



TOWN OF SIDNEY

Multi-Family Residential Parking Study

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EXECUTIVE SUMMARY

Watt Consulting Group was retained by the Town of Sidney to develop the Sidney Multi-Family Residential Parking Study. The purpose of the study is to understand the rate of parking utilization in multi-family apartment buildings across the Town, as well as how it compares to current bylaw direction within the Town and other municipalities in the Capital Region. According to the Town's Off-Street Parking & Loading Bylaw, which was recently updated and adopted in September 2017, the required parking supply for multi-family apartment buildings is 1.0 space per unit. However, some recent development proposals have included a parking supply rate below the Town's minimum requirement.

This study seeks to answer the following questions:

1. What is the rate of resident parking utilization (i.e., demand) in Sidney's multi-family apartment buildings?
2. Is parking being oversupplied or undersupplied in Sidney's multi-family apartment buildings?
3. Is parking demand in the Town influenced by demand factors such as housing tenure (i.e. rental or condominium), location, building age, and unit type?

Observations were used to determine the parking supply, occupancy and utilization of each building. The project team conducted observations at 34 multi-family apartment buildings, of which 7 were market rental buildings¹ and 27 were strata condominium² buildings. This represented a total of 739 units. One limitation of the sample is the uncertainty with the proportion of condominium units being rented. This study assumed that people living in condominium units are predominantly owners of those units. The buildings were selected to be representative of the range of multi-family housing types and locations found within the Town.

Observations were conducted on two different weekdays in May 2019 between 9:00pm and 10:30pm—times that align with best practices for determining peak parking utilization in residential buildings. In addition, the team contacted each selected study site to conduct a short interview. The purpose of the interviews was to verify and/or obtain information related to parking utilization for residents and visitors. Data was provided by telephone and/or email by building managers and strata presidents. There was a 65% response rate (22 out of 34 buildings) where information was provided over the phone or via email.

The following terminology is being used throughout the document and can be found in more detail in **Section 3.4**.

¹ Apartment building secured as rental in perpetuity through a legal agreement and/or is not stratified

² Apartment building regulated by the Strata Property Act

Parking Supply | Used to describe the number of vehicle parking spaces provided on a per unit basis (*Number of parking spaces / number of units*).

Parking Utilization | Used to measure the number of vehicles typically present in a building on a per unit basis. (*Number of vehicles / number of units*).

Parking Occupancy | Used to measure how many of the supplied parking spaces are typically used by vehicles. (*Number of vehicles / number of parking spaces*).

Parking Oversupply / Undersupply Estimate | Used to describe the extent to which there are more or less parking spaces supplied than used. (*Parking supply – parking utilization*) / *parking supply*.

The key results are as follows:

- Parking supply = 1.12 parking spaces per unit.
- Parking utilization = 0.95 vehicles per unit.
- Parking occupancy = 87% of all available parking spaces.
- Parking oversupply / undersupply estimate = 22% oversupply of parking.

Further, this study tested the relationship between parking utilization and various demand factors to determine whether there is a correlation. The following demand factors were used:

Unit Type <i>(Number of bedrooms)</i>	Housing Tenure <i>(Rental vs Condominium)</i>	OCP Designation <i>(COM-1 vs RES-3)</i>
Building Age <i>(Year built)</i>	Parking Supply <i>(Parking spaces per unit)</i>	Walkability <i>(Walk Score)</i>

Based on the analysis, the following key conclusions were identified:

- Based on the analysis conducted and the use of demand ratios by unit type from best practices, studio and 1-bedroom units have at most one vehicle.
- Parking utilization between condominium and rental apartment buildings differed with 0.97 vehicles per unit and 0.86 vehicles per unit, respectively.
- Apartment buildings in the Downtown Commercial zone (COM-1) have similar parking supply and demand with the buildings in the Multi-family Residential zone (RES-3). However, parking oversupply is higher for RES-3 buildings (see **Figure 2** on pg.3).
- Apartment buildings built since the 1990s have demonstrated a smaller parking oversupply than buildings built before the 1990s, which indicates that supply is meeting—or close to meeting—actual parking demand.
- Walkability has an impact on parking demand.

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1.0 INTRODUCTION

Watt Consulting Group was retained by the Town of Sidney to develop the Sidney Multi-Family Residential Parking Study. The purpose of the study is to understand the rate of parking utilization in multi-family apartment buildings across the Town, as well as how it compares to current bylaw direction within the Town and other municipalities in the Capital Region.

According to the Town's Off-Street Parking & Loading Bylaw, which was recently updated and adopted in September 2017, the required parking supply for multi-family apartment buildings is 1.0 space per unit. However, some recent development proposals have included a parking supply rate below the Town's minimum requirement.

This study seeks to answer the following questions:

1. What is the rate of resident parking utilization (i.e., demand) in Sidney's multi-family apartment buildings?
2. Is parking being oversupplied or undersupplied in Sidney's multi-family apartment buildings?
3. Is parking demand in the Town influenced by demand factors such as housing tenure (i.e. rental or strata condominium), location, building age, and unit type?



FIGURE 1: AERIAL VIEW OF SIDNEY

Source: ROYAL LEPAGE

2.0 BACKGROUND

The Town's demographic and travel characteristics were reviewed to understand the larger context of parking within the community.

The Town's population grew slightly (4.4%) from 2011 to 2016, reaching a population of 11,672. Sidney has one of the highest average population ages within the region, at 54.6 compared to 44.4 for the Capital Regional District (CRD) as a whole. Approximately 41% of the population is 65 years and older. By 2016, the Town had registered a total number of 1,760 rental and condominium apartments in multi-family buildings.³

Based on the 2016 Statistics Canada Census, the main mode of commuting for the employed labour force of Sidney is driving one's own vehicle (69%). About 7% of Sidney residents use public transit to commute to work and 4% use a bicycle to commute. The safe and walkable⁴ environment of the Town of Sidney helps explain why 14% of the employed labour force walks to work, compared to 7% for the province and 10% for the CRD.

Based on the 2017 CRD Household Travel Survey, the Town of Sidney has a rate of 0.75 vehicles per person, with 47% of the households having one vehicle.⁵ The survey also identified that 34% of the trips within the Town of Sidney are being done by walking, which is double the percentage identified in the 2016 Census that focused only on commuting travel behavior for the employed labour force.

3.0 METHODOLOGY

The project team developed the methodology for the study in partnership with the Town. This section presents an overview of the study area and study sites, as well as the data collection process and specific methods for the parking demand analysis.

The general process of the study involved:

- Confirming the study area.
- Determining the representative sites to be analyzed.
- Collecting data via observation and telephone interviews.
- Organizing data based on the identified demand factors.

³ Based on Statistics Canada designation of [a] apartment in a building that has five or more storeys and [b] apartment in a building that has fewer than five storeys.

⁴ Walkability or walkable places have multiple definitions and interpretations. For the purposes of this study, walkability is defined using Jane's Walk (2013), as follows: "Walkability is a quantitative and qualitative measurement of how inviting or un-inviting an area is to pedestrians. Walking matters more and more to towns and cities as the connection between walking and socially vibrant neighborhoods is becoming clearer. Built environments that promote and facilitate walking – to stores, work, school and amenities – are better places to live, have higher real estate values, promote healthier lifestyles and have higher levels of social cohesion." More information about walkability is available online at:

https://dash.harvard.edu/bitstream/handle/1/29663388/Forsyth_walkability_082415_final.pdf?sequence=1

⁵ Malatest. (2017). 2017 Capital Regional District Origin Destination Household Travel Survey. Available online at: https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/transportation/crd-2017-od-survey-report20180622-sm.pdf?sfvrsn=4fcbe7ca_2

3.1 STUDY AREA

The broader study area has been set by the boundaries of the Town of Sidney. The specific boundaries of the study area were limited to Official Community Plan designations, which included Downtown Commercial (COM-1) and Multi-Family Residential (RES-3).

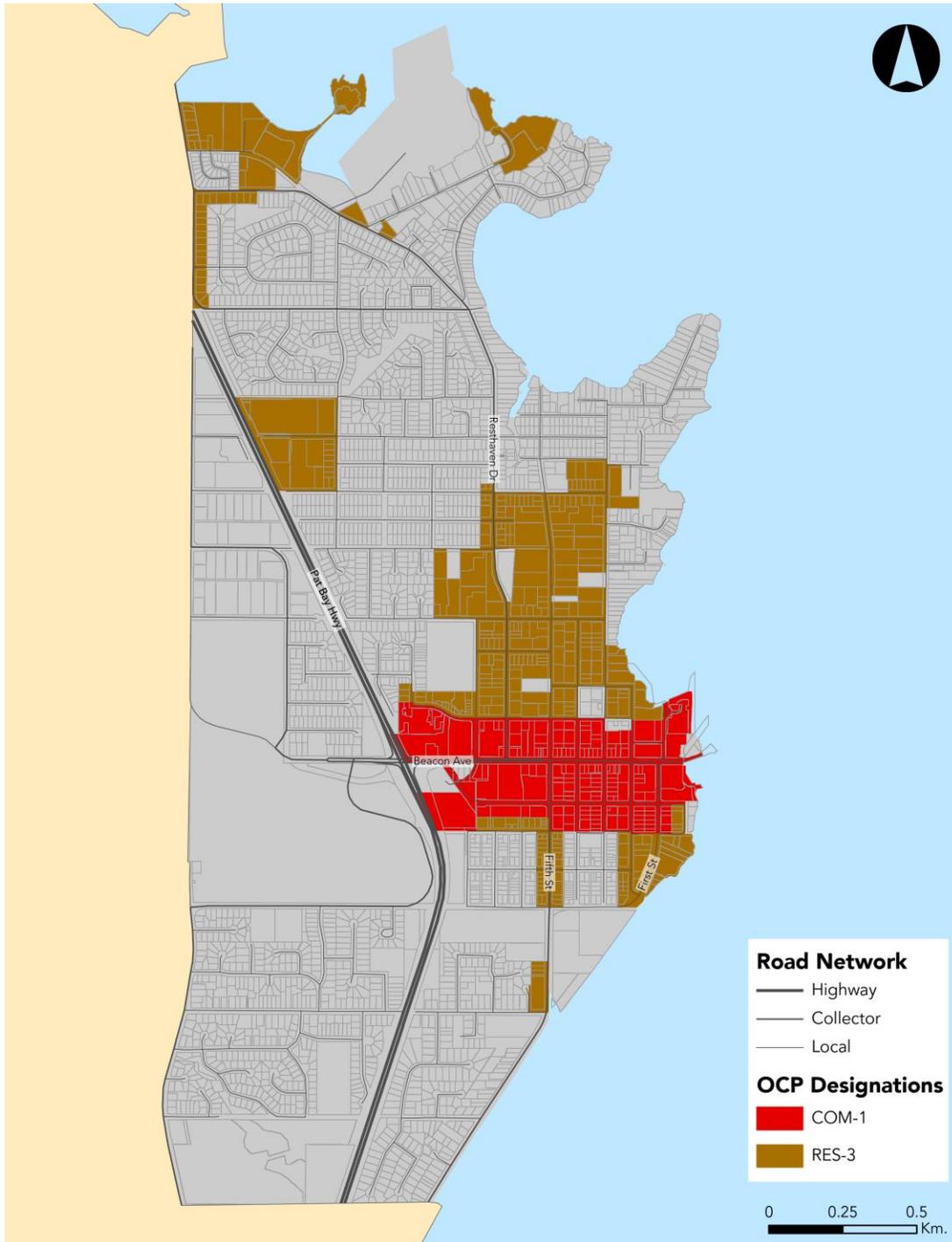


FIGURE 2: STUDY AREA

3.2 STUDY SITE SELECTION

The study sites were selected based on two primary criteria:

1. Location in the relevant OCP designation (COM-1 and RES-3).
2. Housing tenure (rental⁶ and strata condominium⁷).

Housing tenure was specifically selected as one of the criterion because it has been identified as a factor that influences parking demand. For instance, research from the City of Victoria found that rental apartments have lower parking demand than strata condominiums (see **Section 3.4.1** for more details). Some units of the condominium buildings might be used as rental units but this study assumed that people living in condominium units are predominantly owners of said units. For the purposes of this study, strata condominiums are henceforth referred to as “condominiums”.

The goal of the site selection was to obtain an equal distribution between location and housing tenure. Other secondary criteria that assisted site selection included building age and Walk Score (discussed in more detail in **Section 3.4**). A total of 34 multi-family apartment buildings were selected across the Town of Sidney representing a total of 739 units (see **Table 1**). Based on the 2017 CRD Household Travel Survey, this represents 42% of the total number of apartment units in the Town (1,760 units). The sites selected did not include any affordable or senior-specific rental sites and as such all rental buildings in this report refer to market rental buildings.

TABLE 1. STUDY SITES BY LOCATION AND HOUSING TENURE

Location \ Housing Tenure	Rental	Condominium	Total
Downtown Commercial (COM – 1)	0	12	12
Multi-Family Residential (RES – 3)	7	15	22
Total	7	27	34

3.3 DATA COLLECTION

Two main types of data collection were used to obtain and verify information used to assess parking supply, occupancy and utilization in the Town. As described further below, these methods included observations of actual parking utilization at the selected sites and short interviews via telephone or email with building managers or strata presidents.

These data were then analyzed, and then tested with the identified demand factors to determine whether there is a correlation with parking demand and various factors, as well as to how these data compare to the existing Bylaw requirement for multi-family apartment buildings.

⁶ Apartment building secured as rental in perpetuity through a legal agreement and/or is not stratified

⁷ Apartment building regulated by the Strata Property Act

Information regarding the number and type of units, as well as building age was provided by the Town of Sidney. Additional information regarding unit breakdown was provided by Canada Mortgage and Housing Corporation (CMHC).

3.3.1 OBSERVATIONS

Observations were used to determine the parking supply, occupancy and utilization of each building. The project team conducted observations at the study sites on two different weekdays in May 2019 between 9:00pm and 10:30pm, which is broadly acknowledged as the time period representing close to peak residential parking conditions.

The observations collected the following data at each site:

1. Number of resident parking spaces;
2. Number of visitor parking spaces (if they were clearly demarcated); and
3. Number of parked vehicles in resident and visitor parking spaces.

One limitation with observations is the fact that an observation may not “catch” all residents while they are home with their parked car on-site. On a typical weeknight, it can be expected that some residents may return home very late at night or the next morning, or may have driven out of town for business or vacation. Some studies, such as the Metro Vancouver Apartment Parking Study, have reported that observations of parking occupancy (percent of stalls occupied by a car or truck) typically increase later in the night.⁸ The study recommended that occupancy surveys that start between 9PM – 10:30PM should have a 10% adjustment factor while a survey conducted between 10:30PM and 11:00PM should have a 5% adjustment factor.⁹

To reconcile this limitation, an adjustment factor was applied to the observed parking demand rate to reflect the more reliable vehicle ownership data that was obtained from the telephone interviews (a more detailed discussion of the adjustment factor is provided in **Section 3.4.2**).

3.3.2 TELEPHONE INTERVIEWS

The project team contacted each selected study site to conduct a short interview. The purpose of each interview was to verify and/or obtain information related to parking utilization for residents and visitors. Data was provided by telephone and/or email by building managers and strata presidents. The information provided was considered accurate and reflective of the building’s current vehicle ownership status. However, some of responses to the other questions are more qualitative in nature and provide contextual information about the building’s parking conditions. There was a 65% response rate (22 out of 34 buildings) that provided information over the phone or via email.

⁸ Metro Vancouver. (2012). The Metro Vancouver Apartment Parking Study, Technical Report. Available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

⁹ Metro Vancouver. (2018). 2018 Regional Parking Study Technical Report. Available online at: http://www.metrovancouver.org/boards/RegionalPlanning/RPL_2019-Mar-8_AGE.pdf

The interviews sought to obtain the following information:

1. Total number of resident vehicle parking spaces.
2. Number of vehicles registered with the building (i.e. number of vehicle parking spaces that are currently being rented / occupied by tenants).
3. Number of designated visitor vehicle parking spaces.
4. Whether tenants have to pay for parking separate from their rental or strata fees.
5. Any negative impacts / issues associated with paid parking.
6. Whether tenants park their vehicle (or second vehicle) on-street.

3.4 DATA ANALYSIS

The following section provides clarification on the terminology used throughout this report and the data sources for the parking analysis.

Parking Supply = *Number of parking spaces / number of units*

Parking supply describes the overall provision of parking spaces on a per unit basis. It is counted by dividing the total number of parking spaces by the total number of units at each building.

Parking Utilization = *Number of vehicles / number of units*

Parking utilization measures the parking demand for each building. It is calculated by the number of vehicles observed to the total number of units in each multi-family apartment building.

Parking Occupancy = *Number of vehicles / number of parking spaces*

Parking occupancy measures the number of vehicles observed compared with the total number of parking spaces provided at each building. Parking occupancy verifies whether the expected demand meets the actual parking demand for each site and will therefore determine if the study sites are under-providing or over-providing parking.

Parking Oversupply / Undersupply Estimate = *(Parking supply – parking utilization) / parking supply*

Parking oversupply / undersupply describes the estimated percentage difference between parking supply and parking utilization. It is measured by calculating the difference between parking supply and parking utilization and then divided by the parking supply.

3.4.1 DEMAND FACTORS

Based on relevant research, parking demand appears to be dynamic and influenced by a number of factors. This study took into account various factors that have been identified over time in other parking studies and relevant research, and applied them to the study sites to determine whether a correlation exists between parking demand and the following factors.

Housing Tenure

Housing tenure refers to whether a unit in the building is rented or owned (such as a condominium). Housing tenure has been identified as a significant factor in influencing parking demand, where research has shown that rental apartments have lower parking demand than condominiums. A study of 103 Multi-family Residential sites (5,600 units) in the City of Victoria concluded that vehicle ownership among condominium units is approximately 1.5-times higher than in rental apartment units.¹⁰ This finding is consistent with studies from Vancouver, BC and Toronto, ON.¹¹

Unit Type

Unit type refers to the number of bedrooms provided. Larger units are likely to be inhabited by more people and generally come at a higher cost, which might suggest that occupants have a greater need to own a vehicle(s) and have greater capacity to afford them. In terms of composition, research conducted by Metro Vancouver distinguished the demand ratio per number of bedrooms and tenure as follows:

Rental Units

- One-bedroom demand is 117% higher than bachelor.
- Two-bedroom demand is 26% higher than one-bedroom.
- Three-bedroom demand is 23% higher than two-bedroom¹².

Condominium Units

- One-bedroom demand is 19% higher than bachelor.
- Two-bedroom demand is 30% higher than one-bedroom.
- Three-bedroom demand is 23% higher than two-bedroom.

Unit breakdown information for the selected study sites was provided by BC Assessment and the Canada Mortgage and Housing Corporation (CMHC).

¹⁰ City of Victoria, Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.3: Parking Demand Assessment, September 2016. Available online: www.victoria.ca/assets/Departments/Planning-Development/Community-Planning/Documents/Victoria%20Schedule%20C%20Parking%20Review_Working%20Paper%20no3_FINAL_Sept23-16.pdf

¹¹ Metro Vancouver, *Metro Vancouver Apartment Parking Study*, 2012. Available online: http://public.metrovancouver.org/planning/development/strategy/RGSDocs/Apartment_Parking_Study_TechnicalReport.pdf
City of Toronto, Parking Standards Review: Phase Two Apartment Building/Multi-Unit Block Developments Component, 2007. Available online: https://www1.toronto.ca/city_of_toronto/city_planning/zoning_environment/files/pdf/cansult_final_apart_stds.pdf

¹² The study did not provide relevant data on three-bedroom market rental units. This rate derived from the strata rate of the Metro Vancouver study.

Building Age

Building age refers to the year a building was built and first occupied. While not always the case, some older multi-family residential buildings over-supply parking due to the time period in which they were constructed when vehicle ownership trends were different and parking requirements may have been higher.

The purpose of including building age as a demand factor is two-fold: [a] to recognize whether building age for multi-family buildings varies considerably in the Town and [b] to determine if building age affects parking demand and supports the hypothesis that newer buildings provide less parking supply as vehicle ownership trends have changed. See **Table 2** below.

TABLE 2. STUDY SITES BY BUILDING AGE AND HOUSING TENURE

Building Age \ Housing Tenure	Rental	Condominium	Total
1960 – 70	4	1	5
1970 – 80	1	1	2
1980 – 90	2	3	5
1990 – 00	0	4	4
2000 – 10	0	11	11
2010 –	0	7	7
Total	7	27	34

Availability of Off-Street Parking

Availability of off-street parking refers to the overall number of spaces provided per unit. Research has shown that the greater the parking supply (i.e., parking spaces per unit), the greater the parking utilization will be. A study in New York City demonstrated that off-street parking has a correlation with driving to work both indirectly (by easing car ownership) and directly (by easing car use).¹³ The study found that households with a greater number of off-street parking spaces exhibited higher rates of vehicle ownership and commuting by car. More generally, the study confirms that the parking supply rate approved for a residential building can influence the travel behaviour of future residents; with greater access to parking options, it is easy for residents to choose driving as their primary mode of transportation.

This hypothesis was tested in this study by comparing parking supply and parking utilization.

¹³ Weinberger, R. (2018). Parking Mismanagement: An Rx for Congestion In D. Shoup (Ed.), *Parking and the City* (pp.101-108). New York, NY: Routledge

Walk Score

Walk Score¹⁴ measures walkability on a scale from 0 – 100 based on walking routes to destinations such as grocery stores, schools, parks, restaurants, and retail. Buildings in more urban locations generally have lower rates of vehicle ownership due to higher walkability, access to transit, etc. Walk Score has been broken down in the following five categories aligning with Walk Score’s methodology:

- **90 – 100:** Walker’s Paradise (*Daily errands do not require a car*).
- **70 – 89:** Very Walkable (*Most errands can be accomplished on foot*).
- **50 – 69:** Somewhat Walkable (*Some errands can be accomplished on foot*).
- **25 – 49:** Car-Dependent (*Most errands require a car*).
- **0 – 24:** Car-Dependent (*Almost all errands require a car*).

Urban areas generally need less parking than suburban or rural areas—a product of the density and mix of uses, access to non-vehicular travel options, and common parking management practices that require motorists to pay for parking.

Location

Location refers to the physical siting of the building, in this case using the Town’s land use designations. The location of each study site is another demand factor that is influenced by Walk Score. Using the Town’s Official Community Plan designations, a comparison between the Downtown Commercial (COM-1) and the Multi-Family Residential (RES-3) areas was made to test the hypothesis that buildings in the Downtown Commercial designation have lower parking demand than those in the Multi-Family Residential designation.

3.4.2 APPROACH TO PARKING UTILIZATION ANALYSIS

As described in **Section 3.3**, parking utilization data were obtained from two sources: (1) observations of parking facilities and (2) building managers / strata presidents. Both sources provide an indication of parking demand at each respective building; however, observations may not account for all “missed vehicles” and therefore not represent peak demand. On the contrary, vehicle ownership data retrieved from interviews with building managers / strata presidents is considered accurate and representative of current parking utilization at the building. Vehicle ownership information is actively tracked and monitored by building managers / strata presidents and is therefore considered reliable.

To use the results from both sources, the observed parking demand was compared to the vehicle ownership data obtained for each building through the interview sources, where available. Based on the difference in the average among the two sources, a ratio was developed and applied to the observed parking demand rate to reflect the more reliable vehicle ownership data. Using this methodology, a 22% adjustment factor was applied to the observation data to address the limitation of missed vehicles. This methodological approach

¹⁴ Walk Score. Available online at: <https://www.walkscore.com/>

was followed to ensure that the study findings would be conservative and not under estimate parking utilization.

Other parking studies such as the Metro Vancouver Apartment Parking Study, have recommended up to a 10% adjustment factor for observations of residential parking to account for missed vehicles. However, to the project team's knowledge, there is not any published research that has applied an adjustment factor using observation data and vehicle ownership data from a residential building. Therefore, the 22% adjustment factor that was applied to the observations is an original method developed by Watt Consulting Group and is considered the most accurate method of factoring for vehicles that were "missed" during the observations.

3.5 LIMITATIONS

This study acknowledges the following limitations, which may allow for a margin of error in the results:

- The study did not measure on-street parking utilization and therefore, any resident or visitor vehicles parked on-street could not be attributed to the average utilization reported.
- Some of the condominium units in the sample may be used for rental purposes but they were not explicitly identified. The extent to which this is occurring in Sidney is unknown and therefore provides a level of uncertainty. Therefore the study did not categorize those units as market rental. More research is needed to identify and estimate the extent of these types of units in the Town and to better understand how parking demand in those units compares to typical condominium and market rental units.
- Parking demand by unit type is based on ratios from Metro Vancouver, which may not reflect local conditions. The only way to truly determine parking demand by unit type in Sidney would be to survey households to specifically understand how many vehicles are owned by each unit type. Limited budget / time did not allow for this to be done.

4.0 PARKING SUPPLY AND UTILIZATION ANALYSIS

The vast majority of units in the sample consisted of two-bedroom units with 63% of the total number of units (see **Table 3**).

TABLE 3. APARTMENT UNIT TYPE DISTRIBUTION

Unit Type (Bedrooms)	Sample Size
Studio units	29 (4%)
1-bedroom units	219 (30%)
2-bedroom units	469 (63%)
3-bedroom units	22 (3%)
Total	739

In general, the Town has a greater number of condominium multi-family buildings compared to rental buildings. This is also evident in the corresponding distribution of the sample, with almost 80% of the multi-family buildings being condominiums (see **Table 4**).

TABLE 4. HOUSING TENURE DISTRIBUTION

Housing Tenure	Sample Size
Rental	7 (11%)
Condominium	27 (79%)
Total	34

4.1 AVERAGE PARKING UTILIZATION

The average parking utilization across the 34 apartment buildings that were observed was 0.95 vehicles per unit. Overall, parking demand is close to the minimum requirement set by the Town of Sidney of 1 parking stall per unit. Parking utilization for each of the buildings ranged from 0.51 to 1.46 vehicles per unit. A detailed analysis of parking utilization and its relationship with different factors is presented in **Sections 4.4 – 4.9**.

4.2 AVERAGE PARKING OCCUPANCY

Overall, an average of 87% parking occupancy was estimated for all apartment buildings that were observed. As mentioned in the previous section, parking occupancy verifies whether the expected demand meets the actual parking demand. Parking occupancy did not have a significant correlation with any of the factors mentioned in the previous section (i.e., tenure, OCP designation, building age, walkability).

4.3 AVERAGE PARKING SUPPLY PER UNIT

Parking supply across the Town averaged at 1.12 parking spaces per unit, spanning from 0.75 to 1.56 spaces per unit.

4.4 ESTIMATED PARKING UTILIZATION BY UNIT TYPE

Generally, the average number of vehicles per household increases with the number of bedrooms. Based on the parking utilization derived from this study and by using the demand ratios per unit type derived from best practices, as described in **Section 3.4.1**, the following are the results of this analysis (see **Table 5**). It is estimated that studio and 1-bedroom units have at most one vehicle to park.

TABLE 5. VEHICLE PARKING DEMAND BY UNIT TYPE

Unit Type (Bedrooms)	Parked Vehicles Per Unit
Studio units (<i>n</i> =29)	0.56
1-bedroom units (<i>n</i> =219)	0.79
2-bedroom units (<i>n</i> =469)	1.01
3-bedroom units (<i>n</i> =22)	1.22

4.5 RELATIONSHIP WITH HOUSING TENURE

As expected, based on similar studies in other communities, parking utilization for condominiums was found to be higher compared to rental units at 0.97 vehicles per unit and 0.86 vehicles per unit, respectively. Therefore, parking demand in condominium buildings was found to be 13% higher than rental buildings. As indicated in the limitations (**Section 3.5**), some of the condominium units in the sample may be used for rental purposes but they were not explicitly identified. The extent to which this is occurring in Sidney is unknown and therefore provides a level of uncertainty.

Parking occupancy between the two housing tenures showed a slight difference with condominium apartments having an 88% occupancy rate, compared to 81% for rental apartments (see **Table 6**). Therefore, not only was vehicle ownership higher in condominium units compared to rental, but a higher proportion of the parking spaces provided in condominium buildings were occupied with vehicles.

TABLE 6. VEHICLE PARKING DEMAND BY HOUSING TENURE

Housing Tenure	Parked Vehicles Per Unit	Parking Occupancy
Condominium (n=27)	0.97	88%
Rental (n=7)	0.86	81%

The results indicate that for both rental and condominiums, the parking supply exceeds demand across the Town (see **Table 7**). However, it appears that for rental buildings the parking oversupply is more significant (25%), whereas in condominium buildings it is closer to the actual parking demand.

TABLE 7. RESIDENT PARKING DEMAND BY HOUSING TENURE

Housing Tenure	Parking Stalls per Unit	Parked Vehicles per Unit	Parking Oversupply / Undersupply Estimate
Condominium (n=27)	1.13	0.97	16%
Rental (n=7)	1.07	0.86	25%

4.6 RELATIONSHIP WITH OCP DESIGNATIONS

Buildings in the Downtown Commercial (COM-1) area have a similar number of parking stalls provided per unit with those in the Multi-family Residential (RES-3) area. Parking utilization also generally appears to be similar between both designations, with demand being slightly higher in COM-1 (0.97 vehicles per unit versus 0.94 vehicles per unit for RES-3), see **Table 8**. While buildings in both OCP designations provide more parking than the parking utilization, it appears that supply in for COM-1 buildings more closely reflects actual demand.

TABLE 8. RESIDENT PARKING DEMAND BY OCP DESIGNATION

OCP Designation	Parking Stalls per Unit	Parked Vehicles per Unit	Parking Oversupply / Undersupply Estimate
Downtown Commercial (COM-1) (n=12)	1.10	0.97	14%
Multi-family Residential (RES-3) (n=22)	1.12	0.94	20%

4.7 RELATIONSHIP WITH BUILDING AGE

A pattern was identified with condominium and rental apartment buildings in relationship with building age. In reverse to what is typically observed for older buildings, as shown in **Table 9**, it appears that both parking supply and demand were the lowest in the oldest buildings observed (i.e., 1960-70). The parking supply and demand increased for buildings that were built until the 1990s. From 2000-2015, the parking stalls per unit and parked vehicles per unit started to be

more aligned. This suggests that over the last 19 years, apartment buildings in Sidney have generally provided parking that has aligned with actual parking demand (i.e., parking oversupply is significantly lower than previous decades).

TABLE 9. RESIDENT PARKING DEMAND BY BUILDING AGE

Building Age	Parking Stalls per Unit	Parked Vehicles per Unit	Parking Oversupply / Undersupply Estimate
1960 – 70 (n=5)	0.99	0.81	21%
1970 – 80 (n=2)	1.26	0.97	31%
1980 – 90 (n=5)	1.31	0.99	32%
1990 – 00 (n=4)	1.04	1.03	1%
2000 – 10 (n=11)	1.16	0.99	17%
2010 – 15 (n=7)	1.00	0.90	11%

4.8 RELATIONSHIP WITH WALKABILITY

Most of the condominium and rental apartment buildings were found in two categories of Walk Score (70 – 89 and 90 – 100). As expected, the higher the Walk Score, the lower the parking supply and demand. The other Walk Score categories cannot be reliably used as the sample size is too small (1 – 2 buildings per category). For the buildings that belong in the 70 – 89 category, which is generally described as “Very Walkable” (most errands can be accomplished on foot), the parking utilization was found at 1 vehicle per unit. The highest Walk Score category 90 – 100, is described as “Walker’s Paradise” (daily errands do not require a car). For this category, parking utilization was found to be 12% lower than the 70 – 89 category with 0.90 vehicles per unit (see **Table 10**).

TABLE 10. RESIDENT PARKING DEMAND BY WALK SCORE

Walk Score	Parking Stalls per Unit	Parked Vehicles per Unit	Parking Oversupply / Undersupply Estimate
0 – 24 (n=1)	1.00	0.85	18%
25 – 49 (n=2)	1.25	0.94	33%
50 – 69 (n=2)	1.37	1.03	33%
70 – 89 (n=17)	1.10	1.00	11%
90 – 100 (n=12)	1.08	0.88	23%

4.9 RELATIONSHIP WITH PARKING SUPPLY

The hypothesis that the greater the parking supply (i.e., parking spaces per unit), the greater the parking utilization appeared to be true to some extent. A correlation between the two variables was found, as evident in **Figure 3**, but it is not a strong relationship as there are other factors that influence parking utilization.

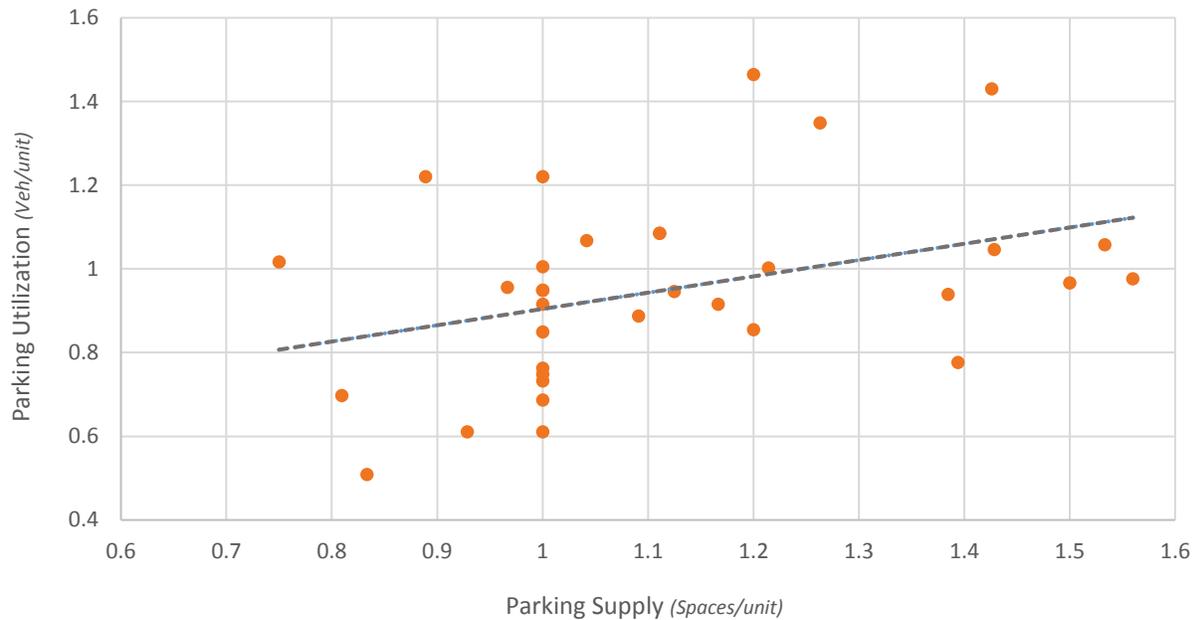


FIGURE 3: SCATTER PLOT OF PARKING SUPPLY WITH PARKING UTILIZATION

The figure above presents a positive correlation of parking supply and parking utilization, whereby as the parking supply becomes greater, the higher the parking utilization. While not corroborating past parking studies, this finding generally indicates that the parking supply rate approved for a residential building can influence the travel behaviour of residents; that is, with greater access to parking options, the easier it is for residents to choose driving as their primary mode of transportation (by easing car ownership and by easing car use). However, based on the results in this study, there are multiple factors influencing utilization and consequently, it was concluded that parking supply does influence utilization but it is not the only factor.

4.10 FURTHER TELEPHONE INTERVIEW RESULTS

Apart from the quantitative analysis completed above, part of the telephone interviews focused on other aspects related to parking, such as whether parking fees are bundled with rent or strata fees; if parking fees have created issues or resulted in negative impacts; and if the strata presidents and building managers were aware of residents parking their vehicle (or second vehicle) on-street. The information provided by the interviewees on these subjects were more anecdotal in nature, representing their perceptions and observations of their building. As such,

these results have been included for information purposes only and do not represent any conclusions.

4.10.1 RENTAL BUILDINGS

Six out of 7 rental building managers responded to the telephone interview. Key findings from the conversations are as follows:

- Only one out of the six rental buildings has unbundled parking costs from the unit rent; the rest are including it in the unit rent.
- The one rental building that has paid parking as separate from rent expressed no issues or negative impacts with that arrangement.
- Two out of the six rental buildings identified that they are aware—but cannot confidently conclude—that some residents are parking their vehicle (or second vehicle) on-street.

4.10.2 CONDOMINIUM BUILDINGS

More than half of the strata presidents from the condominium buildings responded to the telephone interview, resulting in a 59% response rate. Key findings from the conversations are as follows:

- Condominium units have at least one parking space allocated to them and it is bundled with the price of the unit.
- Four out of the 16 buildings that responded identified that they offer a second parking stall for an additional cost that ranges from \$20 - \$25 per month.
- Parking facilities are commonly managed by strata councils, who decide which unit will get a parking stall.
- One out of four (25%) buildings expressed issues with the lack of visitor parking, especially for visitors that wish to stay overnight.
- About 44% of the interviewees reported that they were aware of residents parking their vehicle (or second vehicle) on-street, but could not definitively conclude the extent to which this is occurring.

5.0 CONCLUSIONS

The following provides a summary of the key conclusions from this study:

- Parking supply averaged at 1.12 parking spaces per unit.
- Parking utilization or the number of vehicles associated with each unit across all buildings was found at 0.95 vehicles per unit.
- An average 87% parking occupancy was estimated for all the apartment buildings. Parking occupancy verifies whether the expected demand meets the actual parking demand.
- Based on all apartment buildings, on average a 22% parking oversupply was estimated. The oversupply rate ranged from 32% (buildings constructed between 1980-90) and 11% (2010-2015).
- Based on the analysis conducted and the use of demand ratios by unit type from best practices, studio and 1-bedroom units have on average, less than one vehicle.
- Parking utilization between condominium and rental apartment buildings is significantly different, 0.97 vehicles per unit and 0.86 vehicles per unit respectively.
- Apartment buildings in the Downtown Commercial zone (COM-1) have similar parking supply and demand with the buildings in the Multi-family Residential zone (RES-3). However parking oversupply is higher for RES-3 buildings.
- Apartment buildings built since 1990s have demonstrated a smaller parking oversupply than buildings built before the 1990s, highlighting a more accurate supply of actual parking demand.
- Walkability has an impact on parking demand.