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# District of Kitimat: Household Survey

Population, Income, and Housing Estimates



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## PRODUCED FOR

**Maggie Hall**  
Department of Economic Development  
and Communications, District of Kitimat  
270 City Centre, Kitimat, BC V8C 2H7  
250.632.8900

## PRODUCED BY

**Big River Analytics Ltd.**  
1800C Cedar Drive, Squamish, BC V8B0H9  
hannes@bigriveranalytics.com  
250.922.4999

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# Terms and Acronyms

**CMHC:** Canada Mortgage Housing Corporation.

**Hard shadow:** People in a household for whom Kitimat is not their permanent place of residence (people in the shadow population) and have worked for at least 30 days during the past year<sup>1</sup> in Kitimat or the surrounding areas, as of September 2021.

**Housing costs:** The cost of mortgage or rent payments.

**Shadow population:** People who currently live or stay in Kitimat, but for whom Kitimat is not their permanent place of residence (e.g., the address on their identity card is not in Kitimat, their mail goes to a different household not located in Kitimat).

**Soft shadow:** People in a household for whom Kitimat is not their permanent place of residence (people in the shadow population) and have not worked for at least 30 days during the past year<sup>2</sup> in Kitimat or the surrounding area, as of September 2021.

**Permanent resident:** People who have usual residence in Kitimat, as of September 2021 (e.g., the address on their identity card, where their mail goes, or where they stay most nights out of the year). All persons who have their main residence at the surveyed household address.

For persons with more than one residence in Canada, their usual place of residence is the place where the person lives most of the time, with the following exceptions:

- a. The usual residence of spouses or common-law partners who stay elsewhere while working or studying is the residence where their family lives, if they return periodically.
- b. The usual residence of students is that of their parents, if they return to live with their parents during the year even if they live elsewhere while attending school or working at a summer job.

**Kitimat District Municipality (DM):** Refers to the geographic area encompassed by the 2016 Census Subdivision boundaries for the District of Kitimat. Wherever the term Kitimat is used regarding estimates produced by the Household Survey, it is referencing Kitimat (DM).

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<sup>1</sup> We note that the timeframe for which the 30 days of work must be completed is intended to be “during the past year,” however, this timeframe was not made explicit to respondents in the Household Survey. We discuss this limitation and its impacts in more detail in Section 1.4.

<sup>2</sup> *Ibid.*

# Executive Summary

Kitimat residents have recently expressed concerns about seemingly rapid population growth, increased difficulty finding affordable housing, and widening income disparities between permanent residents and newcomers. There is a sense in the community that these trends are at least partially due to the construction and operations of several major projects in the surrounding region, including the LNG Canada project. Major projects have historically been accompanied by an influx of temporary or “shadow residents” seeking to live and work in nearby communities for some time. The economic and social impacts of an influx of shadow residents have been documented in natural resource-dependent regions in Canada, such as in Northern Alberta (Aylward, 2006). The District of Kitimat wishes to better understand the impacts of these major projects on Kitimat residents.

Data from the 2021 Census of Population, set to be released from February 2022 onwards, will not contain data on the shadow population of Kitimat because respondents fill out their Census questionnaire for their “usual place of residence” (Statistics Canada, 2021) which, for shadow residents, is not Kitimat. Due to the lack of data on this segment of the population in the Census, a unique survey is needed to understand both the permanent and shadow populations of Kitimat, including details on demographics, wages, and housing. We developed and enumerated the 2021 Kitimat Household Survey to obtain information that will enable the District of Kitimat to make program and policy decisions that reflect the current Kitimat population as a whole.

Our findings indicate that, as of September 2021, Kitimat has a total population of 9,978 residents. Of these, 8,595 (86%) are permanent residents<sup>3</sup> and 1,383 (14%) are shadow residents. Kitimat has a higher shadow population as a proportion of the total population than its neighbouring communities of Terrace (4%), the Regional District of Kitimat-Stikine (6%), and Prince Rupert (4%). The permanent resident population of Kitimat has only grown by 1.1% between 2017 and 2021, which suggests that the perceived rapid population growth expressed by the community can be attributed to an influx of shadow residents. Additionally, we estimate that shadow residents pay rents that are 72% higher than those paid by permanent residents, and hard shadow residents (individuals in the shadow population who have worked at least 30 days during the past year in Kitimat or the surrounding areas, as of September 2021) have average annual employment earnings that are almost twice that of permanent residents.

Finally, across all dwelling types and regardless of housing tenure, we estimate an overall vacancy rate in Kitimat of 5.7%. This estimate should be interpreted as a lower bound on possible Kitimat vacancy rates. We further find that vacancy rate estimates for Kitimat are at least twice the average rental vacancy rate for private apartments and attached dwellings (2.5%) across BC.

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<sup>3</sup> This closely aligns with the 2021 Statistics Canada Annual Population Estimate for Kitimat of 8,564 permanent residents.

# 1.0 Introduction

## 1.1 Background

The District of Kitimat is a hub for several major regional projects, such as the Rio Tinto T2 Project, the LNG Canada export facility, the terminal section of the Coastal GasLink pipeline, and the proposed Cedar LNG project.<sup>4</sup> It is expected that these projects have contributed to rapid economic and population growth in Kitimat by attracting both new permanent residents who wish to call Kitimat home, and temporary residents seeking to live and work in Kitimat for a shorter period of time. Further, LNG Canada is projected to reach its peak construction phase in June 2022. With this background as context, the District of Kitimat requires accurate and up-to-date data on its current population to support community planning and policy development in this period of growth.

Currently-available data sources do not provide an accurate overview of the current population of the District of Kitimat or the characteristics of its residents. The 2016 Census of Population remains the most complete data source on the size and composition of Kitimat, but these data are now outdated. Census data also omit shadow residents, who live and work in Kitimat but whose permanent place of residence may be elsewhere. Consequently, this segment of the population will not be captured by the 2021 Census of Population (set to be released from February 2022 onwards). Capturing the shadow population is important as shadow residents draw on local services, impact the local labour market, and influence affordability dynamics, all of which affect the broader set of Kitimat residents.

The objective of this report is to present a snapshot of the community that is conducive to Kitimat's immediate and near-future planning needs and inclusive of the entire Kitimat population. To this end, Big River Analytics has worked with the District of Kitimat to develop the 2021 Kitimat Household Survey ('Household Survey') to collect data on the permanent and shadow populations of Kitimat, including data on local wages and housing costs.

## 1.2 Objectives

The Household Survey was designed to provide up-to-date estimates of (i) the population, (both permanent and shadow residents), (ii) local employment earnings, (iii) household incomes, (iv) rent and mortgage costs, and (v) vacancy rates. In this report, we contextualize these estimates using data on the population and demographic characteristics of neighbouring regions and communities. This report also seeks to identify what effects the shadow population has on community growth and experiences. These estimates will augment the forthcoming 2021 Census of Population data collected by Statistics Canada to support the District of Kitimat in community planning, programming, and making policy decisions.

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<sup>4</sup> The Cedar LNG project is awaiting approval of their Environmental Assessment Certificate (EAC).

To achieve the objectives of this report, we conduct an analysis of population and socioeconomic estimates produced using primary data collected from the Household Survey. Where possible, these estimates are produced by dwelling type (single-detached, attached, apartment, and mobile home), neighbourhood, and resident type (permanent or shadow). Further, we use secondary data to provide regional comparisons of population composition and growth, income, rent costs, and vacancy rates in an effort to contextualize Kitimat's situation relative to nearby regions and communities.

### 1.3 Methodology

We drew a sample of 707 dwellings from the District of Kitimat property tax roll (our sampling frame) to participate in the Household Survey. The geographic area covered in this sample represents the District Municipality (DM) of Kitimat and is referenced in this report as Kitimat. We employed a stratified random sampling approach to account for the interest in estimates across different dwelling types in Kitimat. Counts and proportions of Kitimat dwellings by type are presented in Appendix A, Table A1.1.

Out of the 707 sampled dwellings, a total of 325 dwelling representatives responded to the Household Survey, with 73 declining to participate, producing a response rate of 51.3%. Our responses include an overrepresentation of participants from single-detached dwellings (70% of responses) and underrepresentation from apartments (8%) relative to their respective proportions in the property tax roll (see Table A1.1). To account for this discrepancy, estimates presented in this report are weighted by dwelling type and by neighbourhood. The impact of the underrepresentation of responses from apartments is discussed in more detail when we present vacancy rate estimates in Section 4.2.

Lastly, we use secondary data from the 2016 Census of Population, Statistics Canada Annual Demographic Estimates, and Canada Mortgage Housing Corporation (CMHC) estimates of rental costs, mortgage payments, and vacancy rates to supplement our estimates calculated using primary data from the Household Survey.

### 1.4 Limitations

Our estimates find that, of 1,383 shadow residents in Kitimat, 1,105 are soft shadow residents and 277 are hard shadow residents. While we are confident in our estimates of the total shadow population present in Kitimat, the percentage of shadow residents that are soft shadow residents (80%) relative to hard shadow residents (20%) is larger than we would expect given what we have seen in neighbouring communities.<sup>5</sup> In other words, we expect that the size of the soft shadow population relative to the hard shadow population has been overestimated.

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<sup>5</sup> The ratio of soft shadow to hard shadow is 4:1 in Kitimat, compared to 3:1 in Terrace (2020) and 2:3 in Prince Rupert (2015).

We expect that the cause of this overestimation of soft shadow residents relative to hard shadow residents is misreporting among survey respondents due to the misinterpretation of the following survey question:

*“Of the people in your household for whom this address is NOT their permanent address, how many have worked for at least 30 days in Kitimat or the surrounding areas?”*

More specifically, this question aims to identify which individuals have permanent residence elsewhere (shadow population) but maintain employment in Kitimat or the surrounding area (hard shadow). We note that the question did not define a timeframe that the 30 days of work must occur within (e.g., “during the past year”), therefore leaving room for misinterpretation. To more accurately identify who is part of the hard shadow vs. soft shadow, those who did or didn’t work at least 30 days in Kitimat or surrounding area, the question should be have read:

*“Of the people in your household for whom this address is NOT their permanent address, how many have worked for at least 30 days **during the past year** in Kitimat or the surrounding areas?”*

In light of this limitation, we encourage cautious interpretation of population estimates for hard and soft shadow residents presented in the report.

## 1.5 Report Overview

The report is structured as follows. **Section 2.0** provides population estimates for the permanent and shadow populations of Kitimat, as well as regional comparisons with the shadow populations of the City of Terrace, the Regional District of Kitimat-Stikine, and the City of Prince Rupert. **Section 3.0** presents distributions of wage and household income for residents of Kitimat. **Section 4.0** presents average rent and mortgage costs and estimated vacancy rates in Kitimat by dwelling type and neighbourhood and provides regional comparisons using secondary data from the CMHC. **Section 5.0** concludes the report with a discussion of the key findings and how they relate to the rapid growth Kitimat is experiencing and what additional research would be useful to corroborate the effects of the shadow population. **Section 6.0** includes a series of appendices. **Appendix A** details the survey approach, enumeration, survey results, and questionnaire design. **Appendix B** provides additional detail of the results and figures mentioned in the report.

## 2.0 Population Estimates

In this section we present the estimated population of Kitimat in terms of its permanent and shadow residents using data from the Household Survey. The shadow population refers to people who currently live or stay in Kitimat, but whose usual place of residence is elsewhere. In Section 2.1, we present current estimates and historical population counts for Kitimat, and in Section 2.2, we contextualize these data by comparing the growth rates of surrounding communities.

### 2.1 Overview

We estimate a total population of 9,978 residents in Kitimat as of September 2021. Of the total population, we estimate 8,595 (86%) to be permanent residents and 1,383 (14%) to be shadow residents. Our permanent population estimate aligns closely with Statistics Canada’s 2021 Annual Demographic Estimates, which estimates the 2021 population of Kitimat to be 8,564 residents (Statistics Canada, 2022).

Table 2.1 presents counts and percentages for the total population, permanent resident population, and a breakdown of shadow residents by hard shadow (i.e. those who have worked at least 30 days in Kitimat or the surrounding area) or soft shadow (i.e. all other shadow residents). In Kitimat, the shadow population is estimated to be 14% of the total population. We estimate the majority are soft shadow residents (11%) with the remaining 3% making up the hard shadow. These proportions should be interpreted with caution, as discussed in Section 1.4.

Data collected via the Household Survey allows us to estimate both the permanent and shadow populations of Kitimat, which carries the benefit of understanding the population of Kitimat as the total of the people living there, as opposed to being constrained by knowing only how many people have their permanent place of residence in Kitimat.

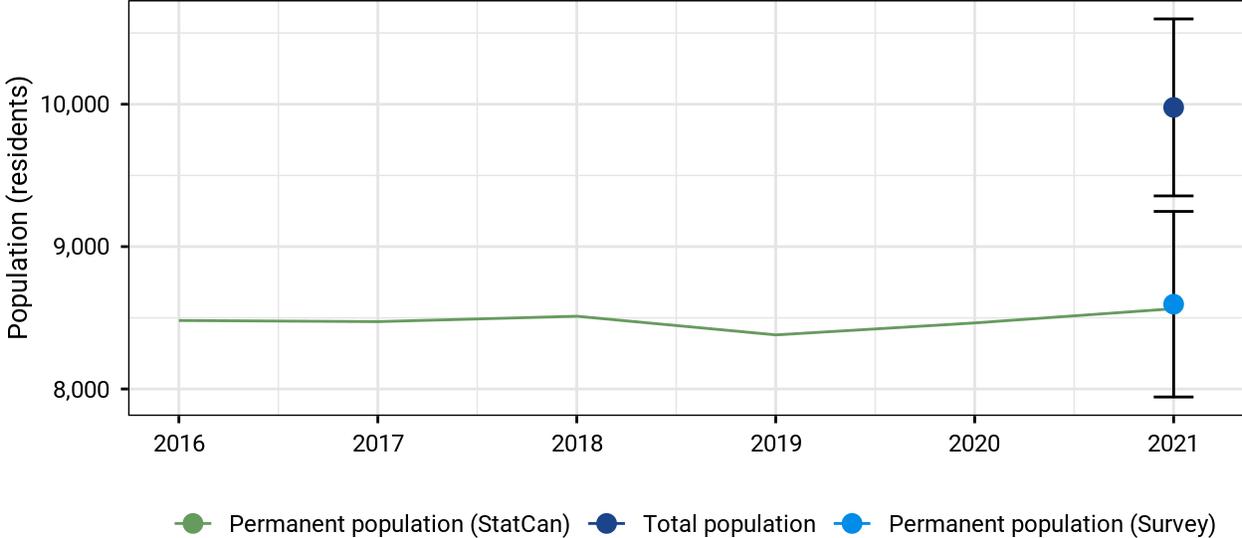
**Table 2.1: Population Estimates, Kitimat, 2021**

Estimate	Population type								
	Total	Permanent		Shadow					
				Total		Soft shadow		Hard shadow	
#	#	%	#	%	#	%	#	%	
Mean	<b>9,978</b>	8,595	86%	1,383	14%	1,105	11%	277	3%
Lower Confidence Limit	<b>9,356</b>	7,944	82%	989	10%	745	8%	130	1%
Upper Confidence Limit	<b>10,599</b>	9,247	90%	1,776	18%	1,465	15%	424	4%

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Notes:** Percentages are based on the proportion compared to the total population. Lower and upper confidence limits are for a 95% confidence interval. Due to rounding, the sum of soft and hard shadow does not equate to the total shadow population.

We present Statistics Canada estimates of the permanent population in Kitimat from 2016 to 2021 in Figure 2.1. Notwithstanding a dip in 2019, the permanent population has remained relatively steady over this timeframe, increasing 2.2% since 2019. This modest increase highlights the potential that the additional activity in Kitimat is most likely a contribution of major regional projects and a period of expanded economic development. In Figure 2.1, we also present our permanent population estimate (using data collected via the Household Survey) as of 2021 (8,595 residents) and our total population estimate (9,978), which includes shadow residents. Failing to account for this segment of the population serves to underestimate the actual population of Kitimat in terms of the number of people living in the geographic area. Error bars are shown indicating the lower and upper confidence limits forming a 95% confidence interval.

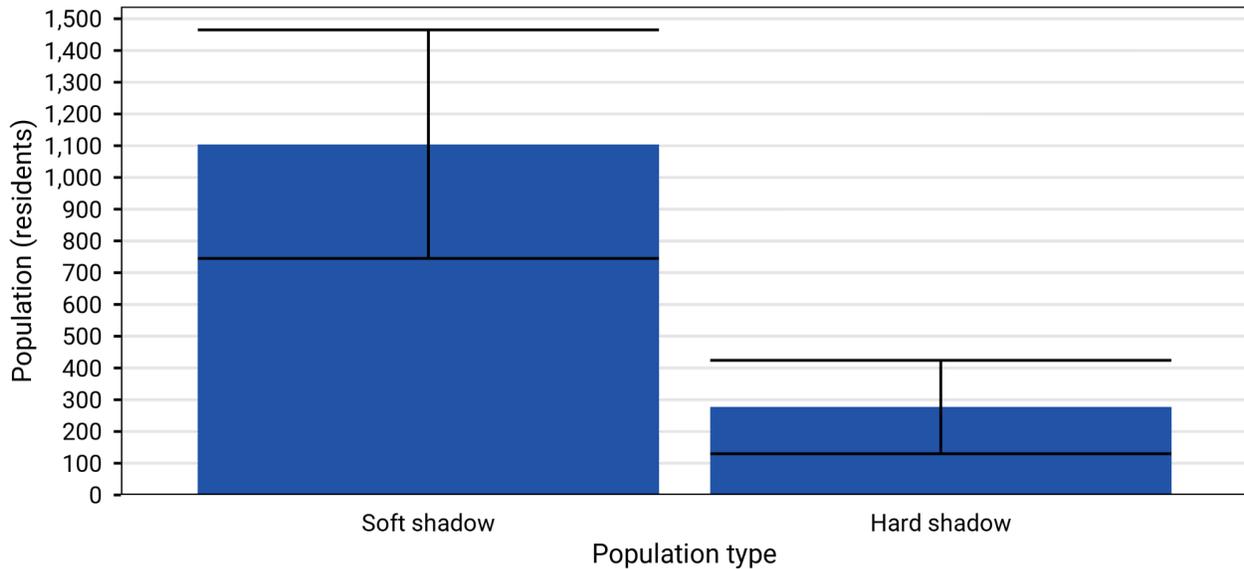
**Figure 2.1 Permanent and Total Population Estimates, Kitimat, 2016–2021**



**Source:** Permanent population - Statistics Canada, Table 17-10-0142, Total population - Big River Analytics calculations from the 2021 Kitimat Household Survey. Permanent Population (Survey) - Big River Analytics calculations from the 2021 Kitimat Household Survey  
**Notes:** Total population estimates include permanent and shadow residents. Lower and upper confidence limits are for a 95% confidence interval.

Figure 2.2 presents estimates of the soft and hard shadow populations of Kitimat. The error bars represent the upper and lower bounds of the 95% confidence interval surrounding the mean values presented in Table 2.1. Of the total shadow population in Kitimat, hard shadow residents make up a smaller proportion of the total Kitimat population than soft shadow residents, although this may be due to an overestimation of soft shadow residents, as discussed in Section 1.4.

**Figure 2.2: Shadow Population Estimates, Kitimat, 2021**



**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey.

**Notes:** Hard shadow represents individuals who identified as being employed in Kitimat or the surrounding area for at least 30 days, as of September 2021. Soft shadow represents the remainder of the shadow population (not employed at least 30 days, but residing in Kitimat as non-permanent residents). Lower and upper confidence limits are for a 95% confidence interval.

## 2.2 Regional comparisons

Population estimates constructed using data collected by the Household Survey indicate that Kitimat has a far higher shadow population (14% of the total population) than other communities in the region such as the City of Terrace (4%) (Big River Analytics, 2020), the Regional District of Kitimat-Stikine (RDKS, 6%) (Big River Analytics, 2020), and Prince Rupert (4%) (Big River Analytics, 2015). The higher concentration of shadow residents in Kitimat is attributable to the relative proximity of Kitimat to major projects in the area such as the Rio Tinto T2 project, the LNG Canada export facility, and the terminus of the Coastal GasLink pipeline. A regional comparison of total shadow population by size and proportion of the population is presented in Table 2.2.

**Table 2.2: Regional Comparison of Total Shadow Population by Size (#) and Proportion of Total Population (%)**

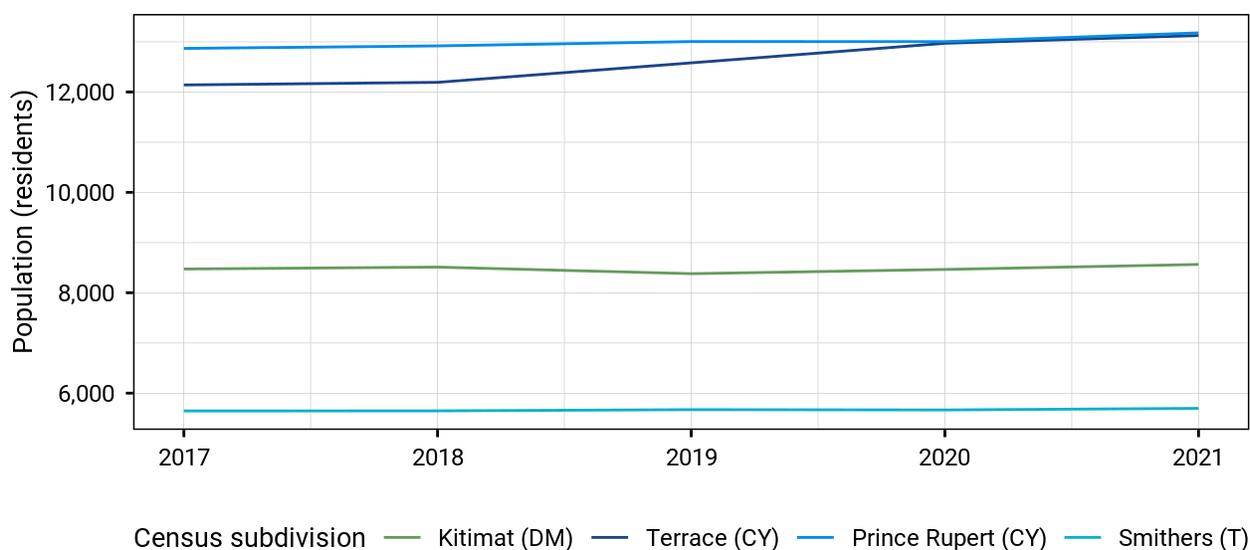
Estimate	Kitimat (DM) 2021		Terrace, 2020		RDKS, 2020		Prince Rupert, 2015	
	#	%	#	%	#	%	#	%
Mean	1,383	14%	471	4%	415	6%	521	4%
Lower Confidence Limit	989	10%	120	1%	118	2%	378	3%
Upper Confidence Limit	1,776	18%	1,102	8%	887	11%	663	5%

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey, including results of previous studies conducted by Big River Analytics (Prince Rupert and City of Terrace population studies). **Notes:** Percentages are based on the proportion compared

to the total population. Lower and upper confidence limits are for a 95% confidence interval. Due to rounding, the sum of soft and hard shadow does not equate to the total shadow population.

In Figure 2.3, we plot the permanent population over time in Kitimat and selected communities in the region. Year-over-year growth rates are presented in Table 2.3. The permanent population of Kitimat grew by 1.1% between 2017 and 2021 – roughly the same rate as Smithers (0.9%). The permanent population in larger communities grew at a faster rate than in Kitimat, as seen in the cities of Terrace (8.1%) and Prince Rupert (2.4%). The lower growth rate of the permanent population in Kitimat in comparison with larger neighbouring communities suggests that major regional projects surrounding Kitimat do not add to permanent population growth and that observed increases in total population arise from an influx of temporary residents.

**Figure 2.3: Permanent Population Estimates, Kitimat and Selected Communities, 2017–2021**



**Source:** Statistics Canada, Table 17-10-0142-01. **Note:** DM: District municipality; CY: City; T: Town.

**Table 2.3: Permanent Population Estimates, Counts and Year-Over-Year (YOY) Growth, 2017–2021**

Year	Kitimat (DM)		Terrace (CY)		Prince Rupert (CY)		Smithers (T)	
	Population (#)	YOY growth (%)	Population (#)	YOY growth (%)	Population (#)	YOY growth (%)	Population (#)	YOY growth (%)
2021	8,564	1.18	13,125	1.2	13,177	1.34	5,697	0.56
2020	8,464	1	12,970	3.1	13,003	-0.01	5,665	-0.11
2019	8,380	-1.54	12,580	3.18	13,004	0.67	5,671	0.43
2018	8,511	0.45	12,192	0.43	12,918	0.39	5,647	0.04
2017	8,473	-	12,140	-	12,868	-	5,645	-

**Source:** Statistics Canada, Table 17-10-0142-01. **Note:** DM: District municipality; CY: City; T: Town.

### 3.0 Wage and Household Income

The current section presents income statistics for households and individuals in Kitimat, developed from the Household Survey. We report household incomes as the total income of a household, from all sources and for all members of the household, before taxes. This estimate is comparable to the definition of total household income from the 2016 Census of Population. We report employment incomes for individuals as annual before-tax wages or salaries. For individuals with multiple jobs, we report the income from their primary job. Since the concept of employment income applies only to individuals who are employed, we only report employment income statistics for the subset of residents who are employed. For context, we also provide comparable estimates from the 2016 Census of Population, where available. This allows us to compare the growth of incomes in Kitimat over time.

#### 3.1 Household Income

Table 3.1 presents the estimated average household income in Kitimat in 2021, for households with one individual, households with multiple individuals, and all households. The average income of households with multiple members (\$142,061) is almost twice that of households consisting of a single person (\$72,562). Since most households in Kitimat are multiple-member households, the average income for all households (\$123,170) is much closer to the average income for households with multiple individuals than to the average income for single-individual households.

**Table 3.1: Average Total Annual Household Income by Household Size, Kitimat, 2021**

Estimate	Household Size		All Households
	One Individual	Multiple Individuals	
Mean	\$72,562	\$142,061	\$123,170
Lower Confidence Limit	\$58,161	\$87,929	\$83,436
Upper Confidence Limit	\$86,963	\$196,193	\$162,904

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** Includes income from all sources for all household members, before taxes.

In the 2016 Census of Population, the average total income for all households was \$107,834, with single-member households averaging \$59,340 and multiple-member households averaging \$128,299. Our estimates thus imply that the average total household income in Kitimat grew by 14% from 2016 to 2021, with single-individual households’ incomes growing faster (22%) than multiple-individual households (11%). Note that these estimates are in current-year dollars and not adjusted for inflation; therefore the growth in real household incomes is less than that implied by comparing the estimates from the Household Survey to those reported by the 2016 Census of Population.

### 3.2 Employment Income

Table 3.2 presents the average annual employment income of individuals employed in the goods-producing and services-producing sectors in Kitimat. The goods-producing sector includes manufacturing industries, utilities, and primary industries such as mining and agriculture. The services-producing sector includes all other industries, including wholesale and retail, professional services, personal services, and government. On average, Kitimat residents employed in the goods-producing sector earn about 50% more than those employed in the services-producing sector (\$90,047 per year for the goods-producing sector compared to \$61,968 per year for the services-producing sector). We estimate the average annual employment income for all employed Kitimat residents to be \$71,551.

**Table 3.2: Average Annual Employment Income by Industrial Sector, Kitimat, 2021**

Estimate	Industrial Sector		All Individuals
	Goods-Producing	Services-Producing	
Mean	\$90,047	\$61,968	\$71,551
Lower Confidence Limit	\$78,283	\$54,756	\$64,959
Upper Confidence Limit	\$101,810	\$69,179	\$78,142

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** For employed residents only.

Table 3.3 presents the estimated average annual employment income for permanent residents and shadow residents in Kitimat. On average, soft shadow residents earn \$58,328 per year, 16% less than the average annual earnings of permanent residents (\$69,713). By definition, soft shadow residents are individuals in the shadow population who have not worked 30 or more days in Kitimat or the surrounding area, as of September 2021. Therefore, we assume that income reported by these individuals was earned elsewhere. In contrast, hard shadow residents earn significantly more on average than permanent residents, with an average annual employment income of \$127,670. This is almost twice the annual employment income of permanent residents.

**Table 3.3: Average Annual Employment Income by Resident Type, Kitimat, 2021**

Estimate	Resident Type			All Individuals
	Permanent	Soft Shadow	Hard Shadow	
Mean	\$69,713	\$58,328	\$127,670	\$71,551
Lower Confidence Limit	\$63,454	\$49,371	\$84,786	\$64,959
Upper Confidence Limit	\$75,972	\$67,284	\$170,554	\$78,142

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** For employed residents only.

## 4.0 Housing Costs and Vacancy

Section 4.0 presents findings from the Household Survey on rents and mortgage costs for permanent and shadow residents of Kitimat (Section 4.1) and estimated vacancy rates for Kitimat dwellings (Section 4.2). Estimates derived from primary data are compared to both recent CMHC housing cost and vacancy estimates and data from a telephone survey of property management companies conducted by Big River Analytics in July 2021. In this section, the term ‘housing cost’ refers to rents or mortgage payments paid by a household. Housing costs by neighbourhood are not discussed in this section but are presented instead in Appendix B2.

### 4.1 Housing Costs

According to primary data collected via the Household Survey, as of September 2021, the average monthly rent in Kitimat is \$1,074 for an apartment (1, 2, or 3 bedrooms) and \$1,307 for attached homes. Rents estimated using survey data are lower than 2020 CMHC estimates: \$1,491 for an apartment and \$1,293 for a row house. We also find that Kitimat residents living in single-detached dwellings face the highest monthly rental costs at \$1,971.

Kitimat residents pay more in rent for attached dwellings and apartments on average than residents of Terrace, Prince Rupert, and Smithers (CMHC, 2021) (regardless of whether Household Survey or CMHC estimates are used). Estimated rents in Kitimat (both Household Survey and CMHC estimates) and neighbouring communities (CMHC estimates only) are presented in Table 4.1 as a regional comparison. Note that CMHC housing cost estimates are provided for rental apartments and row homes only and serve as a comparison of housing costs across communities geographically proximate to Kitimat.

**Table 4.1: Regional Comparison of Average Rents by Dwelling Type**

Dwelling Type / Source	Kitimat (\$)		Terrace (\$)	Prince Rupert (\$)	Smithers (\$)
	2021 (Household Survey)	2020 (CMHC)	2020 (CMHC)		
Single-detached	1,971	-	-	-	-
Attached	1,307	1,293*	970	1,269	797
Apartment	1,074	1,491	914	1,001	790
Mobile home	-	-	-	-	-

**Source:** Kitimat (2021): Big River Analytics calculations from the Household Survey. All regions: CMHC Rental Market Survey, 2021.

**Notes:** \*This estimate refers to rents of two-bedroom row housing only. Estimates for Kitimat (Household Survey) include rents for all dwellings except mobile homes. CMHC estimates encompass rents for apartments and row housing only (i.e. not detached dwellings). Estimates for mobile homes from the survey are omitted due to the small sample size.

### 4.1.1 Incomes Among Renters and Owners

The majority of residents in Kitimat own their dwellings (78%), while the remaining 22% rent. Of the households that own their homes, 28% own their house outright and do not report any mortgage payments.

We find that owner households generally report higher earnings (household income) than renter households. On average, owner households earn \$117,798 per year, which is 42% higher than the \$82,223 earned, on average, by renter households. In addition to earning more, the payments owners make on mortgages are, on average, less than renters make on rental payments. However, the two types of housing costs are different and not directly comparable. Mortgage payments often encompass the payment on the dwelling, interest, and sometimes property taxes, whereas rents often encompass additional costs like utilities, property tax, and other contingencies for repairs. Owner households pay \$896 per month, on average, 28% less than the \$1,242 renter households paid in rent.

Owner households tend to spend a lower percentage of their income on mortgage payments than renter households spend on rent. In Kitimat, 77% of owner households spend less than 30% of their pre-tax income on mortgage payments, which is ten percentage points higher than the 67% of renters who spend less than 30% of their pre-tax income on rent.

We present a regional comparison of the percentage of households that spend less than 30% of their income on shelter costs in Table 4.1.1. Although dated, the only source of data on shelter-costs-to-income are from the 2016 Census of Population. Statistics Canada's definition of shelter costs differs from our measure of income spent on housing costs (rent or mortgage only) by including, (i) for owner households, mortgage payments, property taxes and condominium fees, for rental households, (ii) for renter households, rent, and (iii) for all households, costs of electricity, heat, water and other municipal services, where applicable (Dictionary, Census of Population, 2016).

Consistent with the conclusions made using estimates from the Household Survey, owner households in all communities included in our analysis are more likely to spend less than 30% of their income on shelter costs than renter households. Kitimat has the highest percentage of owner households spending less than 30% of their income on shelter costs (93.3%) and the second-highest percentage of renter households spending less than 30% of their income on shelter costs (65.7%) when compared to Terrace, Prince Rupert, and Smithers.

**Table 4.1.1 Regional Comparison of Percentage of Households that Spend Less than 30% of Income on Shelter Costs, 2016 Census**

Estimate	Kitimat (DM) (%)	Terrace (CY) (%)	Prince Rupert (CY) (%)	Smithers (T) (%)
Owner	93.3	91.2	87.2	90.5
Renter	65.7	64.7	68.3	61.5

**Source:** Statistics Canada, 2016 Census of Population, Statistics Canada Catalogue no. 98-400-X2016225. **Note:** Estimates are reported for owner and renter households in non-farm private dwellings and based on a sample of 25% of census respondents.

#### 4.1.2 Housing Costs Shadow Population

We examine housing costs among dwellings for permanent and shadow residents. The Household Survey identified 229 shadow households (i.e. those composed solely of shadow residents) and 3,519 permanent households in Kitimat. There were 637 households that house both permanent and shadow residents, which were excluded when calculating rents for permanent and shadow households because we are unable to classify them as one or the other. We also excluded four households that consist only of shadow residents but indicated that they paid mortgage payments.<sup>6</sup>

We find that shadow residents pay, on average, 72% higher rent costs than permanent residents (or \$809 more per month). This suggests that shadow residents can either afford higher housing costs or are not able to access more affordable rental housing in the area. We present our results for average monthly rent and employment income in Figure 4.1.2 and Table 4.1.2.

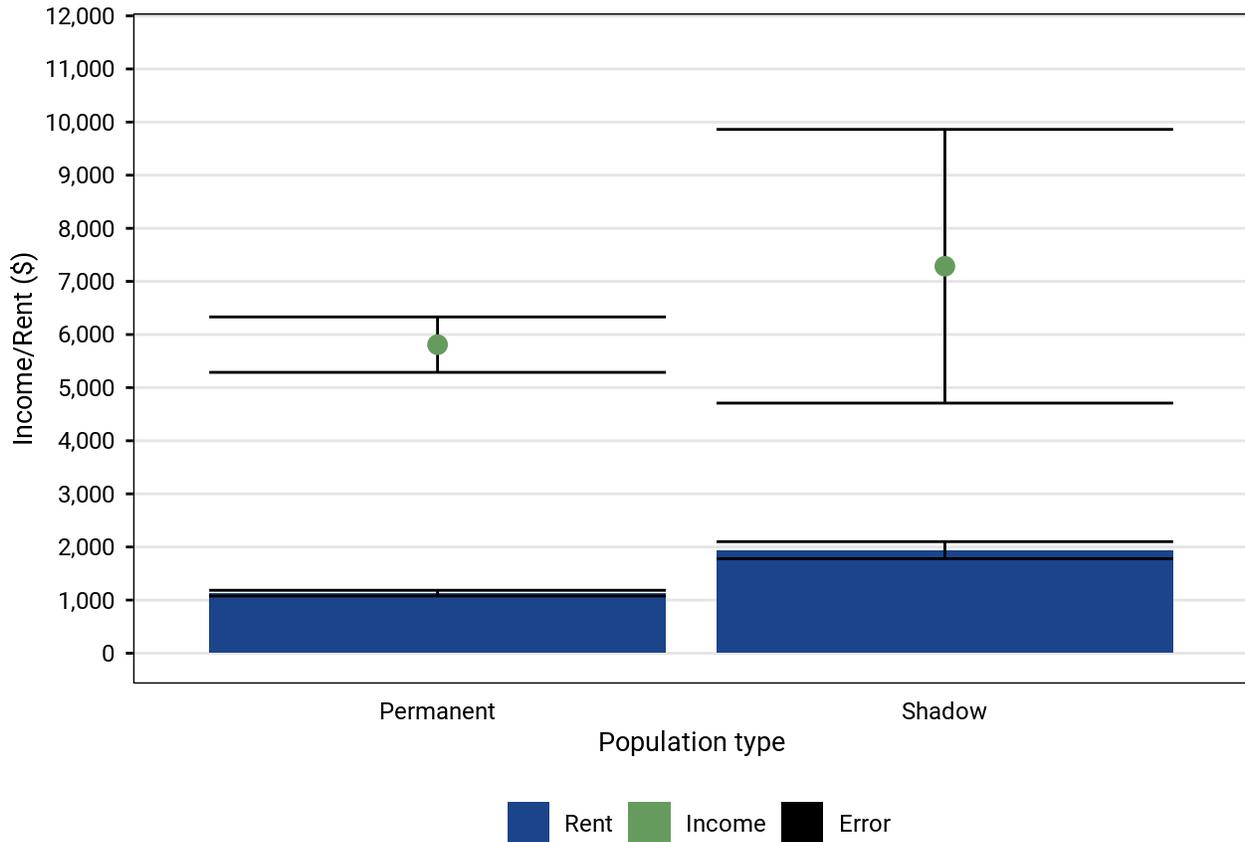
**Table 4.1.2: Average Monthly Rent and Employment Income, Permanent and Shadow Populations**

Estimate	Permanent Population		Shadow Population	
	Rent (\$)	Income (\$)	Rent (\$)	Income (\$)
Mean	1,131	5,809	1,940	7,286
Lower Confidence Limit	1,078	5,288	1,780	4,709
Upper Confidence Limit	1,184	6,331	2,100	9,862

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** Lower and upper confidence limits are for a 95% confidence interval.

<sup>6</sup> Since shadow residents are, by definition, residing somewhere temporarily, these mortgages were most likely paid for dwellings outside of Kitimat. We therefore excluded these payments from our estimates.

**Figure 4.1.2: Average Monthly Rent and Employment Income, Permanent and Shadow Populations**



**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** Lower and upper confidence limits are for a 95% confidence interval.

## 4.2 Vacancy Rate

In Section 4.2, we discuss two types of dwelling vacancy in Kitimat. The first type of vacancy is a private rental vacancy. This rental vacancy measures the percentage of privately owned rental dwellings which are vacant. The second type is the overall vacancy rate of private dwellings of all tenure types, not just rentals, and is calculated using data from the Household Survey. To determine vacancy, enumerators went door-to-door and identified private dwellings that appeared vacant.<sup>7</sup> The rental vacancy rate (first type) and the vacancy rate of all private dwellings (second type) measure different aspects of home vacancy, and both are important to understanding the state of housing in Kitimat.

According to CMHC's 2020 Rental Market Survey (2021), Kitimat has a rental vacancy rate of 15.4% among private apartments and attached dwellings. At this rate, Kitimat has the highest rental vacancy rate in BC, Canada's highest rental vacancy rate for centres with a population

<sup>7</sup> Enumerators visited dwellings multiple times before identifying them as vacant. Reasons for identifying a dwelling as vacant include piles of mail, no cars or lights, asking neighbours, and being visibly not lived in, in combination with a lack of response to any forms of communication or outreach. A total of 40 households from our sample were identified as vacant.

under 10,000, and the fifth-highest vacancy rate in Canada overall. Table 4.2.1 presents centres with the five highest vacancy rates in Canada.

**Table 4.2.1: Centres in Canada with the Highest Rental Apartment and Attached Home Vacancy Rates, 2020**

Centre	Rental Vacancy Rate
	%
1. Estevan, Saskatchewan	26.5
2. Whitecourt, Alberta	20.1
3. Weyburn, Saskatchewan	16.8
4. Sylvan Lake, Alberta	15.6
<b>5. Kitimat, BC</b>	<b>15.4</b>

**Source:** Canadian Mortgage and Housing Corporation, Rental Market Survey, 2021. **Note:** Some centres have Rental Vacancy Rate data suppressed by CMHC, and therefore are not considered.

The rental vacancy rate in Kitimat is extremely high and Kitimat is very different from other nearby centres in this regard. Figure 4.2.1 shows the rental vacancy rates of Kitimat, Terrace, Prince Rupert, Smithers, and the BC average. While both Terrace (5.8%) and Prince Rupert (3.0%) have a higher overall vacancy rate for all tenure types than the BC average rental vacancy rate for private apartments and attached dwellings (2.5%), all nearby centres have a much lower rental vacancy than Kitimat (15.4%).

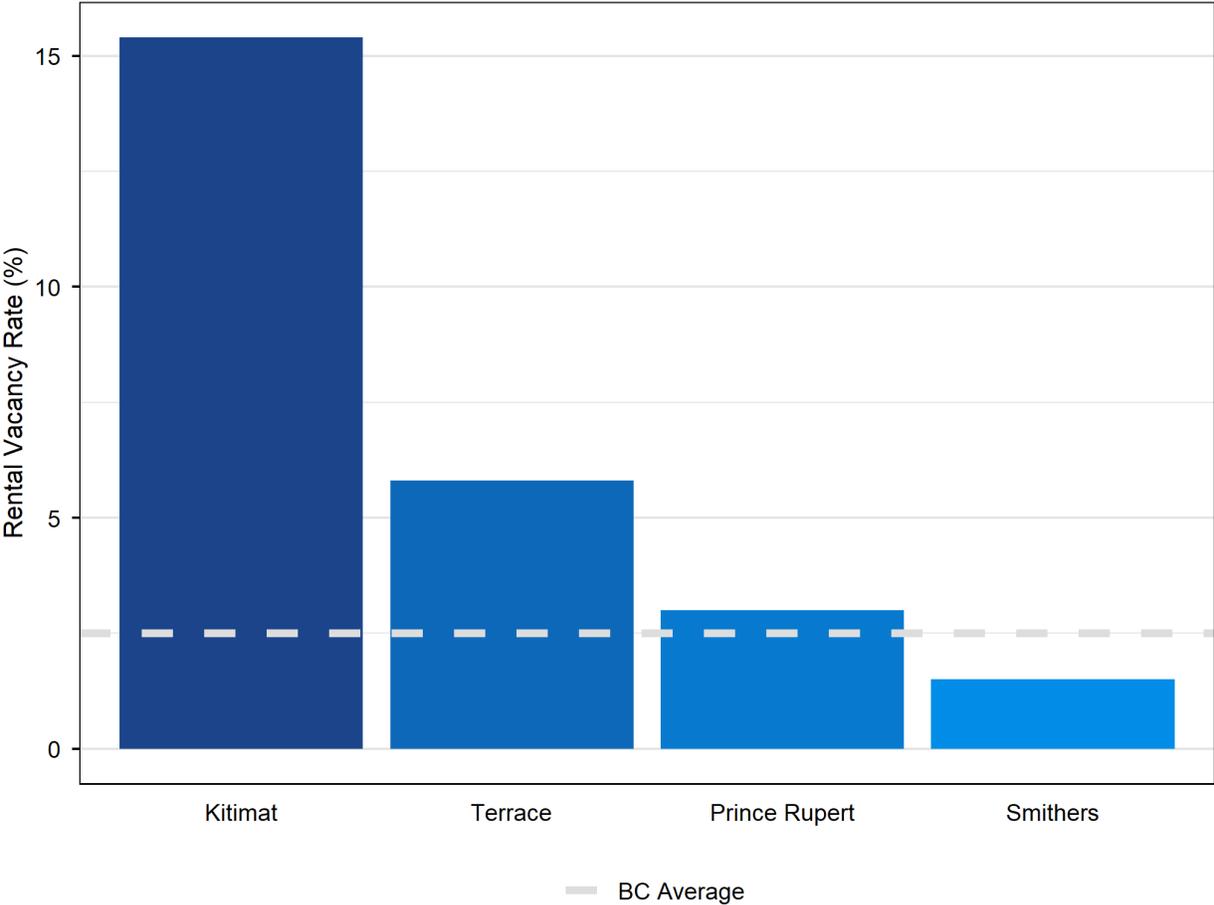
The District of Kitimat's 2021 Housing Fact Sheet notes that a 3% vacancy rate is considered healthy and Kitimat's rental vacancy rate is high, even considering the increase in housing prices and rental costs. A telephone survey of property management companies conducted by Big River Analytics in July 2021 confirms Kitimat's high rental vacancy rate: property managers in Kitimat self-reported a vacancy rate of 14.2% among rental apartments.

While other surveys have established that Kitimat has an extremely high rental vacancy rate, we use data from the Household Survey to estimate the overall vacancy rate for dwellings of all tenure types. Weighing by dwelling type to ensure a representative sample, we estimate that at least 5.7% of dwellings in Kitimat are vacant, with a 95% confidence interval between 4.0% and 7.5%. This translates to an estimated lower bound of 252 vacant dwellings in Kitimat, with a 95% confidence interval of between 176 and 327 dwellings.

In gathering responses for the Household Survey, enumerators identified dwellings that did not respond to the survey, could not be contacted and appeared vacant. As enumerators were unable to access some dwellings (particularly apartments) and may not have identified all vacant dwellings, we consider our estimated 5.7% vacancy rate to be a lower bound for the true vacancy rate in Kitimat.

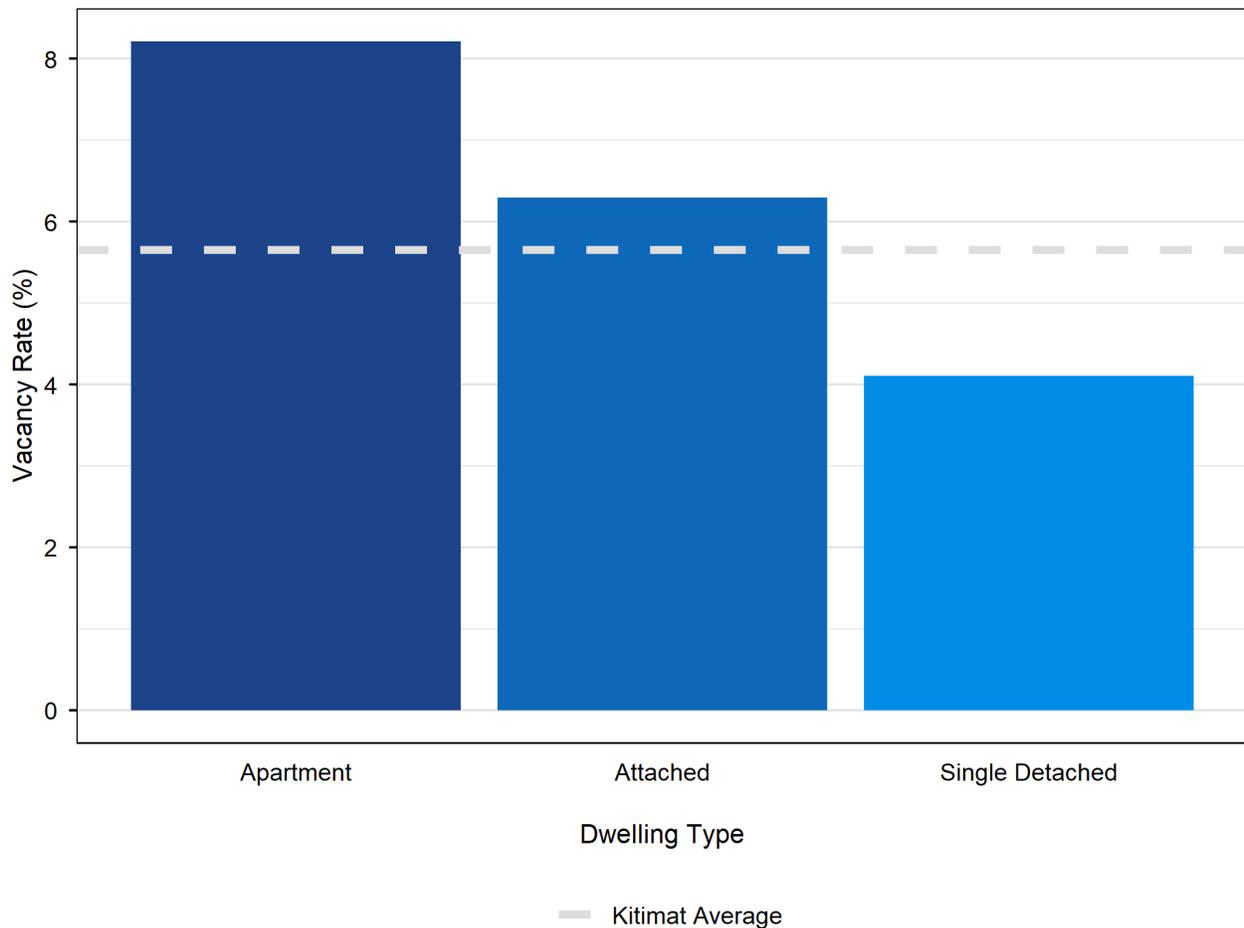
In addition to estimating an overall vacancy rate, we calculate the breakdown of vacancy rates across types of dwellings. Figure 4.2.2 shows the estimated vacancy rate by dwelling type. We discuss confidence intervals in Appendix B3.

**Figure 4.2.1: Rental Apartment and Attached Home Vacancy Rate of Centres Near Kitimat, 2020**



**Source:** Canadian Mortgage and Housing Corporation, Rental Market Survey, 2021. **Note:** Rental Vacancy Rate indicates the rate of private rental apartments and attached dwellings that were vacant in October 2020.

**Figure 4.2.2: Vacancy Rate by Dwelling Type, Kitimat, 2021**



**Source:** Big River Analytics calculations using the 2021 District of Kitimat Household Survey. **Note:** While we estimate that 20.0% of mobile homes are vacant, mobile homes are not included in Figure 4.2.2 - this is based on too small a sample to be considered a reliable estimate.

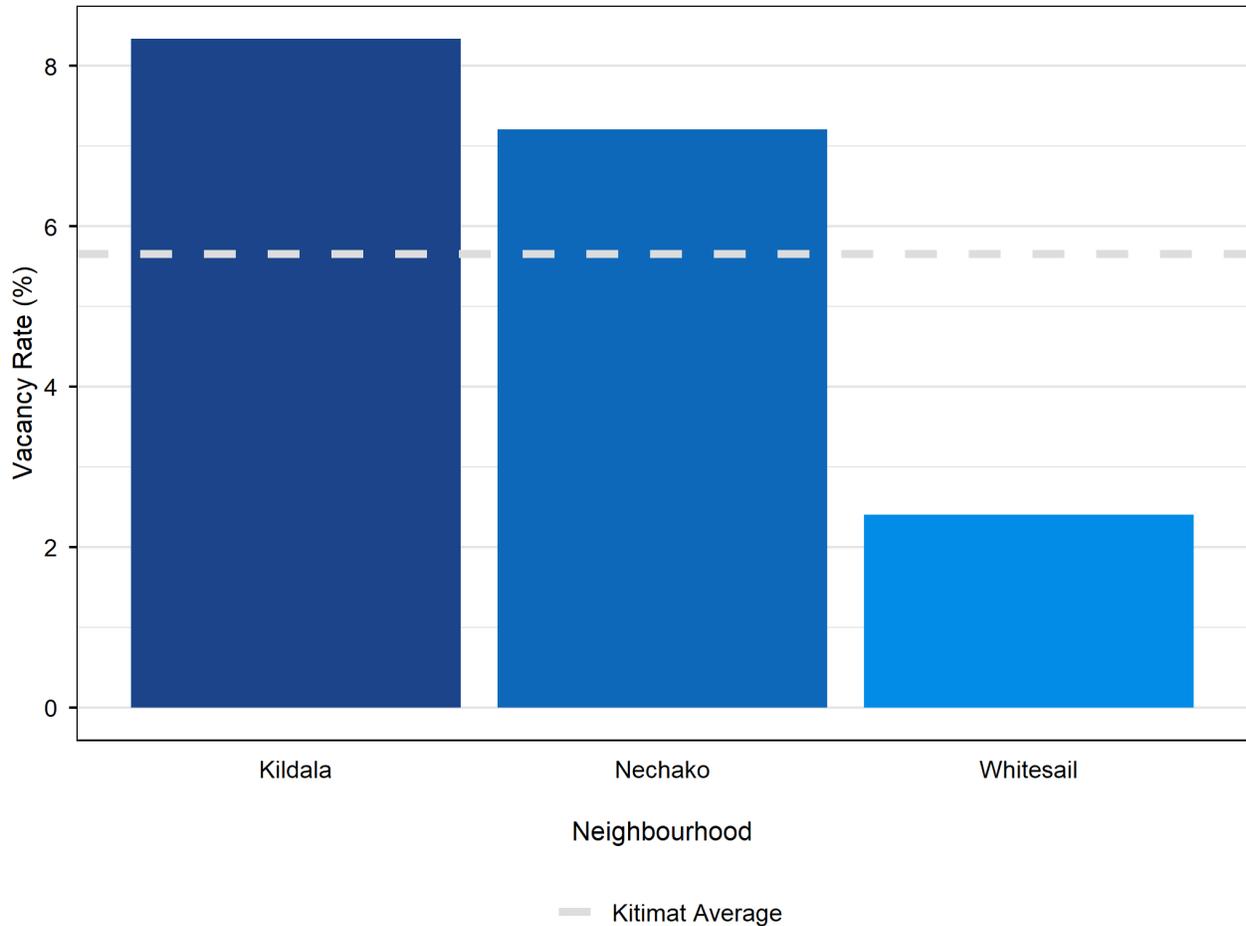
Using data from the Household Survey, we estimate that apartments have a high vacancy rate (8.2%) compared to other dwelling types in Kitimat. Because apartments are the most difficult type of dwelling for enumerators to identify as vacant, we expect that the true vacancy rate for apartments in Kitimat is closer to the rental vacancy rate of 15.4% identified by CMHC (2021).

We expect that our estimates for the vacancy rates of attached and single-detached dwellings are more accurate, as these types of dwellings provide enumerators with more clues as to whether the home is vacant (i.e. empty driveway, maintained yard, etc). We estimate that attached dwellings have a vacancy rate (6.3%) similar to the overall Kitimat vacancy rate (5.7%), and that the single-detached dwelling has the lowest vacancy rate at 4.1%.

We find even larger vacancy rates disparities when comparing different neighbourhoods in Kitimat. Figure 4.2.3 shows the vacancy rates for neighbourhoods in which over 30 dwellings were surveyed. The neighbourhood of Whitesail has a much lower vacancy rate (2.4%) than

Nechako (7.2%) or Kildala (7.8%). We estimate the Surrounding Area, with 28 dwellings sampled, has a vacancy rate of 3.6%. Service Centre had one dwelling sampled, which was not vacant.

**Figure 4.2.3: Vacancy Rate by Neighborhood, Kitimat, 2021**



**Source:** Big River Analytics calculations using the 2021 District of Kitimat Household Survey. **Note:** Surrounding Area and Service Centre neighbourhoods are not included due to too few dwellings sampled. Only neighbourhoods with over 30 dwellings surveyed were included in the figure.

While Kitimat has a high vacancy rate overall, which we estimate to be a minimum of 5.7%, the vacancy rate varies by dwelling type and neighbourhood. Apartments show a high vacancy rate, and private rental apartments and attached dwellings have the fifth-highest vacancy rate in Canada (15.4%, CMHC 2020). Single-detached dwellings have a vacancy rate (4.2%) near the 3% rate which is considered healthy, and the Whitesail neighbourhood has a lower vacancy rate at only 2.4%.

## 5.0 Conclusion

In this report, we present current (as of September 2021) estimates of (i) the size of the permanent and shadow populations of Kitimat, (ii) local employment earnings, (iii) household incomes, (iv) rents and mortgage costs, and (v) vacancy rates based on data collected from the 2021 Kitimat Household Survey. We estimate a total Kitimat population of 9,978 residents, of whom 8595 (86%) are permanent residents and 1,383 (14%) are shadow residents. The shadow population of Kitimat as a proportion of its total population is higher than the neighbouring communities of Terrace (4%), the Regional District of Kitimat-Stikine (6%), and Prince Rupert (4%).

In addition to the population count, we estimate that the majority of private dwellings in Kitimat are owned (78%) rather than rented (22%). On average, owners earn 42% more than renters and pay 28% less in housing costs and overall, rents are higher in Kitimat than in Terrace, Prince Rupert, and Smithers. We find that the shadow population pays, on average, 72% more in rent than permanent residents and that the hard shadow population has an average annual employment earnings of almost twice that of permanent residents.

Despite the relatively large shadow population in Kitimat (needing homes to rent), the vacancy rate in Kitimat remains high (5.7% for all dwelling types and tenure based on the Household Survey). However, due to the relatively low weight of apartments in our sample, and the relative difficulty in accessing apartment buildings (to assess a unit's vacancy status), our sample was skewed toward single-detached and attached dwellings. Conversely, the CMHC Rental Market Report (2020) estimates the rental vacancy of apartments and row housing in Kitimat to be 15.4%, which is substantially higher than rental vacancies in Terrace (5.8%) and Prince Rupert (3.0%). Therefore, our vacancy rate estimate of 5.7% should be considered a lower bound of vacancy rates in Kitimat.

We hope that the up-to-date estimates provided in this report provide the District of Kitimat with the information they need to make informed program and policy decisions to meet their near-future planning needs in a way that is inclusive of the entire Kitimat population.

## 6.0 Appendices

### Appendix A: Survey Approach, Enumeration, and Response Characteristics

Appendix A outlines the survey approach, enumeration results, and characteristics of survey responses for the District of Kitimat Household Survey.

#### A1. Producing the Sample

Big River Analytics constructed a stratified random sample of 707 dwellings from a total of 4,385 private, residential dwellings listed in the 2021 District of Kitimat property tax roll. These private dwelling counts, listed in table A1.1, were used to calculate the overall survey sample size and stratum sizes. Dwellings were stratified based on their type, including single-detached (58% of all dwellings) and attached dwellings (20%), apartments (12%), and mobile homes (2%). We estimated population sizes using a 95% confidence interval and a 5 percentage point margin of error. We stratify on dwelling types to be able to accurately report out by dwelling, as different dwelling types are likely to have different occupancy numbers on average (e.g. apartments usually house fewer residents per unit compared to a single-detached home), different household incomes, and housing costs.

We opted to construct our sample from the 2021 District of Kitimat property tax roll, rather than the 2016 Census because the data are more recent and complete given our needs. The Census only enumerates “occupied private dwellings” for usual residents, whereas our sample frame required counts for all households, regardless of occupation status, dwelling type, or resident. When comparing the data sources, we see that similar proportions of dwelling types exist between the 2016 Census and the 2021 District of Kitimat property tax roll. The most notable difference we see between the two data sources is for apartments. This discrepancy may exist because of the high vacancy rate experienced in Kitimat, specifically for apartments (discussed in Section 4.2).

To confirm the accuracy of the 2021 District of Kitimat property tax roll, we compared our counts to counts published on the Kitimat website, *Number of Dwelling Units by Street* (Kitimat, 2020). The number of total dwellings in July 2020 is 4,396, only 11 more than the 2021 total of 4,385. Ultimately, we used the 2021 District of Kitimat property tax roll data to calculate the desired sample size and strata sizes, based on the composition of dwellings by type, as presented in Table A1.1.

**Table A1.1: Counts and Percentage of Private Dwellings by Type, Kitimat**

Dwelling Type / Source	2016 Census		2021 District of Kitimat Property Tax Roll		2021 Household Survey Sample	
	#	%	#	%	#	%
Single-detached	2,305	66	2,552	58	414	59
Attached	705	20	880	20	143	20
Apartment	410	12	841	19	134	19
Mobile Home	75	2	112	3	16	2
<b>Total</b>	<b>3,495</b>	<b>100</b>	<b>4,385</b>	<b>100</b>	<b>707</b>	<b>100</b>

**Source:** Statistics Canada - 2016 Census. Catalogue Number 98-400-X2016017. Big River Analytics calculations using the 2021 District of Kitimat Property Tax Roll. **Notes:** The District of Kitimat refers to the District Municipality Census region, which encompasses all residential neighbourhoods in the District of Kitimat. Due to rounding percentages between the property tax roll and the survey sample are not exact copies. The 2016 Census only captures "occupied private dwellings" for usual residents.

While we do not use the 2016 Census of Population to construct our sample, comparing household counts by dwelling type with the 2021 District of Kitimat property tax roll gives us an idea of how the housing stock in Kitimat has changed between 2016 and 2021. We note an increase of 890 households in total, with the most growth coming from apartments (an increase of 431 units, or 105%). The composition of dwelling types has shifted slightly between 2016 and 2021, largely due to the increased share of apartments to the total number of privately-owned Kitimat dwellings from 12% in 2016 to 19% in 2021, outpacing the growth of single-detached dwellings which made up 66% of dwellings in 2016 but only 59% in 2021.

## A2. Enumeration

Enumeration of the 707 private dwellings was conducted during October and November 2021. The property tax roll provided us with private dwelling contact information, although it was incomplete, due to the voluntary nature of providing additional information like the property owner's name, email address, and phone number. To contact representatives of private dwellings, various forms of outreach were necessary due to the incomplete contact information. Table A2.1 represents the various forms of enumeration and their corresponding timelines.

**Figure A2.1 Enumeration Timeline, District of Kitimat Household Survey, 2021**

Time frame (2021)	Event
September	Launch Household Survey landing page (www.KitimatHouseholdSurvey.com)
	Distribute information about the survey via local social media channels and the District of Kitimat webpage
Week of October 11	Round one of mail-out flyers reaches 707 private dwellings in the sample
Week of October 18	Local and remote enumerators begin contacting representatives of private dwellings via door-to-door, telephone, email, and social media.
Week of October 25	Round two of mail-out flyers reaches private dwellings that have not yet participated in the survey
November	Multiple rounds of follow-up from both local and remote enumerators
December 3	Survey closed

Although we received responses from 325 private dwellings, there were limitations to who we could successfully contact to request their participation in the Household Survey. These limitations included:

- 121 private dwellings were not reached due to lack of contact information (no phone numbers or emails) or were located in apartment/townhouse complexes where entry was not possible.
  - We contacted property management companies to request resident contact information but were not approved due to tenant confidentiality.
- Responses by dwelling type listed in Table A2.1 show an overrepresentation of respondents from single-detached dwellings and underrepresentation of respondents from apartments when comparing percentages from the total dwellings in Kitimat (the property tax roll) and survey responses.
  - Although we employed a stratified sample by dwelling type, residents of single-detached dwellings participated at a higher rate than those in apartments. To have results perfectly representative of the population the proportions of responses by housing type would need to be closer to the population (tax roll) proportions.
  - To mitigate the effect of oversampling from single-detached dwellings, all estimates were weighted by dwelling type and neighbourhood.

**Table A2.1 Counts (#) and Percentages (%) of Dwelling Type for Population and Survey Responses, Kitimat, 2021**

Dwelling Type / Source	District of Kitimat Property Tax Roll		Kitimat Household Survey Responses	
	#	%	#	%
Single-detached	2,552	58	227	70
Attached	880	20	65	20
Apartment	841	19	26	8
Mobile Home	112	3	7	2
<b>Total</b>	<b>4,385</b>	<b>100</b>	<b>325</b>	<b>100</b>

**Source:** Big River Analytics calculations using the 2021 District of Kitimat Property Tax Roll and 2021 District of Kitimat Household Survey. **Note:** Counts presented in this table are from the raw survey results and have not been weighted and do not represent final estimates of the population.

Of the 707 private dwellings in our sample, we received 325 valid responses. Of the 382 private dwellings that did not respond:

- 67 declined to participate (removed from sample);
- 4 entries in the sample frame were duplicates (removed from sample); and
- 2 private dwelling contacts listed were deceased and no updated contact information was provided (removed from sample)

These 73 private dwellings were removed from the sample altogether, leaving a final sample size of 634 and a response rate of 51.3%. This yields an actual margin of error for survey responses of +/- 5.4%, 19 times out of 20.

### A3. Survey Response Characteristics

Of the 325 dwellings that participated in the Household Survey, this accounted for 752 residents. The highest average household density by dwelling type was apartments, with an average of 3.0 residents per apartment dwelling, followed by 2.3 residents per single-detached dwellings, and an overall average household density for all dwellings of 2.3 residents per dwelling. The 2021 average household densities by dwelling are similar to the 2016 Census average household density for single-detached dwellings, attached dwellings, mobile homes, and overall household density. However, the 2021 Household Survey identified 1.3 more residents per apartment. Table A3.1 presents average household density by dwelling type from the 2021 Household Survey and the 2016 Census.

**Table A3.1 Average Household Density by Dwelling Type, Kitimat**

Dwelling Type	2021 Dwelling Count	2021 Resident Count	2021 Average Household Density	2016 Census Average Household Density
Single-detached	227	530	2.3	2.5
Attached	65	130	2.0	2.1
Apartment	26	78	3.0	1.7
Mobile Home	7	14	2.0	1.6
<b>Total</b>	<b>325</b>	<b>752</b>	<b>2.3</b>	<b>2.3</b>

**Source:** Statistics Canada - 2016 Census. Catalogue Number 98-400-X2016017. Big River Analytics calculations using the 2021 District of Kitimat Household Survey. **Note:** Counts presented in this table are from the raw survey results and have not been weighted and do not represent final estimates of the population.

When examining the responses of residents, 97 individuals were identified as being part of the shadow population (people who currently live or stay in Kitimat, but whose permanent place of residence is elsewhere), 19 of which are hard shadow residents (worked at least 30 days in Kitimat or the surrounding area), and the remaining 78 are soft shadow residents. Of the total respondents to the Household Survey, 14% are shadow residents. Table A3.2 presents the total number of respondents and counts of respondents who identified as shadow residents.

**Table A3.2 Survey Respondents Identified as Shadow Population, Kitimat, 2021**

Dwelling Type	Resident Count	Shadow Residents	Hard Shadow	Soft Shadow
Single-detached	530	57	11	46
Attached	130	16	6	10
Apartment	78	24	2	22
Mobile Home	14	-	-	-
<b>Total</b>	<b>752</b>	<b>97</b>	<b>19</b>	<b>78</b>

**Source:** Big River Analytics calculations using the 2021 District of Kitimat Household Survey. **Note:** Counts presented in this table are from the raw survey results and have not been weighted and do not represent final estimates of the population.

# Appendix B: Additional Survey Results

## B1: Population Estimates

We present estimates of neighbourhood populations in Table B1.1. We estimate Whitesail to be the largest neighbourhood by population (3,979 residents), followed by Kildala – City Centre – Service Centre (2,994), Nechako (2,564), and Cable Car – Highway (441).

**Table B1.1: Total Population Estimates by Neighbourhood, Kitimat, 2021**

Estimate	Cable Car – Highway	Kildala – City Centre – Service Centre	Nechako	Whitesail
	#	#	#	#
Mean	441	2,994	2,564	3,979
Lower Confidence Limit	334	2,586	2,294	3,611
Upper Confidence Limit	547	3,402	2,833	4,347

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** Lower and upper confidence limits are for a 95% confidence interval.

Table B1.2 presents estimates of residents by dwelling type. The majority of residents in Kitimat live in detached dwellings (5,967 residents), followed by apartments (2,020), attached dwellings (1,766), and mobile homes (225).

**Table B1.2: Total Population Estimates by Dwelling Type, Kitimat, 2021**

Estimate	Apartment	Attached	Mobile home	Detached
	#	#	#	#
Mean	2,020	1,766	225	5,967
Lower Confidence Limit	1,599	1,540	132	5,558
Upper Confidence Limit	2,440	1,992	317	6,377

**Source:** Big River Analytics calculations from the 2021 Kitimat Household Survey. **Note:** Lower and upper confidence limits are for a 95% confidence interval.

## B2: Housing Costs by Neighbourhood

The most expensive neighbourhood in Kitimat is Whitesail. In Whitesail, households pay an average of \$1,460 either in housing costs (either mortgage or rent). Almost equally expensive is the Cable Car neighbourhood, where households pay \$1,443 in housing costs. The Nechako and Kildala neighbourhoods are the least expensive where housing costs are \$1,232 and \$982. Any neighbourhood with fewer than 10 survey respondents is excluded from the estimates.

### B3. Confidence Intervals for Vacancy Rate Estimates

Table B1.1 shows 95% confidence intervals for vacancy rate estimates discussed in Section 4.2. The estimates for mobile homes and the Surrounding Area and Service Centre neighbourhoods are based on samples of less than 30 observations. For these estimates, as the sample size does not meet the requirements of the Central Limit Theorem to approximate a normal distribution, we do not include a confidence interval.

**Table B3.1 Vacancy Rate Estimates and Confidence Intervals, Kitimat, 2021**

<b>Dwelling Type</b>	<b>Lower Confidence Limit (%)</b>	<b>Mean Vacancy Rate (%)</b>	<b>Upper Confidence Limit (%)</b>
Single-detached	2.2	4.1	6.0
Attached	2.3	6.3	10.3
Apartment	3.6	8.2	12.9
Mobile Home*	-	20.0	-
<b>Neighbourhood</b>	<b>Minimum 95% Confidence Interval (%)</b>	<b>Vacancy Rate Estimate (%)</b>	<b>Maximum 95% Confidence Interval (%)</b>
Whitesail	0.5	2.4	4.3
Nechako	3.8	7.2	10.6
Kildala	4.5	8.3	12.1
Surrounding Area*	-	3.5	-
Service Centre*	-	0.0	-
<b>Kitimat Average</b>	<b>4.0</b>	<b>5.7</b>	<b>7.5</b>

**Source:** Big River Analytics calculations using the 2021 District of Kitimat Household Survey. **Note:** \* indicates the sample contains fewer than 30 observations, and therefore a confidence interval is not calculated. A 95% confidence interval is used to calculate the lower and upper limits.

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