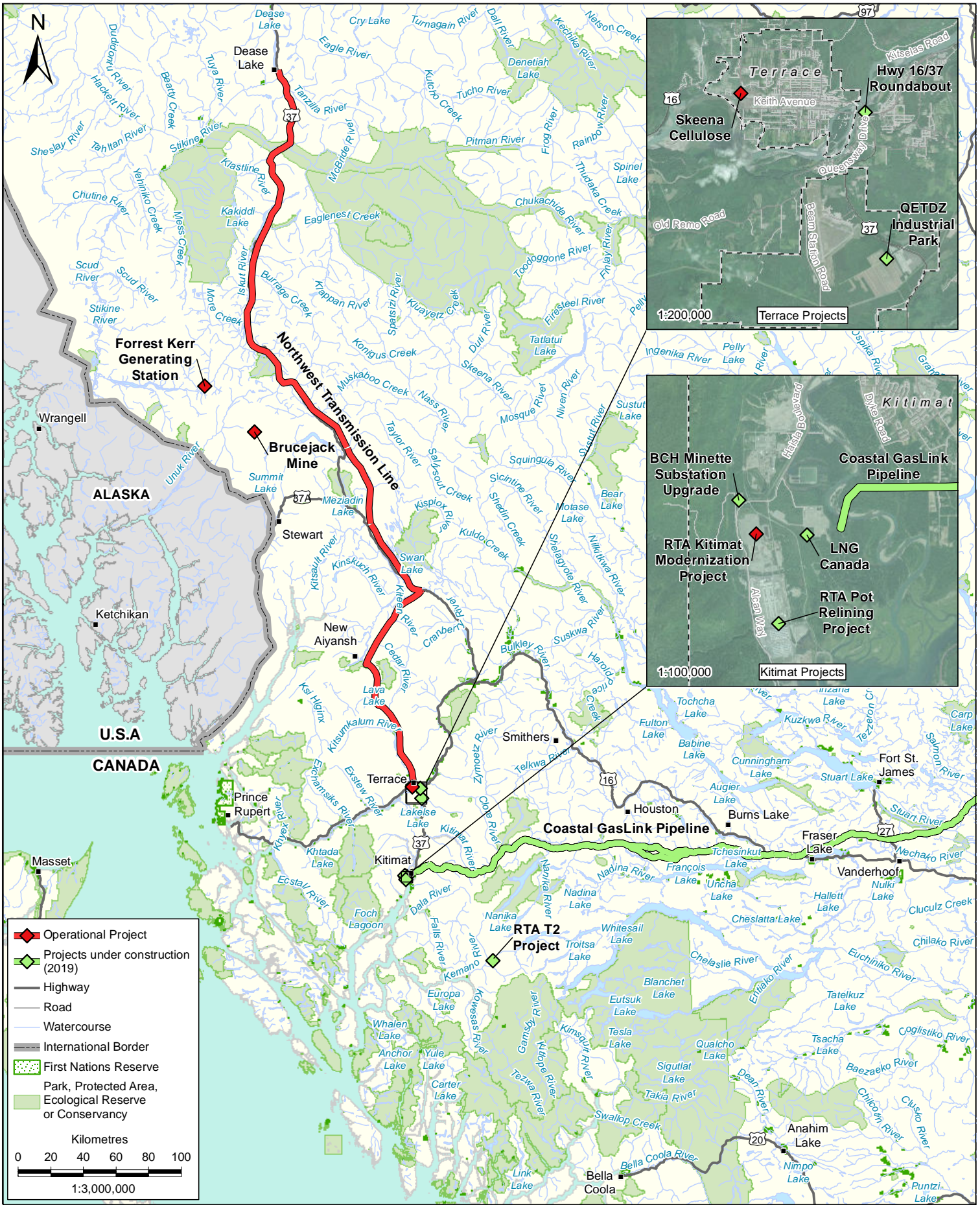
Map Legend:
- Operational Project (red diamond)
- Projects under construction (2019) (green diamond)
- Highway
- Road
- Watercourse
- International Border
- First Nations Reserve
- Park, Protected Area, Ecological Reserve or Conservancy

Kilometres
0 20 40 60 80 100
1:3,000,000

Terrace Projects (1:200,000)
- Skeena Cellulose
- Hwy 16/37 Roundabout
- QETDZ Industrial Park

Kitimat Projects (1:100,000)
- BCH Minette Substation Upgrade
- RTA Kitimat Modernization Project
- Coastal GasLink Pipeline
- LNG Canada
- RTA Pot Relining Project

Main map labels include: Forrest Kerr Generating Station, Brucejack Mine, Northwest Transmission Line, Coastal GasLink Pipeline, RTA T2 Project, ALASKA, U.S.A, CANADA

SELECTED MAJOR PROJECTS IN NORTHWESTERN BRITISH COLUMBIA 2009-2019

LNG CANADA EXPORT TERMINAL
KITIMAT, BRITISH COLUMBIA

PROJECTION	DRAWN BY
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\\CA0183-PPFSS01\Workgroup\12331\active\EM12311\10458\gis\figures\disciplines\socio_ec1231110458-138 Fig 4-5_Selected Major Projects in NWBC 2009-2019.mxd

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The degree to which spinoff benefits will occur within a region depends on the diversity and size of its service and supply sectors, with regions with larger and more diverse economies experiencing greater "multiplier" effects than regions with smaller less diverse economies. A study of local area multipliers published by BC Stats estimated that 0.36 to 0.5 indirect and induced jobs will be created for every construction job created within the Terrace - Kitimat area (Horne 2009). LNG Canada project construction and other projects within Kitimat and Terrace would contribute to a general expansion of the regional economy, including increased employment opportunities and labour demand. Because the labour pool within the Kitimat and Terrace area is limited there could be increased competition for local labour, wage inflation, and in-migration of persons into the region seeking economic opportunities. These phenomena were observed during KMP in the early to mid 2010s (LNG Canada 2014) and are now being seen more recently due to ramp up of construction of LNG Canada and other projects in the Kitimat and Terrace area.

In regards to community infrastructure and services, changes in demand or activity, will reflect a number of factors, including organic population growth, use of such services directly related to activities of the Project and its workforce, use of infrastructure and services by other projects in the Kitimat and Terrace area, as well as consumption of such services by persons who have permanently or temporarily moved into the region due to economic opportunities.

To address long-standing infrastructure needs that have not kept up with resource development, in early 2019 the BC Government announced the Northern Capital and Planning Grant with $100 million funding for Northwest communities including Terrace ($8.2 million), Kitimat ($1.5 million) and the Regional District of Kitimat Stikine ($4.6 million) (BC MAH 2019).

4.2. 2019 Population

Over the 2001 to 2016 period, the population of the Kitimat area declined by 20% from 10,796 in 2001 to 8,656 in 2016 (Figure 4-1). Over the same period, the Terrace area population experienced a 6% decline from 16,659 in 2001 to 15,723 in 2016 (Figure 4-3). Recent trends show an upward trend in Terrace area population, evidenced by a 1% growth rate from 2006 to 2011 and from 2011 to 2016.

Population metrics are derived from Census data which reflects the permanent resident population of an area. However, the overall populations of Terrace, Kitimat, and surrounding communities is comprised of permanent residents, visitors, and individuals who are temporarily residing in the area for employment. Because the capacity of community infrastructure and service providers is typically sized and funded to match the residential population, a sudden increase in the population in an area can result in a strain on such providers.

The Census, last undertaken in 2016, provides the most accurate measure of the permanent population within the region. The 2016 Census population for the Kitimat region[4] was 8,656 persons, while the Census population of the of Terrace area[5] was 15,723 persons. As the Census is now nearly four years old, the current populations of the Kitimat and Terrace areas were likely different in 2019 compared to the Census year due to a combination of natural population change (births minus deaths) and net migration (in-migrants minus out-migrants). By applying such assumptions, the BC Stats P.E.O.P.L.E model forecasted a 1.7% increase in the Kitimat Health Areas population from 2016 to 2020, and a 1% increase in the Terrace Health Area (BC Stats 2020a).

To estimate the total population within the Kitimat and Terrace Regions for 2019, the following populations were added to the Census 2016 counts:

- Change in permanent population based on P.E.O.P.L.E. model forecast
- Average number of occupants at worker accommodations
- Estimated number of visitors based on hotel, motel, and Airbnb occupancy
- Estimated Terrace shadow population from City of Terrace 2015 survey[6]

The above assumptions likely underestimate the true magnitude of population change in Kitimat or Terrace because they do not account for: (i) persons who have recently moved in the area and have taken up rental accommodations or purchased a home, (ii) temporary non-local workers who may be renting a residential property rather than staying at an open lodge facility when on rotation, and (iii) persons who have recently moved into the region and are temporarily staying with friends or family (beyond those captured in Terrace's 2015 shadow population survey).

Kitimat

Throughout 2019, the population in the Kitimat area increased steadily mainly due to temporary workers staying in workforce accommodation centres while undertaking employment at the Project and at other projects (Figure 4-6). The population peaked in October 2019 at 10,427 persons, of whom 16% were non-residents. On average, the Project directly accounted for 71% of the temporary population in Kitimat.

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[4] Kitimat Area Permanent Population (2016 Census) includes Census subdivisions: DM of Kitimat and Kitamaat IR No. 2 (Statistics Canada 2016).
[5] Terrace Area Permanent Population (2016 Census) includes Terrace Census Agglomeration Area (Kulspai IR No. 6, Kitimat-Stikine E, and City of Terrace), Kitselas IR No. 1, and Kitsumkaylum IR No. 1 (Statistics Canada 2016). Kitimat-Stikine E includes the community of Thornhill.
[6] The shadow population is defined as persons who spend a significant amount of time in one area, but maintain their primary residence in another area.

Kitimat Area Population Estimate, APR - DEC 2019

Figure 4-6 below shows the population estimate broken into categories: Visitors (green), Average Occupants in Open Lodges (yellow), Change in Permanent Pop'n (P.E.O.P.L.E.) (dark blue), and Permanent Population (Census 2016) (blue). The chart shows monthly values from Apr to Dec with Population on the y-axis from 0 to 11,000.
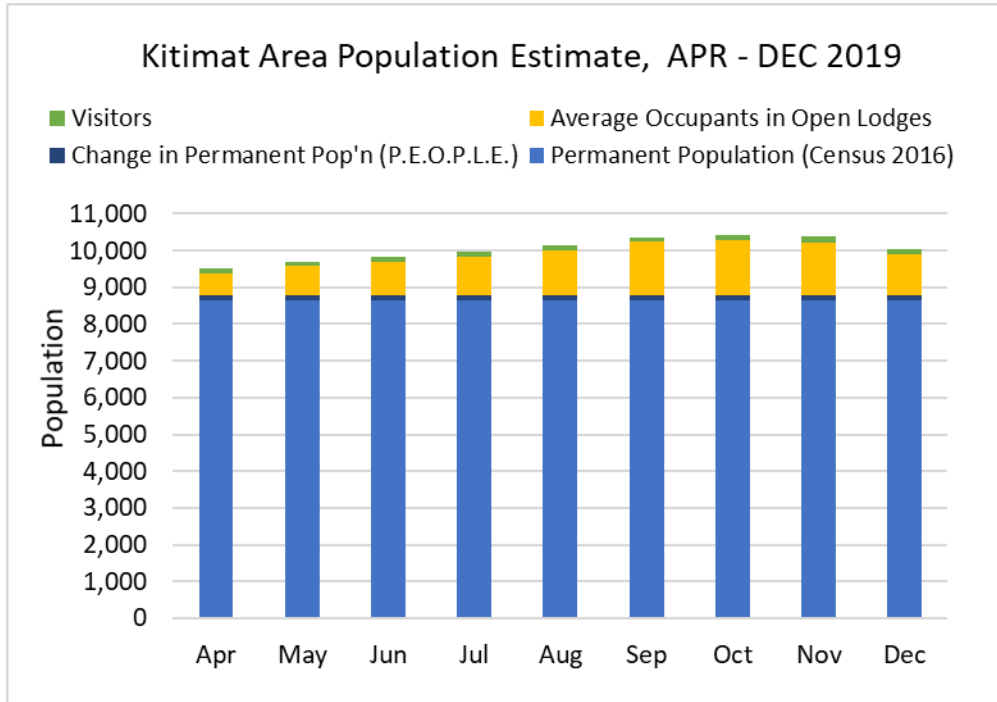
SOURCES: Statistics Canada 2017; STR Global 2020; Civeo 2020; Horizon North 2020; BRA 2020a

NOTE: Permanent Population (2016 Census) includes Census subdivisions: District Municipality (DM) of Kitimat and Kitamaat IR No. 2. Occupants in open lodges include Sitka Lodge and Crossroads Lodge occupants (Civeo 2020 and Horizon North 2020). Change in permanent population based on BC Stats P.E.O.P.L.E. model

*Visitors includes hotels, motels, and Airbnb occupants (BRA 2020a)

Figure 4-6   Kitimat & Area Population Estimate, 2019 Q2–2019 Q4

Terrace

Throughout 2019, the estimated population in the Terrace area was relatively stable, with monthly fluctuations resulting from change in visitor populations. Due to the nature of industry jobs in the region and its position as the major service provider, Terrace receives "spillover" of jobs created in Kitimat, Prince Rupert, and mines located close to Terrace (BRA 2015). Terrace's shadow population is assumed to remain in Terrace only during project construction phases and are not considered part of the permanent population., However, the shadow population may temporarily contribute to growth indicators such as availability and cost of rental accommodations. The estimated population peaked at 17,686 persons in November 2019. During this month, there were approximately 540 visitors, of whom approximately 25% were Project workers staying in Terrace area hotels (Table 5-1).

A combination of housing monitoring data and economic indicators suggest the overall population present in Terrace may have increased from 2016 to 2019, as evidenced by:

- Housing starts increased by 186 units over this period
- 1.8 percentage point decrease in rental vacancy rates
- Addition of 97 supportive (52) and affordable (45) housing units, and local shelters operating at or above capacity for much of 2019
- 40% increase (49 individuals) in unsheltered homeless individuals over the five-year average identified during the 2019 Terrace Homeless count (City of Terrace 2019)

5. SMP Report—Housing and Accommodations

5.1. Introduction

The Housing and Accommodations SMP identifies actions to manage project-related direct effects on the availability and affordability of housing on the District of Kitimat, City of Terrace and nearby Indigenous communities. The plan also identifies actions to manage the potential for increased demand for temporary accommodations such as hotels, motels and campsites from the in-migration of project workforces. The objectives of the plan are to:

- Reduce the potential for the project workforce to displace local residents or visitors from using temporary accommodations, or accessing rental opportunities or home ownership
- Minimize project-related effects on individuals and families who depend on affordable housing
- Engage with stakeholders and Indigenous groups to provide a responsive framework in which they can raise concerns with LNG Canada

Appendix B provides a list of stakeholders who participated in the Housing and Accommodations working group meetings, including virtual participants.

5.2. Context

Kitimat

Changes to the average residential house price in Kitimat from 2011 to 2019 correlated with actual or anticipated demand associated with industrial development. Prior to the ramp up of KMP, the average house cost in Kitimat ranged from $125,000 to $150,000 and quarterly units sold averaged around 20 (Figure 5-1). During the KMP construction period average house prices increased 120%, reaching $316,000 in the fall of 2014. After hitting a high of $350,000 in Q1 2016, average sale prices fell and stabilized at around $250,000 from 2016 through to Q1 2018. Housing prices jumped again in 2018, reaching a new peak of $400,000 by Q1 2019, suggesting that LNG Canada's positive FID had an impact on Kitimat's housing market (DOK 2020a). Similarly, 2018 saw a record high of 168 units sold, a 9% increase over units sold during 2011 (Figure 5-1). In 2019, transactions levelled off, averaging around 30 units sold per quarter.
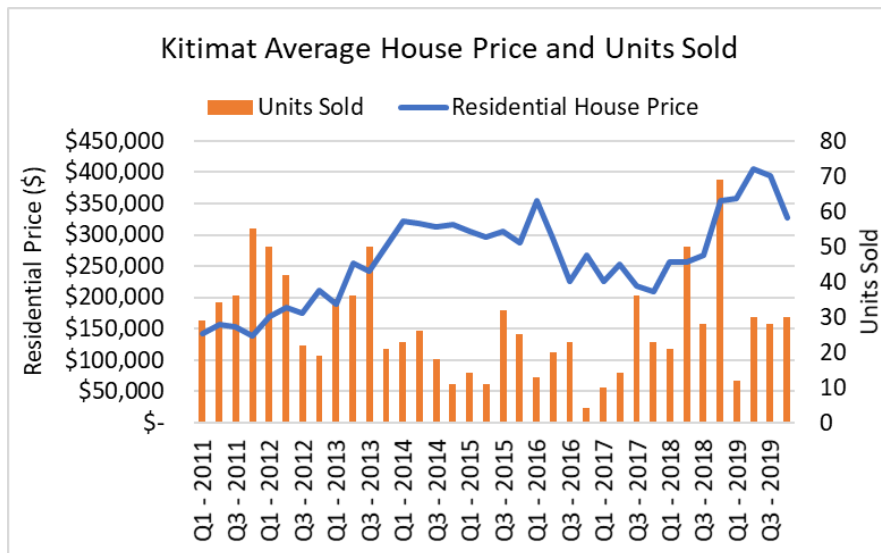
SOURCE: BCNREB 2020

Figure 5-1   Average Home Price and Units Sold (Kitimat)

Over the 2011-2018 period, Kitimat remained the most affordable community for homeowners in northern BC, despite a 34% increase in housing prices between 2017-2018 (BCNREB 2018). In 2018, Kitimat had a Housing Affordability Indicator[7] (HAI) of 20.6%, while Terrace had a HAI of 30.4%. The 2018 HAI for northern BC was 26.9% (BCNREB 2018). Kitimat's favourable HAI is reflective of historically low average house prices accompanied by the highest reported median income in the region (Orr 2014a).

The average cost of rental accommodation in Kitimat over time is also correlated with periods of actual or anticipated periods of industrial development. Prior to KMP, rental affordability was attainable for most Kitimat residents (DOK 2020a). During the construction of KMP, the demand for worker accommodations greatly exceeded the available supply of work camp rooms. Some employers paid LOAs and the resulting competition for rental housing contributed to the "renoviction" phenomenon, in which some tenants were evicted from their homes to enable landlords to refurbish and then rent out the unit to construction workers at substantially higher rates (Orr 2014b)., Average rents nearly doubled from 2010 to 2014, while the vacancy rate dropped from nearly 30% to 3% (Figure 5-1). The completion of the KMP project in 2015 is correlated with a substantial increase in Kitimat's vacancy rate, and a 40% reduction in average rental rates from 2015 to 2016.

The Canadian Mortgage and Housing Corporation (CMHC) 2019 fall Rental Market Survey reported a sharp 43% increase in the average cost of Kitimat rental accommodations coinciding with the announcement of LNG Canada's FID in October 2018. LNG Canada had not yet commenced construction activities or related hiring efforts and so this increase in rental cost was not triggered by direct demand by the Project.

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[7] 2018 Indicator: Percent of median household income needed to finance home ownership (BCNREB 2018).

This market response may have reflected speculative efforts by some landlords over the course of 2018 to take units off the market in order to refurbish and legally increase the rental pricing in anticipation of a similar surge in demand for rental housing by construction workers as occurred during the peak construction years of KMP.
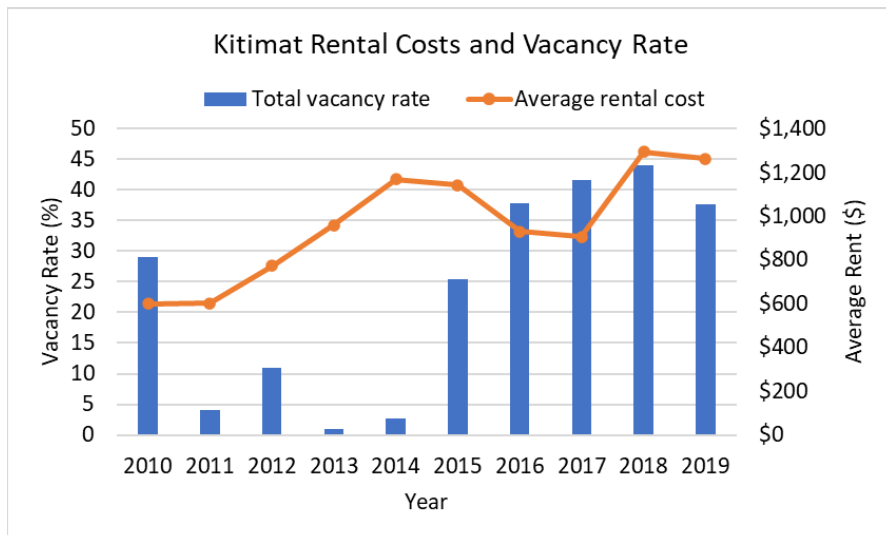
SOURCE: CMHC 2020b

Figure 5-2   Rental Costs and Vacancy Rate (Kitimat)

Kitimat's surveyed vacancy rate has remained at over 35% since 2016 (CMHC 2020b). This is thought to be because a substantial proportion of the rental stock has been taken off the market, including some units that are not in a rentable state, some units being renovated, while others are being reserved or possibly supply-managed by landlords. This has resulted in an effective vacancy rate that is much lower than estimated by the CMHC survey.

Terrace

From 2011 to 2019 the cost of market housing in Terrace fluctuated substantially. According to the CMHC survey, average residential house prices increased 55% from Q1 2011 to $340,000 by Q3 2014, before stabilizing at approximately $300,000 from Q3 2014 to Q1 2018. By July 2018, the sales-to-active ratio in Terrace exceeded 20 per cent, which indicated a seller's market as more people are looking to buy than there are homes available (Gervais 2018a). Average house prices continued on an upward trend from 2018, reaching a new peak of $420,000 by Q4 2019. After LNG Canada's positive FID, Kitimat's housing market depleted in a matter of days to as few as three to four homes on the market in Q4 2018 (Gervais 2018b). As a result of the lack of inventory in Kitimat and rising demand for property, Terrace received the overflow in demand as more people moved to the area and fewer properties became available (Gervais 2018b). The Terrace housing market also experienced a peak of 103 housing starts in 2018 (Figure 5-4).
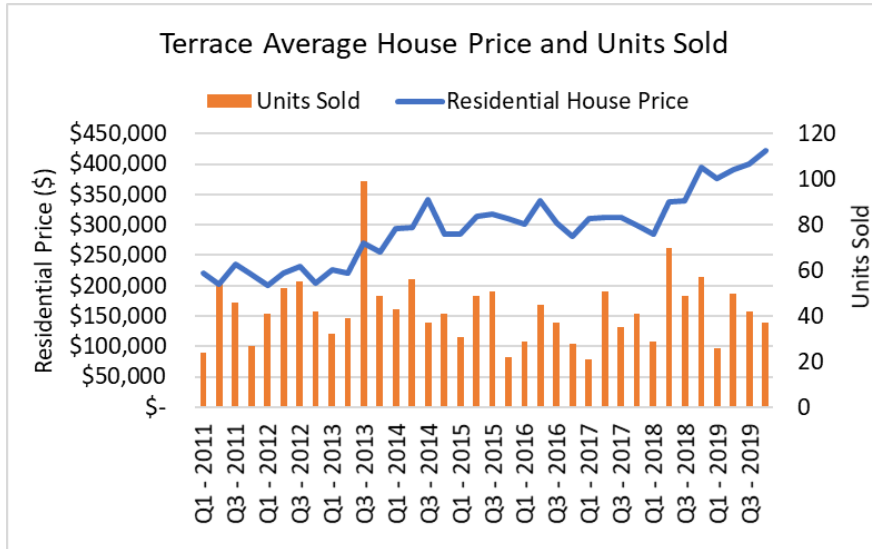
SOURCE: BCNREB 2020

Figure 5-3   Average Home Price and Units Sold (Terrace)
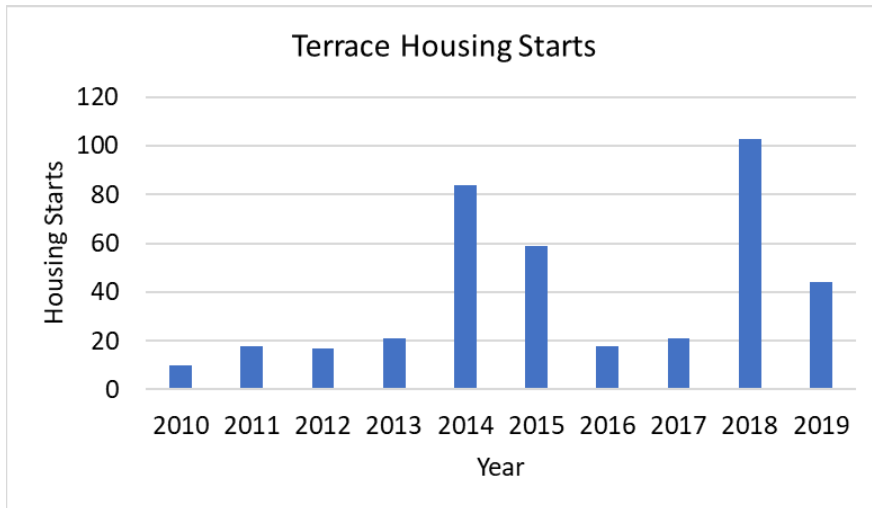
SOURCE: BC Stats 2020b

Figure 5-4   Housing Starts (Terrace)

Similar to Kitimat, Terrace's rental housing market has been influenced by patterns of regional development activity. From 2010 to 2013 the rental vacancy rate dropped from nearly 9% to less than 1%, during a period that correlates with the development of the NTL, the Forest Kerr hydroelectric facility, as well as the KMP. During this period, Terrace may have experienced an increase in rental demand due to some construction workers relocating temporarily into the city, as well as by induced population growth. Average rental rates increased only modestly from 2010 to 2013, suggesting that the "renoviction" phenomena was not occurring to the same degree as it was in Kitimat. Rental vacancy rates in Terrace reached 5.4% in 2017, before dropping to 2% in 2019, correlating with the recent industrial development activity occurring in the region.

Overall fluctuations in Terrace's rental housing market in terms of price and vacancy rates have been less compared to Kitimat, possibly because of Terrace's more stable permanent population, and because temporary construction workforces likely comprise a smaller proportion of its population.
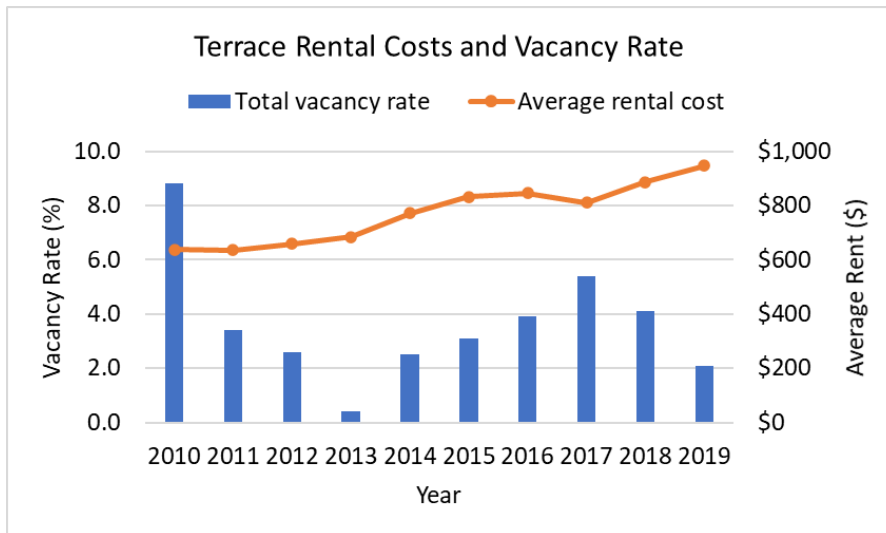
SOURCE: CMHC 2020a

Figure 5-5   Rental Costs and Vacancy Rate (Terrace)

Since 2014, the City of Terrace has undertaken an annual count of its homeless population. The count, which is done over a single 24-hour period in the spring, focuses on the visibly homeless, and includes individuals who are currently sheltered, as well as those who are unsheltered. The 2019 count of 71 homeless individuals is comparable with the average number of visibly homeless since 2014 (Figure 5-6). However, 49 of the homeless individuals in 2019 were unsheltered, a 40% increase in unsheltered individuals compared to the average (City of Terrace 2019). In 2019 men made up 61% of Terrace's visibly homeless, with persons of Indigenous ancestry over-represented (49 of those surveyed self-identified as Indigenous). The majority of surveyed homeless individuals were long-time Terrace residents, with only 26% of individuals reporting that they had lived in Terrace for less than a year (City of Terrace 2019). The barriers most cited by homeless individuals to finding a home were: rental cost (cited by 50% of survey participants), low income (35%), and housing suitability (10%). Other cited reasons were addiction issues and poor housing conditions. The report authors note that the count underestimates the true magnitude of homelessness in Terrace, because it does not capture homeless individuals who are not visible, such as those who are staying with friends or family (City of Terrace 2019).
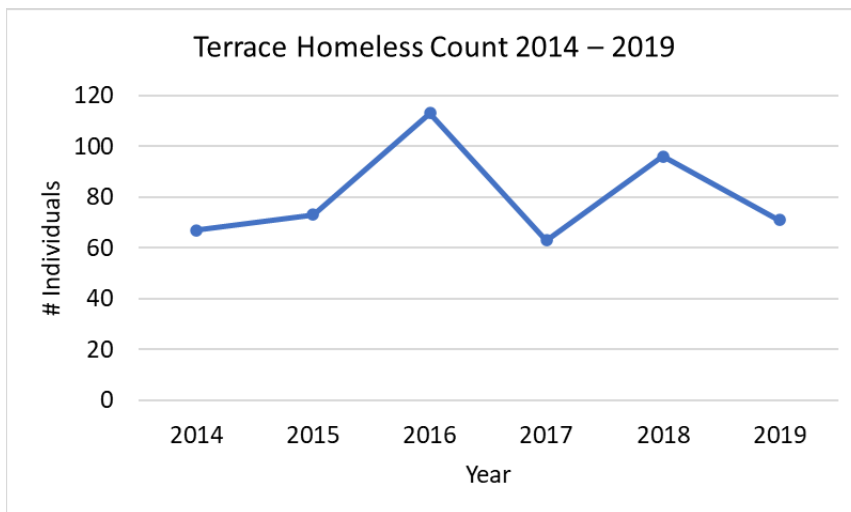
SOURCE: BC Housing 2019
Figure 5-6   Homeless Count (Terrace)

Both Kitimat and Terrace have experienced previous periods of heightened economic development activity that have resulted in housing market changes, affecting housing affordability and availability and increasing demand for social housing and support services A number of initiatives have targeted the evolving housing needs and/or anticipate and address potential adverse effects to housing in Kitimat and Terrace resulting from industrial developments. Some examples include:

- BC Housing—City of Terrace collaboration to build 52 supportive housing units and 45 low income housing units in Terrace (completed June 2019).

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- Several affordable housing projects have been initiated or are under development including 23 seniors units provided by Haisla Nation in Kitamaat Village, 42 units for vulnerable women provided by Tamitik Status of Women in Kitimat, 48 low income units provided by M'akola Housing Society in Terrace and 22 second stage housing units provided by Ksan society in Terrace (BC Housing 2020)
- District of Kitimat established an Affordable Housing Fund which collects $500 tax for each dedicated workforce accommodation unit, expected to generate almost $3 million in cumulative revenues from Sitka Lodge, Crossroads Lodge, Sitka Annex 2 and LNG Canada's Cedar Valley Lodge by 2021 to support Kitimat's affordable and social housing needs such as the TSW Housing Project (TSW 2020a)

The Province has established new requirements for local governments to produce updated housing needs reports by April 2022. Both COT and RDKS received funding in early 2020 to collect and analyze data on local housing needs. The DOK conducted its Housing Needs Assessment during 2019 with the complete Housing Action Plan and Needs Assessment published in March 2020 (DOK 2020a).

5.3. Project Reporting

In 2019 the Project implemented the following measures to manage its effects on housing and accommodations:

- The Project did not provide Living Out Allowances (LOA) to the workforce to mitigate impacts to the rental housing market, and the LOA policy was broadly communicated. Costs associated with transportation, meals and housing for the non-local workforce are covered directly by the Project
- Non-local workers followed a job rotation system (primarily 14 days on/7 days off) to encourage workers to maintain their home base
- Housing the non-local workforce at open lodge workforce accommodations: Sitka Lodge and Crossroads Lodge prior to the opening of Cedar Valley Lodge in 2020
- Constructing Cedar Valley Lodge on the Project site to house 4.500 non-local workers between 2020-2024
- Housing non-local short stay visitors at Haisla Town Centre or workforce accommodation centres
- The Project limited the number of employees and their accompanying families relocated to Kitimat with housing provided at company-managed units under long term lease (secured in consultation with DOK).
- Due to a temporary situation where worker demand for beds exceeded available supply at open lodges in 2019 Q4, the Project temporarily housed workers in Kitimat and Terrace area hotels

Cedar Valley Lodge, the Project's dedicated workforce accommodation center is currently under construction and will begin to house its first 1,500 workers in 2020, increasing capacity by 1,000 per quarter until a capacity of 4,500 beds is reached.

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In 2019, the Project accommodated a peak of 1,550 non-local workers during the month of December. Workers were accommodated in open lodges except for October to December when a limited accommodation supply meant there was a temporary need to house a small portion of the workers in local areas hotels. A peak of 31 Project staff relocated to Kitimat, presently accommodated in company-provided housing at Haisla Town Centre (HTC) apartments or Cedar Ridge homes (Table 5-1). Both HTC and Cedar Ridge developments are owned and operated by third parties and LNG Canada has been in long term lease agreements since the new housing stock was introduced in 2017 and 2018 respectively to manage a total of 49 one and two-bedroom apartments at HTC and 20 two-bedroom homes at Cedar Ridge. Prior to July 2019, Sitka Lodge (operated by Civeo) was the sole workforce accommodation centre utilized by the Project. The Project began to also use Crossroads Lodge (operated by Horizon North) in July 2019. Both Sitka Lodge and Crossroads lodge are located in Kitimat

From October to December 2019, a small portion of the non-local workforce was lodged in local area hotels. During this period, the Project monitored area hotel vacancy rates and was in direct contact with hotel managers to enable feedback regarding workers staying at their facilities.

Table 5-1   Housing and Accommodations Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4
Local (resident) workforce	339	520	566
Project non-local (non-resident) workforce staying at Open Lodges and area hotels (peak beds)	623	1,111	1,550
Project non-resident workforce temporarily staying at Kitimat hotels or lodges (peak beds)	0	0	76
Project non-resident workforce temporarily staying at Terrace hotels or lodges (peak beds)	0	0	142
Project staff re-located to Kitimat, presently staying in company-provided housing (Haisla Town Centre or Cedar Ridge homes)	25	28	31
Accompanying adults of relocated Project staff	10	7	11
Accompanying school-aged children of relocated Project staff	9	8	12
Number of housing related concerns or complaints (including hotel-related)	0	0	1
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data			

5.4. Community Reporting

In 2019, economic development activity in the region has resulted in changes to the housing market, as evidenced by decreased vacancy in short-term accommodation and increased prices, lower rental vacancy, increased average rent and elevated demand for social housing and support services in both DOK and COT.

Terrace's average assessed house value was $373,000 (up 20% from July 1, 2018). However, BC Northern Real Estate Board (BCNREB) market data shows that the housing market in Kitimat has cooled since 2019 Q3, with the 2019 Q4 average residential house resale price at $ 327,492 (down 7% from 2019 Q4). The year-to-date (YTD) change in average residential house resale prices remains high, with a 28% increase in Kitimat and a 13% increase in Terrace between 2018 and 2019 (Q2-Q4). There is continued demand for suitable and affordable housing in both Terrace and Kitimat. Terrace's rental vacancy rates remain low, particularly for row houses, which had 1.6% vacancy in October 2019 (CMHC 2020a). While Kitimat has a nominal 38% vacancy rate (CMHC 2020b), it is believed that a large number of units are not on the market in Kitimat, and therefore the effective vacancy rate is expected to be less than that estimated by CMHC. High average rent costs did not increase in Kitimat from 2018 to 2019 but increased 7% in Terrace over the same period.

In June 2019, 97 new housing units were added in Terrace to meet low income and supportive housing needs (48 low income units as Stone Ridge Estates and 52 supportive housing units at Sonder House, both operated by Ksan Society). However, the demand for social housing remains elevated. The Ksan Residence & Shelter (KRS) consistently operated near capacity, while Dunmore Place Transition House in Kitimat, operated by Tamitik Status of Women, experienced an average 25% increase in the number of full nights compared to 2018 (Table 5-2). Ksan Society, Terrace's largest social housing operator, reported reduced capacity in 2019 Q4 due to staff shortages, a trend experienced in both communities (Gray 2020).

Regional hotel and motel occupancy rates show that, despite the Project temporarily accommodating non-local workers in local area hotels in 2019 Q4, rooms remained available for visitors. The annual average hotel/ motel occupancy rate was 63% (a 9.4 percentage point increase between 2018 and 2019), and annual ADR was $139 (15% increase). In December 2019, there was a large decrease in the ADR, potentially due to accommodation rates for several weeks of use being negotiated by LNG Canada and JFJV to make up for the shortage in beds at the workforce accommodation facilities (BRA 2020a). Overall, local area hotels have provided positive feedback about the economic benefits, as hotel/ motel occupancy rates are generally lower in the winter months.

Table 5-2 **Housing and Accommodations Community Reporting**

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Average
Regional Hotel and Motel Occupancy Rates, [YOY percentage point change][1]	56% [11.1]	61% [-1.6]	71% [18.6]	63% [9.4]
Regional Hotel and Motel Average Daily Rate, [% YOY change][2]	$140 [20%]	$144 [18%]	$134 [8%]	$139 [15%]
Kitimat Rental Vacancy Rates, [YOY percentage point change][3]	- [-]	38% [-6.4]	- [-]	38% [-6.4]
Kitimat Average Overall Rent, [%YOY change][4]	- [-]	$1,263 [-2%]	- [-]	$1,263 [-2%]
Kitimat Average Residential House Price, [%YOY change][5]	$ 405,399 [58%]	$ 393,588 [47%]	$ 327,492 [-7%]	$ 375,493 [28%]
Terrace Rental Vacancy Rate (%), [YOY percentage point change][6]	- [-]	2.1% [-2.0]	- [-]	2.1% [-2.0]
Terrace Average Overall Rent, [%YOY change][7]	- [-]	$ 946 [7%]	- [-]	$ 946 [7%]
Terrace Average Residential House Price, [%YOY change][8]	$ 391,625 [16%]	$ 399,938 [18%]	$ 421,751 [7%]	$ 404,438 [13%]
Dunmore Place Nights Full (%), [YOY percentage point change][9]	91% [16.5]	89% [13.0]	79% [46.7]	87% [25.4]
Ksan Residence & Shelter (KRS) Nights Full (%), [YOY percentage point change][10]	85% [-14.2]	99% [2.1]	98% [-2.2]	94% [-4.8]
Individuals accessing KRS Non-Resident Support Services, [%YOY change][11]	971 [4%]	1,225 [-]	829 [-]	1,008 [-]
NOTES: -: not reported SOURCES: [1,2] STR Global (2020), [3,4] CMHC (2020b), [5,8] BCNREB (2020), [6,7] CMHC (2020a), [9] TSW (2020b), [10] Ksan Society (2020)				

5.5. SMR Feedback

The Housing and Accommodations SMR met in July 2019, November 2019, and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following questions, issues and topics were discussed during these meetings:

- Availability of affordable housing in Kitimat and Terrace
- Increase in usage of emergency shelters
- Policies and programs protecting the rights of landlords and tenants
- Funding programs for social and supportive housing, and incentives for building rental accommodations
- Project policy of not paying LOA to workers and how effectively this policy was being communicated to landlords and others
- Open Lodges reaching capacity, and need by Project to house some workers in local area hotels
- Availability and adequacy of social housing projects in Terrace and Kitimat
- Discrepancy between high vacancy rates, high rental prices in Kitimat and underlying landlord behaviours
- Affordable housing availability as barrier to hiring and retention of staff at service organizations

During SMR meetings, LNG Canada project staff answered questions related to the Project's policies and management of workforce accommodations, including clarification that no LOA allowances are provided. Housing social service providers, such as Tamitik Status of Women, described challenges related to the increased demand for their facilities that has occurred in 2019 as well as higher operating costs resulting from increasing commercial rental prices. LNG Canada's $250K contribution to Tamitik Status of Women and Kitimat Community Development Centre to support sustainable service delivery to vulnerable groups through "The Cornerstone" may help address some of these challenges. The BC government addressed questions related to provincially funded measures that support affordable rental housing and supportive housing. The Residential Tenancy Branch has been identified as the appropriate resource for rental-related queries.

Appendix C describes follow-up actions that were identified during the SMR meetings, including those assigned to LNG Canada, local government, service providers, and provincial agencies. Appendix D summarizes items identified by the BC government for follow-up, including connecting with key provincial agencies to address landlord behaviours in Kitimat and exploring opportunities for potential tenant and landlord workshops to provide resources for individuals at risk of homelessness.

In the fall of 2019, the Project adaptively managed the temporary shortfall in available open lodge accommodations, by lodging a small proportion of its non-local workforce in hotels and motels in Kitimat and Terrace. No additional mitigation measures were identified for LNG Canada within the housing and accommodations SMR meetings.

5.6. Discussion

History has shown that economic development activities in the region can affect housing affordability and availability. The Project has managed its direct impact on the housing market in 2019 by not paying LOAs and by housing the non-local workforce in dedicated workforce accommodation centres. During a temporary period in 2019 when open lodge capacity was insufficient to house all non-local workers, the Project adaptively managed its housing mitigation strategy by accommodating a small portion of the non-local workforce in local area hotels, while upholding its policy to not pay LOAs.

While the Project has limited its direct demand on the housing market, it is evident that the housing market in the Kitimat and Terrace region has been influenced by economic activity related to the LNG Canada project and other projects, similar to what occurred during the period of project development that occurred in the region in the early 2010s. This is evident by lower rental vacancy, increased average rent, increased demand for social housing, and increased hotel/motel accommodations occupancy and rates. Behaviour by some property owners in response to actual or perceived opportunities, and in-migration into the region, has likely contributed to the increased cost and reduced availability of rental accommodations.

A regional dynamic exists between Kitimat and Terrace whereby those unable to secure or maintain affordable housing in Kitimat may find greater availability of housing options and support services in Terrace. Increased demand for temporary housing and emergency shelters is evident, particularly in Terrace, where such facilities tended to experience higher utilization, and longer wait times in 2019 compared to 2018 (Table 5-2). The availability of affordable rental accommodations in Terrace and Kitimat has been identified by local governments, Indigenous groups, and service providers as an issue of high importance. It was also suggested in SMR meetings that the current imbalance of social housing availability between Terrace and Kitimat should be addressed. The Project continues to work with social and housing operators at the local level and will be touring local service agencies and meeting front-line staff and program participants to better understand the demands on services.

6. SMP Report—Traffic

6.1. Introduction

The Traffic SMP identifies actions to manage project-related effects on local road traffic and airport infrastructure. This SMP summarizes how mitigations identified in the Application will be implemented, monitored, and measured for effectiveness. Objectives of the plan are to:

- Minimize the volume of and congestion caused by project-related road traffic
- Reduce the risk of project-related vehicle collisions
- Reduce demand on airport infrastructure and congestion caused by the transport of workers
- Facilitate collaboration with stakeholders and provide a responsive framework from which stakeholders can raise concerns with LNG Canada

Appendix B provides a list of stakeholders who participated in the Traffic working group meetings, including virtual participants.

6.2. Context

Monthly terminal volumes for commercial traffic at the Northwest Regional Airport doubled from June 2012 to July 2014, a period coinciding with the ramp up of KMP, early works for the Chevron Kitimat LNG Terminal project, and construction of several projects north of Terrace (Figure 4-2). Flight frequency at the airport was expanded and maintained following the completion of KMP (YXT 2014) which may have stimulated demand in subsequent years. In 2018, the airport opened the first phase of its terminal expansion, which increased the size of the airport by 40%, adding a larger holding room for departing passengers (Link 2018). The uptick in airport volume from April 2018 correlates with the increased project activity in the Kitimat-Terrace region.
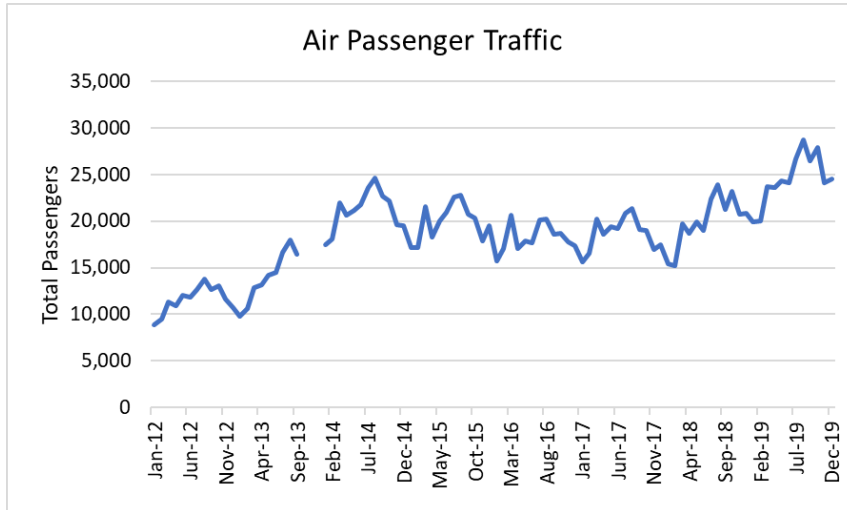
SOURCE: YXT 2020

* Missing data for October 2013 – December 2013.

Figure 6-1   Monthly YXT Commercial Terminal Volume, 2012-2019

Ministry of Transportation and Infrastructure (MOTI) vehicle count data is incomplete at monitoring stations within Kitimat, Terrace, and along Highway 37, making it difficult to identify potential correlations between project development trends and highway roadway vehicle volumes. ICBC crash data shows an increase in vehicle crashes from 2013 to 2014/2015 in both Kitimat and Terrace, a period coinciding with increased project development activity, followed by a reduction in crash volume from 2016 to 2018 during the period when project activity was reduced (Figure 6-2).
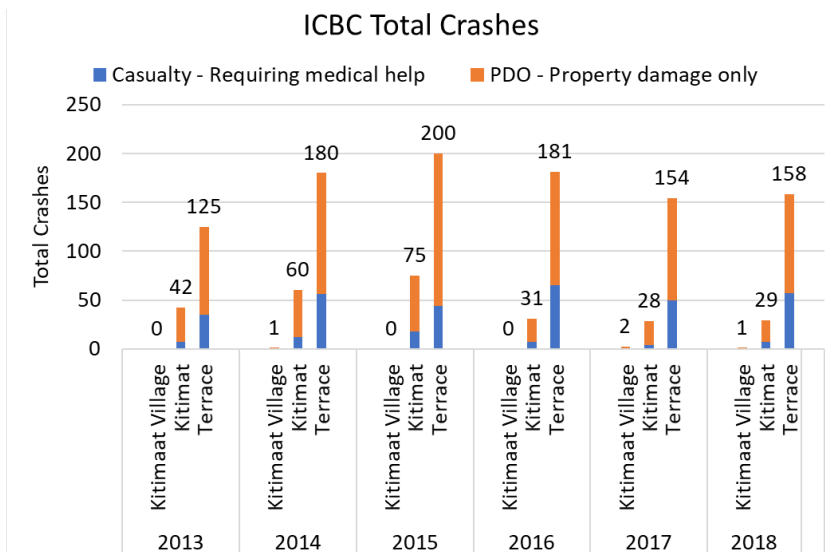
SOURCE: ICBC 2020

Figure 6-2   ICBC Crash Data (Kitimat & Terrace), 2013-2018

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6.3. Project Reporting

In 2019 the Project implemented the following measures to limit its effects on transportation infrastructure:

- Project materials transported by vessel or barges along marine transportation routes, where possible
- Workforce transported via shuttles to and from the Project site in Kitimat, with pick up points in Terrace and Kitimat, including:
   - Northwest Regional Airport, situated 9 km south of downtown Terrace
    - Park and Ride locations in Terrace, Kitimat and Haisla Village
- Workforce Accommodation centers located near the Project site, including Sitka Lodge, Crossroads Lodge, and Haisla Town Centre
- Working with the District of Kitimat to minimize local traffic impacts, including parking with additional consideration for snow removal concerns in winter months
- Development of a Traffic Management Plan (EAC Condition #16)
- Project vehicles equipped with In-Vehicle Monitoring System (IVMS) to monitor driving behaviour. The Project has zero tolerance for speeding or dangerous driving.
- The Project began to use charter flights in an out of Northwest Regional Airport in 2019, in addition to commercial flights, for transportation of non-local workers. Use of charter flights is expected to increase from 2020 onwards.

Throughout 2019, the number of Project-related passengers transiting through Northwest Regional Airport continued to increase, consistent with the ramp up of construction activities and the Project workforce. In Q4, 5,965 Project personnel transited through the airport, accounting for 6% of total terminal passenger volume (Table 6-1). The use of commercial flights by the Project peaked in October 2019 and decreased near the end of year, while there was a steady increase in Project workers transported by charter carriers. The number of bus trips shuttling Project personnel from the airport, accommodation centres, Park & Ride locations, and construction sites increased throughout 2019.

The Project resulted in seven traffic related incidents/ near misses in 2019, and 12 traffic related complaints/ concerns from the public. All concerns and complaints raised were addressed by JFJV within 10 business days.

Table 6-1   Traffic Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4
Number of daily Project bus trips from Northwest Regional Airport to Kitimat [avg. passengers /day]	0 [0]	8 [0]	10 [68]
Number of daily Project bus trips from Terrace Park & Ride to Kitimat [avg. passengers /day]	8 [15]	0 [2]	68 [5]
Number of daily Project bus trips from Kitimat and Kitamaat Village Park & Ride to Site [avg. passengers /day]	41 [38]	20 [43]	29 [72]
Number of road transport-related incidents and near misses	1	1	5
Number of Project personnel on commercial flights through airport per month	2,576	3,868	4,734

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Indicator	2019 Q2	2019 Q3	2019 Q4
Number of Project personnel on charter flights	349	935	1,231
Provision of project transportation plans to transportation authorities	0	2	2
Notifications to service providers and the public regarding scheduling of transportation equipment	0	0	4
Number of meeting with transportation authorities on traffic management, congestion and road safety	0	2	2
Number of traffic related concerns or complaints	3	5	4
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data			

6.4. Community Reporting

In 2019, there was a 21% increase in commercial air traffic through YXT compared to 2018. Because of recent upgrades to the terminal, the airport has reported that it has sufficient capacity to handle this increase in volume (Hendry 2019). Transiting Project workers accounted for 5% of total terminal volume in 2019 Q2–Q4 or 28% of the increased terminal traffic.

Road traffic[8] along Highway 37 at the MOTI Traffic Monitoring Site P-47-8NS[9] increased approximately 26% between 2018 and 2019 (based on Q2 and Q3 data only). At the time of this report, MOTI traffic data was not available for 2019 Q4. While Project-related bus traffic accounted for only 6%[10] of traffic along Highway 37 in 2019 Q2, other Project traffic, including truck movements, contributed to the increased roadway volume.

Table 6-2   Traffic Community Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Sum/ Avg
YXT Commercial Air Passengers, [%YOY change][1]	72,069 [25%]	81,764 [21%]	76,454 [18%]	230,287 [21%]
Highway Road Traffic, [%YOY change][2]	4,120 [27%]	4,428 [26%]	N/A	N/A
NOTES: *Average for Q2 and Q3 only SOURCES:[1] YXT 2020, [2] MOTI 2019				

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[8] MAWDT (Monthly Average Weekday Traffic): Refers to the average daily traffic calculated from Monday to Thursday over a one-month period. Fridays are excluded from the calculation as they tend to have traffic patterns that do not match other weekdays (MOTI 2014).
[9] MOTI Traffic Monitoring Site P-47-8NS located 0.8 km south of Oolichan Ave, Kitimat.

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6.5. SMR Feedback

The Traffic and Emergency Response SMR met in July 2019, November 2019, and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following issues and topics were discussed during these meetings:

- Roundabout Project construction in Terrace at Hwy 16 and Hwy 37
- Recommended traffic light at Nalabila/Hwy 37 intersection in Kitimat
- Reduction of Kitimat taxi and BC Transit transportation services due to driver shortages
- Use of pilot trucks to accompany oversize truck shipments
- Use of In-Vehicle Monitoring Systems in Project vehicles
- Project-related parking and local traffic impacts in Kitimat
- Winter traffic management and emergency preparedness plans
- New charter routes and commercial routes due to increased demand for air transportation
- Motor vehicle crash investigator vacancy locally, relying on Prince George as nearest resource and implications for road closures on Hwy 16 or 37 in the event of a serious incident
- Capacity and preparedness to respond to a regional mass casualty incident e.g., motor vehicle crash on Highway 37

During SMR meetings LNG Canada project staff explained the Project's use of IVMS, a requirement for all workers carrying out driving activities on the Project. The Project also shared winter traffic management and emergency preparedness plans, which entails mitigation measures such as prohibiting use of personal vehicles and daily risk assessments for shuttle bus services.

Appendix C describes follow-up actions that were identified during the SMR meetings, including those assigned to LNG Canada, local government, service providers, and provincial agencies. Actions that were undertaken by SMR participants regarding traffic are identified as follows:

- Assessment of need for traffic light at Nalabila/Hwy 37 intersection underway (DOK)
- Clarified to SMR participants the areas of interest and definition of recordable incidents (Project team)
- Clarified to SMR participants the extent of IVMS requirements across all contractors and shuttles (Project team)
- Confirmed to SMR participants that the data set for traffic monitoring includes hourly breakdown/ peak times/ etc. (Project team)

Additional mitigation measured were identified for LNG Canada and DOK within the traffic SMR meetings regarding DOK parking and traffic impacts.

6.6. Discussion

A notable increase in road and air traffic was experienced in the Kitimat - Terrace area between 2018 and 2019, partly due to increased Project-related bus traffic and other Project traffic, including truckloads of Project trailers and other equipment required to assemble temporary construction facilities and the Cedar Valley Lodge. By transporting workers to and from the airport, open lodges, area hotels, and Project site locations on company-provided shuttles, and by establishing Park & Ride lots, and enforcing shuttle transit for local workers, the Project limited the use of personal vehicles on local roads.

The Project limited its direct effects on Northwest Regional Airport by prioritizing hiring from the local area and using charter flights for a portion of the workforce. Despite 2019 being a record-breaking year with 230,287 commercial air passengers between Q2-Q4 (18% increase from 2014[11]), the airport had sufficient capacity to handle the increase in volume. The Project directly accounted for approximately 5% of commercial passengers transiting through the airport and will be limiting terminal usage by using charter flights for most of its rotational workforce. The addition of flights by commercial carriers, and the movement of people resulting from induced economic activity may account for some of the increase in air traffic in 2019.

The tightening local labor market impacted some transportation providers in 2019. Due to increased employment opportunities in the region, Haisla Taxi experienced a shortage of drivers which led to the service shutdown; however, local taxi service did resume once again in Kitimat.

In 2019, the Project worked together with DOK to minimize parking and local traffic impacts which included: leasing multiple DOK parking lots to meet increasing demand for local workforce Park 'n Ride locations; and support for DOK implementation of parking by-laws and additional signage to restrict overnight parking on busy residential roads and in high traffic public parking lots. In response to concerns raised during the SMR meetings regarding the need for traffic lights at Nalabila / Hwy 37 intersection, DOK indicated that it has secured funding and will start a Traffic Impact Assessment in 2020 Q1 for the intersection of Nalabila / Hwy 37.

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[11] The second busiest year for YXT.

7. SMP Report—Emergency Response

7.1. Introduction

The Emergency Response SMP identifies actions to manage project-related demands on emergency services. The SMP summarizes how mitigations identified in the EAC application will be implemented, monitored, and measured for effectiveness. The plan also outlines objectives of mitigation measures and provides a timeframe during which mitigation measures will be implemented. Stakeholders that may be interested in participating in the implementation of components of the plan are also identified.

Objectives of the plan are to:

- Implement a framework to manage emergencies and spills within the project site
- Minimize project-related demand on emergency and protective services
- Develop positive workforce behaviours and respect for local communities, and avoid incidents that would require the use of community protection services
- Help emergency and protective service providers plan for potential changes in service requirements.

Appendix B provides a list of stakeholders who participated in the Emergency Response working group meetings, including virtual participants.

7.2. Context

Figure 7-1 shows annual service call volumes for the Kitimat Fire and Ambulance Service from 2012 to 2019, while Figure 7-2 shows call volumes to the Terrace Fire Department over the same period. In 2014 Kitimat call volumes increased up to 20% from 2012, which correlates with the peak construction year of the KMP project, before falling back by 2016. Call volumes then increased from 2016 to 2018, during a period of relatively low development activity. Call volumes in Terrace show a similar fluctuating pattern, with an overall increasing trend from 2012 to 2018, with the recent peak occurring in 2017. Over this period, Kitimat RCMP call volumes peaked at 4,486 calls in 2013, before declining in 2016 (Figure 7-3). Since 2016 there has been a gradual increase in calls to the Kitimat RCMP detachment, although recent volumes have not reached historical peaks. Terrace RCMP call volumes were not available prior to 2017.
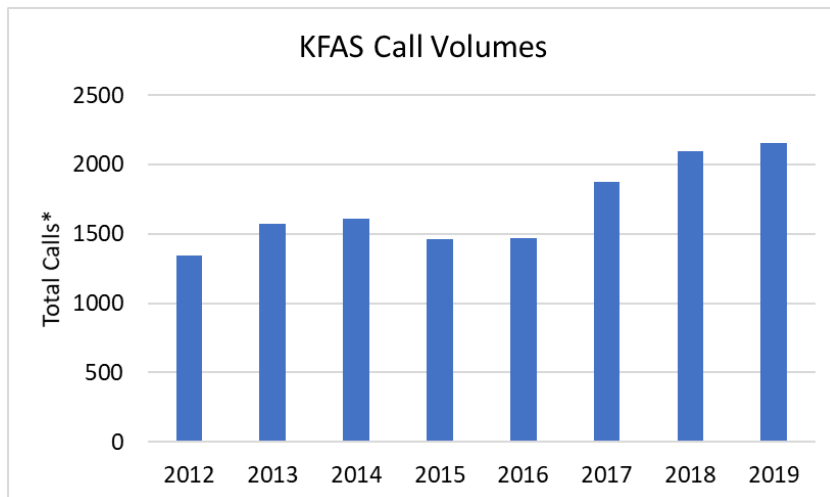
SOURCE: KFAS 2020

Figure 7-1   **Kitimat Fire & Ambulance Service Call Volumes, 2012-2019**
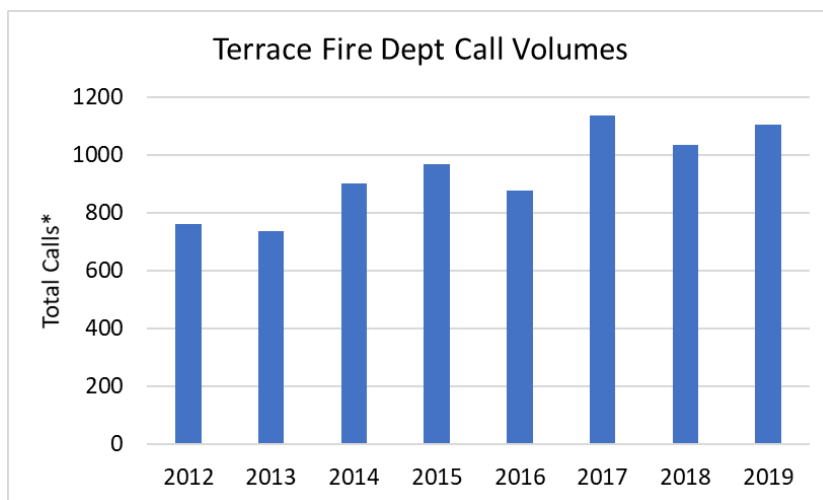
SOURCE: TFD 2020

Figure 7-2   **Terrace Fire Department Call Volumes, 2012-2019**
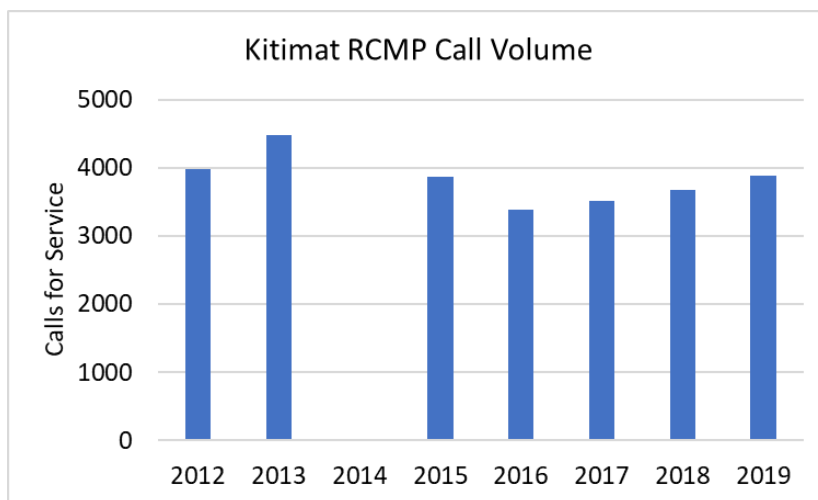
Figure 7-3

SOURCE: DOK 2012; DOK 2013; DOK 2015; DOK 2016; DOK 2017; DOK 2018; RCMP 2020

* Missing data for 2014; 2017-2018 data uses average from DOK Annual Reports and RCMP provided data.
Figure 7-3   Kitimat RCMP Call Volumes, 2012-2019

7.3. Project Reporting

In 2019 the Project implemented the following measures to limit its effects on emergency response services:

- Emergency response plans are in place and continue to be updated as required with input from local first responders
- Safer Together Program has been implemented to reinforce a safety mindset that is based on four pillars with a strong foundation of caring for people
- All site personnel are required to sign off on the Workers Code of Conduct and complete Cultural Awareness training
- Sitka Lodge has contracted security personnel on-site, and is located five minutes away from the Kitimat RCMP detachment

In 2019, the project recorded a limited number of calls to site for ambulance and RCMP service, and recorded workplace occupational and non-occupational injuries that required medical treatment (Table 7-1). The Project directly accounted for a small proportion of the direct demand on local area emergency service providers. In 2019 Q2–Q4 it accounted for no fire-related calls, 1.2% of ambulance calls received, and 0.1% of calls to the Kitimat RCMP.

Table 7-1   Emergency Response Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Sum/ Avg
Ambulance service calls to site	2	2	8	12
Fire department service calls to site	0	0	0	0
RCMP service calls to site	0	1	3	4
Meetings held to coordinate and plan emergency response	0	3	6	9
Emergency response related concerns or complaints	0	0	0	0
Notifications to health authorities for occurrence of communicable illnesses/diseases	12	4	1	17
Percentage of worked who have signed the Worker Code of Conduct (launched May 2019)	59%	155%[12]	115%	110%
Percentage of workers who have completed Cultural Awareness Training	84%	76%	126%[13]	95%
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data				

7.4. Community Reporting

Demands for emergency service providers in both Kitimat and Terrace fluctuated across the year due to seasonal trends, with a general increase in service demand in 2019 compared to 2018 (Table 7-2). Generally, the City of Terrace experienced greater increases in demand than did the District of Kitimat. For example, in 2019 the Terrace Fire Department experienced a 20% increase in calls for service in 2019 Q2–Q4, compared to the same period in 2018, while KFAS recorded a 3% increase in calls between 2018 and 2019 (Table 7-2). The Terrace RCMP recorded a 14% increase in call volume from 2018 to 2019, while the Kitimat RCMP experienced an 8% increase in call volume over the same period. Terrace BC Emergency Health Services (BCEHS) has recently experienced personnel capacity issues, as evidenced by the increase in vacant shifts. For example, in December 2019 Terrace BCEHS had 60 vacant shifts, compared to only 16 vacant shifts in December 2018 (White 2020).

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[12] Workers Code of Conduct was implemented May 15, 2019. The remainder of 2019 was spent closing the gap on Worker Code of Conduct Training for workers who completed their orientation prior to May 15th. Hence numbers higher than 100% are reported for both Q3 and Q4 2019.

[13] Cultural Awareness Training can be completed within 30 days of attending Orientation. In order to teach in a meaningful way, class size is capped at 30 people. Hence values may fall below 100% or may exceed 100% for a given month of reporting

Table 7-2   **Emergency Response Community Reporting**

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Sum
KFAS Total Calls for Service, [%YOY change][1]	536 [22%]	504 [-13%]	514 [4%]	1,554 [3%]
KFAS Fire Related Calls, [%YOY change] [2]	38 [-21%]	47 [-28%]	31 [-14%]	116 [-22%]
KFAS Medical Related Calls, [%YOY change] [3]	353 [22%]	331 [-2%]	316 [-7%]	1,000 [4%]
Terrace Fire Department Calls for Service, [%YOY change] [4]	455 [19%]	448 [35%]	300 [3%]	1,203 [20%]
Terrace BCEHS Calls for Service, [%YOY change] [5]	N/A	823 [9%]	674 [-8%]	1,497 [0.3%]
Kitimat Policing Calls for Service, [%YOY change] [6]	1,091 [8%]	1,099 [14%]	916 [3%]	3,106 [8%]
Terrace Policing Calls for Service, [%YOY change] [7]	3,708 [17%]	4,071 [18%]	3,209 [6%]	10,988 [14%]
SOURCES: [1,2,3] KFAS 2020, [4] Terrace Fire Department 2020, [5] BCEHS 2020, [6,7] RCMP 2020				

7.5. SMR Feedback

The Emergency Response SMR met in July 2019, November 2019, and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following issues and topics were discussed during these meetings:

- Increase in emergency responder calls volumes, particularly in Terrace
- Loss of employees in the emergency services sector for Project-related employment
- Resource and funding requirements to address additional service demands
- Emergency response training and coordination
- Search & Rescue resource needs, including marine search and rescue

During SMR meetings LNG Canada project staff answered questions related to the Project's policies and mitigation measures to help limit incremental demand on emergency service providers, including its Worker Code of Conduct and Cultural Training requirements. Emergency service organizations, including Kitimat Fire and Ambulance Service, Terrace RCMP, Terrace Fire Department, and BCEHS shared their observations on changes in demand and resourcing challenges. Representatives of Indigenous communities expressed their concerns related to coordination of emergency response with municipal emergency service providers, as well as concerns over changes in community stability and well-being related to the increased presence of non-residents.

The long-term concern of regional needs related to ambulance services and the BC government's process for assessing and allocating these needs was discussed at the SMR meetings.

Appendix C describes follow-up actions that were identified during the SMR meetings, including those assigned to LNG Canada, local government, service providers, and provincial agencies. No additional mitigation measures were identified for LNG Canada within the emergency response SMR meetings. Appendix D summarizes items identified for follow up by the provincial government. At the 2019 Q4 SMR meeting, the BC Government provided an overview of how policing and ambulance resources are allocated in British Columbia. It was clarified that any requests for information or services related to the RCMP specifically should be addressed directly to the RCMP or through a follow-up discussion with the Ministry of Public Safety and Solicitor General.

7.6. Discussion

Through the implementation of mitigation measures, the Project limited its direct demands on emergency service providers, with Project-related calls and incidents accounting for a small proportion of calls attended to by fire, ambulance, and police services. Data shared by emergency service providers shows that demands for fire, ambulance, and police increased in 2019 in both Kitimat and Terrace compared to 2018 (Table 7-2). It is likely that a portion of this increase can be attributed to generalized population growth that is related to the indirect and induced economic activity associated with the Project. It should also be expected, however, that changes in demands also reflect the general social conditions within Terrace, Kitimat, and surrounding communities. For example, over the course of the decade preced7ing the LNG Canada project from 2010 to 2018 the crime rate dropped 16% in BC, overall (Statistics Canada 2019b). Over the same period, the crime rate dropped 10% in Kitimat but increased by 19% in Terrace. These trends, which have occurred prior to start of construction of the LNG Canada project, will also be reflected in the evolving demands on emergency service providers.

First responders indicated that increased demand for emergency services are expected and these trends were also observed during previous major construction projects in the region (Figure 7-1, Figure 7-2). LNG Canada's strategic community investments in a new Highway Emergency Response Vehicle for the City of Terrace will strengthen emergency response capability at a time when traffic along Highway 37 is increasing as a result of Project activity and overall economic growth in the area.

Feedback from SMR meetings included considerable discussion related to resourcing and funding for emergency service providers, particularly in Terrace. Despite BCEHS staffing challenges with high shift vacancies, recruitment is underway, and fewer vacant shifts are expected in 2020 (White 2020). Government representatives attending these meetings have outlined how policing and ambulance resources are allocated in British Columbia. The SMR continues to serve as a convening platform to better understand Kitimat and Terrace emergency response challenges and opportunities to strengthen capacity.

In 2019, there were no emergency response related concerns/ complaints with respect to the Project. No additional mitigation measures were identified for LNG Canada regarding its management of direct demand on emergency services.

8. SMP Report—Community Health

8.1. Introduction

The Community Health SMP identifies actions to manage project-related demands on health infrastructure and services within the Northwest Health Service Delivery Area (HSDA) of Northern Health, as well as community cohesion and resilience. Community Health is a broad area, covering aspects including social health determinants, health risk, health-related behaviours, health outcomes, and health services. SMP areas such as housing, education, and emergency services are health determinants, or otherwise relate to health conditions within the study area. Because of the linkage between community health and crime, crime rate data and discussion are provided in this section.

The SMP summarizes how mitigations identified in the EAC application will be implemented, monitored, and measured for effectiveness. The plan also outlines objectives of mitigation measures and provides a timeframe during which mitigation measures will be implemented. Stakeholders that may be interested in participating in the implementation of components of the plan are also identified.

Objectives of the plan are to:

- Manage potential demand on local and regional health care infrastructure and services
- Manage workforce activities and behaviours to promote healthy living and working environments, and community cohesion
- Engage and share information on temporary workforce numbers with Indigenous Groups and services providers to help them plan for additional demands

Appendix B provides a list of stakeholders who participated in the Community Health working group meetings, including virtual participants.

8.2. Context

The social determinants of health are the economic and social conditions that influence individual and population health (GOC 2019). CLISMP community monitoring includes a number of indicators that relate directly or indirectly to the social determinants, including housing, health and social services delivery, emergency service delivery, and crime rates.

The Community Well-Being (CWB) Index measures a number of health determinants for communities across Canada based on Census data. The Index is comprised of four equally weighted components, widely accepted as being important to wellbeing: education, labour force activity, income and housing. From 1991–2016, the CWB scores of communities within the Kitimat-Terrace region were flat to gradually increasing (Figure 8-1). There is no apparent correlation between change in community wellbeing, and major project activity; however, because the analysis is only undertaken during Census years, it is possible that there might be more fluctuation in score values if the survey was undertaken more frequently.

In 2016, the CWB values of Kitimat and Terrace were slightly higher than the average score of 78 for non-Indigenous communities in BC (Statistics Canada 2017). In 2016, the CWB values of Indigenous communities within the Kitimat— Terrace area were similar to the provincial average CWB score for First Nations communities of 63 (Statistics Canada 2017)
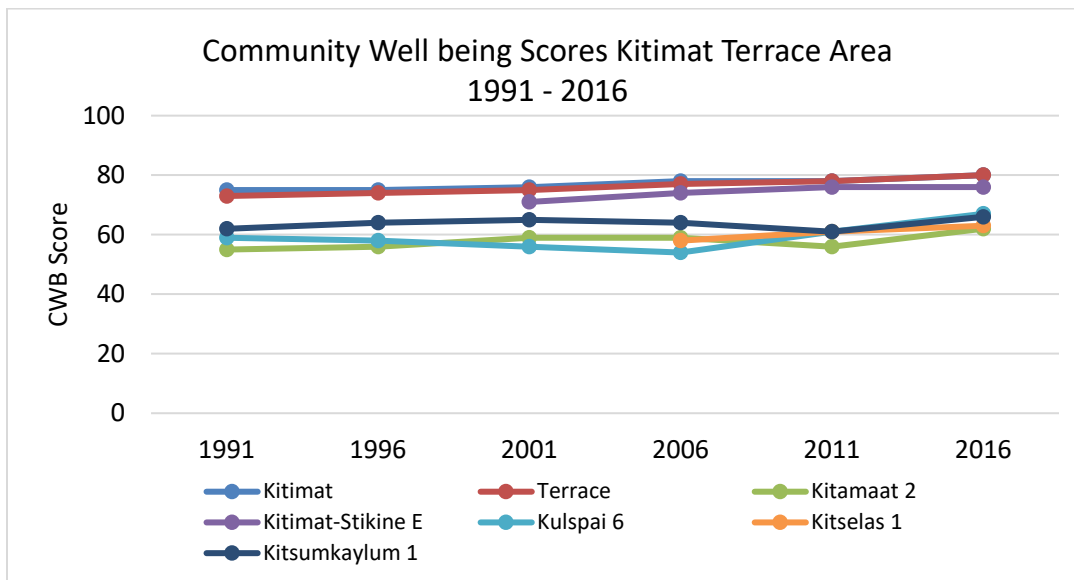
SOURCE: Statistics Canada 2017
Figure 8-1   Community Well-Being Scores

During the decade preceding the LNG Canada project, the overall crime rate in north coast communities was substantially higher than the BC average, with Terrace's crime rate averaging nearly 2.5X the provincial average, and Kitimat's crime rate averaging over 1.2X the provincial average (Figure 8-2). The higher crime rates within the north coast communities is consistent with findings of a Canada-wide study, which found that crime rates in northern Canada were substantively higher than those in southern Canada (Rotenberg 2019).

Between 2010 and 2014 (at the height of construction of the KMP and NTL projects, among others) the rate of violent crime decreased 27% Terrace and 34% in Kitimat, comparable to the 29% decline in the BC overall crime rate over this period (Figure 8-3). By contrast, from 2014 to 2018, crime increased 33% in Terrace and 26% in Kitimat, compared to the BC average increase of 3%. Similarly, between 2010 and 2014, the rate of sexual assaults decreased 9% in Terrace and 12% in Kitimat, compared to the 24% decline in the overall BC rate over this period. By contrast, from 2014 to 2018, the rate of sexual assaults increased 65% in Terrace and 122% in Kitimat, compared to the BC average increase of 33% (Figure 8-4).

Total Criminal Code Incident Rate
North Coast Communities 2010 - 2018
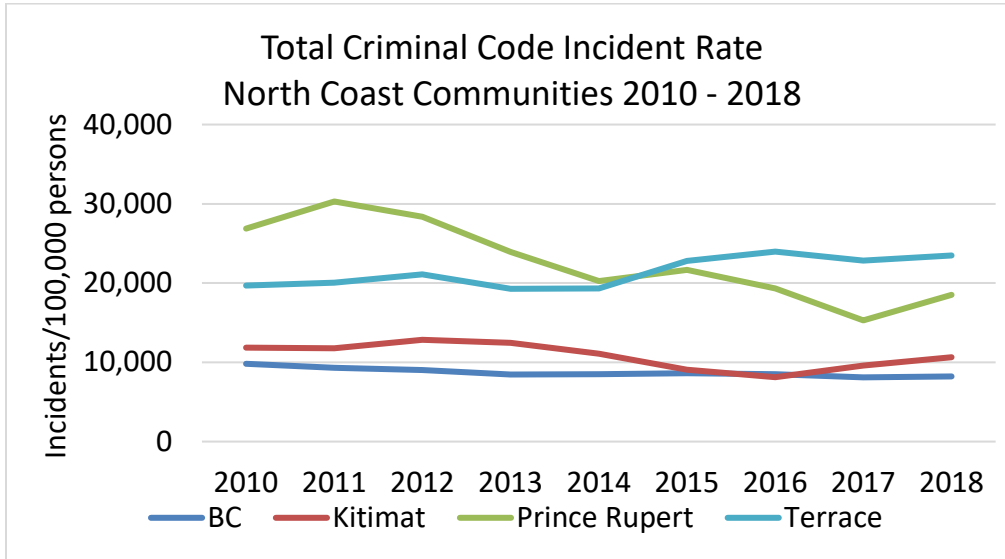
Source: Statistics Canada 2019b

Figure 8-2   Total Criminal Code Incident Rate 2010–2018

Total Violent Crime Incident Rate
North Coast Communities 2010 - 2018
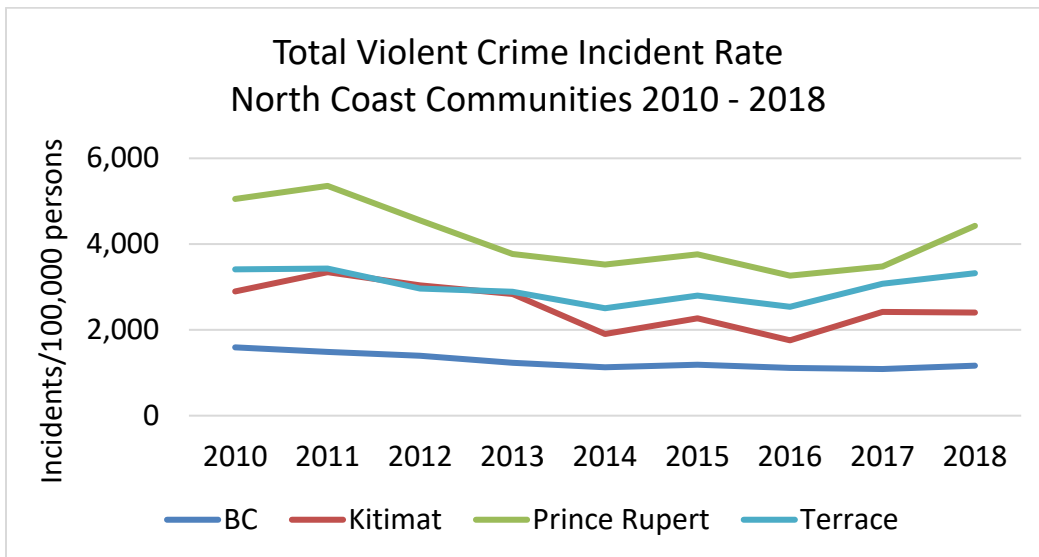
Source: Statistics Canada 2019b

Figure 8-3   Violent Crime Incident Rate 2010–2018
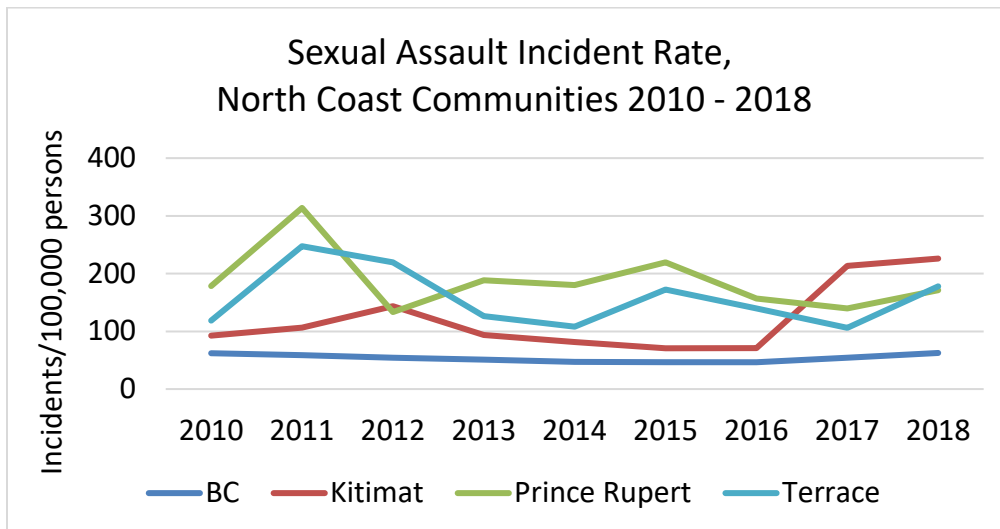
Source: Statistics Canada 2019b

Figure 8-4   Sexual Assault Incident Rate 2010–2018

The statistics on overall crime, violent crime, and sexual offenses in north coast communities between 2010 to 2018 does not show a positive correlation between crime rates and large development projects occurring in or near north coast communities. Rather, the data suggests a potential positive correlation between project development activity and lowered crime rates, possibly due to improved employment outcomes and family income during periods of strong economic development.

8.3. Project Reporting

In 2019 the Project implemented the following measures to limit its effects on community health services:

- Medical services provided through third party providers at the Project site (ISOS) and at Sitka Lodge (Medcor)
- Occupational First Aid person available day/night at Crossroads Lodge
- Monthly "Health Focus" bulletins sent to entire project workforce
- Implementation of worker welfare programs and access to telemedicine
- Continued communication and coordination with KGH. Regular check in with MMH
- Implementation of site-specific health plans in coordination with Northern Health

In 2019, the Project recorded 64 workplace injuries (Table 8-1). Of these, 63 (98%) required treatment at local hospitals. The Project also notified health authorities 17 times of occurrences of communicable diseases related to its workforce. Project related workplace injuries accounted for an estimated 0.6% of emergency room visits to the KGH.

Table 8-1   Community Health Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Sum/
Workplace occupational injuries and illnesses requiring treatment at local hospitals	3	2	11	16
Workplace non-occupational injuries and illnesses requiring treatment at local hospitals	1	18	28	47
Workplace injuries or illnesses requiring medevac	0	0	0	0
Recordable occupational injuries	24	2	9	35
Non-occupational injuries	24	0	5	29
Notifications to health authorities for occurrence of communicable illnesses/diseases	12	4	1	17
Percentage of worked who have signed the Worker Code of Conduct (launched May 2019)	59%	155%	115%	110%
Percentage of workers who have completed Cultural Awareness Training	84%	76%	126%	95%
Community health related concerns or complaints	0	1	1	2
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data				

8.4. Community Reporting

There was an average 9% increase in ER visits to KGH in 2019, compared to 2018, with much of the increase occurring in Q2 and Q3 (Table 8-2). By contrast ER visits to the MMH decreased in 2019 compared to 2018, due to the opening of several new primary care clinics in Terrace. While Terrace received 12 new physicians between 2018 and 2019, Kitimat only received one new physician (PNW Division of Family Practice 2019). Throughout 2019, KGH had a much lower proportion of unscheduled ER visits than did MMH, suggesting that more people were using KGH for primary care needs. There was a notable increase in the proportion of KGH ER patients from outside of the Northern Health Service Delivery Area (NHSDA) in Q3 and Q4, compared to Q2, with 317 of the patients visiting the ER in 2019 Q4 being from outside the NHSDA (Table 8-2). This increase correlates with and increase in the number of non-local workers lodged in Kitimat working on the LNG Canada project and other projects in the area, suggesting that some non-local workers may be visiting KGH for primary care needs. However, data for unscheduled visits, and patient locality was not available prior to 2019, making it difficult to determine the extent to which trends may be correlated with the Project, rather than seasonally related.

Table 8-2   Community Health Community Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Sum/ Average [in %]
KGH Emergency Room (ER) Visits, [%YOY change]	3,780 [21%]	3,507 [15%]	3,169 [-8%]	10,456 [9%]
MMH ER Visits, [%YOY change]	6,238 [-13%]	6,060 [-17%]	5,533 [-21%]	17,831 [-17%]
KGH % Unscheduled ER visits, 2019	63%	65%	69%	66%
MMH % Unscheduled ER visits, 2019	84%	83%	85%	84%
KGH % of Patient Home HSDA Outside the Northern Health Authority (NHA), 2019	6%	12%	10%	9%
MMH % of Patient Home HSDA Outside the NHA, 2019	6%	8%	6%	7%
SOURCE: Northern Health 2020				

Table 8-3 and Table 8-4 present the number of and percentage of quarterly changes in founded crime incidents under the Canadian Criminal Code and other federal statutes in 2019 for Kitimat and Terrace respectively. In both communities, the overall incidences of crime increased in Q2 over Q1, and Q3 over Q2, and then declined between Q3 and Q4. This reflects a seasonal pattern of crime incidences, which has also been evident over recent years.

From 2017 to 2019 the RCMP have implemented changes in how incidents are defined, generally to reflect a victim-centered approach to crime reporting. This has resulted in the elimination of the category of "unsubstantiated" incidents, and a broader definition of what constitutes a "founded[1]" incident. These changes have resulted in increases in the proportion of incidents recorded as "founded". Because of these reporting changes, it is not possible to compare crime incident levels in 2019 with previous years.

Table 8-3   Crime Incidents Under Canadian Criminal Code & other Federal Statutes (Number of Incidents), Kitimat, 2019

	Q1	Q2	Q3	Q4
Total Incidents	184	262	285	259
Property Crime Incidents	41	69	101	108
Violent Crime Incidents	48	73	71	66
Motor Vehicle Crime Incidents	27	45	36	17
Other Crime Incidents	68	75	77	68
Sex Crime Incidents	8	8	7	8
SOURCE: RCMP 2020				

Table 8-4 **Crime incidents under Canadian Criminal Code & other Federal Statutes (Number of Incidents), Terrace, 2019**

	Q1	Q2	Q3	Q4
Total Crime Incidents	1,031	1,213	1,264	1,144
Property Crime Incidents	412	513	526	491
Violent Crime Incidents	153	210	229	177
Motor Vehicle Crime Incidents	61	85	99	89
Other Crime Incidents	405	405	413	387
Sex Crime Incidents	15	28	18	17
SOURCE: RCMP 2020				

8.5. SMR Feedback

The Community Health SMR met in July 2019, November 2019, and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following issues and topics were discussed during these meetings:

- Inclusion of social determinants as part of community health monitoring metrics
- Attrition of health service providers
- Kitselas community-centered Health Impact Assessment framework shared by Janis Shandro
- Use of proxy indicators to support monitoring of alcohol, drug use, and related mental health issues
- Qualitative changes in crime incidences in Terrace, with increased property crime
- Insecurity related to the increased presence of unfamiliar faces within communities
- Adequacy of resourcing and impact on staff for social housing, shelters, and related support programs in the face of increased service demand
- Clients accessing homeless support services demonstrating increasing violence towards staff and volunteers, raising concerns for security and ability to continue service delivery
- Adequacy of resourcing of health and safety workers in the region, including first responders, fire services, ambulance services, and police services
- Additional mental health and cultural sensitivity training needs of those dealing with high needs individuals
- Demand for health services by non-resident Project workers
- Wage parity between service agencies
- Vulnerability of Indigenous women and children
- Need for community-based detox and treatment centres, and other resources to support families impacted by drug use, mental health issues, and violence.
- Planning and preparation for epidemics

During SMR meetings LNG Canada project staff answered questions related to the Project's policies and programs with respect to management of impacts to community health and health services. These included the Project's policy that non-resident workers access specialist health services (e.g., dentist/optometrist) at home when off-rotation, as these specialist services are not provided at site or at the worker accommodations. The Project also expanded its community health reporting metrics in response to SMR feedback. Overall, the Project received two community health related concerns/ complaints in 2019.

During the 2019 Q4 SMR meeting, the BC government provided an overview of how policing and ambulance resources are allocated in British Columbia. It was clarified that any requests for information or services related to the RCMP specifically should be addressed directly to the RCMP or through a follow-up discussion with the Ministry of Public Safety and Solicitor General. At the same meeting, Northern Health provided SMR participants with an overview of programs available to address substance use, including an overview of the Intensive Case Management team approach.

Appendix C summarizes follow-up actions that were developed during the SMR meetings, including those identified for LNG Canada, local government, service providers, and provincial agencies. No additional mitigation measures were identified for LNG Canada within the community health SMR meetings. Appendix D summarizes items identified for follow up by the provincial government.

8.6. Discussion

In 2019, The Project limited direct demand on local health facilities, with workplace related medical incidents accounting for less than 1% of the ER visits at KGH. The number of ER visits at KGH increased by 9% in 2019 compared to 2018, with a much higher proportion of unscheduled visits, compared to MMH, and a higher proportion of patients from outside the NHA. These ER usage patterns suggest that nonlocal workers, potentially including those from the LNG Canada project, were visiting the KGH ER for non-workplace related issues. ER visits to MMH declined substantially in 2019, compared to 2018, attributed to the opening of several primary care clinics in Terrace.

Induced effects of regional economic development have affected community health determinants in 2019, particularly the scarcity of affordable housing. This has been evidenced in the ongoing high demand for emergency and temporary housing, particularly in Terrace. Feedback from the SMR meeting indicated that there is ongoing concern related to service availability in the region, including RCMP and social support services, especially with respect to supporting high-needs individuals. Housing affordability has also affected the availability of health-related human resources, including front-line ambulance staff and social support workers, which continues to be an issue of concern for communities in the Kitimat and Terrace region.

The phenomena of resource development projects with transient workforces having adverse social interactions with residents of nearby communities, particularly vulnerable groups such as women and youth, has been extensively researched in Canada and abroad (Brubacker and Associates 2002, Firelight Group et al. 2017, MacDonald and Rowland 2002, Shandro et al. 2014). However, a review of historical crime incident rates in the Kitimat-Terrace area from 2010 to 2018 does not show a positive correlation between development activity and crime rates. LNG Canada takes the safety and wellbeing of vulnerable groups seriously and continues its commitment to ensure all workers sign the Worker Code of Conduct outlining respectful behaviours in the community both on and off shift, with consequence management as appropriate. The Project also supports the work of community organizations who provide essential services to vulnerable populations, while continuing to monitor the situation experienced by surrounding communities and service providers for identification of challenges and opportunities.

Recent changes in RCMP crime reporting protocols prevent the comparison of the magnitude of crime incidences between 2018 and 2019. However, SMR feedback provided by the RCMP, and other SMR participants indicate an increase in certain crime types, including property crimes and drug offenses, particularly in Terrace. Despite mitigation efforts, a portion of incidents may be related to the LNG Canada Project workforce and/or workers from other area projects. Privacy laws limit the ability of RCMP to attribute any offsite incidents directly to the Project workforce and it was acknowledged that the Project is unable to monitor the behavior of its workforce while off shift.

9. SMP Report—Community Amenities

9.1. Introduction

The Community Amenities SMP identifies actions to manage potential Project-related demands on community and land-based recreation resources and facilities. The plan summarizes how mitigations identified in the EAC application will be implemented, monitored, and measured for effectiveness. The plan also outlines objectives of mitigations, identifies parties responsible for mitigations, and the timeframes during which the mitigation measures will be implemented.

Objectives of the plan are to:

- Minimize project-related demand on community and land-based recreation resources
- Encourage the responsible use of existing community and land-based recreation resources by the project-related workforce
- Engage with Aboriginal Groups, general public, recreation providers and external organizations, to assess and monitor potential change in demand on recreation resources

Appendix B provides a list of stakeholders who participated in the Community Amenities working group meetings, including virtual participants.

9.2. Project Reporting

In 2019 the Project implemented the following measures to limit its effects on community amenities:

- Recreational facilities included in workforce accommodation centres
- Limited the number of employees relocated to Kitimat with accompanying family
- All workers required to complete Code of Conduct and cultural awareness training
- Provide stakeholders with information on anticipated changes in resident populations attributable to the Project

For most of 2019, the non-resident workforce stayed at Sitka Lodge or Crossroads Lodge. These facilities provide their own recreational amenities. For instance, Sitka Lodge has a TV and games room, weight room with light equipment, cardio rooms, 24-hour fitness centres, and women-only gym. All rooms have cable tv and wireless high-speed internet. Sitka Lodge hired a recreational coordinator to set up activities that support worker interests (dog walks, dragon boating, hikes).

By the end of 2019, 31 staff had permanently relocated to Kitimat, accounting for approximately 1% of the total workforce. This number of individuals (plus dependents) is unlikely to have adversely affected the provision of community amenities in Kitimat.

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Table 9-1   **Amenities Project Reporting**

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Max
Local (resident) workforce	339	520	566	566
Project non-local (resident) workforce staying at Open Lodges and area hotels (peak beds)	623	1,111	1,550	1,550
Project staff re-located to Kitimat, presently staying in company-provided housing	25	28	31	31
Accompanying adults of relocated Project staff	10	7	11	11
Accompanying School-aged children of relocated Project staff	9	8	12	12
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data				

9.3. Community Reporting

In 2019, there was a slight decrease in recreational facility attendance in Kitimat (Riverlodge Centre, Sam Lindsay Aquatic Centre and Tamitik Sports Complex), despite a 12% increase in hours at the Sam Lindsay Aquatic Centre and Tamitik Sports Complex during this period. Similarly, in Terrace, the number of fitness program users decreased 4% in 2019 compared to 2018. Part of the decrease in Kitimat facility attendance was due to the Terrace Aquatic Centre being closed for a period of time in 2018 Q4, which increased activity in Kitimat facilities. Between the 2018 and 2019 camping season, the number of total campers increased significantly for Radley Park (Kitimat) but fell slightly for Ferry Island (Terrace) (Table 9-2).

Table 9-2   **Amenities Community Reporting**

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD [Sum]
Riverlodge Community Program Attendance, [%YOY change][1]	1,733 [-13%]	7,310 [0.4%]	1,284 [-32%]	10,327 [-7%]
Sam Lindsay Aquatic Centre + Tamitik Complex Attendance, [%YOY change][2]	20,644 [-20%]	14,035 [-2%]	28,433 [9%]	63,112 [-5%]
Sportsplex Fitness Classes Attendance, [%YOY change][4]	N/A	1,033 [23%]	1,852 [-14%]	2,885 [-4%]
Radley Park Total Campers, [%YOY change][5]	1,724 [150%]	5,564 [20%]	N/A	7,288 [36%]
Ferry Island Total Campers, [%YOY change][6]	N/A	4,013 [-6%]	N/A	4,013 [-6%]
SOURCES: [1,2,3,5] DOK 2020c, [4,6] COT 2020b				

9.4. SMR Feedback

The Community Amenities SMR met in July 2019 and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following issues and topics were discussed during these meetings:

- Availability of gender-specific amenities in open lodges and gender balance on site/ in work camps
- Ban on Kitimat River riverside camping
- Communities' desire to increase use of currently under-utilized spaces
- Additional Parks Department data to be considered for proxy indicators of impacts

During SMR meetings, LNG Canada project staff answered questions related to the Project's gender balance on site/in work camps. The Project stated that in February 2020 the workforce was 10% female-identifying and shared that female-only gyms and other gender-specific amenities are provided at open lodges. Community amenity providers generally indicated that they have sufficient capacity to meet demands, with amenity managers from both communities indicating interest in having additional usage by the Project.

Appendix C describes follow-up actions that were identified during the SMR meetings, including those assigned to LNG Canada, local government, service providers, and provincial agencies. No additional mitigation measures/follow-up items were identified within the community amenities SMR meetings.

9.5. Discussion

The availability of recreation facilities at Sitka Lodge and Crossroads Lodge, where most non-resident Project workers were housed during 2019, resulted in limited Project-related demand for community fitness facilities. Between 2018 and 2019, community amenities in the region experienced declines in usage. The trends in lower community amenities usage rates may also be due to seasonal effects, reduced operating hours, and some individuals having less leisure time due to work obligations. Community amenity providers have expressed a desire for the Project and its workforce to increase use of currently under-utilized spaces. In 2019, there were no adaptive management measures undertaken related to the community amenities SMP.

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10. SMP Report—Education

10.1. Introduction

The Education SMP identifies actions that manage effects on educational services (elementary, middle and high school). These actions consist of engaging with educational organizations to plan for increased demand related to the project workforce. This SMP summarizes how mitigations identified in the EAC application will be implemented, monitored, and measured for effectiveness. This plan also outlines objectives of mitigations, identifies parties responsible for mitigations, and the timeframes during which the mitigation measures will be implemented.

The objective of the plan is to:

- Provide information regarding potential increase in demand for local educational services

Appendix B provides a list of stakeholders who participated in the Education working group meetings, including virtual participants.

10.2. Context

Student Enrolment

K-12 enrolment from 2010/2011 to 2019/20 within the Coast Mountain School District (CMSD) has been in decline, with no correlation to major project construction activity (Figure 10-1). However, fall program enrolment at the University of Northern BC (UNBC) was lower from 2013 to 2015, compared to the previous and following years, a period correlating with major project activity in the region, suggesting that there may be an inverse correlation between periods of greater employment opportunity and post-secondary enrollment. In recent years, college enrolment has picked up again, reaching a high of 142 students enrolled in the 2019 fall semester (Figure 10-2).
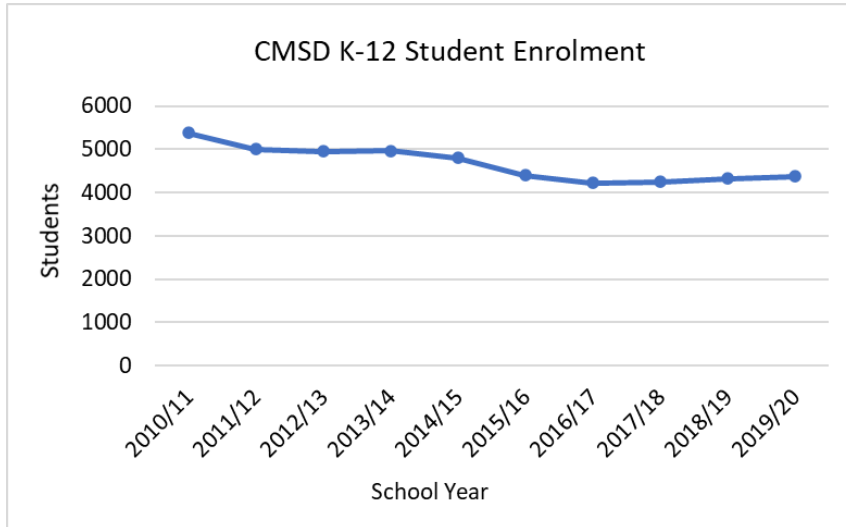
SOURCE: Ministry of Education 2020

Figure 10-1   CMSD Student Enrolment
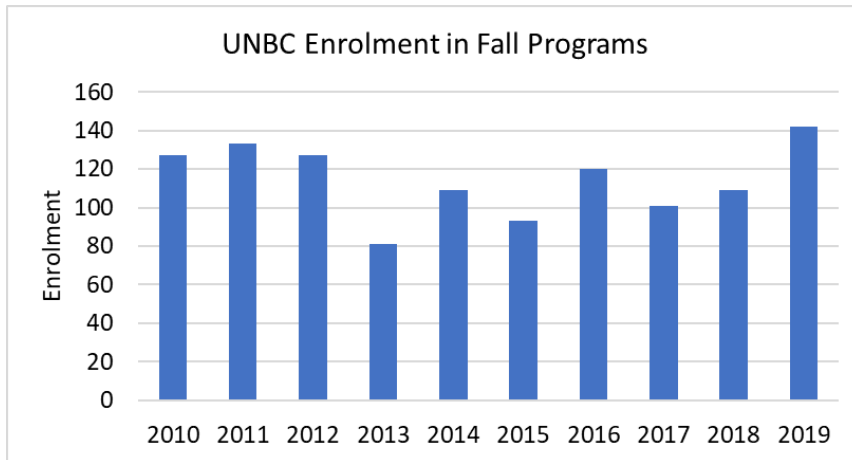
SOURCE: UNBC 2020

Figure 10-2   UNBC Fall Enrolment

Childcare

In 2013, there were 10 licensed childcare facilities, and six other pre-kindergarten facilities in the Kitimat and Terrace area (LNG Canada 2014). At the time, these facilities were at or over capacity. From 2014 to 2020, 18 new licensed daycare facilities were added in Kitimat and Terrace (LNG Canada 2014; NHPHP 2020). Table 10-1 summarizes the current number of licensed daycare facilities and spaces within the communities.

Table 10-1   Licensed Childcare Spaces

Community	Licensed Facilities	Total Spaces
Kitimat	7	156
Kitamaat Village	1	28
Terrace	23	570
Thornhill	4	105
Total	**35**	**859**
SOURCE: NHPHP 2020		

In 2019, only one out of six childcare facilities in Kitimat had vacancy in one or more age categories, while in Terrace 7 out of 23 childcare facilities in Terrace had vacancy in one or more age categories (Government of BC 2020). There are no License-Not-Required (LNR) childcare providers operating in the Kitimat-Terrace area.

10.3. Project Reporting

In 2019 the Project implemented the following measures to limit its effects on education facilities:

- Provide stakeholders with information on anticipated changes in resident populations attributable to the Project to facilitate planning for incremental demand for education services
- Limit the number of employees relocated to Kitimat with accompanying family
- All workers required to complete Code of Conduct and cultural awareness training

In 2019, most of the Project workforce was either hired locally or works on a rotational basis, and do not reside permanently in Kitimat or Terrace. By the end of 2019, 31 Project staff had relocated to Kitimat, along with 11 accompanying adults, and 12 school-aged children, which would account for approximately 0.3% of total K-12 enrollment at the CMSD (Table 10-2). The Project has not received any education-related concerns or complaints.

Table 10-2   Education Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4	2019 YTD Max
Local (resident) workforce	339	520	566	566
Project non-local (resident) workforce staying at Open Lodges and area hotels (peak beds)	623	1,111	1,550	1,550
Project staff re-located to Kitimat, presently staying in company-provided housing	25	28	31	31
Accompanying adults of relocated Project staff	10	7	11	11
Accompanying School-aged children of relocated Project staff	9	8	12	12
SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data				

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10.4. Community Reporting

In 2019, the CMSD reported no large shifts in student enrolment, with enrolment changes reflecting natural population change (Bath 2020). The CMSD forecasts a total 0.5% increase in K-12 student enrolment over the next 10 years (Ministry of Education 2020). Between 2018 and 2019, enrolment in University of Northern BC (UNBC) Terrace Campus programs increased 16% (includes Bachelor/ Grad programs), with the largest increase in spring semester enrolment (Q2).

During 2019, there was a shortage of childcare spaces in the region. A recent childcare needs survey and assessment undertaken for the City of Terrace found that there is unmet demand for approximately 900 licensed childcare spaces, with the largest categories of unmet demand being children under three years of age and school-aged children (BRA 2020b). Childcare staff shortages have been identified as a limitation in the region and daycare providers in both Kitimat and Terrace have not opened all licensed spaces to accommodate all the children on the waiting lists due to staff shortages (BRA 2020b). The shortage of qualified early childcare educator (ECE) staff is a province-wide issue, however added challenges in the region include competing with higher wages paid in industry (Hemmy 2020).

10.5. SMR Feedback

The Education SMR met in July 2019 and February 2020 to review Project and community monitoring data, discuss emerging issues and concerns, and identify actions. The following issues and topics were discussed during these meetings:

- Difficulty in finding childcare in Terrace due to limited spaces
- Shortage of early childcare educators in town
- Opportunity to receive Union of BC Municipalities (UBCM) funding to do a childcare planning report/needs assessment
- Grant applications for daycare and early childhood education spaces/training including a proposed 24/7 daycare in Kitimat
- Decline in training opportunities/student registrations in post-secondary/upgrading programs
- Lower completion rates of post-secondary programs as adult students are working on the Project
- Opportunity for dual-credit high school/college programming and delivering post-secondary training in rural and remote communities with mobile training units
- DOK, Tamitik Status of Women and the Haisla Nation have applied for provincial funding to provide overnight care services in the community (i.e., to support families with shift work)

During SMR meetings LNG Canada project staff answered queries regarding the number of school-aged children that would enter the education system due to relocating staff, as well as Project-funded training programs. It was indicated that while there will likely be a nominal increase in school aged children moving into the region during Project construction, most of the individuals who have been relocating into the region do not have school-aged children.

With respect to Project training, LNG Canada has funded and piloted the YOUR PLACE program through the WBF non-profit society, in partnership with KVI, offering four-week safety training and exposure to several trades including carpentry and pipefitting.

Appendix C describes follow-up actions that were identified during the SMR meetings, including those assigned to LNG Canada, local government, service providers, and provincial agencies. No additional mitigation measures were identified for LNG Canada within the education SMR meetings.

Appendix D summarizes items identified by the Project team for follow-up including updates regarding early childhood education spaces/training grant applications (e.g., Haisla spaces in Kitamaat Village). Additional follow up items identified by Coast Mountain College include connecting with Ministry of Children & Family Development to discuss a dual-credit program.

10.6. Discussion

In 2019, the Project had limited the number of employees relocating to Kitimat with accompanying family, thus the Project-had low direct effects on daycare facilities and K-12 educational services. The Project will continue to monitor the number of employees and accompanied dependents relocating to Kitimat and will share this information with education providers. No additional Project mitigation measures were identified.

Community data and SMR feedback indicated that there was little change in demand for K-12 education and the small increase was within the capacity of the CMSD to accommodate. The cost and availability of housing in the region, as well as the relatively low wages paid to ECEs were identified as issues limiting the hiring and retention of ECE staff.

Feedback and data regarding post-secondary training was mixed. On one hand, SMR participants indicated that there was a decline in post-secondary upgrading programs, and lower completion rates, as more adult students are dropping out in favor of employment, including Project employment. However, the overall enrollment at the UNBC Terrace campus in 2019 was 16% higher than for 2018, indicating growing interest in post-secondary education in the region. Several ideas and initiatives were explored at SMR meetings in regard to post-secondary education, including options for dual-credit high school/college programming. The Project will continue to support programs related to safety, trades, and vocational training.

The shortage of childcare space within the region was discussed at the Education SMR meetings. As indicated through its recent survey, as well as SMR feedback, Terrace has a substantial shortage of licensed childcare spaces, and childcare providers in both Kitimat and Terrace are unable to hire and retain sufficient qualified ECEs to meet their needs. It is anticipated that some of the additional demand for childcare spaces has resulted from individuals taking up Project-related employment, while other demands may be related to increased availability and uptake of employment opportunities in the region due to generalized economic growth. Provincially supported childhood education spaces and training grants were discussed in SMR meetings, as means to address the childcare space shortfall in the region.

11. SMP Report—Utilities

11.1. Introduction

The Municipal Utilities SMP identifies actions to minimize project-related demands on municipal utilities (sewage, waste, water). This plan summarizes how mitigations under the Plan will be implemented and monitored to ensure that the mitigations identified in the Application are effective in managing predicted effects.

Objectives of the plan are to:

- Manage the potential increase in demand for potable water and wastewater treatment within local communities
- Minimize the potential increase in pressure on landfills and recycling programs within the Regional District of Kitimat-Stikine

Appendix B provides a list of stakeholders who participated in the Utilities working group meetings, including virtual participants.

11.2. Project Reporting

In 2019, the Project implemented a waste management plan, to manage the disposal of solid and liquid waste. The Project site and office receive potable water shipped by truck and has periodic pump out and disposal of wastewater from its septic system to the Forceman Ridge landfill. Non-hazardous solid waste is removed by truck and disposed of at Forceman Ridge and hazardous solid and liquid waste is disposed of at the Terrapure waste management facility in Prince George. The workforce accommodations centres are responsible for their own waste disposal and purchase potable water and wastewater disposal services from the District of Kitimat. Once operational, the Project's Cedar Valley Lodge worker village will be self-sufficient with its own potable water and wastewater treatment systems. The Project began tracking the volume/weight of waste sent to the Forceman Ridge landfill in December 2019 (Table 11-1). There were no utilities related concerns/ complaints in 2019.

Table 11-1   Utilities Project Reporting

Indicator	2019 Q2	2019 Q3	2019 Q4
Volume/weight of hazardous liquids sent to Terrapure, Prince George and Forceman Ridge landfill (litres)	-	-	5,750
Volume/weight of hazardous solids sent to Terrapure, Prince George and Forceman Ridge landfill (m^3)	-	-	12,695
Volume/weight of non-hazardous solids sent to Forceman Ridge landfill (m^3)	-	-	1,677
Number of municipal utility related concerns or complaints	-	-	0
NOTE: - not reported SOURCES: CIMP Reports (JFJV); LNGC-reported CLISMP data			

Sitka Lodge, operated by Civeo, and Crossroads Lodge operated by Horizon North, served as the main worker accommodation centres used by the Project during 2019. Sitka Lodge connects directly to the DOK potable water treatment system, which is set up for a large population. The cost to connect to the town's infrastructure is $300/room. Waste management measures are in place, such as separating waste trains and implementing recycling systems, as well as donating cans and bottles to the local SPCA. In addition, Civeo has installed a 750-gallon surge tank for the sewage component to control the release of peak volumes and accommodate two peak surges (Greaves 2019). Similarly, the Crossroads Lodge facility receives its potable water supply from the city water system. Solid waste is bin stored and hauled to the local refuse centre for disposal. Further waste reduction options are being explored, including the breakdown of solid organics to clean effluent, artificial intelligence waste monitoring, and reduced plastics. During the start of camp operation, Crossroads Lodge used a store and haul program for wastewater treatment; however, it has since transitioned to the city wastewater sewage system (Larose 2019).

11.3. Community Reporting

Table 11-2 summarizes potable water daily consumption and wastewater flow for both the District of Kitimat and the City of Terrace in 2019, as well as waste disposal at the Forceman Ridge landfill. The table also shows the change in demand from 2018 to 2019.

In Kitimat, there was no change in average daily potable water consumption from 2018 to 2019 but peak demand increased by 13% from 11,735 to 13,249 m^3/day, both of which remain below the system rated capacity of 15,142 m^3/day. Daily wastewater flow increased by 8%, with a portion of this increased demand related to the service requirements of the open lodge accommodation centres. While there was a modest increase in average daily potable water consumption in Terrace, peak water consumption, and average and peak wastewater flow declined between 2018 and 2019.

Over 2019, the Forceman Ridge Landfill received 18,500 tonnes of waste (including all material types such as refuse from Thornhill Transfer Station, clean wood, yard and garden, industrial refuse, septage), more than double the waste disposed in 2018 (RDKS 2020). In 2019 industrial waste accounted for approximately 30% (5,573 tonnes) of the waste disposed at Forceman Ridge, with garbage and other waste accounting for the balance. Industrial waste disposed at Forceman Ridge increased from 1,198 tonnes in 2018 to approximately 5,574 tonnes in 2019, indicating that in 2019 the Project accounted for most of the increase in industrial waste disposal. Project disposal at Forceman Ridge (recorded in Q4 only) accounted for less than 1% of the landfill's capacity of over 1.5 million m^3. The Forceman Ridge landfill has an estimated lifespan of 100 years (RDKS 2020).

Table 11-2   Utilities Community Reporting

Indicator	2019
Kitimat Potable Water Average Daily Demand in m^3/day, [%YOY change][1]	6,814 [0%]
Kitimat Potable Water Peak Day Demand in m^3/day, [%YOY change][2]	13,249 [13%]
Kitimat Daily Wastewater Flow in m^3/day, [%YOY change][3]	5,300 [8%]
Kitimat Peak Daily Flow in m^3/day, [%YOY change][4]	14,385 [0%]
Terrace Potable Water Average Daily Demand in m^3/day, [%YOY change][6]	8,087 [4%]
Terrace Potable Water Peak Day Demand in m^3/day, [%YOY change][7]	13,222 [-13%]
Terrace Daily Wastewater Flow in m^3/day, [%YOY change][8]	3,937 [-2%]
Terrace Peak Daily Wastewater Flow in m^3/day, [%YOY change][9]	8,437 [-8%]
Forceman Ridge Landfill in tonnes/year, [%YOY change][10]	18,500 [107%]
SOURCES: [1,2,3,4,5] DOK 2020b, [6,7,8,9] COT 2020a, [10] RDKS 2020	

11.4. SMR Feedback

The Utilities SMR met in July 2019 and February 2020 to review Q2 2019 and Q42019 Project and community monitoring data, discuss emerging issues and concerns, and identify actions. At the February 2020 meeting, SMR participants questioned what makes up the "hazardous" and "non-hazardous" materials identified in Project reporting. The Project sent hazardous liquid waste (waste oil), and hazardous solids (including but not limited to oily rags, filters, and other construction waste) to the Terrapure facility in Prince George. Non-hazardous solids, including domestic waste, non-hazardous construction waste, and wood were disposed of at Forceman Ridge. Recyclables, like cardboard and metals were disposed of at Do It Yourself Terrace and at ABC Metals.

During the February 2020 SMR meetings the City of Terrace noted that improved technology for transporting water and a more environmentally conscious community are likely positively impacting consumption trends, with future potable water use and wastewater flow projected to not increase proportionally with population changes.

Appendix C describes follow-up actions that were identified during the February SMR meeting, including those assigned to LNG Canada, local government, service providers, and provincial agencies. No action items were identified during the July SMR meeting.

No additional Project-specific mitigation measures/follow-up items were identified.

11.5. Discussion

In 2019 there was a notable increase in potable water consumption and wastewater treatment volume within the District of Kitimat. The Project indirectly contributed to this change in demand due to the potable water consumption and wastewater disposal by the Project workforce residing at Sitka Lodge and Crossroads Lodge. These facilities pay service fees for utilities consumption. When the Project's own Cedar Valley Lodge worker village is completed later in 2020, the facility will be self-sufficient in both potable water supply and wastewater treatment, which is expected to lower the demand on the municipal systems. In Terrace, slight increases in average daily flow for potable water in 2019 and more substantial decreases in peak daily demand could be attributed to population change and/or improvements in technology used to transport water, and a more environmentally conscious community.

The Project's disposal of solid waste in December 2019 accounted for less than 1% of the total capacity at the Forceman Ridge landfill site, which is permitted to accept industrial waste. The Project will continue to mitigate its waste disposal though the use of its waste management plan.

12. Summary

Socio-economic monitoring data has shown, that, in its first year of construction, the mitigation and adaptive management measures implemented by the LNG Canada project have limited the direct effects of Project construction on community infrastructure and services in the Kitimat and Terrace Area. It is also evident that the overall increase in economic activity occurring in the Kitimat and Terrace region, associated with the Project and other projects, has affected both the supply and demand for some services. The data shows that some infrastructure and service areas are more sensitive to short-term economic trends and changes in temporary population, while other areas are more stable and likely reflective of overall population change. In several instances, such as air traffic or utilities, increases in demand have not had a material impact on available capacity of services and infrastructure. However, in other areas, such as housing, there have been substantial changes in cost and availability despite limited Project demand. Feedback from some service providers suggests ongoing attrition of staff to higher paying Project-related opportunities with challenges attracting and backfilling positions due to high housing costs.

The local housing market and demand for housing support services are experiencing the most notable changes, driven not by direct Project demand for housing, but by a combination of speculative behaviours and housing stock conditions likely resulting from a history of industrial development and real estate boom / bust cycles. While the Project has taken care to house its non-local workforce in Kitimat open lodge workforce accommodations and has not paid LOAs, the availability of rental units has declined while average rents have increased in both Kitimat and Terrace. All indicators suggest increasing demand for affordable and social housing considerably exceeds available supply in both Kitimat and Terrace.

The movement of passengers through Northwest Regional Airport, which increased 21% YOY from 2018, reflects the increased economic activity in the Kitimat and Terrace region. While the Project accounted for 28% of the increase in terminal traffic, other projects and induced economic activity are also contributing to the increased movement of persons in and out of the Kitimat and Terrace region.

There were similarities and differences in the socio-economic changes experienced in Terrace and Kitimat from 2018 to 2019. Both communities experienced a notable increase in calls to the RCMP, elevated demand for supportive housing and social services, and tightening markets for rental accommodations. Terrace experienced a substantial increase in calls to its Fire Department, which increased 20% over 2018, compared to Kitimat, where calls to the Kitimat Fire and Ambulance Service increased only 3% over 2018. It is possible that variability in the manner by which emergency response data is coded and collected may account for some of the differences. By contrast, Kitimat experienced a 9% increase in the number of ER visits to the Kitimat General Hospital, while ER visits to Mills Memorial Hospital in Terrace declined from 2018 to 2019. Kitimat also experienced an increase in potable water consumption and sewage treatment in 2018, in contrast to Terrace, which experienced only modest change in demand for these services.

A combination of factors may explain the similarities and differences in how Kitimat and Terrace are experiencing changes in demand for infrastructure and services. The cost and demand for market and rental housing in both communities is influenced by market forces, while the higher level of economic activity occurring in both communities has also opened up job opportunities and the resulting tightening of labour availability has contributed to capacity constraints in sectors such as transportation, daycare, and social services. The majority of the temporary construction workforces of the LNG Canada project, and other projects, are housed in Kitimat, which likely explains the increase in demand for potable water, wastewater treatment, and scheduled (i.e., non-urgent) calls to the ER department of the local hospital. A large proportion of the temporary workforce in the Kitimat region both live and work in highly managed environments, which may explain why there has been only a modest increase in demand for fire and ambulance services despite the large increase in the temporary population. In contrast, because of its position as the regional commercial hub, and more extensive provision of social support services (particularly social housing), Terrace may be experiencing a disproportionate increase in demands related to the induced and indirect economic activity. Baseline socio-economic conditions, including average wage levels, crime rates, community resiliency, and other factors also likely contribute to the differences in how the two communities have responded to the rapid economic development that occurred from 2018 to 2019.

Looking towards the next several years of construction activities, the LNG Canada Project will continue to bring economic benefits to the region while continuing to manage its direct effects on community level infrastructure and services through implementation of effective mitigation measures and monitoring efforts, and adaptive management. Through its implementation of the CLISMP and the SMR, LNG Canada remains committed to engaging and working with community service providers, local governments, First Nations and provincial government agencies to understand how economic developments are more broadly and indirectly affecting the supply and demand for infrastructure and services in the region, and to help identify potential measures for managing such changes.

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APPENDICES

Appendix Subtitle

Appendix A   CLISMP METRICS

Table A-1   **Project Reporting Metrics**

SMP	Data Provider	Project Metrics
Housing & Accommodations	LNG Canada, JFJV	Local (resident) workforce
		Project non-local (non-resident) workforce staying at Open Lodges (peak beds)
		Project non-resident workforce temporarily staying at Kitimat hotels or lodges (peak beds)
		Project non-resident workforce temporarily staying at Terrace hotels or lodges (peak beds)
		Project staff re-located to Kitimat, presently staying in company-provided housing
		Accompanying adults of relocated Project staff
		Accompanying School-aged children of relocated Project staff
		Number of housing related concerns or complaints (including hotel-related)
Traffic	LNG Canada, JFJV	Number of daily Project bus trips from YXT to Kitimat [avg. passengers /day]
		Number of daily Project bus trips from Terrace Park & Ride to Kitimat [avg. passengers /day]
		Number of daily Project bus trips from Kitimat and Kitimaat Village Park & Ride to Site [avg. passengers /day]
		Number of road transport-related incidents and near misses
		Number of Project personnel on commercial flights through airport per month
		Number of Project personnel on charter flights
		Provision of project transportation plans to transportation authorities
		Notifications to service providers and the public regarding scheduling of transportation equipment
		Number of meeting with transportation authorities on traffic management, congestion and road safety
		Number of traffic related concerns or complaints

SMP	Data Provider	Project Metrics
Emergency Response	LNG Canada, JFJV	Ambulance service calls to site
		Fire department service calls to site
		RCMP service calls to site
		Meetings held to coordinate and plan emergency response
		Emergency response related concerns or complaints
		Notifications to health authorities for occurrence of communicable illnesses/diseases
		Percentage of worked who have signed the Worker Code of Conduct (launched May 2019)
		Percentage of workers who have completed Cultural Awareness Training
Community Health	LNG Canada, JFJV	Workplace occupational injuries and illnesses requiring treatment at local hospitals
		Workplace non-occupational injuries and illnesses requiring treatment at local hospitals
		Workplace injuries or illnesses requiring medevac
		Recordable occupational injuries
		Recordable non-occupational injuries
		Notifications to health authorities for occurrence of communicable illnesses/diseases
		Percentage of worked who have signed the Worker Code of Conduct (launched May 2019)
		Percentage of workers who have completed Cultural Awareness Training
		Community health related concerns or complaints
Community Amenities & Education	LNG Canada, JFJV	Local (resident) workforce
		Project non-local (resident) workforce staying at Open Lodges (peak beds)
		Project staff re-located to Kitimat, presently staying in company-provided housing
		Accompanying adults of relocated Project staff
		Accompanying School-aged children of relocated Project staff
Utilities	LNG Canada, JFJV	Volume/weight of hazardous liquids sent to Forceman Ridge landfill (litres)
		Volume/weight of hazardous solids sent to Forceman Ridge landfill (cubic metres)
		Volume/weight of non-hazardous solids sent to Forceman Ridge landfill (cubic yards)
		Influent and effluent flow rates from Cedar Valley Lodge wastewater treatment system
		Number of municipal utility related concerns or complaints

Table A-2　　　Community Reporting Metrics

SMP	Data Provider	Community Data (Frequency)
Housing & Accommodations	Hotel/ motels (STR Global)	Regional hotel/ motel occupancy rates (monthly)
	Airbnb postings	Range of units available (quarterly) and occupancy rates (daily)
	BC Northern Board of Real Estate (BCNREB); Multiple Listing Service; realtors	Average Residential Real Estate Prices and Units Sold (condos, houses) (monthly)
	Kitimat apartment landlords (Hillcrest, Kitimat Apartments, Oceanview, Kuldo Suites, Midtown Apartments); Facebook & Kijiji postings	Rental accommodations vacancy rate and average rental cost (monthly)
	Sitka Lodge (Civeo) Crossroads Lodge (Horizon North)	Open lodge occupancy rate (monthly) Maximum capacity (monthly)
	Tamitik Status of Women (TSW); Ksan House Society.	% of nights full/ average shelter occupancy (monthly) # of bed-stays and # of turn-aways (monthly)
	BC Housing; M'akola Housing Society.	Affordable housing units occupied (monthly) Wait lists for affordable/supportive housing (monthly) Social housing unit count (annual)
Traffic	YXT	Terminal Volume (Commercial Passengers) (monthly)
	BC MOTI	Monthly Average Weekday Traffic (MAWDT) (monthly)
	Insurance Corporation of BC (ICBC)	Traffic Collisions Reported (monthly)
Emergency Response	RCMP North District	Total calls for service (monthly) Number of founded criminal incidents by crime type (monthly)
	Kitimat Fire and Ambulance Services (KFAS); Terrace Fire Department, Thornhill Fire Department	Number of firefighter response incidents (monthly)
	KFAS; BCEHS	Number of ambulance/ medical related incidents (monthly)
	Statistics Canada	Crime rate (annual) Criminal Code of Canada (CCC) offences (annual)

SMP	Data Provider	Community Data (Frequency)
Community Amenities	District of Kitimat (DOK); City of Terrace (COT)	Community program attendance (monthly) Recreation facility attendance and hours of operation (monthly) Fitness program attendance (monthly)
Education	Kitimat Community Development Centre (CDC); Haisla Nation Council	Daycare registration, licensed spaces, and waitlist (quarterly)
	Coast Mountain School District #82 (CMSD); St. Anthony's Catholic School; Centennial Christian School	Student enrolment (annual) Number of educators, including teachers, administrative and supporting staff (annual)
	University of Northern British Columbia (UNBC); Kitamaat Valley Education Society (KVES); Coast Mountain College (CMTN)	Student enrolment (annual or by semester)
Utilities	DOK; COT	Potable water and sewage services average daily demand, peak day demand, and rated capacity (annual)
	Regional District of Kitimat-Stikine (RDKS)	Landfill demand, lifespan, and estimated population served (annual)

Appendix B   SMR WORKING GROUP PARTICIPANTS

Organizations represented in the table below participated in SMR working group sessions during the course of 2019. A complete list of organizations invited to participate in SMR working groups is identified and updated annually in the SMR ToR.

SMR Working Group	Group	Participating Organization
Housing and Accommodations	Project Team	LNG Canada, JFJV, Civeo, Horizon North, support (Stantec and Earnscliffe)
	Indigenous Groups	Haisla Nation, Kitselas First Nation, Kitsumkalum First Nation
	Local/ regional governments	District of Kitimat, City of Terrace, Regional District of Kitimat-Stikine
	Local service providers	Kitimat Community Development Centre, Tamitik Status of Women, Ksan Society, Kermode Friendship Centre
	Province of BC	LNG Canada Implementation Secretariat, Northern Health, Municipal Affairs & Housing, BC Housing
Traffic & Emergency Response	Project Team	LNG Canada, JFJV, Civeo, support (Stantec and Earnscliffe)
	Indigenous Groups	Haisla Nation, Kitselas First Nation, Kitsumkalum First Nation
	Local/ regional governments	District of Kitimat, City of Terrace, Regional District of Kitimat-Stikine
	Local service providers	Kitimat Fire and Ambulance Services (KFAS), Kitimat Community Services Society (Victim Services), YXT, Thornhill Fire Department, Terrace Fire Department, Terrace RCMP
	Province of BC	LNG Canada Implementation Secretariat, BC Emergency Health Services (BCEHS), ICBC, Northern Health, Ministry of Health, Municipal Affairs & Housing, MOTI, WorkSafeBC, RCMP
Community Health	Project Team	LNG Canada, JFJV, Civeo, support (Stantec and Earnscliffe)
	Indigenous Groups	Haisla Nation, Gitga'at First Nation, Kitselas First Nation, Kitsumkalum First Nation, Metlakatla First Nation
	Local/ regional governments	District of Kitimat, City of Terrace, Regional District of Kitimat-Stikine

SMR Working Group	Group	Participating Organization
	Local service providers	Kitimat Fire and Ambulance Services (KFAS), Kitimat Community Services Society (Victim Services), Kitimat RCMP, Ksan Society, Kermode Friendship Centre, Terrace RCMP
	Province of BC	LNG Canada Implementation Secretariat, Northern Health, Municipal Affairs & Housing, BC Emergency Health Services, BC Health Protection, WorkSafeBC, RCMP, BC First Nations Health Authority (FNHA)
Community Amenities, Education, Utilities	Project Team	LNG Canada, JFJV, Horizon North, support (Stantec and Earnscliffe)
	Local/ regional governments	District of Kitimat, City of Terrace, Regional District of Kitimat-Stikine
	Local service providers	Kitimat Understanding the Environment, Kitimat Chamber of Commerce, St. Anthony's School, Kitimat Valley Institute, Coast Mountain College, Terrace Chamber of Commerce
	Province of BC	LNG Canada Implementation Secretariat, Municipal Affairs & Housing, Ministry of Children & Family Development

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Appendix C   SMR ACTION ITEMS

#	Working Group	Responsible Party	Action	Status
2019-Q2-1	Housing & Accommodations	LNG Canada Project Team	Share monitoring data ahead of SMR meetings	**Complete 11/05/19**.
2019-Q2-2	Housing & Accommodations	City of Terrace Planning Department	Provide LNG Canada Project team with available Terrace population forecast information and address existing data gaps for Terrace housing (i.e., off-market housing and legal rental suite information).	**Complete 11/05/19**.
2019-Q2-3	Housing & Accommodations	DOK Planning & Development	Provide LNG Canada Project team with additional available rental housing information (i.e., vacancy rates) and population forecast.	**Complete 11/05/19**.
2019-Q2-4	Traffic & Emergency Response	RCMP and Fire Services	Re-opened action from Q2. Provide LNG Canada Project team with available information on traffic incidents by location.	**Ongoing 01/27/20.** Gaps remain in RCMP traffic incidents by location (requested from RCMP north district). Latest data available is 2017 (ICBC Crash Data). Recent locational crash data currently unavailable from RCMP.
2019-Q2-5	Traffic & Emergency Response	DOK Engineering Services	Re-opened action from Q2. Recommendation to DOK to assess need for traffic light at Nalabila / Hwy 37 intersection Update: DOK has secured funding for a Traffic Impact Assessment. Results will be available in several months. Action to remain open in the meantime.	**Ongoing 01/27/20.** DOK has secured funding for a Traffic Impact Assessment. Results will be available in several months. Action to remain open in the meantime.

#	Working Group	Responsible Party	Action	Status
2019-Q2-6	Traffic & Emergency Response	LNG Canada Project Team	Clarifications for next SMR: define areas of interest; provide definition of recordable incidents;	**Complete 11/05/19**. JFJV follows OSHA (Occupational Safety and Health Administration) 1904 Recordkeeping Guidelines regarding work relatedness, injury classification, and interpretation. We also make sure that there is consistency with our obligations to report to WorkSafeBC on occupational injuries and illnesses for JFJV employees. Contractors are responsible for their recordkeeping and reporting requirements to WorkSafeBC injuries and illnesses of their worker(s).
2019-Q2-7	Traffic & Emergency Response	Terrace Fire Department	Northern Health request to be included in Terrace scenario planning	**Complete 11/05/19**. Noted.
2019-Q2-8	Community Health	LNG Canada Project team	Clarifications for next SMR: confirm provider of medical services at Crossroads Lodge (Horizon North); define medevac services	**Complete 11/05/19**. Medical evacuation, or "medevac", is the timely and efficient movement with medical care provided by medical personnel to injured being evacuated from the scene of an accident to receiving medical facilities, or to patients at a rural hospital requiring urgent care at a better equipped facility using medically equipped ground vehicles (ambulances) or aircraft (air ambulance) either helicopter or fixed wing air crafts.
2019-Q2-9	Community Health	LNG Canada Project team	Q2 Action remains open. Follow up on public health linkages between Northern Health and First Nations Health Authority.	**Ongoing 01/27/20**. Details to be provided by FNHA at next SMR meeting.
2019-Q2-10	Community Health	LNG Canada Project team	Recommendation to Project Team to invite the First Nation Health Authority to join the Health SMR	**Complete 11/05/19**.
2019-Q2-11	Community Health	Kitselas	Share Kitselas health impact assessment report with SMR when it becomes available (mid-August)	**Complete 11/05/19**.
2019-Q2-12	Community Health	LNG Canada Project Team	Recommendation to Project Team to consider preventive metrics e.g., worker health seeking or avoidance behaviours	**Complete 11/05/19**. Noted.

#	Working Group	Responsible Party	Action	Status
2019-Q2-13	Education	DOK	DOK encouraged to apply for UBCM funding (as Terrace recently did) to conduct childcare inventory & needs assessment	**Complete 11/05/19**. Noted.
2019-Q2-14	Education	LNG Canada Project Team	Work with education providers to include available 10-year enrolment trends, future enrolment projections, additional post-secondary metrics	**Complete 11/05/19**.
2019-Q3-1	Housing & Accommodations	LNG Canada Project Team	Recommendation to breakdown workforce accommodation monitoring data by contractor and location	**Complete 01/27/20**. It will not be possible to provide this breakdown; however, a listing of mobilized contractors will be included in SMR Project updates going forward
2019-Q3-2	Housing & Accommodations	LNG Canada Project Team	Work with hotels where LNG Canada workers are staying to provide code of conduct expectations and feedback mechanisms for reporting grievances.	**Complete 01/27/20** In November and December, the Project team reached out to Kitimat and Terrace hotels by phone, in person and with letters to provide Worker Code of Conduct and Community Feedback contact details
2019-Q3-3	Housing & Accommodations	LNG Canada Project Team	Confirm if the Code of Conduct can be shared as a public document.	**Complete 01/27/20**. In December, Worker Code of Conduct was published in local area newspapers and shared externally with stakeholders (see below).
2019-Q3-4	Housing & Accommodations	SMR Participants	Make use of the LNG Canada Project community feedback email address (info@jfjvkitimat.com) to share concerns	**Complete 01/27/20**. Noted.
2019-Q3-5	Housing & Accommodations	LNG Canada Project Team	Examine zero housing complaints and consider current distribution channels and additional channels through which community feedback contact information can be shared.	**Complete 01/27/20**. Community Feedback can reach the Project via email, hotline, walk in to JFJV Project resource Centre in the Kitimat mall, stakeholder meetings, and public events. These channels are communicated continuously through newspaper ads, community mailers, public events, stakeholder meetings, outreach to municipal government and chambers of commerce. Most recently outreach to hotels was added.

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#	Working Group	Responsible Party	Action	Status
2019-Q3-6	Housing & Accommodations	City of Terrace	Identify and share with SMR project team additional social service providers to be invited to future SMR sessions.	**Complete 01/27/20**. TDCSS and Kermode Friendship Centre identified and invited to SMR
2019-Q3-7	Housing & Accommodations	LNG Canada Project Team	Confirm if housing prices are included in the data set / pre-read.	**Complete 01/27/20**. Yes, housing prices are included in the data set / pre-read
2019-Q3-8	Housing & Accommodations	LNG Canada Project Team	Review how effectively the Project is communicating its "No LOA" policy to target real estate speculators and job seekers from outside the local area.	**Complete 01/27/20**. In December, the Project "no LOA" policy was published in local area newspapers. This message is continuously reinforced with subcontractors and local stakeholders including realtors and municipal planners
2019-Q3-9	Housing & Accommodations	BC Housing	Provide list of regional housing projects underway (status, location, timeline) to be shared with SMR participants.	**Complete 01/27/20**. List provided below In Section 5 under "Social Housing."
2019-Q3-10	Housing & Accommodations	SMR Participants	Flag to Project Team if there are any sensitives with any provided data being shared outside of the SMR.	**Complete 01/27/20**. Noted.
2019-Q3-11	Community Health	LNG Canada Project Team	Consider routine outreach efforts with Terrace Hospital in addition to Kitimat Hospital.	**Ongoing 01/27/20**. To date the Project has had limited outreach with MMH in Terrace. In March the Project will host a Terrace-Kitimat medical community engagement. Routine engagement with MMH will follow. An update will be provided at Q12020 SMR
2019-Q3-12	Community Health	LNG Canada Project Team	Confirm if incidence of criminal offense by category is available in the data set / pre-read e.g., illicit drug use/possession.	**Ongoing 01/27/20**. Yes, crime incidence information is available.
2019-Q3-13	Community Health	LNG Canada Project Team	Recommendation to report Terrace and Kitimat data sets as separate and distinct where possible.	**Complete 01/27/20** Noted.

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#	Working Group	Responsible Party	Action	Status
2019-Q3-14	Community Health	LNG Canada Project Team	Present injury/illness data as rate of injury / illness per workforce population rather than total quantity.	**Complete 01/27/20** Noted.
2019-Q3-15	Community Health	Northern Health	Provide a list of proxy indicators highly correlated with drug and alcohol use that could be considered as additional data sources.	**Ongoing 01/27/20.** Proxy indicators highly correlated with drug and alcohol use suggested by Northern Health at 11/05/19 SMR include: • Single vehicle crashes at night • Late night ER visits by single males • Late night violent crimes and sexual assaults The Project is exploring opportunities to gather this data from RCMP and Northern Health as a composite indicator of drug and alcohol use.
2019-Q3-16	Community Health	LNG Canada Project Team	Provide updates to SMR from regular meetings between LNG Canada and Northern Health (beginning on December 3), regarding broader community health impacts.	**Ongoing 01/27/20**. Updates to be provided at next SMR meeting. Key topics discussed: • Patient transfer between onsite and public medical professionals • Additional medical supports and infrastructure that may be needed • Anticipated demand on higher levels of care.
2019-Q3-17	Community Health	Northern Health	Consider providing data from mobile unit service to support SMR monitoring needs	**Ongoing 01/27/20**. Monitoring data provided to SMR from Northern Health still under development. Mobile unit will be considered

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#	Working Group	Responsible Party	Action	Status
2019-Q3-18	Community Health	LNG Canada Project Team	Clarify alcohol & drug policy and alternative supports available for workers with addictions or mental health issues.	**Ongoing 01/27/20**. Update to be provided at next SMR. Project site Drug & Alcohol policy requires all workers to complete initial site- access screening. Workers who have "non-negative" test results are not permitted access to site. On site testing also occurs with reasonable cause and following significant incidents. Tests are confirmed by an independent lab and if the lab confirms the presence of alcohol or drugs, the worker is provided transportation to their home base where they may continue to work and be supported by their parent company HR department. For workers where lab testing confirms no alcohol and drugs are present, the worker is cleared to return to work on the next shift. The Project also provides ongoing public health activities for the workforce including promotion of physical and mental health initiatives.
2019-Q3-19	Community Health	LNG Canada	Schedule a separate meeting with First Nations Health Authority prior to the next SMR session in February 2020.	**Complete 01/27/20**. The Project team met with FNHA Executive Director North, Nicole Cross 01-15-20 to share information regarding SMR.
2019-Q3-20	Traffic & Emergency Response	LNG Canada Project Team	Clarify extent of In-Vehicle Monitoring System (IVMS) requirements across all contractors and shuttles.	**Complete 01/27/20** Long term Contractors are required to install IVMS in equipment/vehicles as a condition of contract.
2019-Q3-21	Traffic & Emergency Response	SMR Participants	Submit Costal Gas Link-specific questions, as appropriate. LNG Canada will work with CGL to coordinate responses.	**Complete 01/27/20** Noted.
2019-Q3-22	Traffic & Emergency Response	LNG Canada Project Team	Capture learnings from recent efforts made to work with DOK around mitigating parking and local traffic impacts.	**Ongoing 01/27/20** Adaptive parking strategies over the first year of construction will be shared as a learning at the Q12020 SMR.
2019-Q3-23	Traffic & Emergency Response	LNG Canada Project Team	Recommendation to include Project road and air traffic projections in the data.	• **Ongoing 01/27/20** The Project will explore opportunities to capture this data in future reporting cycles.

#	Working Group	Responsible Party	Action	Status
2019-Q3-25	Traffic & Emergency Response	Ministry of Transportation and Infrastructure	Recommendation for additional traffic monitoring locations.	**Complete 01/27/20** Existing traffic counters on Hwy 37 and Hwy 16 are viewed by MOTI to be adequately monitoring increased traffic without any major concerns. Traffic will continue to be monitored to determine if changes need to be made. Short counts for the area are conducted every 3-years and are scheduled for 2020.
2019-Q3-26	Traffic & Emergency Response	LNG Canada Project Team	Confirm whether data set for traffic monitoring includes hourly breakdown/peak times/etc.	**Complete 01/27/20** Yes, MOTI traffic monitoring information is available on an hourly basis
2019-Q4-1	Housing & Accommodations	LNG Canada Project Team	Clarify/check with Coastal Gas Link regarding anecdotal comment that logging contractors are paying LOAs	**New 02/05/20.**
2019-Q4-2	Housing & Accommodations	LNG Canada Project Team	Add context to Housing data when presented, where possible (ie. Avg. rental rate amounts).	**New 02/05/20.**
2019-Q4-3	Community Health	LNG Canada Project Team	Follow up with the Kermode Friendship Society regarding their MMIWG report (to be shared with SMR participants)	**New 02/05/20.**
2019-Q4-4	Community Health	LNG Canada Project Team	Share workforce multiplier projections from District of Kitimat & City of Terrace	**New 02/05/20.**
2019-Q4-5	Community Health	LNG Canada Project Team	Follow up with Homeless & Housing services to tour facilities/ programs/staff/ clients	**New 02/05/20.**
2019-Q4-6	Community Health	LNG Canada Project Team	Clarify where Project-level planning intersects with provincial- and community-level Hazard, Risk and Vulnerability Analysis (HRVA) processes (ie. epidemics).	**New 02/05/20.**

#	Working Group	Responsible Party	Action	Status
2019-Q4-7	Community Health	LNG Canada Project Team	Data packs from Northern Health & RCMP to be shared with SMR participants (were not received in time to be included in the Pre-Read)	**New 02/05/20.**
2019-Q4-8	Traffic & Emergency Response	LNG Canada Project Team	Capture/cross check Northern Health data on hospital transfers not currently captured in ambulance services monitoring.	**New 02/05/20.**
2019-Q4-9	Community Amenities, Utilities and Education	LNG Canada Project Team	Follow up with Kitimat Understanding the Environment to understand waste solution technology.	**New 02/05/20.**
2019-Q4-10	Community Amenities, Utilities and Education	LNG Canada Project Team	Verify where hazardous liquids are sent (presentation indicated municipal landfills).	**New 02/05/20.**
2019-Q4-11	Community Amenities, Utilities and Education	LNG Canada Project Team	Provide definitions of hazardous waste/liquids and non-hazardous waste/liquids.	**New 02/05/20.**
2019-Q4-12	Community Amenities, Utilities and Education	LNG Canada Project Team	Share employee and accompanied dependents projections if available.	**New 02/05/20.**
2019-Q4-13	Community Amenities, Utilities and Education	LNG Canada Project Team	Work with City of Terrace to compile Parks Department expenditures data. Proxy indicators for other impacts include: trash/needle/human waste cleanup.	**New 02/05/20.**

#	Working Group	Responsible Party	Action	Status
2019-Q4-14	Community Amenities, Utilities and Education	LNG Canada Project Team	Discuss taxi service use and potential impacts when Cedar Valley Lodge opens during ongoing monthly meetings with the project team and District of Kitimat.	**New 02/05/20.**
2019-Q4-15	Community Amenities, Utilities and Education	LNG Canada Project Team	Work with City of Terrace on Municipal capacity metrics include w/ CLISMP where possible.	**New 02/05/20.**

Appendix D   FOLLOW UP DISCUSSION ITEMS FOR BC GOVERNMENT

During Q3 and Q4 2019 SMR meetings several broader and more complex issues were identified, which were recognized as being beyond the direct influence of the LNG Canada Project. These items were listed for follow up discussion by BC Government and can be found in the tables below.

Clarifications were provided by government representatives at subsequent SMR meetings, in quarterly SMR reports, as well as through summary information distributed to SMR participants by email.

Q3 2019 SMR (November 2019) Follow Up Discussion List for BC Government

SMR Working Group	Items for Follow up Discussion
Housing & Accommodations (MAH, BC Housing, CMHC)	• Connect with key agencies on whether the Province has programs to address rent seeking[14] behaviour in Kitimat—recognizing the need for affordable rental rates in Kitimat. • Work with CMHC to determine if there is any available, unpublished data on vacancy rates in Kitimat (Kitimat population currently below threshold) • Explore opportunities for potential tenant and landlord workshops and to provide materials and resources for individuals at risk of homelessness • Connect with BC Housing and Northern Health to better understand community experiences and impacts resulting from implemented housing projects in Terrace • Investigate the status and planning for regional social housing and shelters—recognizing the feedback on different level of availability/resourcing between Kitimat and Terrace • Determine if there is a Provincial role in long-term local government planning for housing and accommodation in light of ongoing Kitimat industrial development • Determine if there is a Provincial role in providing protections for commercial tenants (non-profits often rent commercial space).
Community Health (Northern Health, Justice)	• Connect on the process by which RCMP and other emergency services resources are allocated to communities (both provincial and municipal resourcing) • Connect with Ministry of Health on programs available to address increased occurrences of illicit drug use in the community • Follow up on Health Impact Assessment experience, including the use of Special Economic Zones (shared by Janis Shandro of Kitselas)
Housing & Accommodations / Traffic & Emergency Response	• Connect with key agencies on impacts to service workers and service sector in light of increased housing costs and wage disparities

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[14] In this instance, rent seeking is used literally to refer to the practice of landlords withholding vacant rental units from the market, presumably with the hope of securing much higher rents as demand increases.

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2019 Q4 SMR (February 2020) Provincial Follow-up Discussion Items

SMR Working Group	Items for Follow up Discussion at Next SMR Meeting
Housing & Accommodations	• Ongoing discussion to understand increase in demand at area shelters and social housing
Community Health	• Ongoing discussion about police and emergency service resourcing requests and how they are considered
Traffic & Emergency Response	• Ongoing discussion about the status of existing emergency response planning in the region and what else is required to support communities. Findings will be reported back at a future meeting.
Community Amenities, Education and Utilities	• MCFD to provide update on daycare and early childhood education spaces, including Haisla spaces, training grant application updates, and dual credit