29 HOUSING

29.1 Approach

As described in Volume 3 Section 17 Labour Market Effects Assessment and Volume 4 Section 28 Population and Demographics, the Project demand for labour during construction would exceed the local labour supply, resulting in an in-migration of workers and a resultant change in local population. The predicted population change in combination with the Project's proposed strategies and plans for labour supply and worker accommodation are key drivers of change in the demand for local area housing. This assessment of housing takes into account the current capacity of the local housing market to receive increased demand, using indicators of housing availability, cost, and future supply.

29.1.1 Regulatory and Policy Setting

The assessment was prepared in accordance with Section 17.3 of the Site C Clean Energy Project Environmental Impact Statement Guidelines (The Minister of Environment of Canada and the Executive Director of the BCEAO 2012) (EIS Guidelines).

29.1.2 Key Issues and Identification of Potential Effects

Housing issues were identified by the public, agencies, Aboriginal groups and other stakeholders as a potential effect of the Project (Volume 1 Section 9 Information Distribution and Consultation).

Consistent with Volume 4 Section 28 Population and Demographics, the interaction between the Project and housing would be expected during the Project construction phase only, due to worker demand for accommodation during this period.

During the Project's construction phase, the change in housing demand would be directly related to the change in population attributable to the Project, and by BC Hydro's plans for providing worker accommodation. Population change would be driven by in-migration of direct workers to the local area, as well as workers in indirect and induced employment attributable to the Project. BC Hydro plans to provide temporary camp accommodations for all direct workers at the Site C dam site, with the ability to scale up the capacity, if required (Volume 1 Section 4 Project Description).

The key issues for housing, as identified in Table 29.1, include the potential for housing shortages, especially for temporary accommodation, which is currently experiencing high demand because of major construction projects.

Table 29.1 Key Issues: Housing

Key Issues	Approach to Addressing Key Issues
Population change could lead to housing distort or disrupt housing conditions, leading to shortages rising costs.	▪ Population change is addressed in Volume 4 Section 28 Population and Demographics. ▪ This assessment provides an estimate of housing supply, project-related demand, and the potential for shortages or imbalances in the market, and the associated after-effects, including changes in cost.
The Project should encourage local residency and hiring of local workers and businesses.	▪ The Labour Market assessment in Volume 3 Section 17 assumes that the Project utilizes the pool of available labour without disrupting the regional labour market. ▪ The assessment of housing takes into account the supply available to accommodate in-migrating workers without disrupting the market.
Project will affect the in-community and temporary worker accommodation in the community.	▪ Additional indicators not specified in the EIS Guidelines were added to the assessment to facilitate analysis of temporary versus longer-term workers. These included ownership (i.e., purchase versus rental) and type (e.g., single family, apartment) preferences. The assessment also distinguishes between on-site and in-community workers.
The determination of the housing baseline and the analysis of effects on housing need to be performed separately for the affected First Nation communities.	▪ The implications for housing in Aboriginal communities are considered in this assessment. Housing baseline information was assembled by First Nations community where available and potential implications for communities were identified.
Project may have adverse effects on housing in or near the impact lines, especially in Hudson's Hope.	▪ Volume 2 Section 11.3 Land Status, Tenure, and Project Requirements outlines BC Hydro's approach to fee simple tenure acquisition for properties directly affected by the Project activity zone.
First Nations concern that an influx of workers would put pressure on housing on-reserve and off-reserve (SFN, T8TA).	▪ Issue is addressed in view of results of population projections and Project effects on the housing market in Fort St. John. ▪ The implications for housing in Aboriginal communities are considered in this assessment.
First Nations concern that existing pressures on housing would be exacerbated by additional crowding as First Nations people are forced to return to reserve communities (SFN, T8TA).	
First Nations concern that housing costs will further increase in Fort St. John, resulting in increased demand for housing on First Nation reserves. Concern regarding increased cost of living as well as increased crowding and associated health and social dysfunction in Fort St. John, including homelessness (T8TA).	▪ Issue is addressed in view of results of population projections and Project effects on the housing market in Fort St. John. ▪ The implications for housing in Aboriginal communities are considered in this assessment.

NOTES:
SFN – Saulteau First Nations
T8TA – Treaty 8 Tribal Association

Project interactions with housing are ranked in Table 2 of Volume 2 Appendix A Project Interaction Matrix. As defined in Volume 2 Section 10 Effects Assessment Methodology, a rank of "2" was given where interactions may result in an adverse effect and the nature of the effect and/or the effectiveness of mitigation measures is uncertain. Therefore, interactions with a "2" ranking require analysis and evaluation in the environmental assessment.

The housing assessment considers the predicted non-camp population increase in the communities resulting from the influx of direct, indirect, and induced workers during construction (Table 29.2). The incremental demand for housing would generate a market response in the form of changes in the supply of housing. Changes in the labour market and population, in combination with proposed worker accommodation by BC Hydro, would determine the extent and timing of the market response.

Housing effects are assessed for the construction phase for the following reasons:

- All project components and activities generate labour demand and population change with implications for housing
- The housing market would react to the combined effects of this change

Table 29.2 Interactions of the Project with Housing

Project Activities and Physical Works	Key Aspects
	Change in the demand for housing (considering labour market change, population change, and Project plans for worker accommodation), with specific reference to the City of Fort St. John
Construction	✓

29.1.3 Standard Mitigation Measures and Effects Addressed

A "1" ranking in Volume 2 Appendix A Project Interaction Matrix, Table 2 means that an interaction would occur, but that it is well understood and can be avoided or mitigated through the application of standard mitigation measures, and effects would be negligible. With only 13 full-time positions during operations, the Project would have negligible effects on the housing market. Effects on operations are therefore not assessed further.

Interactions with housing would also occur in relation to periodic sustaining capital expenditures, which would employ approximately 50 direct workers. This activity would not begin to occur until the 40th year of operation, at which time baseline housing conditions would have changed. According to population projections presented in Volume 4 Section 28 Population and Demographics, the Fort St. John area population would be at least 40% larger than it is today. In terms of the anticipated housing at that time, the demand for housing by the Project would be negligible. Standard mitigation measures would also have evolved and become more effective in avoiding and minimizing potential adverse effects on housing, specifically housing shortages. Effects on housing are therefore not assessed.

BC Hydro has committed to providing accommodation for all direct workers if required. As shown in Table 29.3, the base capacity of the Site C dam site camps is

1,700 persons. Several areas of flexibility are built into the base plan. Two smaller camps may be used in off-site locations depending on short-term housing market conditions in the local area at the time of construction, while the south bank camp would be designed to be easily expanded to accommodate potentially higher annual direct workforce during construction.

Table 29.3 Accommodation for Direct Workers

Type	Location	Capacity [a]
Temporary Camp Accommodations	Site C Dam Site North Bank (planned)	500
	Site C Dam Site South Bank (planned)	1,200
	Site C Road (potential)	100
	Highway 29 (potential)	150

NOTES:
[a] Capacity refers to the number of units, not the number of workers
Source: BC Hydro (2012)

29.1.4 Selection of Key Indicators

The key indicators for assessing Project effects on Housing and the rationale for their selection are shown in Table 29.4.

Table 29.4 Key Indicators for Housing

Key Aspects	Key Indicators	Rationale for Selection of the Key Indicators [a]
Change in the demand for housing	Occupancy and vacancy rates Occupancy costs Multiple Listing Service activity Residential construction activity Planned housing developments and land available for housing	The indicators are recognized measureable parameters of demand for changes in the housing market.
	Housing ownership and type	Additional indicators included based on review of public comments on guidelines.

NOTES:
[a] Includes input from consultation with regulators, First Nations, affected stakeholders, and the public, as well as regulatory guidelines, polices and/or programs

29.1.5 Spatial and Temporal Boundaries

29.1.5.1 Spatial Boundaries

The local assessment area (LAA) is the Peace River Regional District (PRRD) as noted in Table 29.5 and Figure 29.1, which aligns with the assessment areas for Volume 3 Section 17 Labour Market Effects Assessment and Volume 4 Section 28 Population and Demographics. As with Population, the communities nearest to the Project (i.e., Fort St. John, District of Taylor, and PRRD Area C) are where the majority of in-migrating new residents would be expected to live, and where demand for housing could change. This is the geographical area where project interactions with the housing VC will occur.

Baseline housing information is presented for First Nations communities, where available. The borders of the Peace River Regional District and First Nations traditional

territories and communities do not precisely overlap. The First Nations with Indian Reserve communities situated within or near the boundaries of the LAA are the Doig River First Nations, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations, Blueberry First Nation, and Saulteau First Nations.

Where First Nations outside the LAA have identified interests in potential effects on housing, these are discussed in Volume 5 Section 34 Asserted or Established Aboriginal and Treaty Rights, Aboriginal Interests, and Information Requirements.

The Regional Assessment Area (RAA) is the same as the LAA and is the spatial boundary where communities share similar socio-economic characteristics, including a region-wide housing market. It is also the area where other projects may result in changes to the labour market, associated regional population, and housing levels.

Table 29.5 Spatial Assessment Areas for Housing

Local Assessment Area	Regional Assessment Area
Peace River Regional District	Peace River Regional District

29.1.5.2 Temporal Boundaries

The temporal boundary for the housing assessment was the project construction phase, as described in Volume 1 Section 4 Project Description, during which population effects would create a demand for housing. Because of relatively low operations phase local employment, housing effects during operations are not anticipated, and therefore not assessed further.

29.2 Information Sources and Methods

29.2.1 Review of Existing Information

Data to describe the housing baseline were obtained from Statistics Canada (for communities in the LAA and for the Aboriginal population), BC Stats, the B.C. Real Estate Association, Canada Mortgage and Housing Corporation (CMHC), the BC Northern Real Estate Board, local municipalities, and the Peace River Regional District.

Housing studies supplied by the City of Fort St. John, District of Hudson's Hope, and District of Chetwynd provided supplemental baseline data, trends on development and housing affordability, and strategies for enhancing housing supply through local government policies and programs.

Data and information sources for key indicators include the following:

- Rental vacancies and cost data as published by Canada Mortgage and Housing Corporation, which is only available for the Dawson Creek and Fort St. John areas. (Multiple Listing Service data, which are published for the two real estate boards serving the PRRD, the BC Northern Real Estate Board, and the Northern Lights Real Estate Board. The BC Northern Board Area covers all of northern B.C., including the Cariboo, Fraser-Fort George, Peace River, Northern Rockies, Bulkley-Nechako, Kitimat-Stikine, Skeena-Queen Charlotte and Stikine regional districts, excluding the Northern Lights Board Area of the South Peace. The Northern Lights Board Area includes that portion of the Peace River Regional District south of the Peace

River. The Fort St. John area covers the City of Fort St. John, Districts of Hudson's Hope, Taylor, and Area C of the PRRD).

- Housing data and information included in First Nations community baseline reports for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, West Moberly First Nations (Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table)

Detailed results of the 2011 census were not released at the time of writing, thus the 2006 census is relied upon for certain statistics. Information on housing availability and conditions in First Nations communities is both quantitative and qualitative, in the latter instance focusing on issues related to crowding due to housing shortages in communities.

29.2.2 Interviews

Interviews were conducted in 2011 with representatives of B.C. Real Estate Association, Canada Mortgage and Housing Corporation, BC Northern Real Estate Board, and the PRRD to identify secondary data sources and validate existing data. Discussions with the BC Real Estate Association and the real estate boards concerned the aggregation and interpretation of Multiple Listing Service (MLS) data. Information requests and follow-up discussions with municipalities and the PRRD involved housing and subdivision information, development potential, interpretation of Official Community Plan guidelines for community growth, and potential effects of the Project on housing.

Interviews were also held with non-market housing providers (e.g., Salvation Army, North Peace Community Resources Society, Fort St. John Friendship Society) and temporary accommodation providers (e.g., hotels), to understand housing issues and potential effects on those services.

The interview methodology is described in Volume 4 Appendix A Social Assessment Supporting Documentation, Part 1 Social Assessment Interview Methdology, and includes a list of persons contacted and interviewed.

29.2.3 Data Management, Mapping, and Modelling

In-community housing needs associated with the Project are provided in Volume 4 Section 28 Population and Demographics. This was used as the input to the housing model presented in Volume 4 Appendix A Social Assessment Supporting Documentation, Part 5 Housing Effects Model. The annual in-community housing needs of direct, indirect, and induced workers were compared to the existing and future projected housing supply to determine the magnitude and timing of potential shortages.

29.2.4 Aboriginal Community and Traditional Knowledge

Aboriginal community and traditional knowledge related to the housing VC was gained through review of results from BC Hydro's consultation with Aboriginal groups and the First Nations community baseline studies prepared and submitted to BC Hydro by the following First Nations in the LAA: Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations, through the Treaty 8 Tribal Association. While the communities and territories of the Blueberry First Nations and Saulteau First Nations are within the boundaries of the LAA, BC Hydro had not received

community baseline information from them at the time of writing. Should information be received during the EIS review period, it will be considered and integrated in an amendment to the EIS.

Baseline information and data as well as First Nations concerns and interests relevant to housing are incorporated in the baseline and effects assessment sections below. The First Nations community baseline reports are provided in Volume 3 Appendix B First Nations Community Baseline Reports.

BC Hydro's approach to gathering and integrating community-based social and economic data with First Nations is described in Volume 3 Appendix B First Nations Community Baseline Reports, Part 1 Approach to Gathering First Nations Community Baseline Information.

29.3 Baseline Conditions

29.3.1 Housing Ownership and Type

29.3.1.1 Private Dwellings

The number of occupied and unoccupied private dwellings in 2011 for the PRRD is shown in Table 29.6. Unoccupied dwellings are an official part of the housing stock if they are suitable for habitation with heat or power and drinking water. In 2011, the total number of dwellings in the PRRD was 25,854 and in the City of Fort St. John, 8,238.

Table 29.6 Occupied and Unoccupied Private Dwellings, 2011

Community/ Electoral Area	Occupied Private Dwellings	Total Dwellings	Unoccupied Private Dwellings
City of Fort St. John	7,480	8,238	758
District of Hudson's Hope	417~~530~~	495~~563~~	78~~33~~
District of Taylor	532~~530~~	563	31~~33~~
PRRD Area B	1,610	1,785	175
PRRD Area C	2,339	2,409	70
District of Chetwynd	1,027	1,119	92
City of Dawson Creek	4,859	5,406	547
Village of Pouce Coupe	301	318	17
District of Tumbler Ridge	1,158	1,510	352
PRRD Area D	2,003	2,252	249
PRRD Area E	1,056	1,292	236
PRRD 23,19	6	25,854	2,658

NOTES:
Sum of communities and rural areas do not add up to total PRRD because of rounding
Source: Statistics Canada (2011)

29.3.1.2 Type of Housing Structure

The distribution of housing stock in the PRRD by type of structure is shown in Table 29.7. Sixty-seven per cent of housing was single detached houses, compared to

47.7% for the province as a whole. Multi-residential housing, including row houses, duplexes, and apartments, represented 18.4% of the housing stock in the PRRD, versus 46.4% in the province. The City of Fort St. John, City of Dawson Creek, District of Chetwynd, and District of Taylor had a greater proportion of their total stock in apartments and other multi-residential units than the PRRD as a whole.

Table 29.7 Percentage of Total Housing as Occupied Private Dwellings – by Structural Type, 2011

Community/ Electoral Area	Percentage					
	Single Detached House	Semi-Detached House	Row House	Duplex	Apartment	Other [a]
City of Fort St. John	54.9	7.4	10.6	1.7	19.5	5.8
District of Hudson's Hope	74.7	0.0	2.4	0.0	3.6	19.3
District of Taylor	35.5	0.9	0.0	0.9	12.1	50.5
PRRD Area B	84.8	0.3	0.3	0.3	0.0	14.3
PRRD Area C	77.6	0.0	0.2	0.2	0.0	22.0
District of Chetwynd	54.6	3.4	13.7	1.5	12.7	14.1
City of Dawson Creek	65.0	4.5	6.1	1.1	18.5	4.8
Village of Pouce Coupe	93.2	3.4	1.7	0.0	1.7	0.0
District of Tumbler Ridge	71.3	0.9	1.7	0.0	15.2	10.9
PRRD Area D	88.8	0.2	0.2	0.0	0.0	10.7
PRRD Area E	78.2	0.0	0.0	0.0	0.0	21.8
PRRD	67.0	3.7	5.6	0.9	11.9	10.9
B.C.	47.7	3.0	7.4	10.4	28.6	2.8

NOTE:
[a] Other includes other single-attached houses and movable dwellings.
Source: Statistics Canada (2011)

29.3.1.3 Population Mobility

The Census tracks place of residence one year and five years prior to the Census as a way of determining population mobility. Mobility status can influence listing and sales activity, as well as turnover in the rental and non-market housing sectors. As shown in Table 29.8, the mobility status of PRRD residents was similar to that of B.C., with 53.4% not moving in the previous five years, 23.0% moving within the province, and 23.6% migrating from outside the province.

However, mobility status varied among PRRD communities, with municipalities having more mobile populations than rural areas. Non-movers (i.e., people who had not moved from their principal place of residence in the previous five years) accounted for

approximately 38% of the population in the City of Fort St. John, District of Taylor, and District of Chetwynd, and more than 75% of the population of PRRD Area B.

The higher mobility levels in the City of Fort St. John, District of Taylor, and District of Chetwynd is consistent with the seasonal and temporary nature of oil and gas industry, as well as the migration behaviour of young professionals who come to town, start their careers, "get ahead", and then leave for larger urban centres (Urban Systems 2011).

Table 29.8 Mobility Status by Place of Residence Five Years Ago, by Community, for PRRD and B.C., 2006

Community/Electoral Area	Non-Movers (%)	Movers (%)	
		Non-migrants	Migrants
City of Fort St. John	37.7	32.6	29.7
District of Taylor	38.3	34.4	27.3
District of Tumbler Ridge	38.8	10.1	51.2
District of Chetwynd	39.4	25.4	35.2
City of Dawson Creek	49.3	29.6	21.2
PRRD	53.4	23.0	23.6
B.C.	**53.4**	**23.4**	**23.2**
District of Hudson's Hope	62.4	11.9	25.8
PRRD Area C	67.0	16.8	16.2
Village of Pouce Coupe	68.8	2.3	28.1
PRRD Area D	70.8	12.1	17.0
PRRD Area E	73.6	7.5	18.7
PRRD Area B	75.4	15.0	9.5

NOTES:

Non-Movers – Persons who on Census Day were living at the same address as the one at which they resided five years earlier

Movers – Persons who on Census Day were living at a different address than the one at which they resided five years earlier

Migrants – Movers who did not live in the PRRD five years earlier

Non-Migrants – Movers who lived in the PRRD but at a different address five years earlier

Source: Statistics Canada (2006)

29.3.1.4 Temporary Accommodation

Temporary accommodation in the PRRD comprises fixed-roof facilities such as hotels, motels, bed and breakfasts, lodges, resorts, and vacation properties, as well as campground and RV sites. Although typically portrayed as part of the tourism sector, temporary accommodation plays an important role in serving the short-term housing needs of business travellers who comprise over half of all visitors to Fort St. John (Bass 2009). For some hotel and motel properties, the majority of revenues, particularly in the non-summer months, come from business travellers.

The inventory of temporary accommodation in communities in proximity to the Project is summarized in Table 29.9. The majority of units are in the City of Fort St. John, followed by City of Dawson Creek, District of Chetwynd, District of Hudson's Hope, and District of Taylor. Many units have multiple beds, so capacity is larger than unit count.

The availability of temporary accommodation varies by season, and certain categories of accommodation such as campgrounds may only be available in spring and summer. Demand for temporary accommodation is highest in the summer tourist season and in the winter oil and gas activity period, and decreases during the spring thaw and fall freeze-up, when oil and gas activity slackens.

A description of temporary accommodation by community is provided in Volume 4 Appendix A Social Assessment Supporting Documentation, Part 4 Housing Baseline Data.

Table 29.9 Summary of Temporary Accommodation, 2011

Accommodation Type	Ft. St. John		District of Taylor		District of Hudson's Hope		City of Dawson Creek		District of Chetwynd	
	Sites	Units	Sites	Units	Sites	Units	Sites	Units	Sites	Units
Campground/RV	5	270	2	118	5	116	10	522	6	289
Hotel and Motel	21	1,400	2	26	3	173	15	813	10	424
Lodges & Camps	0	0	0	0	2	20	0	0	4	78
B & B	1	2	0	0	1	3	6	18	3	5
Total	27	1,672	4	144	11	312	31	1,353	23	796

NOTES:
Bed & Breakfast accommodation only includes Tourism BC-approved facilities
Sources: District of Chetwynd (2010); HelloBC (2011); District of Hudson's Hope (2012); Tourism Dawson Creek (2012)

29.3.1.5 Non-Market Housing

Non-market housing is owned by government or a not-for-profit or cooperative society and is made available to those who cannot afford to pay full market rents. Rents are typically determined by the residents' ability to pay.

BC Housing is the provincial Crown agency that develops, manages, and administers a wide range of subsidized housing programs and services. BC Housing often partners with private and non-profit agencies, other levels of government, health authorities, and community groups to increase affordable housing options. As shown in Table 29.10, in 2011 there were 943 BC Housing-related non-market housing units in the PRRD, including rental assistance for seniors and families, subsidized housing, supportive housing, and emergency housing.

Table 29.10 Number of BC Housing Subsidized Units in the Peace River Regional District by Client Group, 2011

Area	Aboriginal	Frail Seniors	Homeless Housed	Homeless Sheltered	Low Income Families	Independent Seniors	Special Needs	Rent Assistance		Total Units
								Families	Seniors	
Peace River North	48	24	12	40	52	73	33	30	96	408
Peace River South	105	71	0	11	109	117	26	20	76	535
Total Units	**153**	**95**	**12**	**51**	**161**	**190**	**59**	**50**	**172**	**943**

NOTES:

Peace River North includes City of Fort St. John, District of Taylor, District of Hudson's Hope, and PRRD Areas B and C

Peace River South includes City of Dawson Creek, Village of Pouce Coupe, District of Chetwynd, District of Tumbler Ridge, and PRRD Areas D and E

BC Housing only tracks units in which they have a financial relationship

Source: BC Housing (2011a)

The majority of facilities are located in the City of Fort St. John and the City of Dawson Creek. As shown in Table 29.11, there are a small number of shelter beds in the City of Fort St. John, City of Dawson Creek, and District of Chetwynd that are primarily for people living on the streets or who are otherwise unable to obtain suitable accommodation. BC Housing's Extreme Weather Response program funds 25 temporary shelter mats in the City of Fort St. John during extreme weather conditions from November 1 to March 31.

Table 29.11 Emergency and Extreme Weather Shelters in the PRRD, 2011

Community	Facility	Emergency		Extreme Weather	Client
		No. of Beds	Type	No. of Mats	
District of Chetwynd	Red Lion Inn	3	Shelter	0	Men and women
City of Dawson Creek	Aspen Court Hostel	8	Shelter	0	Men, women, families
City of Fort St. John	Fort St. John Shelter	20	Shelter	25	Men, women, families

NOTE:

Source: BC Housing (2011b)

In May 2012, the Province and the Salvation Army announced the purchase and proposed redevelopment of the Cedar Lodge Motor Inn as a shelter with transitional beds for at-risk and marginalized people in Fort St. John. Following redevelopment, the facility will include 10 minimum-barrier transitional beds, 20 shelter beds and 26 transitional beds (Salvation Army 2012). The new facility will be approximately double the size of the current site.

29.3.2 Residential Construction Activity

Housing starts between 2001 and 2010 in the Fort St. John and Dawson Creek areas, the region's two largest centres, are shown in Table 29.12. Starts in Fort St. John during this period ranged from 80 (2002) to a peak of 382 (2007), while the average number annually was 168. Dawson Creek annual housing starts ranged from a low of 16 in 2002 and a high of 149 in 2010.

Table 29.12 Housing Starts for Cities of Dawson Creek and Fort St. John, 2001 to 2010

Community	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Fort St. John	90	80	204	125	153	256	382	135	100	160
Dawson Creek	58	16	29	38	40	67	138	49	84	149
Total	**148**	**96**	**233**	**163**	**193**	**323**	**520**	**184**	**184**	**309**

NOTES:
Fort St. John data includes District of Taylor and Area C of the PRRD
Data not available for individual municipalities or PRRD
Source: BC Stats and CMHC (2011)

29.3.3 Multiple Listing Service Activity

The Multiple Listing Service (MLS) is the primary source of real estate listings in Canada and the standard benchmark for residential housing sales and price trends.

Annual MLS housing sales and price data for the BC Northern Real Estate Board, the Northern Lights Real Estate Board, and the Fort St. John area for the five-year period ending 2010 are shown in Table 29.13. The relationship between units sold and units listed is a key market metric; the higher the ratio, the greater the demand (i.e., sales) for the available supply (i.e., listings). In B.C., ratios above 25% are typical of a sellers' market, while those below 15% indicate a buyers' market (Yu 2012, pers. comm.). In 2006, the housing market was buoyant across northern B.C. but particularly in the PRRD. Since 2006, the ratios for all three areas have declined and the 2010 sales-to-listing ratios of between 11% and 15% are an indication of a buyers' market.

Despite the drop-off in sales activity between 2006 and 2010, average prices continued to rise, with a peak in 2008 in the Fort St. John area and a peak in 2009 in the Northern Lights Real Estate Board area. Prices moderated in 2010 to about $260,000 for the average property in the Fort St. John area.

The MLS data for the Fort St. John area indicate an active market that responds quickly to both increases and declines in demand, so that buyers' and balanced markets become the norm. Even when demand spikes, as happened in 2006, the market was able to quickly respond with more supply (see year 2007 in Table 29.12) that restored balanced conditions.

Table 29.13 MLS Activity and Prices for BC Northern and Northern Lights Real Estate Board Areas and Fort St. John Area, 2006–2010

Year	BC Northern Board Area [a]				Northern Lights Board Area [b]				Fort St. John Area [d]			
	Unit Sales	Units Listed	Sales-to-Listing (%)	Average Price ($)	Unit Sales	Units Listed	Sales-to-Listing (%)	Average Price ($)	Unit Sales	Units Listed	Sales-to-Listing (%)[e]	Average Price ($)
2006	5,605	20,362	28	164,577	502	878	57	147,122	812	NA	50	203,906
2007	5,400	22,068	24	195,502	502	1,862	27	179,917	683	NA	15	243,543
2008	4,038	30,890	13	214,510	473	2,402	20	189,133	701	NA	12	263,166
2009	3,729	30,628	12	212,325	340	3,452	10	214,906	562	NA	10	257,250
2010	3,664	33,185	11	208,249	509	3,385	15	206,422	625	NA	12	259,426

NOTES:

[a] The BC Northern Real Estate Board area covers all of northern B.C., including the Cariboo, Fraser-Fort George, Peace River, Northern Rockies, Bulkley-Nechako, Kitimat-Stikine, Skeena-Queen Charlotte, and Stikine regional districts, excluding the Northern Lights Real Estate Board Area of the South Peace.

[b] Northern Lights Real Estate Board area includes that portion of the Peace River Regional District south of the Peace River.

[c] City of Fort St. John, District of Hudson's Hope, District of Taylor, and Area C of the PRRD

[d] Estimated from quarterly reports from BC Northern Real Estate Board

NA – data not available

Source: BC Real Estate Association (2011)

29.3.4 Occupancy Costs

The average value of dwellings in the PRRD and for individual communities, compared to the provincial average for 2001 and 2006, is shown in Table 29.14. 'Value of dwelling' refers to the dollar amount expected by the owner if the dwelling were to be sold. Census data estimate dwelling value for the entire housing stock; thus, values will differ from previously presented MLS sales values, which only account for homes sold during the period shown.

The average dwelling value in the PRRD increased 84% between 2001 and 2006, and although the greatest increases were seen in the District of Tumbler Ridge and City of Dawson Creek, all communities experienced increased dwelling values.

Table 29.14 Average Value of Dwelling, 2001 and 2006

Community	2006 ($)	% of Provincial Average	2001 ($)	% of Provincial Average
City of Fort St. John	223,365	53	128,224	56
District of Taylor	190,713	46	105,577	46
District of Hudson's Hope	147,505	35	85,532	37
City of Dawson Creek	195,837	47	95,507	41
Village of Pouce Coupe	140,282	34	80,664	35
District of Chetwynd	150,100	36	97,502	42
District of Tumbler Ridge	152,496	36	45,998	20
Peace River Regional District	215,561	51	117,363	51
B.C.	418,703	N/A	230,645	N/A

NOTES:
N/A – not applicable
Data not available from 2011 census at time of writing
Source: Statistics Canada (2006)

The rise in dwelling values between 2001 and 2006 in the PRRD reflected provincial trends, although values in the PRRD were about half the provincial average for both Census years.

As part of its Census household survey, Statistics Canada estimates affordability thresholds based on the proportion of total household income that goes towards meeting housing needs. The percentage of resident households who spend more than 30% of their income on housing is lower in the City of Fort St. John, District of Taylor, and the PRRD than it is in the province as a whole (Table 29.15). Tenants in the PRRD are less likely than homeowners to be paying more than 30% of their incomes on housing.

Table 29.15 Percent of Households Paying More than 30% of Income on Housing, 2006

Community	Private Dwellings with Usual Residents (%) [a]		Private Dwellings with One-Family Households (%) [b]	
	Owners	Tenants	Owners	Tenants
City of Fort St. John	32	16	29	13
District of Taylor	16	14	33	13
District of Hudson's Hope	6	41	0	29
City of Dawson Creek	15	43	10	29
Village of Pouce Coupe	16	29	6	0
District of Chetwynd	11	21	6	20
District of Tumbler Ridge	8	25	4	23
PRRD	33	13	26	10
B.C.	43	23	35	20

NOTES:

[a] A usual resident is equivalent to a permanent resident, and excludes foreign or temporary residents who have a usual place of residence elsewhere in Canada or abroad

[b] A one-family household refers to a single census family (with or without other persons) that occupies a private dwelling. A census family is a married couple with or without children, or a couple living common-law with or without children, or a lone parent living with one or more children.

Source: Statistics Canada (2006)

Canada Mortgage and Housing Corporation tracks and publishes rental affordability criteria for selected B.C. communities, including Fort St. John and Dawson Creek. Table 29.16 shows that in 2011, rents in the bachelor and one-bedroom categories were within the affordability threshold in Dawson Creek and for Fort St. John. However, rents were above the threshold for two- and three-bedroom units in Fort St. John (CMHC 2011).

Table 29.16 Rent Affordability in Fort St. John and Dawson Creek, 2011

Community	Bachelor ($)	1 Bedroom ($)	2 Bedroom ($)	3 Bedroom ($)
Fort St. John				
Affordability Threshold	650	750	929	1,000
Existing Rents	612	717	940	1,065
Dawson Creek				
Affordability Threshold	675	815	1,000	1,150
Existing Rents	629	733	974	1,079

NOTES:

CMHC rental survey data is reported at the 80th, 65th, and 50th rent percentiles, which are referred to as Levels 1, 2, and 3, respectively. Data in the table is for Level 2, which was selected as the mid-point of the published data.

Source: CMHC (2011) (2012)

29.3.5 Occupancy and Vacancy Rates

Canada Mortgage and Housing Corporation publishes rental market data for the Fort St. John and Dawson Creek census agglomerations. Data for the other municipalities and the PRRD are not available. Rental data for the 2007 to 2011 period are shown in Table 29.17. Census data from 2006 indicate that 37% of total dwellings in Fort St. John

are rented, versus 34% in Dawson Creek, but Fort St. John has approximately double the inventory of apartment and row house rentals compared to Dawson Creek. From 2007 to 2011, Fort St. John had a consistently higher vacancy rate than Dawson Creek. The higher vacancy rate in Fort St. John coincided with the addition of new inventory (the number of total rental units has increased by 14% since late 2007).

Table 29.17 Rental Accommodation Availability in the Fort St. John and Dawson Creek Census Agglomerations, 2007 to 2011

Community	October 2007	October 2008	October 2009	October 2010	October 2011
Fort St. John					
Total Units	1,888	2,131	2,217	2,132	2,091
Vacant Units	73	171	411	207	140
Vacancy Rate (%)	3.9	8.0	18.5	9.7	6.7
Dawson Creek					
Total Units	993	999	1,039	1,040	1,038
Vacant Units	24	15	38	25	17
Vacancy Rate (%)	2.4	1.5	3.7	2.4	1.6

NOTES:

Includes private row (townhouse) and apartment accommodation.

Fort St. John census agglomeration (CA) includes City of Fort St. John, Peace River electoral Area C, and the District of Taylor. Dawson Creek CA includes the City of Dawson Creek, Village of Pouce Coupe, and Peace River electoral Area D.

Source: CMHC (2008–2011)

There is no formal source of temporary accommodation occupancy data in the LAA. Current annual occupancy in the hotel and motel sector in the City of Fort St. John is in the range of 70%, but there are seasonal and even weekly variations to this rate (Pomeroy Hotel, General Manager 2009 and 2011, pers. comm.; Quality Inn, General Manager 2009, pers. comm.).

Occupancy levels for non-market housing vary but are generally considered to be low, especially for emergency and shelter housing in the City of Fort St. John (Salvation Army, Manager 2011, pers. comm.; North Peace Community Resources Society, Executive Director 2011, pers. comm.).

29.3.6 Outlook

Future housing conditions in the PRRD will continue to respond to demographic trends and population changes driven by economic activity.

29.3.6.1 Planned Housing Developments and Land Available for Housing

All communities in the LAA have residential land available for development, as infill in existing subdivisions and for perimeter expansion. Nevertheless, some communities, such as the District of Hudson's Hope, will need to seek new parcels or increase density to meet expected demand over the next eight years (District of Hudson's Hope 2012). There is also sufficient capacity in municipal infrastructure to extend services to accommodate anticipated development in most municipalities (CitySpaces 2006). As indicated within Volume 4 Section 30 Community Infrastructure and Services, projected

additions to infrastructure development will be sufficient to support new residential development over the next 10 years.

Future residential land and housing is planned in all current Official Community Plans in the PRRD. The City of Fort St. John expects a population increase of 8,000 to 10,000 in the next 10 years, and 20,000 to 30,000 in the next 25 years. The City of Fort St. John's Official Community Plan indicates that their community "has adequate land resources to support this growth for the foreseeable future. As population continues to grow, the City will focus on infill opportunities and densification within our existing service boundary" (City of Fort St. John 2012: 46).

The PRRD's Official Community Plan for the North Peace Fringe Area (i.e., the rural areas of PRRD Area C surrounding the City of Fort St. John and the District of Taylor) proposes to target residential development to infill areas with access to existing community sewer systems while maintaining the area's medium- and low-density rural residential character. Proposed settlement areas are to be complemented with high-density residential zoning north and east of the existing City of Fort St. John boundaries. Policies and provisions for the advancement of affordable housing are also part of the Official Community Plan bylaw (PRRD 2009), specifically:

- New manufactured home parks allowed in high density residential zones
- Secondary suites permitted in all residential areas
- Multiple family dwelling units permitted in high density residential, comprehensive development, and settlement centre zones
- Consideration for alternative housing options, including small-lot subdivisions

New subdivisions proposed for the City of Fort St. John in 2011 are summarized in Table 29.18. Twelve subdivision projects were either under construction or in planning during the year, representing more than 5,000 units.

Table 29.18 The City of Fort St. John Subdivision Developments, 2012

Name	Lots (No.)	Developer
Westridge	256	Colteran Developments
Sunset Ridge	275 & 125 units maximum on High Density Zone	Peace Holdings
Country View	20	Steve Moore
Parklane (Phase 2B)	48	John McKay
Energy Park (Parklane Phase 3)	201 duplex units	Al Parker
Greenridge Heights	Total of 932 units mix use	City Of Fort St. John
Garrison Landing	237 & 257 units maximum on High Density Zone	Seymour Pacific
Duplex Lots	26 duplex units	Colteran Developments
Newrock Condos	78 units	Newrock Developments
Hillcrest Village Condos	156 units	Terra Partners
G8 Properties on 102nd Avenue	900 units maximum on High Density Zone	G8 Properties
Station 44 Residential Zones	1648 units maximum on Medium to High Density Zones	G8 Properties

NOTE:
NA – data not available
Source: City of Fort St. John, Planning Officer 2012, pers. comm.

The District of Taylor has available developable lots. A strata development under construction in the District of Taylor would provide approximately 190 units over the next five years. Phase 1, which consists of 12 units, has been constructed; further development would be expected to proceed once the majority of the units are sold. The District also expects an additional 125 homes in the community over the next 10 years, including 32 existing lots and 93 lots that the District plans to sell for residential housing development (District of Taylor, Administrator 2011, pers. comm.).

The District of Hudson's Hope has residential subdivisions slated for development, with 99 residential units currently under construction or completed within the last year, as of September 2012. This new construction will have increased the dwelling unit stock in the District of Hudson's Hope by approximately 23%. There are proposals to add a third 36-unit apartment building. In addition, there are approximately 65 full-serviced and zoned vacant residential infill lots in the town centre. A further 60.4 ha of large lots would be suitable for subdivision to accommodate multi-family development (Urban Systems 2012).

The District of Chetwynd has several landowners investigating subdivision development (in the range of 20 to 50 lots); however, there is no new construction at this time. The District is working to initiate a development of approximately 40 single family lots and a handful of multi-family lots (District of Chetwynd, Chief Administrative Officer 2011, pers. comm.).

According to the North Peace Fringe Area Official Community Plan, annual growth of 2% between 2010 and 2020 is anticipated, for a total addition of 2,000 new residents. In

response, the PRRD's Official Community Plan designates land to accommodate demand for various land uses and the expected increase in population growth. This includes 6,094 ha of land suitable for high-, medium-, and low-density rural residential development, with a capacity to house approximately 8,000 new residents (PRRD 2009).

29.3.6.2 Housing Projection

Based on the latest population trends, future anticipated economic growth, planned developments, and future land availability, the PRRD communities most likely to receive new population and to experience increased demand for housing are the cities of Fort St. John and Dawson Creek.

The base case (non-Project) population projection for the PRRD, as presented in Volume 4 Section 28 Population and Demographics, is for strong population growth due to natural increase and in-migration, which by 2021 is expected to add 15,521 persons to the PRRD. Assuming that per capita housing requirements remain unchanged, population growth would result in a need for a 22% increase in the housing stock over the next 13 years. In its internal planning, the PRRD recognizes the potential for the Project as a population effect (PRRD, General Manager Development Services 2012, pers. comm.).

Communities are also planning for population growth. Over the next 20 years, the City of Fort St. John expects to see more "multi-family" developments relative to single family and duplex development. The City's proposed Development Cost Charge program and bylaw assumes that 2,279 new single family and duplex units and 1,159 multifamily units will be built between 2011 and 2030 (Urban Systems 2011), approximately 200 new units annually. This is within the range for new housing starts recently in this community.

Projections prepared as part of this assessment for the housing stock in the North Peace and South Peace regions are shown in Table 29.19. The dwelling projections are based on the household forecast in Volume 4 Section 28 Population and Demographics. The inventory of temporary accommodation is assumed to grow at the same rate as the growth in households, in response to anticipated economic growth and the associated increase in business travel.

In the North Peace, the number of owned and rental housing units is expected to increase by 1,698, between 2012 and 2022, an increase of 12.6%. The inventory of temporary accommodations is anticipated to see similar growth with an additional 290 units.

Table 29.19 Dwelling and Temporary Accommodation Projections for the North Peace and South Peace, 2014–2022

Regional District	Units								
	2014	2015	2016	2017	2018	2019	2020	2021	2022
North Peace Households									
Owned dwellings	9,833	10,044	10,250	10,377	10,501	10,605	10,724	10,899	11,079
Rented dwellings	3,563	3,639	3,714	3,760	3,805	3,843	3,886	3,950	4,015
Temporary accommodations	2,294	2,343	2,391	2,421	2,450	2,474	2,502	2,542	2,584
South Peace Households									
Owned dwellings	8,766	8,925	9,078	9,170	9,240	9,309	9,358	9,433	9,517
Rented dwellings	2,773	2,823	2,872	2,901	2,923	2,945	2,961	2,984	3,011
Temporary accommodations	2,395	2,438	2,480	2,505	2,524	2,543	2,557	2,577	2,600

Demand for non-market housing is expected to continue to increase in the LAA due to population growth, but particularly in the City of Fort St. John and City of Dawson Creek where social services are concentrated. The trend toward a greater proportion of older residents staying in the PRRD in their retirement years will increase demand for seniors-oriented housing, including those that provide supportive or assisted living services (CitySpaces 2006).

29.3.7 Housing Baseline Conditions for Aboriginal Peoples

The housing baseline conditions apply in general to the Aboriginal population not living on a reserve in the LAA. The specific housing characteristics for the Aboriginal population not living on reserve are not known, as housing data are not typically collected by Aboriginal identification for non-Aboriginal communities such as Fort St. John and Dawson Creek.

In 2006, there were 45 occupied private dwellings on the Doig River First Nation reserves. Forty-four per cent were in good condition while 56% required minor repair (Statistics Canada 2007; Statistics Canada 2009). Plans have been developed by Doig River First Nation to increase the number of houses to over 80 (Interraplan Inc. 2004). There are 49 houses on the Prophet River First Nation reserve, and 25 on the West Moberly First Nations reserve. While housing is in good condition on the Prophet River First Nation reserve, approximately 40% of West Moberly First Nations' houses are in need of minor repairs.

Work orders for minor repairs and maintenance are common to address on reserve housing. Funding received from Aboriginal Affairs and Northern Development Canada (AANDC) for housing maintenance and repairs is perceived by some First Nations as being insufficient, given the high cost of construction labour and, subsequently, housing repairs. An exception to this is the Prophet River First Nation reserve, where community members are generally satisfied with the quality and maintenance of the existing on-reserve 32 housing units.

Housing shortages exist on all four reserve communities included in this assessment. Funding sources are deemed insufficient, given the relative cost of constructing houses,

and so new builds are not common. Housing for seniors is also in high demand, and in short supply. This lack of housing has resulted in crowding on some reserves, and associated health and wellness issues.

The Doig River First Nation has identified the pursuit of commercial and residential development through increased non-reserve land holding and investment in affordable housing solutions as a strategy for alleviating on-reserve housing pressure.

A report from T8FNs Community Assessment Team and The Firelight Group Research Cooperative reported that the costs for purchasing a house and paying rent in nearby off-reserve communities are considered high, and high costs (particularly the high rental costs) in Fort St. John have negative social effects. Aboriginal persons living in the non-Aboriginal communities in the LAA often pay a disproportional amount of rent to food and other expenses, and that high rents act as a deterrent to pursuing post-secondary educations for many, and act as a barrier to elders living in Fort St. John in an effort to be closer to medical services (T8FNs Community Assessment Team and The Firelight Group Research Cooperative 2012b).

29.4 Effects Assessment

The effects on housing are assessed by taking into account the potential for change in the following key aspects:

- The demand for housing, with specific reference to the City of Fort St. John
- The assessment of the Project on the labour market and on population and demographics will be used to assess the effects on housing
- Specific plans by BC Hydro to directly provide worker accommodation

Labour market and population effects, as well as worker accommodation provisions are direct inputs into the determination of the assessment of demand for housing; therefore, these three aspects are assessed for combined change.

29.4.1 Effects Assessment – Construction – Changes in Demand for Housing– General Population

29.4.1.1 Change in Labour Market and Population and Demographics

Housing effects generated by the Project would result from project labour requirements and the associated in-migration of new workers and their families (direct, indirect, and induced workforce).

Table 29.20 summarizes results presented in Volume 3 Section 17 Labour Market and Volume 4 Section 28 Population and Demographics, estimating the number of direct workers expected to reside in on-site temporary camp accommodations and in communities within commuting distance from the Project. Based on experience with other construction sites in B.C. and Alberta, and based on the estimated number of long-term project jobs, it is estimated that 85% of the direct trades and construction supervisors would live in on-site temporary camp accommodation, and the remaining 15% would live in nearby communities. For BC Hydro management, the reverse is expected, 15% would live on-site and the other 85% would live in the community. The

number of in-migrating workers expected to live in communities would range from a high of 492 persons in Year 5 to a low of 93 in Year 0.

Table 29.20 Number of Direct Construction Workers by Place of Residence

Residence Type	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
On-site temporary camp accommodation	145 [a]	502	683	661	792	1,372	1,227	768	233
Existing residents of LAA [b]	33	121	163	158	181	304	269	162	48
New residents of LAA [c]	93	235	309	311	385	492	469	408	180
Total Direct Employment	271	858	1,155	1,130	1,357	2,167	1,965	1,338	461

NOTES:

[a] 85 direct workers building on-site accommodation in the first two months of construction would be living in temporary accommodation in the community

[b] Existing residents include unemployed residents and employed residents who leave a position that must then be filled by an in-migrant

[c] New residents include in-migrating workers who would not stay in on-site accommodation

Totals may not add, due to rounding

29.4.1.2 Change in Worker Accommodation

As identified in Volume 1 Section 4 Project Description, two on-site construction camps are planned, one for the north bank of the Peace River and one for the south bank. They would be scalable, in that they could increase capacity as required to respond to workforce accommodation requirements. The combined capacity of the camps is planned to be 1,700 workers, but could be scaled up to meet the peak work month in Year 5.

29.4.1.3 Change in Demand for Accommodation

Housing effects would result from direct workers who would live in the community (and not in the on-site camps), and from indirect and induced employment opportunities taken by in-migrants to the LAA. Figure 29.2 shows the anticipated change in the number of people and the number of households as a result of the Project (not including workers living in on-site accommodation). The total increase in households is estimated to be about 133 in Year 0, peaking at a total of 713 by Year 5, and declining back to 226 in the final year of construction before returning to non-Project conditions. There are two years where incremental growth is predicted to be greatest: Year 1, and Year 5. Table 29.21 summarizes the estimated incremental demand for housing by location, type of dwelling, and ownership status during the construction period for the North Peace and South Peace regions.

It is estimated that 90% of in-migrating workers would choose to reside in the North Peace, mainly the City of Fort St. John, District of Taylor, and Area C of the PRRD. Owned private residences would be the preferred housing choice if the length of

employment was more than one year (Nichols Applied Management 2007; Casey 2012, pers. comm.). BC Hydro management, some contractor supervisors, and some trades workers would fall into this category. The close proximity of the Site C dam site to the City of Fort St. John, and short commute times, is another factor that would encourage management and supervisory personnel, and their families, to reside in the community (Kowalik 2012, pers. comm.).

The assumptions and inputs used for the projections are discussed in Volume 4 Appendix A Social Assessment Supporting Documentation, Part 5 Housing Effects Model.

Table 29.21 Projected Total Demand for Accommodation During Construction

Accommodation Type by Region			Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
North Peace	Owned	House	40.4	102.7	130.0	136.5	174.9	198.2	186.4	150.3	67.6
		Apartment	4.7	12.1	15.3	16.1	20.6	23.3	21.9	17.7	7.9
		Mobile Home	2.4	6.0	7.6	8.0	10.3	11.7	11.0	8.8	4.0
		Temporary Accommodation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Subtotal	**47.5**	**120.8**	**153.0**	**160.5**	**205.8**	**233.2**	**219.3**	**176.9**	**79.5**
	Rented	House	5.6	14.8	18.9	19.6	24.8	30.1	28.1	21.8	9.4
		Apartment	42.0	110.9	142.1	147.2	186.3	225.6	210.4	163.9	70.4
		Mobile Home	10.9	29.1	37.7	38.6~~29.4~~	48.4	61.3	57.0~~68.6~~	44.1	18.5~~28.2~~
		Temporary Accommodation	13.9	39.3	52.3	51.9	63.1	91.5	84.7~~150.3~~	64.4	25.2~~29.7~~
		Subtotal	**72.4**	**194.2**	**251.0**	**257.3~~248.1~~**	**322.7**	**408.5**	**380.2~~457.4~~**	**294.3**	**123.5~~137.6~~**
	Total		**119.8**	**315.0**	**404.0**	**417.8~~408.7~~**	**528.4**	**641.6**	**599.4~~676.7~~**	**471.1**	**203.0~~217.1~~**
South Peace	Owned	House	4.5	11.4	14.4	15.2	19.4	22.0	20.7	16.7	7.5
		Apartment	0.5	1.3	1.7	1.8	2.3	2.6	2.4	2.0	0.9
		Mobile Home	0.3	0.7	0.8	0.9	1.1	1.3	1.2	1.0	0.4
		Temporary Accommodation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Subtotal	**5.3**	**13.4**	**17.0**	**17.8**	**22.9**	**25.9**	**24.4**	**19.7**	**8.8**
	Rented	House	0.6	1.6	2.1	2.2	2.8	3.3	3.1	2.4	1.0
		Apartment	4.7	12.3	15.8	16.4	20.7	25.1	23.4	18.2	7.8
		Mobile Home	1.2	3.2	4.2	4.3~~3.3~~	5.4	6.8	6.3~~7.6~~	4.9	2.1~~3.1~~
		Temporary Accommodation	1.5	4.4	5.8	5.8	7.0	10.2	9.4~~16.7~~	7.2	2.8~~3.3~~
		Subtotal	**8.0**	**21.6**	**27.9**	**28.6~~27.6~~**	**35.9**	**45.4**	**42.2~~50.8~~**	**32.7**	**13.7~~15.3~~**
Total			**13.3**	**35.0**	**44.9**	**46.4~~45.4~~**	**58.7**	**71.3**	**66.6~~75.2~~**	**52.3**	**22.6~~24.1~~**
Grand Total			**133.2**	**350.0**	**448.9**	**464.2~~454.1~~**	**587.2**	**712.9**	**666.0~~751.9~~**	**523.4**	**225.2~~41.2~~**

NOTES:

Totals may not add, due to rounding

Total demand includes demand from direct, indirect, and induced workers

29.4.1.3.1 Owned Housing

In the City of Fort St. John area, the increased demand for owned housing is estimated to average 155 residences, with a peak demand of 233 units in 2019 (Year 5). The number of houses available in the market, while maintaining balanced market conditions, would average 288 properties during the construction period, and an estimated 292 properties in 2019. The Project effect, therefore, is expected to be positive, as it would create more balance conditions, especially if a buyers' market were underway when peak effects occur.

29.4.1.3.2 Rental Housing

The Project's incremental demand for rental housing in low- and high-vacancy environments in the Fort St. John area is illustrated in Table 29.22. If the vacancy rate at the time of construction were in the range of 4%, such as prevailed in the PRRD in 2007, then the market could not absorb the new housing demand without additions to housing supply. If the vacancy rate was in the 9% range, the market could absorb the new demand, but rates would still be low in 2019 and 2020.

The minimum vacancy rate that would have to prevail in the North Peace during construction to keep the rental market in balance is illustrated in Figure 29.3. A vacancy rate of 9% (average vacancy rate between 2007 and 2011), or higher, would allow the market to absorb all project demand. If the vacancy rate should go lower, the likelihood of a market imbalance increases. Given the variability in the vacancy rate over the last five years, a low-vacancy period, and therefore a market imbalance, during the course of project construction is reasonably likely to occur.

Table 29.22 Total Rental Demand in Fort St. John Area in Low and High Vacancy Scenarios [a]

	Construction Year (Projected Calendar Year)								
Projected Vacancy Scenario	**Year 0 (2014)**	**Year 1 (2015)**	**Year 2 (2016)**	**Year 3 (2017)**	**Year 4 (2018)**	**Year 5 (2019)**	**Year 6 (2020)**	**Year 7 (2021)**	**Year 8 (2022)**
Project Rental Demand (number of units)	42	111	142	147	186	226	210	164	70
Low Vacancy Scenario									
Without Project 4% (number of available units)	143	146	149	150	152	154	155	158	161
With Project Vacancy Rate	3%	1%	0%	0%	-1%	-2%	-1%	0%	2%
Average Vacancy Scenario									
Without Project 9% (number of available units)	321	328	334	338	342	346	350	355	361
With Project Vacancy Rate	8%	6%	5%	5%	4%	3%	4%	5%	7%

NOTE:

[a] Total rental demand includes direct, indirect, and induced workers. Includes apartments as monitored by CMHC. Private homes, mobile homes, and temporary accommodations are not included.

29.4.1.3.3 Temporary Accommodation

The temporary accommodation component of the housing market could be adversely affected if shortages develop and prices rise because of incremental demand associated with the Project. However, based on research on mobile workers in the Fort McMurray area, it is anticipated that less than 3% of all Project construction workers would stay in local campgrounds, hotels, or motels (Nichols Applied Management 2007).

The projected demand for temporary accommodation during construction is shown in Table 29.23. The average annual number of units required would range from a low of 14 in Year 0 (2014) to 91~~150~~ in 2019~~2020~~. In the first year of construction, there would be a temporary spike in demand of approximately 85 units to accommodate direct workers building the on-site accommodation. Current annual occupancy in the hotel and motel sector in the City of Fort St. John is in the range of 70%. There is sufficient temporary accommodation capacity to handle project demand, which could serve as a contingency option in the event of shortages in the apartment rental market (Pomeroy Hotel, General Manager 2011, pers. comm.). There would be no adverse effects on the temporary accommodation market.

Table 29.23 Total Projected Demand and Supply of Temporary Accommodation in Fort St. John Area During Construction

	Construction Year (projected calendar year)								
Housing Demand and Supply	**Year 0 (2014)**	**Year 1 (2015)**	**Year 2 (2016)**	**Year 3 (2017)**	**Year 4 (2018)**	**Year 5 (2019)**	**Year 6 (2020)**	**Year 7 (2021)**	**Year 8 (2022)**
Demand (units)	14 [a]	39	52	52 63	91		85~~150~~	64	25~~30~~
Supply (units)	336~~33~~ ~~3~~	334~~34~~ ~~0~~	351~~34~~ ~~7~~	355~~35~~ ~~2~~	359~~35~~ ~~6~~	363~~35~~ ~~9~~	367~~36~~ ~~3~~	373~~36~~ ~~9~~	379~~37~~ ~~5~~

NOTES:

[a] Does not account for the 85 direct workers building on-site construction accommodation in the first two months of construction – these workers would be using temporary accommodation in the City of Fort St. John and District of Taylor

Total rental demand includes direct, indirect, and induced workers

29.4.1.3.4 Occupancy Costs

Housing prices in the PRRD could be affected by the Project, but based on the projected housing supply and demand comparison, a sellers' market with a low listing-to-sales ratio would have to be present during the 2014 to 2018 period for that to occur. Even in that scenario, price increases would be temporary as residential builders bring new houses onto the market (BCREA 2010).

Housing studies (City Space 2006; Urban Systems 2011, 2012) show that builder capacity is not a barrier to affordable housing in northeast B.C. Official communities plans in all communities indicate there is available future subdivision space to accommodate expected growth. In addition, conditions that might signal a potential housing shortage during project construction (i.e., low inventories, low listing activity, and low levels of new building activity) are not projected to be evident in the Fort St. John area or the PRRD.

Similarly, the expected increase in listing activity in the last two years of construction as workers leave the area could create a housing surplus with short-term price implications,

but the market would adjust either by discouraging new listing activity (in a buyers' market) or encouraging greater listing and sales activity (in a sellers' market).

Unlike the owned market, the rental market would be vulnerable to rent pressures if vacancy rates were below 9%.

Based on the above analysis, the Project would not affect owned housing or temporary accommodation prices, but there would be a likelihood of apartment shortages, indicating a potential adverse project effect on rental prices.

29.4.1.3.5 Non-Market Housing

Some segments of the non-market sector, including seniors and special needs clients, would not be directly affected by the Project, as their demographics do not match the Project workforce. However, housing for low-income families, the homeless, and those needing transitional housing would be expected to experience increased demand and possible shortages. The source of this demand has two origins: 1) people come to the area seeking Project-related employment, and may need short-term housing support until they eventually find employment (either Project-related or other), and 2) people come to the area seeking Project-related employment who may need short-term housing support, but who may not find work.

Those finding employment have been considered in the assessment of market housing. Even then, some of these workers and their families may experience trouble entering the market and could require short-term support, transitional assistance, or support to become job-ready (Salvation Army, Manager 2011, pers. comm.).

Past experience in northeast B.C. indicates that people coming to the area who do not gain employment will turn to social service providers for basic needs in times of robust economic activity (Salvation Army, Manager 2011, pers. comm.; North Peace Community Resources Society, Executive Director 2011, pers. comm.). When the construction period begins, job seekers coming to the area could arrive without planned accommodation and few resources. If their efforts to find employment are unsuccessful, they may lack the resources to return home. In such cases, shelter services become a last resort.

Given the size and public awareness of the Project, it is predicted that there would be an increase in the number of people coming to the region, resulting in an increase in demand for emergency and transitional housing facilities in the City of Fort St. John during the construction phase.

With the announced expansion of bed availability with the redevelopment of Cedar Lodge by the Salvation Army, shortages of emergency and non-market housing may not occur. The Project would not have an adverse effect on non-market housing.

29.4.1.4 Aboriginal Peoples

The adverse effect in the rental accommodation sector due to Project-induced demand that was identified in Section 29.4.1 applies to Aboriginal persons living and renting in Fort St. John, as well as to its non-Aboriginal renters.

As well, First Nations communities could experience an adverse effect on their housing situations as a result of Project-induced demand for rental accommodation. First Nations people already find the rents in Fort St. John too high and note that people on low fixed

incomes are unable to afford the current rents in Fort St. John. Should demand for accommodation in Fort St. John place pressure on rents, Aboriginal persons, who are often more vulnerable to inflation and rising costs, may move back to their own communities.

While decisions regarding moving back to home communities are individual and difficult to predict, it is reasonable to assume that some First Nations people will return to their communities. However, the housing effect (i.e., change in housing supply and demand) of people returning to reserve communities would depend on a number of factors, including the housing stock, housing development plans, out-migration, and the current housing situation.

29.4.2 Mitigation Measures – Changes in Demand for Housing

29.4.2.1 General Population

BC Hydro has planned to provide on-site and in-community accommodation to support the Project's workforce requirements. BC Hydro is developing a flexible approach to the implementation of worker housing, given that labour expectations, market conditions, and community preferences could change during the project's planning and assessment period, and during project construction.

To retain balanced housing conditions and minimize potentially adverse effects on housing supply and demand, BC Hydro will implement the following mitigation measures:

- Scale camp capacity up or down as required to accommodate direct workers
- Provide logistical assistance to the Project workforce seeking accommodation in communities, through a community camp coordinator.
- Expand the supply of rental housing by building at least 40 rental units in partnership with BC Housing, for use by Project workforce during construction.
- Transition the 40 rental units to permanent non-market/affordable housing after construction (in partnership with BC Housing)
- Expand the supply of temporary accommodation by providing long-stay RV spaces (seeking private or local government partnerships)
- Pre-book hotel and motel space when substantial temporary accommodations are required
- Provide supportive funding to the Fort St. John Salvation Army during the Project construction phase to provide support for people who require transitional or emergency housing, or who need help to become job-ready and able to participate in market housing

29.4.2.2 Aboriginal Peoples

The mitigation measures outlined in Section 29.5~~4.3~~ to help achieve a balanced rental accommodation market have general applicability in the LAA. These mitigation measures will address adverse effects on Aboriginal renters in the City of Fort St. John as well as on its non-Aboriginal renters.

First Nations members may make personal decisions to move back to their communities, which may be influenced by pressure on the City of Fort St. John rental market in terms of low vacancy rates and rising prices. It is proposed that BC Hydro would work with First Nation communities in the LAA to track net migration to on-reserve housing, and, using the results of the monitoring of rental market conditions in the City of Fort St. John, would identify if additional housing related mitigation may be needed.

29.5 Summary of Effects Assessment and Mitigation Measures

Table 29.24 summarizes project effects and mitigation measures for housing. With the application of mitigation measures, residual adverse project effects are only anticipated for the apartment rental market.

Table 29.24 Project Effects and Mitigation Measures on Housing

Project Phase	Potential Effects	Mitigation Measures	Mitigation Effectiveness	Responsibility
Construction	Change in the demand for housing (considering labour market change, population change, and Project plans for worker accommodation), with specific reference to the City of Fort St. John	▪ Scale camp capacity up or down as required to accommodate direct workers ▪ Provide logistical assistance to the Project workforce seeking local accommodation, through a community camp coordinator ▪ Expand the supply of rental housing by building at least 40 rental units in partnership with BC Housing for use by Project workforce during construction. Transition the units to permanent affordable housing use after construction. ▪ Expand the supply of temporary accommodation by expanding the supply of long-stay RV sites ▪ Pre-book hotel and motel space when substantial temporary hotel accommodations are required ▪ Provide financial support to emergency or transitional housing providers in the City of Fort St. John (e.g. Salvation Army)	▪ Mitigation options for housing, specifically the use of scalable on-site camp capacities to control the proportion of direct workers searching for accommodation in the community, are used extensively by major development projects. ▪ BC Hydro has engaged with BC Housing for the 40 unit rental facility and non-market housing mitigation. ▪ Similar mitigation has been used for other BC Hydro projects, including Mica and Revelstoke. ▪ By managing demand and supplementing supply in areas of potential shortage, residual effects on housing can be managed. ▪ Adverse effects are not anticipated, except for the area of apartment rentals where shortages have occurred in the City of Fort St. John in the last five years. ▪ With mitigation there will be residual housing effects.	▪ BC Hydro & its contractors ▪ Partners, including BC Housing and the Salvation Army

NOTE:
N/A = not applicable

29.5.1 Other Mitigation Options Considered

BC Hydro considered the following preliminary concepts for housing:

- Accommodate up to 100% of direct workers on-site. This would be accomplished by increasing full camp coverage so the workers have little to no effect on the regional housing market. This option is technically and economically feasible, but was rejected because it did not meet community interest in encouraging local residency of in-migrating workers.
- Lower-density neighbourhood development in single-family dwellings was considered not technically or economically feasible, as it did not address those segments of the market that were perceived to have shortages (e.g., apartment rentals, non-market housing) and would overlap with an active development market in Fort St. John that appears prepared to increase supply when needed.

29.6 Residual Effects

29.6.1 Characterization of Residual Effects

With the application of the above mitigation measures, there is potential for residual adverse Project effects on housing, due to a high probability of a period of low apartment rental vacancy rates at some point during construction such that incremental demand by the Project would create a rental unit shortage and contribute to imbalanced market conditions.

Residual effects are characterized according to the criteria described in Table 29.25.

Table 29.25 Characterization Criteria for Residual Housing Effects

Criterion	Description	Quantitative Measure or Definition of Qualitative Categories
Direction	Ultimate long-term trend of the effect	**Positive**: maintains balanced market conditions
		Negative: creates an imbalance in market conditions
Magnitude	The amount of change in a key indicator or variable relative to base case	**Low**: Changes in the market cannot be distinguished from base case variations
		Medium: Changes in the market are evident, but remain within recent historical norms
		High: Changes in the market result in effects that are beyond historical norms
Geographic Extent	The geographic area in which effects are anticipated	**Local**: City of Fort St. John, Area C of PRRD, Districts of Taylor and Hudson's Hope
		Regional: PRRD
Duration	The period of time required until indicator returns to base case condition, or the effect can no longer be measured or otherwise perceived	**Short term**: Effect is limited to < 1 year
		Medium term: Effect occurs > 1 year but not beyond the construction of the Project
		Long term: Effect lasts beyond the construction phase and up to 10 years of the operations phase
		Far future: Effect extends > 10 years for the life of the Project

Criterion	Description	Quantitative Measure or Definition of Qualitative Categories
Frequency	The number of times the effect may occur.	**Once**: Occurs once
		Continuous: Occurs on a regular basis and at regular intervals
		Periodic: Occurs at irregular intervals
Reversibility	The degree to which existing baseline conditions can be re-established after the factors causing the effect are removed	**Reversible**: Effect returns to base case conditions
		Irreversible: Effect cannot revert to base case
Context	The extent to which the area within which an effect may occur has already been adversely affected by human activities or has little resilience and resistance to imposed stresses	**Low**: Effect occurs in environments of low resiliency and/or high vulnerability
		Medium: Effect occurs in an environment of moderate resiliency and/or moderate vulnerability
		High: Effect occurs in an environment of high resiliency and/or low vulnerability
Probability	The likelihood that an adverse effect will occur	**Low**: Past experience indicates that an effect is unlikely but could occur
		High: Past experience indicates that an effect is highly likely to occur
		Unknown: Past experience does not allow the determination of the effect's probability
Level of Confidence	Scientific certainty in the review of project-specific data, relevant literature, and professional opinion	**Low:** Assessment based on professional judgment and experience, but hampered by incomplete understanding of cause-effect relationships, and or lack of data.
		Moderate: Assessment based on professional judgment and experience, including a reasonable understanding of cause-effect relationships, and adequate data.
		High: Assessment based on professional judgment and experience, including a good understanding of cause-effect relationships, and ample data.

Effects of the Project on housing would be negative in direction, due to the potential for the Project to create or exacerbate a shortage in the apartment rental market. The magnitude would be low, however, as after mitigation, peak incremental demand would be 16~~24~~ units and peak total demand 31~~71~~ units. The effect would be local, with a concentrated effect in the City of Fort St. John, and sporadic, as market conditions would be changing. Project effect on housing would be reversible with the completion of construction. The context is one of high resiliency, as the housing market in the Fort St. John area and in the LAA has experienced the effects of large development projects, mobile workforces, and large amounts of in- and out-migration in the past.

The probability of an adverse residual effect due to a period of low vacancies during construction would be high. ~~occurring is medium – the probability of a period of low vacancies during construction would be high, but the probability of it occurring during peak construction activity is low.~~

Projections for housing demand by the Project carry a high degree of confidence, while research on major construction projects in Kitimat, the PRRD, and Fort McMurray have provided realistic benchmarks for housing preferences. Supply-side parameters and market conditions are well documented by statistical agencies and housing authorities such as Canada Mortgage and Housing Corporation, and BC Housing. The supply

projections and thresholds used in the assessment are considered conservative and defensible in light of recent history in the region's housing market. For these reasons, the level of confidence in the effects predictions is high.

The adverse project effect on housing is characterized in Table 29.26.

29.6.2 Standards or Thresholds for Determining Significance

Project demand for rental housing that causes the apartment vacancy rate to move below 4% for more than six months is considered a significant adverse effect.

29.6.3 Determination of Significance of Residual Effects

The only potential residual effect is for the apartment rental market. The project demand for rental housing has the potential to create or exacerbate a "landlords' market" if the market is experiencing low vacancy rates when labour requirements and population effects are peaking. It is uncertain whether the threshold vacancy rate would be exceeded, but in consideration of the anticipated short duration and low magnitude, Project effects on housing are not considered significant.

1 **Table 29.26 Characterization Criteria for Residual Effects for Housing**

Activity	Effect	Residual Environmental Effect							
		Direction	Magnitude	Geographic Extent	Duration and Frequency	Reversibility	Context	Level of Confidence	Probability
Construction	Change in demand for housing – apartment rentals	Negative	Low	Local	Short term Periodic	Reversible	High resiliency	High	Low

NOTE:
N/A – not applicable

A summary of residual project effects, mitigation and significance determination is presented in Table 29.27.

Table 29.27 Summary of Effects, Mitigation, and Significance for Housing

Valued Component	Project Phase	Potential Effects	Key Mitigation Measures	Significance Analysis of Residual Effects (Summary Statement)
Housing - Apartment Rentals	Construction	Project demand would create shortages in the apartment rental market	▪ Scale camp capacity up or down as required to accommodate direct workers ▪ Provide logistical assistance to the Project workforce seeking local accommodation, through a community camp coordinator ▪ Expand the supply of rental housing by building at least 40 rental units in partnership with BC Housing for use by Project workforce during construction. Transition the units to permanent affordable housing use after construction. ▪ Expand the supply of temporary accommodation by expanding the supply of long-stay RV sites ▪ Pre-book hotel and motel space when substantial temporary hotel accommodations are required ▪ Provide financial support to emergency or transitional housing providers in the City of Fort St. John (e.g. Salvation Army)	Not significant: proposed monitoring of shortages in the rental market would allow mitigation to be adapted to market conditions and keep vacancy rates above the threshold of 4%.

29.7 Cumulative Effects Assessment

The base case projections for labour market and population include the future effects of major development projects in the Project Inclusion List in Volume 2 Section 10 Effects Assessment Methodology. Therefore, the residual project effects of housing already account for overlaps and interaction with these projects, and therefore reflect potential cumulative effects. An assessment of cumulative effects here is not undertaken because it would represent a double-counting of project residual effects.

29.8 Monitoring and Follow-up

As noted in Table 29.28, monitoring will focus on the apartment rental vacancy rate in the City of Fort St. John. BC Hydro will determine, in cooperation with the City of Fort St. John, when additional mitigation measures, specified in Section 29.4.2, are necessary. While the potential Project demand for rentals is forecast with a high level of confidence, the market conditions themselves may be different than the base case forecast.

Table 29.28 Follow-Up Program for Housing

Valued Component	Project Phase	Monitoring Program Objective	Monitoring Program Frequency	Monitoring Program Duration
Housing	Construction	Monitor apartment vacancy rate and price for Fort St. John area, as published by CMHC. ▪ Work with the City of Fort St. John to review rental market vacancy and affordability, and to identify if additional mitigation is needed (see Section 29.4.2) ▪ Work with Aboriginal communities in the LAA to track net migration to on-reserve housing that is attributable to Project effects on rental market conditions in the City of Fort St. John, and to identify if additional mitigation is needed	Semi-annual	During construction

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