



1025 Kings Road Parking Variance Report

Final Report

Prepared for
Aryze Developments Inc.

Date
August 31, 2021

Project No.
04-20-0240

August 31, 2021
04-20-0240

Carly Abrahams
Aryze Developments Inc.
1839 Fairfield Road
Victoria, BC

Dear Carly:

**Re: 1025 Kings Road Residential Development
Parking Variance Report – Final Report**

Bunt & Associates Engineering Ltd. (Bunt) has reviewed the proposed parking supply for the proposed 56-unit rental residential development at 1025 Kings Road in Victoria, BC.

To promote affordability just one level of vehicle parking is viable at the proposed site, resulting in 20 on-site parking spaces for 56 rental residential units. The proposed development requires a parking variance as the proposed on-site parking supply is below City of Victoria's bylaw requirements.

Our Parking Variance Report is provided herewith. Our report presents the development, its required parking variance, and discusses Transportation Demand Management (TDM) strategies that can support the proposed parking supply.

Bunt acknowledges Aryze Developments' offer of significant TDM initiatives. These initiatives, described herein, are anticipated to support the proposed parking supply, facilitate more affordable rental housing in Victoria, and encourage the use of more sustainable forms of transportation. The TDM section of this report may be used to inform a covenant to ensure TDM implementation.

Best regards,
Bunt & Associates



Jason Potter, M.Sc. PTP
Senior Transportation Planner, Associate

CORPORATE AUTHORIZATION

Prepared By: Jason Potter, PTP
Senior Transportation Planner

Bunt & Associates Engineering Ltd.
Suite 530 – 645 Fort Street
Victoria, BC V8W 1G2
Canada

Telephone: +1 250 592 6122

Date: 2021-08-31

Project No. 04-20-0240

Status: Final

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TABLE OF CONTENTS

- EXECUTIVE SUMMARY I
- 1. INTRODUCTION 1
 - 1.1 Report Scope and Objectives 1
 - 1.2 Development Details 3
 - 1.3 Bylaw Vehicle Parking Requirements and Proposed Parking Supply 5
- 2. LOCAL CONTEXT 6
 - 2.1 Land Use 6
 - 2.2 Street Network 6
 - 2.3 Walking and Cycling 6
 - 2.4 Transit 8
 - 2.5 Car-Share 8
 - 2.6 On-Street Parking 8
- 3. PARKING DEMAND ANALYSIS 10
 - 3.1 Resident Parking 10
 - 3.1.1 Unit Size & Affordability 10
 - 3.1.2 Tenure 12
 - 3.1.3 Geographical Area 14
 - 3.2 Visitor Parking 14
 - 3.3 Vehicle Parking Demand Summary 15
- 4. VEHICLE TRIP GENERATION 16
- 5. TRANSPORTATION DEMAND MANAGEMENT 18
 - 5.1 Information Sharing 18
 - 5.2 Cycling Amenities 18
 - 5.2.1 Bicycle Parking 18
 - 5.2.2 Bicycle Repair Station 19
 - 5.3 Car Share 19
 - 5.4 Transit 22
 - 5.5 Specialized Parking 22
- 6. CONCLUSIONS 24

EXHIBITS

Exhibit 1.1: Study Area	2
Exhibit 1.2: Site Plan.....	4
Exhibit 2.1: Cycling Network.....	7
Exhibit 2.2: On-Street Parking Regulations	9

TABLES

Table 1.1: Residential Unit Breakdown	3
Table 1.2: Parking Requirement and Proposed Supply – Six Affordable Units	5
Table 2.1: Nearby Transit Routes	8
Table 3.1: Residential Unit Sizes	11
Table 3.2: Vehicle Ownership Rates for Comparable Affordable Buildings in Greater Victoria	11
Table 3.3: Vehicle Ownership Rates for Comparable CRHC Buildings in Greater Victoria.....	12
Table 3.4: Summary of Market Rental Apartments Included in 2012 Parking Study.....	13
Table 4.1: Trip Generation – 1025 Kings Road	16
Table 5.1: TDM Strategy Summary	23

EXECUTIVE SUMMARY

Aryze Developments is proposing to develop 1025 Kings Road in Victoria, BC. The development is located just east of Quadra Street, and approximately one block south of Hillside Avenue. The property is currently occupied with a three-storey building with 15 residential rental units. The proposed six-storey development will result in 56 residential rental units.

The development includes 20 vehicle parking spaces which is 25 spaces below the City of Victoria's bylaw requirement. One of the 20 spaces will be an Accessible space for visitors.

The proposed total parking supply of 20 parking spaces is anticipated to meet resident and visitor peak period parking demand when considering existing demand profiles at comparable buildings, the size of the units which is intended to promote affordability, the rental tenure of the building, the location's walkability, transit access, and the substantial Transportation Demand Management (TDM) initiatives proposed by Aryze Developments.

Most importantly, future residents will understand that some units at this development will not have access to a parking space. If they require a parking space, then these residential units will simply not be for them. The neighbourhood's walkability, cycling routes, and frequent transit networks will attract tenants wishing to live a car-light or car-free lifestyle. We believe there are plenty of prospective tenants who do not require a parking space, making this development not only viable but also important for promoting more affordable housing in Victoria.

100% of all vehicle parking spaces will include an energized electrical outlet capable of providing future Level 2 (208 volts to 240 volts) charging for electric vehicles. Four (4) electric vehicle charging stations will be installed and accessible by tenants in the building.

Proposed TDM initiatives include Aryze Developments providing MODO car-share memberships to all units. The memberships will remain in title of the building and be transferable to future residents.

The development will exceed the long-term bicycle parking requirements (70 long-term spaces including eight cargo-bike spaces) by approximately 10% and exceed requirements for short-term spaces. Aryze is proposing 20% of bicycle parking spaces be provided with electrical outlets for e-bike charging, and a bicycle repair station will be located adjacent to a bike storage room. 60% of the long-term spaces will be ground anchored for easy accessibility which exceeds City requirements of 50%.

To help establish more sustainable forms of transportation while resident travel behaviour is most pliable, Aryze Developments will provide new residents with information that summarizes the location's wide range of transport options in printable and on-line forms. Aryze will also include an educational information session regarding local area transportation options as part of the tenant walkthrough.

1. INTRODUCTION

1.1 Report Scope and Objectives

Aryze Developments is proposing to develop 1025 Kings Road, Victoria BC. The location of the site is illustrated in **Exhibit 1.1**. The proposed development will be providing a total of 56 residential units.

The site currently contains a three-storey residential building.

The goal of this report is to develop and present a parking supply plan that ensures the proposed development's parking demand can be accommodated on-site. Specifically this study will:

- Review the transportation context of the development location (Section 2);
- Review the development's proposed vehicle parking supply in comparison with the bylaw requirements (Section 3);
- Forecast the development's parking demands based on various factors such as location, tenure, and unit types (Section 3);
- Provide a high-level vehicle trip generation estimate (Section 4); and,
- Present Transportation Demand Management (TDM) initiatives that can help support the proposed parking supply and potentially inform a covenant to ensure TDM implementation (Section 5).



Exhibit 1.1 Site Context

1025 Kings Road Parking Variance Study
04-20-0240 July 2020



1.2 Development Details

The development will have a total of 56 residential units. The units range from studios to 3 bedroom units. The proposed development's unit breakdown is presented in **Table 1.1**. Each unit size is broken down into size ranges used to apply the City of Victoria's bylaw minimum vehicle parking rates. As shown, 54 of the 56 units (96%) are 726 square feet or less.

Table 1.1: Residential Unit Breakdown

	SF	M ²	# OF UNITS	<45 M ²	45-70 M ²	>70 M ²
Studio	392	36	5	5	-	-
1 bedroom	441-523	41-49	34	24	10	-
2 bedrooms	619-726	58-67	15	-	15	-
3 bedrooms	885	82	2	-	-	2
TOTALS			56	29	25	2

The residential units, with their modest size, are anticipated to have low person per unit occupancy.

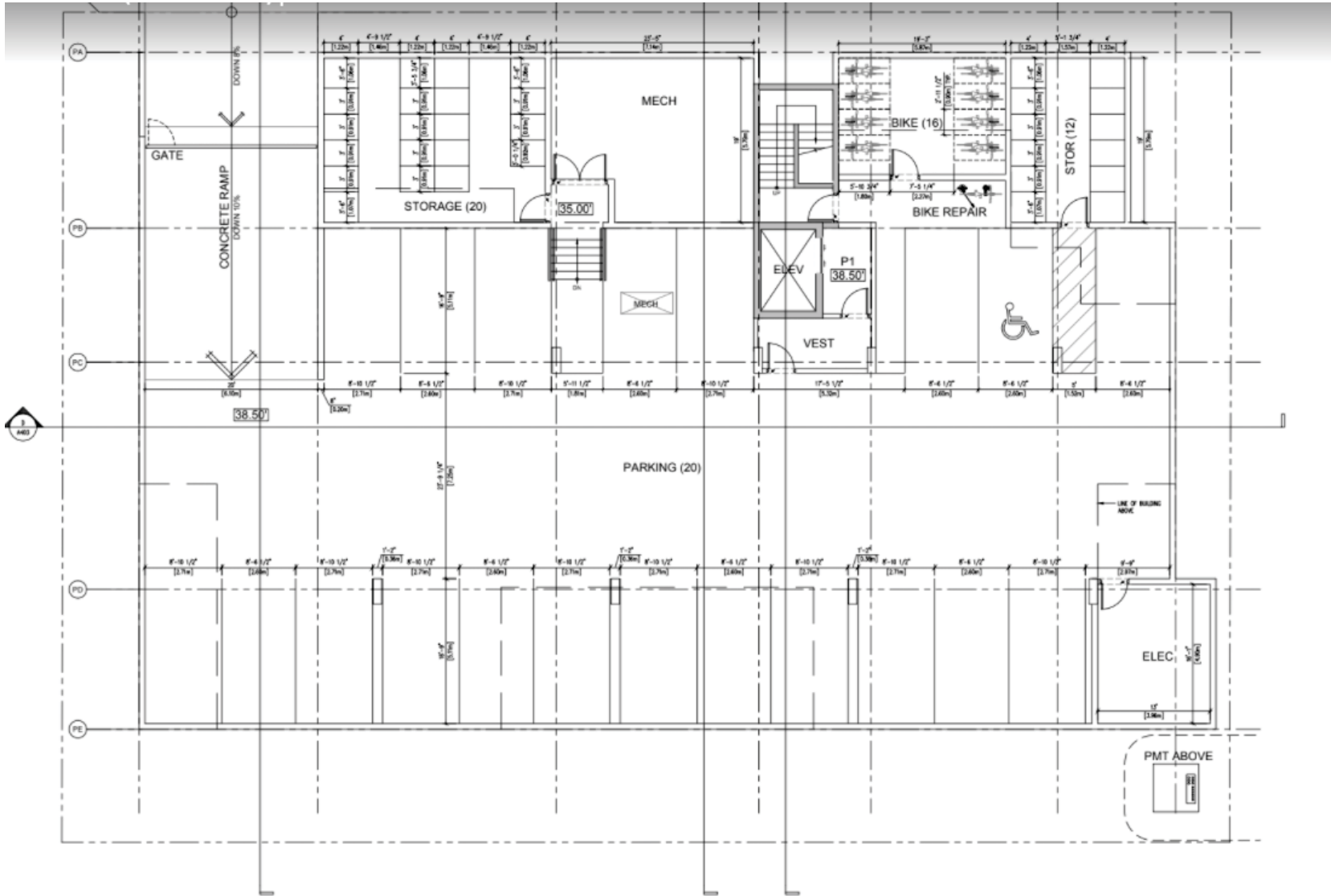
All units will be rental units.

100% of the unit's meet BC Housing's definition of "Affordable" where the rent maximum is 30% of household before-tax income.

10% of the units (6 units) are "Affordable" as defined by the City of Victoria. The difference from BC Housing's definition is that in Victoria, the 30% is calculated using the renter's median household income in Victoria (Victoria Housing Strategy Phase Two: 2019-2022).

The site plan is shown in **Exhibit 1.2**.

KINGS ROAD



1 PARKING LEVEL FLOOR PLAN
1/8"

Exhibit 1.2
Site Plan

1025 Kings Road Parking Variance Study
04-20-0240 Scale: NTS August 2021



1.3 Bylaw Vehicle Parking Requirements and Proposed Parking Supply

City of Victoria’s updated Schedule C: Off-Street Parking bylaw differentiates between affordable units – defined on Page 3 and secured in perpetuity through a legal agreement, and regular apartment units. At this time, six of the 56 units will be considered “affordable” units for perpetuity as per City of Victoria definition.

The development is in a Village/Centre area and therefore requirements were calculated using this residential unit type was applied to parking bylaw requirement calculations. The units are all rental units. The parking requirements were therefore calculated as a rental development, located in a “Village/ Centre” area, with six of the units provided affordable status. Parking Bylaw requirements are summarized in **Table 1.2** along with the proposed parking supply.

Table 1.2: Parking Requirement and Proposed Supply – Six Affordable Units

DEVELOPMENT COMPONENT	UNITS	BYLAW MINIMUMS		PROPOSED SUPPLY
		RATE	AMOUNT	AMOUNT (RATE)
Affordable	6 (assumed 3 of <45m ² and 3 of 45m ² to 70m ²)	0.35*	2.1	19 (0.34)
< 45 m ²	29 (-3 affordable)	0.60	17.4	
45 m ² to 70 m ²	25 (-3 affordable)	0.70	17.5	
>70 m ²	2	1.1	2.2	
Resident Sub-total	56	-	39.2 (39)	19
Visitor	56	0.1/ unit	5.6 (6)	1 Accessible (0.02/unit)
TOTALS	56	-	45	20

*Blended rate (of 0.2 and 0.5 spaces per unit) for each unit size.

As shown in Table 1.2, the bylaw requirement is 45 parking spaces. This represents a 25-space variance from the proposed on-site parking supply of 20 spaces.

The proposed vehicle parking supply of 20 spaces equates to a resident rate of 0.34 spaces per unit.

One (1) barrier-free accessible visitor parking stall is included in the total number of 20 parking stalls.

100% of all vehicle parking spaces will include an energized electrical outlet capable of providing future Level 2 (208 volts to 240 volts) charging for electric vehicles. Four (4) electric vehicle charging stations will be installed and accessible by tenants in the building.

2. LOCAL CONTEXT

The location of a development site dictates the extent of transportation options available to future residents. As described in the following sub-sections, the proposed development is accessible by foot, bicycle, transit, and car-share. While City of Victoria recognizes location factors by dividing the City into three categories, it is our opinion that location factors differentiate sites beyond these three categories.

2.1 Land Use

The site is within Quadra Village, with Quadra Village services and amenities within typical walking distance thresholds. Near the site on Fifth Street is a mix of single family and multi-family residential buildings. Also near the site, Quadra Street offers a wide range of retail, commercial businesses, and services.

The site is also less than 500 metres from the north edge of Victoria's downtown core area.

2.2 Street Network

Quadra Street extending north/south is classified by the City of Victoria as an arterial road. Fifth Street is classified as a local road. Kings Road along the north edge of the site is also classified as a local road.

The Fifth Street and Kings Road intersection to the north of the development site operates under stop control for Fifth Street. Fifth Street traffic is restricted to right-in and right-out only turn movements.

2.3 Walking and Cycling

Kings Road has sidewalks along each road edge. The majority of the nearby streets have sidewalks on both sides. There are crosswalks at all of the major intersections in the vicinity of the site.

Fifth Street has a sidewalk along the development frontage's west edge, while the east edge is unfinished with unregulated parking. The homes along the opposite east edge of Fifth Street face east, hence Fifth Street functions as a rear access to these lots.

Kings Road is planned to be converted into a shared-use bikeway in 2021 as per the City of Victoria's AAA bicycle network expansion.

The nearest designated bike route is located on Graham Street which is one block east of Fifth Street. Graham Street is classified as a Signed Bike Route which indicates it is a comfortable route for people cycling however it does not have any dedicated cycling infrastructure. The Graham Street cycling route is part of the Vancouver Street cycling route which extends north/south connecting south to the Pandora AAA cycling route in Victoria's core downtown area, and north to the Finlayson Street bike lanes and onward into Saanich. Victoria's existing cycling network is shown in **Exhibit 2.1**.

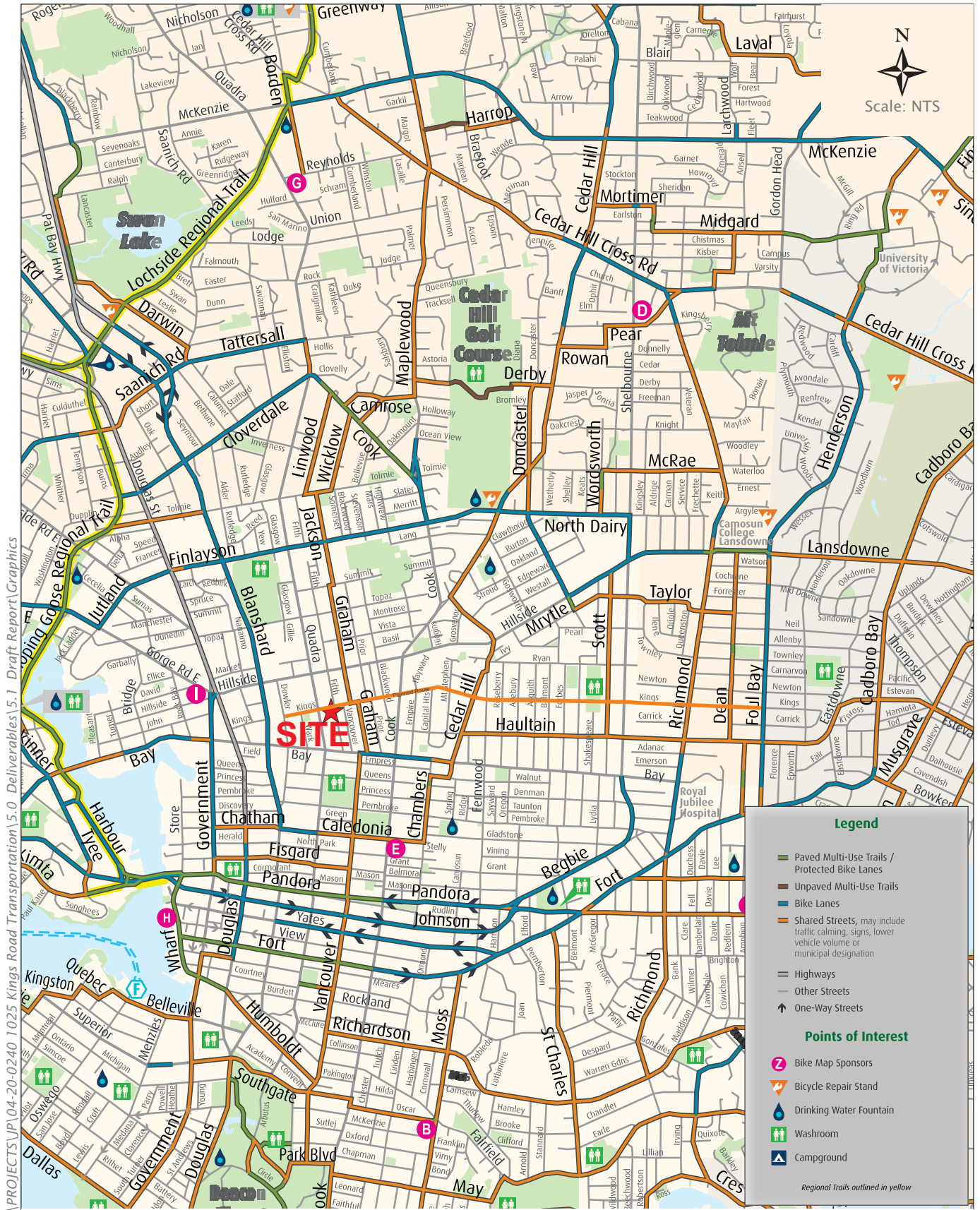


Exhibit 2.1 Cycling Network

1025 Kings Road Parking Variance Study
04-20-0240
May 2021



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2.4 Transit

The site is well served by transit. The proposed development site is surrounded by five major transit corridors, all within a 5 to 10 minute walk. **Table 2.1** presents nearby transit routes and approximate distances from the development site to bus stops. Buses along these routes are designed to accommodate wheelchairs, strollers, and mobility aids.

Table 2.1: Nearby Transit Routes

STREET/ AVENUE	BUS ROUTE	TRAVEL DIRECTION	DISTANCE FROM SITE	NEAREST BUS STOP IS SHELTERED (Y/N)
Quadra Street	6	N/S	170 m	Y
Bay Street	10	E/W	220 m	N
Hillside Avenue	4	E/W	270 m	Y
Cook Street	24, 25	N/S	450 m	Y-SB, N-NB
Douglas Street	70, 72	N/S	1,000 m	Y

2.5 Car-Share

The site has four MODO vehicles within a 10-minute walk which is commonly regarded as walkable. One MODO vehicle is located directly next door at 2750 Fifth Street. Another is approximately 200m to the east on Kings Road, another is 400m to the south near Quadra Street and Queens Avenue, and another is approximately 500m away from the development site near Quadra Street and Topaz Avenue.

2.6 On-Street Parking

The development will face Kings Road, with vehicles accessing the site from Kings Road.

The Kings Road site frontage is currently regulated as 2-hour parking. There is space for approximately 4 vehicles along this site frontage after allowance for the driveway. It is anticipated that these four spaces will remain 2-hour parking spaces. On the north side of Kings Road there are no parking restrictions. There is area for approximately 10 vehicles along this north edge of Kings Road, which is at the back of the Fairway Market grocery store.

The development frontage on Fifth Street is approximately 30m in length.

Despite fronting the development site and a high likelihood of these on-street parking spaces being used by development visitors, they do not count towards the buildings parking supply. However, their presence is noted, as functionally these spaces are anticipated to be used by visitors.

Existing (July 2020) on-street parking regulations are illustrated on **Exhibit 2.2**.

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- █ 2 Hour Maximum 8A.M.-6P.M. Mon.-Sat
- █ Commercial Loading Zone 7A.M. - 6P.M. Mon.-Sat.
- █ No Restriction
- █ Resident Only
- █ No Parking

Exhibit 2.2 On-Street Parking Regulations

1025 Kings Road Parking Variance Study
04-20-0240 July 2020



3. PARKING DEMAND ANALYSIS

3.1 Resident Parking

Many municipalities such as Victoria recognize variations in resident parking demands based on various factors. Variables we considered when forecasting resident auto ownership and corresponding parking demands include:

- **Unit size:** Parking requirements should be proportional to the dwelling size (square footage/ number of bedrooms). Unit size can also correlate with factors such as the number of working adults in the household, income level, and unit affordability.
- **Tenure type (rental or strata):** Parking requirements should be different for private ownership, market rental, and non-market rental units to reflect the different vehicle ownership rates of these tenure types.
- **Geographic area:** Parking requirements should be lowest in areas that are in close proximity to frequent and high quality transit and active mode infrastructure.
- **Transportation Demand Management (TDM):** TDM initiatives can have substantial impact in reducing vehicle dependency.

The City of Victoria's Zoning Bylaw Schedule C Off-Street Parking Regulations has three categories for unit sizes and recognizes rental versus strata tenure. For location the City's bylaw recognizes three locations:

- Core Area,
- Village/ Centre and
- Other.

While these three categories help differentiate between different locations within Victoria, we believe that the importance of location factors warrants further differentiation beyond these categories. Transit, bike and walkability scores for a particular location can help further evaluate a location in regard to its ability to be served by non-vehicle modes of transportation. Each of these factors is discussed below in the context of the proposed 1025 Kings Road residential development. Proposed TDM initiatives to support the proposed parking supply are presented in Section 5.

3.1.1 Unit Size & Affordability

The proposed unit sizes are particularly small in size. As shown in **Table 3.1**, 54 of the 56 units (96%) are less than 70 m².

Table 3.1: Residential Unit Sizes

UNIT SIZE	NUMBER OF UNITS
Less than 45m ²	29
45m ² or more, but less than 70m ²	25
More than 70m ²	2
	56

Many cities recognize the correlation between unit size and parking demand. The City of Victoria, with its recently updated Zoning Bylaw No. 80-159 Schedule C: Off-Street Parking Regulations has parking space requirements tailored to the location of the development and unit sizes. Parking requirements for units less than 45 m² are approximately 30% lower than rates applied to larger units in a common area. Parking requirements for units less than 70 m² are approximately 20% lower than rates applied to larger units in a common area.

Smaller residential unit sizes also correspond with affordability and resident income, as smaller unit sizes generally allow for reduced unit prices.

Bunt obtained parking supply and parking demand data of comparable Greater Victoria Housing Society (Table 3.2) affordable housing buildings operated by Capital Region Housing Corporation (Table 3.3). The buildings listed were selected as they share similar characteristics such as expected resident demographics, unit size, proximity to services, and that they are all non-downtown locations. As shown in Tables 3.2 and 3.3, the average parking demand is approximately 0.37 spaces per unit and no building had a parking demand greater than 0.59 spaces per unit.

Table 3.2: Vehicle Ownership Rates for Comparable Affordable Buildings in Greater Victoria

COMPLEX NAME	LOCATION	SUBSIDIZED	NUMBER OF UNITS	PARKING SPACES	PARKING SPACES OCCUPIED BY TENANT	PARKING DEMAND RATE
Colwood Lodge	85 Belmont Road Victoria	YES	50	37	24	0.48
Constance Court	1325 Esquimalt Road Esquimalt	YES	52	26	18	0.35
Grafton Lodge	506 Crofton Street Esquimalt	YES	29	20	17	0.59
Townley Lodge	1780 Townley Street Saanich	NO	39	16	13	0.33
Esquimalt Lions Lodge	874 Fleming Street Esquimalt	NO	77	23	21	0.27
WEIGHTED AVERAGE						0.37

Source: Greater Victoria Housing Society

The dataset (presented in Table 3.3) obtained from Capital Region Housing Corporation in 2017 of six “Affordable” housing buildings (either rental or strata) in the Greater Victoria area (with similar characteristics such as unit size, proximity to services, but mostly in less central locations) also shows that the average resident parking demand for affordable housing units was approximately 0.37 spaces per unit, and no building had a parking demand greater than 0.50 spaces per unit. These rates were realized with minimal to no support from TDM initiatives.

Table 3.3: Vehicle Ownership Rates for Comparable CRHC Buildings in Greater Victoria

COMPLEX NAME	LOCATION	SUBSIDIZED	NUMBER OF UNITS	PARKING SPACES OCCUPIED BY TENANT	PARKING DEMAND RATE
Amberlea	3330 Glasgow Avenue	YES	44	22	0.50
The Birches	1466 Hillside Avenue	YES	49	8	0.16
Leblond Place	390 Waterfront Crescent	YES	53	23	0.43
Rosewood	1827 McKenzie Avenue	YES	44	15	0.34
Springtide	270 Russell Street	YES	48	19	0.40
The Heathers	3169 Tillicum Road	YES	26	11	0.42
Viewmont Gardens	4450 Viewmount Avenue	YES	36	14	0.39
WEIGHTED AVERAGE					0.37

Source: Capital Region Housing Corporation

The Canada Mortgage and Housing Corporation (CMHC) (Research Highlight, Socio-Economic Series Issue 50- Revision 2) concluded that household income is the second best predictor of auto ownership. As income increases, auto ownership and use increase. A study reported in the Australia Transportation Forum (2007) also found a strong correlation between vehicle ownership and household income. A study published by Pushkar et al (TRB 2000) based on a survey of 115,000 households in Toronto indicated that higher income households had more vehicles. A study conducted by Bunt & Associates in the Vancouver area in the early 1990’s and in Calgary area in 2003 also supported a positive, almost linear relationship between income and auto ownership.

3.1.2 Tenure

Rental apartments generally have lower vehicle ownership rates than owned apartments. Bunt has previously conducted analysis of out-of downtown market rental apartment buildings in Victoria in 2012. The data (presented in **Table 3.4**) was derived from three key sources of information:

- Vehicle ownership information acquired from ICBC;
- Data collected in the field during resident and visitor peak parking periods; and,

- Information gathered from building manager interviews.

The collected data indicated that the approximate vehicle ownership rate (i.e. residential parking demand) of the 13 rental apartment buildings was 0.66 vehicles per unit. These parking ownership rates are approximately 40% lower than bylaw minimum supply rates for “Other Area” locations. This data correlates with the field observation counts and building manager surveys. The data revealed a range of vehicle ownership rates as low as 0.52 and as high as 0.81 vehicles per unit. It also illustrates the impact of unit size as the highest vehicle occupant buildings have a higher proportion of two bedroom units.

All units at 1025 Kings Road will be rental units.

Table 3.4: Summary of Market Rental Apartments Included in 2012 Parking Study

NAME AND ADDRESS	TOTAL UNITS (OCCUPIED/ AVAILABLE)	# OF STUDIO UNITS	# OF 1 BDR UNITS	# OF 2 BDR UNITS	# OF ON-SITE RESIDENT PARKING STALLS	# OF ON-SITE VISITOR PARKING STALLS	PARKING STALL COST (MONTHLY)	VEHICLE OWNERSHIP RATE
805 Academy Close	9 / 10	0	10	0	0	0	N/A	0.7
360 Douglas Street, Goodacre Towers N. & S.	194 / 197	55	81	61	152	32	\$15 - \$20	0.68
240 Douglas Street, Beacon Tower Apartments	58/60	0	44	16	42	0	\$30	0.73
151 St. Andrews, Beacon Park Apartments	75/75	3	10	62	90	5	\$35	0.81
575 Marifield Ave, Kirkcauldy Apartments	43 / 43	7	28	8	28	3	\$20	0.53
562/566 Simcoe Street	104 / 108	6	78	24	75	12	\$20	0.54
576 Simcoe Street, Park Plaza	37 / 37	3	27	7	35	1	\$0	0.55
160 Government Street, Weybridge Manor	33/33	N/A	N/A	N/A	23	3	N/A	0.63
890 Academy Close	54 / 55	12	30	13	33	0	\$10-\$15	0.63
505 Quadra Street, Beacon Arms	34 / 34	2	21	11	26	1	\$15-\$30	0.68
955 Humbolt Street	43 / 43	0	37	6	40	3	\$45	0.72
976 Humbolt Street	23 / 23	6	13	4	15	0	\$45	0.52
TOTALS AND AVERAGES	98.5% OCCUPANCY	-	-	-	-	-	\$20	0.66

3.1.3 Geographical Area

Potential apartment owners who do not own a vehicle or would like to live without a private vehicle require other transportation options such as transit, car-share, or the ability to safely access common destinations by foot or bicycle. Proximity to high frequency transit, commercial areas, and recreational opportunities is a critical support for reduced parking rates.

As presented in Section 2, from a transportation perspective the site is in an excellent location as it is near a cycling route and is within a walkable range of various commercial services, amenities and transit routes.

The development is in a Village/ Centre area and is considered highly walkable. Grocery stores, pharmacies, restaurants, coffee shops, parks, schools, shopping and entertainment are all shown to be within a 500-meter distance (an approximate 5 to 10 minute walk). According to the Walk Score¹ website the 1025 Kings Road location has a Walk Score of 84 (out of 100) placing it in the “Very Walkable” category.

The 1025 Kings Road location also has a bike score of 89, which Walk Score defines as “Very Bikeable and a transit score of 68 which is defined as “Good Transit”.

3.2 Visitor Parking

Previous research conducted by Bunt has suggested that a visitor parking rate of 0.10 spaces per unit for residential buildings is suitable as it is anticipated to provide a buffer over peak demands. This is supported by Metro Vancouver’s comprehensive “*2012 Metro Vancouver Residential Apartment Parking Study*”² which suggests 0.10 spaces per residential unit can accommodate peak visitor parking demand. The study found peak visitor parking demand rates in the range of 0.05 to 0.07 vehicles per unit for multi-family residential. This is consistent with Bunt’s in-house database of peak visitor parking demand rates.

A visitor parking demand rate of 0.05 spaces per unit would translate to peak period demand of approximately three parking spaces for the proposed 56 units.

While not recognized through Bylaw, short-term visitors are anticipated to use the approximate four (4) two-hour on-street parking spaces which front the site on Kings Road, or the approximate 10 unregulated spaces on the north side of Kings Road, across from the development site.

¹ Walk Score is a method of evaluating a location’s walkability by using an algorithm that awards points based on the distance to amenities such as grocery stores, schools, shops, recreation opportunities, banks and restaurants. www.walkscore.com

² 2012 Metro Vancouver Apartment Parking Study available at: https://www.esquimalt.ca/sites/default/files/docs/municipal-hall/EVP/schedule_m_parking_study.pdf

The one accessible on-site parking space will be available to visitors with accessibility constraints.

3.3 Vehicle Parking Demand Summary

Smaller apartments have been shown to result in lower than average parking demand rates, regardless of tenure. Rental buildings also typically result in lower parking demands than strata ownership.

The location of the development offers a plenitude of transportation options. It is in a highly walkable area, surrounded by amenities. It has nearby transit, cycling routes, and car-share opportunities.

These factors of unit size, tenure, and location are all shown to result in lower vehicle ownership rates, when these factors are combined the impact is anticipated to be compounded.

In addition to the above factors, this proposed development is largely defined by its effort to promote affordability. While the development is not defined as being all affordable units by Victoria's current definition, the development's vehicle-lite parking strategy is anticipated to help provide more affordability.

Due to the likelihood that visitors will likely use on-street site-fronting parking spaces Bunt recommends that 19 of the 20 on-site parking spaces be reserved for resident use. This will allow for easier parking structure security and alleviate the need for two gates (one accessible for visitors and a second for residents). One space would be reserved as an accessible visitor space.

The 20 total spaces available to support the development's 56 units represents an overall parking ratio of 0.36 spaces per unit. While this may be achievable without additional management, we recommend the development prioritize parking spaces leasing by initially offering parking spaces to the larger sizes units. When parking spaces are all occupied the rental of further units would therefore be contingent on the renter not owning a vehicle.

With consideration of the factors discussed above and with the support of the proposed transportation demand management initiatives, it is Bunt's opinion that the proposed 20 on-site parking spaces can be anticipated to meet the parking demands of the proposed 56-unit rental residential development at 1025 Kings Road.

4. VEHICLE TRIP GENERATION

The Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) was used to estimate the number of vehicle trips generated from the proposed building in the weekday PM peak hour (**Table 4.1**). The ITE trip rate for Mid-Rise Apartments was used. This trip rate likely overestimates the amount of traffic the building will generate because it is based on strata apartments rather than rental units and does not account for location factors of the site’s lower than average vehicle parking supply.

Table 4.1: Trip Generation – 1025 Kings Road

LAND USE				PM PEAK HOUR TRAFFIC VOLUMES					
ITE LAND USE CODE	TITLE	VARIABLE	SIZE	TRIP RATE	% IN	% OUT	TRIPS IN	TRIPS OUT	TOTAL 2-WAY
221	Mid-Rise Apartment	units	56	0.44	61%	39%	15	10	25

As shown in Table 4.1 ITE trip generation rates suggest a total of 25 two-way vehicle trips during the weekday PM peak hour. Bunt anticipates actual trip generation of the site is likely to be approximately half of this amount due to location, unit sizes and associated parking supply.

The conservative estimate of 20 total vehicle trips per peak hour (12 inbound, 8 inbound) equates to approximately one vehicle traveling into or out of the development site every 3 minutes during peak periods. This level of vehicle generation is anticipated to have a negligible impact on the adjacent road network.

An estimated vehicle distribution based on existing vehicle distribution patterns of the conservatively calculated 20 total two-way weekday PM peak hour is presented below in **Figure 1**.

Figure 1: Estimated Weekday PM Peak Hour Development Generated Vehicle Volumes



5. TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) seeks to decrease private vehicle use by promoting other more sustainable modes of transportation. While important for all developments, TDM is especially important in projects such as 1025 King Road where it is anticipated to support the required vehicle parking space variance.

TDM initiatives are discussed below then summarized in **Table 5.1**, which includes items recommended by City staff and offerings by Aryze which attempt to address City recommendations by providing details that will lead to an effective and more efficiently administrative TDM program.

5.1 Information Sharing

TDM is about changing travel behaviour. New residents are considered a pliable demographic for transportation mode change as they have yet to establish travel patterns from their new address. Clear and simple messages along with practical information about local transit services and walking and cycling routes to and from the site can help encourage residents to use more sustainable transportation modes. Information should be distributed to tenants upon their move-in or made available through a website or webpage. The information provided in print or on-line should include:

- Map showing local transit routes (can be obtained from BC Transit - Victoria website);
- Map showing local area cycling routes (can be obtained from City website – Map of Victoria Bike Routes);
- Map showing amenities within a typical walking catchment of 800 metres (can be obtained from Walk Score website: www.walkscore.com).

5.2 Cycling Amenities

5.2.1 Bicycle Parking

City of Victoria's updated zoning bylaw requires 1.25 long-term bicycle space per residential unit greater than 45 m² and 1 space per unit less than 45 m², resulting in a requirement for 63 long-term bicycle spaces for the 56 residential units. Long-term bicycle parking spaces are defined as a secure, weather-protected bicycle parking facility used to accommodate long-term bicycle parking. The greater of 6 short-term bicycle spaces per building or 0.1 spaces per unit equates to a bylaw requirement for 6 short-term bicycle spaces.

The total bylaw requirement for the site is therefore 63 long-term bicycle spaces and 6 short-term bicycle spaces.

The development will exceed the long-term bicycle parking requirements by 10% with 70 long-term spaces, including eight cargo-bicycle-sized spaces (2.4 metres x 0.75 metres). 20% of the long-term bicycle parking spaces will have access to electrical outlets for e-bike charging.

60% of the long-term spaces will be ground anchored which is greater than the 50% bylaw requirement.

A short-term bicycle rack will be provided immediately adjacent to the building's main entry in a well lit and highly visible area. It will also be weather protected.

5.2.2 Bicycle Repair Station

To support resident cycling, the developer will provide a bicycle repair station within the parkade for easy accessibility by residents (example image of a bicycle repair station provided below in **Figure 5.1**).



Figure 5.1: Example of Bike Repair Station

5.3 Car Share

Car-sharing organizations have developed significantly in the last 5-10 years. They allow people to have access to a car in their area without having to buy or maintain their own vehicle. A “pay as you go” approach is adopted as members pay by the hour and/or kilometre when they use a vehicle. There is currently one car share organization in Victoria: Modo. Modo currently (August 2021) has a fleet of approximately 70 vehicles throughout Victoria, including four vehicles within 650 metres of the development site.

A Car Share vehicle provides an amenity to not only the offering development but also to the adjacent neighbourhood. Modo has expressed preference for vehicles to be placed at-grade, in publicly accessible locations that are visible from the street and sidewalk. They do not wish to have vehicles in parkade structures, this is to ensure the vehicle can be used by the wider community.

Aryze Developments is offering to purchase Modo memberships for each unit. The cost to Aryze Developments will be \$500 per unit for each unit. The memberships will remain property of the development and are transferable to new future tenants. Residents provided with memberships will pay for vehicle use by time or by kilometers traveled.

Some other municipalities such as Vancouver have equated varying degrees of car-share participation with a parking requirement reduction of five vehicle spaces. The true impact is likely dependent on various site specific factors such as location and resident demographics. It is our opinion that having access to shared vehicles will remove a common barrier for residents who may consider not owning a private vehicle, especially in the present context where car-share provides another viable transport option to an area that has other strong multi-modal transportation options.

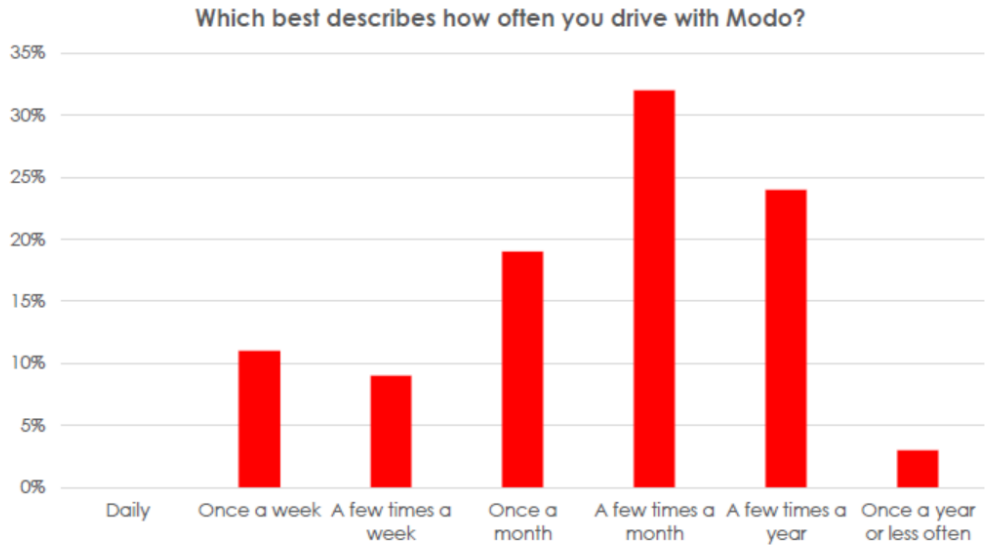
The Metro Vancouver Car Share Study (November 2014) suggests each car share vehicle equates to a reduction of 5 – 11 vehicles from the roadways.

Vehicle Reduction

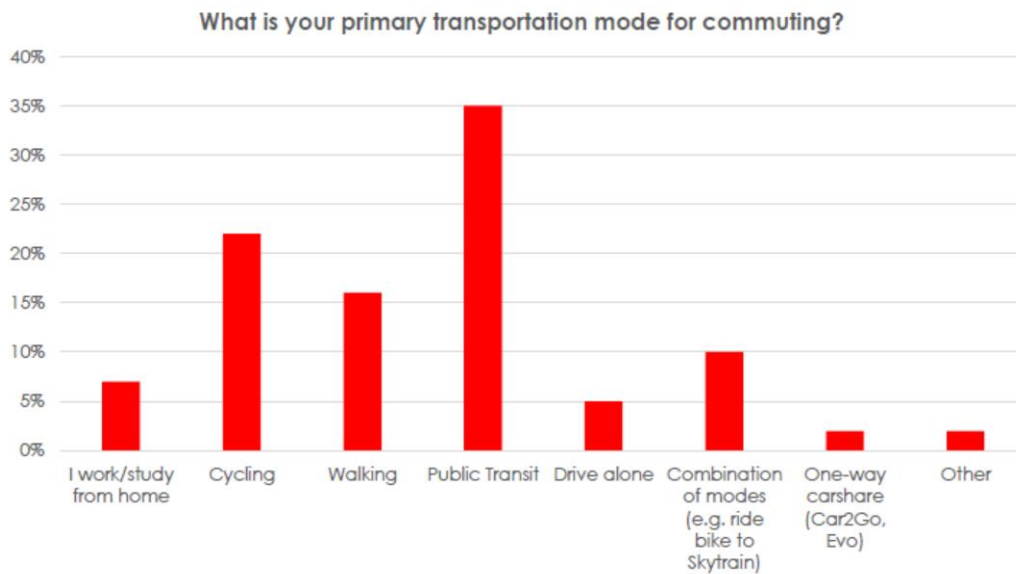
On average, up to three private vehicles were shed per car share vehicle. When the avoidance of acquiring private vehicles was included, then each car share vehicle is estimated to have removed 5-11 private vehicles from the use of current car share households. Unlike avoiding an additional vehicle, not all vehicles that were shed would have been taken off the road permanently, as some would have been sold or transferred to other owners in the region or elsewhere.

Source: Metrovancouver, November 2014, *The Metro Vancouver Car Share Study*

Car-share membership removes a major barrier for living a without a vehicle as it provides an option for the non-typical, non-commuting trip types where public transit or active modes become difficult such as trips out of town or errand trips that require hauling larger amounts of goods. Modo has provided Bunt with information about its members in Vancouver that we believe stresses this important role Car Share can have in filling a tenants need for irregular yet important, non-everyday commuting vehicle trips. Specifically, in the following page, two graphs indicate that Modo vehicles provide a specific transport role which complements other forms of transportation, allowing a member to use a vehicle for the small proportion of trips that are of distances beyond the reach of transit or active modes. The graphs indicate that Modo vehicles do not replace transit or active mode trips but rather Modo members are shown to use Car Share as a compliment to their use of transit and active modes.



Source: Annual Modo Survey Results — June 2016



Other key findings from Modo obtained from a presentation Modo provided to Bunt on February 17, 2017 include:

- Modo members in Vancouver have just 0.36 vehicles per household compared to the 1.56 vehicles per household Metro Vancouver average.
- When people become Modo members their mean car ownership rates drop considerably. Round-trip members (park in place, such as Modo) start with 44% of mean car ownership, dropping to 22% after becoming a Modo member and one-way members (can park at other locations) are shown to have 70% of mean car ownership before membership which drops to 63% after becoming a Modo member (Namazu & Dowlatabadi 2017, Vehicle ownership reduction: A comparison of one-way and two-way carsharing systems).

5.4 Transit

Aryze Developments has inquired about enrollment in BC Transit's Eco-Pass Program. While the Eco-Pass Program has potential to encourage more transit use, Aryze and Bunt believe a more robust and focused initiative can better facilitate mode shift. Specifically, Aryze is offering to subsidize transit passes for each unit to the monthly Senior/ Youth rate (\$45/ month) applicable for the first 6-months of every new tenancy for a five-year period. The rationale of this initiative is that transit passes are more valued and more likely to be used when the tenant has contributed, in part, to the cost (although Seniors and Youth would be covered in full). The rationale for the subsidy being for the first 6-months of each tenancy is to introduce each new tenant to the transit system and to help establish this mode of transport for tenants. Receipts or proof of purchase for transit passes would be provided to building management to receive applicable deductions to rent payment balances. Further details are provided in Table 5.1.

5.5 Specialized Parking

The developer will provide future Level 2 (208 volts to 240 volts) electric charging abilities to 100% of the vehicle spaces. To ensure the electrical demand of the charging does not exceed the building's capacity, a building demand load management system will be installed. This system monitors the building's spare capacity and distributes that amount to each electric vehicle connected to a charging station.

Four Level 2 electric charging stations are also being offered by Aryze.

5.6 Lower Vehicle Parking Supply

Having a lower supply of vehicle parking is itself a TDM initiative as it disincentivizes vehicle ownership.

Lower parking supply also contributes to affordability of the building. Constructing a vehicle parking supply lower than bylaw will also result in considerable cost savings that will be passed on to future tenants. Additionally, enabling a car lite lifestyle serves to lower tenants' overall cost of living due to the high costs of vehicle ownership.

Table 5.1: TDM Strategy Summary

CATEGORY	POTENTIAL TDM INITIATIVE	CITY REQUEST	ARYZE FEEDBACK	ARYZE SOLUTION
Transit	Provide transit pass subsidies	Three years of BC Transit EcoPass program for each unit. Cost is \$1,000 for annual pass (on 56 units = \$168,000 value).	Preferred if tenants also contribute to cost of the transit pass due to: 1) higher anticipated transit use when passes are subsidized rather than given outright. 2) Applicable discounts for Youth and Seniors not recognized with EcoPass 3) Tenants may already have a transit pass as part of their post-secondary tuition from U-PASS program. 4) Less control over program may lead to more unintended resale of passes.	Subsidize each new tenancy with a 6-month subsidy to youth/senior rate (\$45/Month), for a 5-year period. If resident has a UPASS their subsidy will be deducted from their rent to ensure they also benefit from this transit incentive. Reimbursement processed at 6-month interval (full uptake value assuming new tenancy each year is \$75,600).
Car Share	Provide Car Share membership	One membership for each residential unit.	Nil	Aryze will provide
	Provide parking space for a car share vehicle	Provide one car share parking space in parkade.	Modo does not want a space in parkade.	Contribute for car-share vehicle purchase to be located at Modo discretion, ideally near site but at more publicly accessible location.
	Provide a car share vehicle	Provide one car share vehicle.	Nil	
Information Sharing/ Marketing & Promotion	Prepare marketing materials to attract residents to car-light lifestyle.	N/A	Nil	Aryze will provide
	Provide a Welcome Brochure, with an information package on local area transportation options.	N/A	Nil	Aryze will provide Information Package to all new residents at move-in and posted in a common area
Cycling	Provide a bicycle repair station	N/A	Nil	Aryze to provide
	Provide long-term secure and convenient bicycle storage for residents	Bylaw	Nil	Aryze will provide 62 long-term bicycle stalls and eight long-term cargo bicycle stalls within secure bicycle storage rooms at the parkade and at-grade. This is seven stalls (or 10% increase) over Bylaw.
	Provide short-term bicycle rack parking at building entrance (well lit and protected, within view of lobby)	Bylaw	Nil	Aryze will provide, it will be well lit, highly visible and also weather protected.
	Provision for Cargo Bikes	City requested 8	Nil	Aryze to provide 8
Pedestrian Amenities	Provide a sidewalk along site frontage with boulevard improvements to buffer pedestrians from moving traffic	City request	Nil	Aryze will provide
	Provide amenities such as benches on and/or along site frontage	N/A	Nil	Aryze will provide
Parking Management	Unbundle parking from unit leasing	N/A	Nil	Aryze will provide
	Require residents to pay for parking	N/A	Nil	Aryze will provide
	Restrict parking supply: provide lower than Bylaw supply rates	N/A	Nil	Aryze will provide
Electric Vehicle Charging	Provide electric charging ability to parking spaces.	City requests 100% of spaces be fitted with electric charging ability.	Nil	100% of vehicle spaces will include an energized electrical outlet. Four electric vehicle charging stations will be installed and accessible by tenants.

6. CONCLUSIONS

1. The proposed residential development at 1025 Kings Road proposes a total of 56 rental residential units.
2. The units are generally small in size with 54 of the 56 (or 96%) of the units being less than 70 m².
3. The site is very well serviced with transit and is within walking range to a wide variety of commercial and service amenities. The development's high walkability, cycling and transit ratings indicate it is in a nearly ideal location for vehicle-free tenants.
4. The current zoning bylaw requires a minimum of 45 parking spaces for this project. This is calculated with six of the 56 units being considered "Affordable" by the City's bylaw definition.
5. All 56 units would be considered "affordable" if BC Housing's definition of affordable was used. If all the units were considered to be affordable, the development would require 20 spaces for residents.
6. The development offers 20 on-site vehicle parking spaces which represents a 25-space variance from Bylaw requirements. Due to four available on-street spaces along the Kings Road site frontage, it is recommended that 19 of the 20 spaces be allocated to residents, recognizing that visitors are likely to use site-fronting on-street parking. The other on-site parking space will be an Accessible space for visitors. The total of 20 parking spaces serving 56 units equates to an overall parking ratio of 0.36 spaces per unit.
7. Our analysis of other comparable buildings suggests that the proposed 20 parking spaces can be anticipated to accommodate the building's resident parking demands. Similar affordable or small sized apartments are shown to have average parking demand rates of 0.37 spaces per unit regardless of tenure and without TDM initiatives. The rental tenure of the proposed units is also anticipated to lead to lower than average vehicle ownership rates. These factors of affordability, size, and tenure are further supported by the site's strong proximity to other transportation options and Aryze Developments' proposed TDM initiatives.
8. 100% of all vehicle parking spaces will include an energized electrical outlet capable of providing future Level 2 (208 volts to 240 volts) charging for electric vehicles. Four (4) electric vehicle charging stations will be installed and accessible by tenants in the building.
9. The development will exceed the long-term bicycle parking requirements with 70 long-term spaces including allowance for 8 cargo bikes and meet Bylaw requirements for short-term spaces. 60% of the long-term spaces will be ground anchored which is greater than the 50% bylaw requirement.
10. Aryze will provide electric charging ability for 20% of the long-term bicycle spaces.

11. Aryze will provide a bicycle repair station in a common area in the parkade accessible to all residents.
12. Aryze will provide a Welcome/ Transportation Information Brochure for future residents and provide an education information session to each tenant upon move-in..
13. Larger sized units first be offered to lease an unbundled vehicle parking space.
14. If or when all parking spaces are leased, new tenants to be notified that a parking space is not available, and priority be given to vehicle-less prospective tenants.
15. Bunt recommends that 19 of the 20 vehicle parkade parking spaces be reserved for resident use and one space be provided as an accessible visitor space. This recognizes the available four on-street spaces along the site's King Road frontage.
16. The proposed parking variance will be supported by the developer agreeing to purchase Modo car-share memberships for all units. The memberships would remain with the units and will be transferable to future tenants for the lifetime of the building.
17. Aryze will purchase one Car Share vehicle for Modo that will be located at Modo's direction and preference.
18. Aryze will provide BC Transit pass subsidies to all units at the Senior/ Youth rate (\$45/ month) for the first 6-months of each new tenancy for a five-year term.

