ATTACHMENT H **



1301 Hillside Avenue Development

Parking Study

Prepared for: Abstract Developments

Prepared by: Watt Consulting Group

Our File: 2280.B01

Date: June 12, 2019



TABLE OF CONTENTS

1.0	INTRC 1.1 1.2	DUCTION						
2.0	PROP 2.1 2.2	OSED DEVELOPMENT						
3.0	BYLA	W PARKING REQUIREMENT						
4.0	EXPE (4.1	CTED PARKING DEMAND						
		4.1.1 Adjustment Factors6						
		4.1.2 Parking Demand By Unit Type7						
	4.2	Affordable Housing Parking Demand84.2.1Parking Demand by Unit Type10						
	4.3 4.4	Visitor Parking Demand						
5.0	ON-ST	REET PARKING						
6.0	ON-STREET PARKING 1 TRANSPORTATION DEMAND MANAGEMENT 1 6.1 Carsharing 1 6.2 Transit Passes 1 6.3 Electric Bike Parking 1 6.4 Electric Bike Rebate 1 6.5 TDM Summary 1							
7.0	CONC 7.1	LUSIONS						



1.0 INTRODUCTION

Watt Consulting Group ("WATT") was retained by Abstract Developments to conduct a parking study for the proposed market condominium development at 1301 Hillside Avenue in the City of Victoria. The purpose of this study is to determine whether the proposed parking supply will accommodate demand in consideration of transportation demand management (TDM) options.

1.1 SUBJECT SITE

The proposed development site is located at 1301 Hillside Avenue in the City of Victoria. The site is currently zoned C-SS | Special Service Station District. See **Figure 1**.



FIGURE 1. SUBJECT SITE



1.2 SITE CHARACTERISTICS & POLICY CONSIDERATIONS

The following provides details regarding transportation options and services that are located in proximity to the site.



Community Policies

The City of Victoria's Official Community Plan (OCP) provides policies and objectives to guide decisions on planning and land management. Updated in 2012, the OCP contains a number of 30-year goals in 17 distinct topic areas that give expression to Victoria's sustainability commitment and work toward the achievement of long-term sustainability goals¹. Section 7 of the OCP (Transportation and Mobility) contains a number of objectives and policies that prioritize sustainable forms of transportation including walking, cycling, and transit.

Policy 7.12 directs the City to review and update the Zoning Bylaw to consider reductions in parking requirements. While the City has delivered on this policy promise by updating its Schedule C Off-Street Parking Regulations, the OCP also recommends reductions in parking requirements that are not included in Schedule C such as transit accessibility, walkability, and other factors that support non-auto mode choice or lower parking demand.² The subject site is not directly in a Large Urban Village, but it is within a 5-minute walk of Quadra Village, where the City is planning to concentrate more residential and commercial growth.



Services

The site is located 550m (5-minute walk) from Quadra Village and 1km from Hillside Centre. Both locations provide the majority of services that residents may need including grocery stores, cafes, restaurants, retail stores, postal services and medical services. The site is located 3km from downtown Victoria which hosts a wide variety of services.

Barn and	
and an	

Transit

The site is located in front of a bus stop on Hillside Avenue which is served by Route 4 (UVic / Downtown) and Route 9 (Royal Oak / UVic). Route 4 currently operates 10 minutes or better at peak times and is designated as a Frequent Transit route with a service frequency of 15 minutes or better from 7:00am to 7:00pm, and Route 9 operates every 15 minutes during peak times. There are also bus stops on Cook Street that serve Routes 24 (Cedar Hill / Admirals Walk)

¹ City of Victoria. (2012). Official Community Plan. Available online at:

http://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/OCP/OCP_Book.pdf ² lbid, pg. 60.

and 25 (Maplewood / Admirals Walk) which are local routes with a service frequency of 20 to 120 minutes.

The Victoria Transit Future Plan³ identifies Hillside Avenue as a Frequent Transit corridor that will continue to see investments in service frequency and quality, with improved transit travel times achieved by transit priority measures and enhanced bus stop infrastructure.



Walking

There are sidewalks on all major roads surrounding the site and crosswalks, pedestrian signals and mid-block crosswalks at major intersections. The site has a Walkscore of 79⁴ which suggests the site is very walkable and most errands can be accomplished on foot.



Cycling

There are currently no separate cycling facilities on Hillside Avenue or Cook Street in proximity to the site. Hillside Avenue is a recommended future route from the City of Victoria's 2014 Bicycle Plan Network⁵; however, recent bicycle network planning within the City has not retained this designation for Hillside Avenue. The closest All Ages and Abilities cycling routes to the subject site are planned for the Haultain Street / Kings Road corridor and the Hillside / Quadra north-south connection (currently proposed to be located along Fifth Street and Graham Street), located 275m southwest and 375m west of the site, respectively. Proximity to these cycling routes will allow future residents of the site to easily access downtown Victoria and other destinations.



Carsharing

The Modo CarShare Cooperative ("Modo") provides carsharing services in the Victoria Region and facilitates a two-way carsharing program that allows users to book a vehicle at any time to utilize for errands, shopping, trips, etc. Five Modo vehicles are located within a 15-minute walk of the site at the following locations:

- Hillside Avenue / Cedar Hill Road (550m);
- Quadra Street / Topaz Avenue (950m);
- Queens Avenue / Quadra Street (1.2km);
- Haultain Street / Cedar Hill Road (900m); and
- Gladstone Avenue / Chambers Street (1.3km).

³ Victoria Region Transit Future Plan, May 2011, pg. 6-7. Available online at: https://bctransit.com/servlet/documents/1403641054473

⁴ Walkscore. Available online at: <u>https://www.walkscore.com/score/1301-hillside-ave-victoria-bc-canada</u>

⁵ City of Victoria map of existing cycling facilities, available online at: http://www.victoria.ca/assets/Community/Cycling/2014ExistingBicycleNetworkFacilities.pdf



2.0 PROPOSED DEVELOPMENT

2.1 LAND USE

The proposed development is to rezone 1301 Hillside Avenue to a site-specific zone that would allow for a market condominium building with 49 units, fourteen of which may be designated as affordable housing. See **Table 1**. The unit composition includes bachelor, one-bedroom and two-bedroom units ranging from 310 sq.ft. to 907 sq.ft. (29-84m²). Three of the bachelor units are described as live / work units and include 282 sq.ft. of designated work space (in addition to residential space).

TABLE 1. SUMMARY OF PROPOSED DEVELOPMENT

Unit Type	Size	Quantity	
Pachalar	310 sq.ft. to 382 sq.ft.*	16 units	
bacheloi	(29m ² to 35m ²)	(4 condo, 12 affordable)	
One Bedreem (plue den)	467 sq.ft. to 634 sq.ft.	20 units	
One-Bedroom (plus den)	(43m ² to 59m ²)	(18 condo, 2 affordable)	
Tue Dedreem	644 sq.ft. to 907 sq.ft.	13 units	
1wo-Bedroom	(60m ² to 84m ²)	(13 condo)	
	Total Units	49 units	

*Bachelor floor size does not include work space component of live / work units.

2.2 PROPOSED PARKING SUPPLY

The proposed parking supply is for 24 spaces – a parking supply rate of 0.49 spaces per unit. Due to the context of the site and the previous land use (gas station), underground parking is restricted, and all parking will be surface parking. This is stated in a Certificate of Compliance from the BC Government that identifies permitted uses and the remediation process for previous gas station lands.

The proposed bicycle parking supply is for 63 indoor Class 1 (i.e., long-term, secure, weatherprotected) bicycle spaces and 6 outdoor Class 2 (short-term) bicycle spaces.



3.0 BYLAW PARKING REQUIREMENT

The City of Victoria's Zoning Bylaw No. 80-159 Schedule C identifies the bylaw parking requirements for the site⁶. Schedule C specifies parking requirements based on several different factors for multi-family uses including:

- **Class of Use (i.e. Housing Tenure)** Condominium (dwelling unit in a building owned by a Strata Corporation); Apartment (dwelling unit secured as a rental in perpetuity through a legal agreement); and Affordable (affordable dwelling units secure in perpetuity through a legal agreement).
- Location Core Area, Village/Centre and Other Area; and
- Unit Size <45m² (< 485 sq.ft.), 45m² to 70m² (485 750 sq.ft.), and >70m² (>750 sq.ft.)

Based on Schedule C, the subject site contains both Condominium and Affordable units and is located in an area designated as "Other Areas". As shown in **Table 2**, <u>the resulting bylaw</u> <u>parking requirement is 43 spaces</u>, 19 more spaces than the proposed supply.

Class of Use	Size	Quantity	Parking Req't Rate	Parking Req't
	< 45m²	4 units	0.85 per unit	3
Condominium	45m ² to 70m ²	28 units	1.00 spaces per unit	28
	>70m²	3 units	1.45 spaces per unit	4
	< 45m²	12 units	0.2 per unit	2
Affordable	45m ² to 70m ²	2 units	0.5 spaces per unit	1
Visitor Spaces		49 units	0.1 spaces per unit	5
		Total R	equired Parking	43 spaces

TABLE 2. SUMMARY OF SCHEDULE C PARKING REQUIREMENTS

Schedule C also includes requirements for providing long term bicycle parking at a rate of 1 space per unit less than 45m² in size and 1.25 spaces per unit that is 45 m² or greater in size. Applying these rates to the proposed development results in a <u>bicycle parking requirement of 57</u> long term bicycle parking spaces, which the applicant is exceeding by six spaces. Six short-term bike parking spaces are also required, which the applicant is meeting.

⁶City of Victoria Zoning Bylaw No. 80-159 Schedule C: https://www.victoria.ca/assets/Departments/Planning~Development/Development~Services/Zoning/Bylaws/Schedule%20C.pdf



4.0 EXPECTED PARKING DEMAND

The expected parking demand rates for the condo and affordable housing uses were determined separately in order to estimate the combined demand of the proposed development.

4.1 CONDOMINIUM PARKING DEMAND

4.1.1 OBSERVATIONS

In order to estimate the expected parking demand of the condominium units, field observations were conducted of representative sites within the City of Victoria and the District of Saanich. Representative sites were selected based on similar geographical locations and contexts (i.e., Walk Score) such as proximity and access to services and amenities. Sites with countable parking spaces (above ground and / or ungated parking lots) were also a criterion to enable the project team to conduct the observations and record parked vehicles. Ten representative sites were selected comprising a total of 439 units, which was deemed to represent a sufficient sample size for this study.

Observations of each representative site were conducted on April 3rd and April 4th, 2019, between 10:00PM and 11:00PM; the observation with the greater number of vehicles observed was taken as representative. The observation results are summarized in **Table 3**.

4.1.1 ADJUSTMENT FACTORS

Observations are a useful method of assessing parking demand rates; however, there are limitations. One such limitation 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 return home very late at night or in the next morning or have driven out of town for business or vacation.

A large scale apartment parking study commissioned by Metro Vancouver reported that observations of parking occupancy (percent of stalls occupied by a car or truck) increased later in the night.⁷ The study also suggested 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. As the observations in this study occurred between 10:00PM and 11:00PM, a conservative <u>10% adjustment factor</u> was applied to the observed parking demand to determine peak parking demand. The adjusted peak parking demand is <u>0.91 spaces per unit</u> and is shown in **Table 3**.

⁷ Metro Vancouver. (2012). The Metro Vancouver Apartment Parking Study, Technical Report. Available online at: <u>http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf</u>

			Observed	l Vehicles		Peak	
Representative Site	Walk Score	Number of Units	3-Apr-19 10:00pm	4-Apr-19 10:00pm	Observed Demand	Demand (Adjusted)	
1525 Hillside Ave	85	49	31	29	0.63	0.70	
606 Speed Ave	80	19	15	13	0.79	0.87	
3255 Glasgow Ave	68	74	60	62	0.84	0.92	
3277 Glasgow Ave	71	47	46	46	0.98	1.08	
1025 Inverness Rd	73	92	52	51	0.57	0.62	
904 Hillside Ave	90	27	18	17	0.67	0.73	
3263 Alder St	80	16	16	18	1.13	1.24	
900 Tolmie Ave	75	71	59	61	0.86	0.95	
3259 Alder St	74	21	17	20	0.95	1.05	
3258 Alder St	78	23	17	20	0.87	0.96	
				Average	0.83	0.91	

TABLE 3. PARKING DEMAND OBSERVATIONS AT REPRESENTATIVE SITES

4.1.2 PARKING DEMAND BY UNIT TYPE

Parking demand rates vary based on the size of unit; the higher the number of bedrooms, the higher the parking demand. For each representative site, the total parking demand was broken out based on the number of bedrooms. Parking demand by unit type was calculated using:

- 1. Observed parking demand at each site;
- 2. The breakdown of unit type (i.e., number of bedrooms) at each site; and
- 3. The assumed "ratio differences" between each unit type, which are based on the Metro Vancouver 2018 Regional Parking Study⁸ which reports that one-bedroom strata apartment units have a 19% higher parking demand than bachelor units; two-bedroom units have a 30% higher parking demand than one-bedroom units; and three-bedroom units have a 23% higher parking demand than two-bedroom units.

 Table 4 summarizes the parking demand per unit type of the representative condo sites.

⁸ Metro Vancouver. (2018). 2018 Regional Parking Study Technical Report, Table 21, pg. 18. Available online at http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RegionalParkingStudy-TechnicalReport.pdf



	Book	Parkin	g Demand by Un	it Type
Representative Site	Parking Demand	Bachelor Unit	One- Bedroom Unit	Two- Bedroom Unit
1525 Hillside Ave	0.70		0.60	0.78
606 Speed Ave	0.87	0.67	0.79	1.03
3255 Glasgow Ave	0.92		0.78	1.02
3277 Glasgow Ave	1.08		0.97	1.26
1025 Inverness Rd	0.62	0.47	0.55	0.72
904 Hillside Ave	0.73		0.69	0.89
3263 Alder St	1.24		1.01	1.31
900 Tolmie Ave	0.95		0.78	1.02
3259 Alder St	1.05		0.81	1.06
3258 Alder St	0.96			0.96
Average	0.91	0.57*	0.78	1.00

TABLE 4: PARKING DEMAND BY UNIT TYPE OF REPRESENTATIVE SITES

*Due to the small sample size for bachelor units (only two of the representative sites included bachelor units), the observed bachelor unit parking demand may not be representative. Instead, the bachelor unit parking demand was determined using the one-bedroom rate and applying the demand ratio from the Metro Vancouver study to obtain a bachelor unit parking demand of 0.66 vehicles per unit.

Applying the resulting parking demand rates by unit type to the proposed condominium units results in <u>a demand of 30 vehicles</u>, broken out by unit type as follows:

- Bachelor (4) = 0.66 vehicles per unit, 3 vehicles.
- One-bedroom units (18) = 0.78 vehicles per unit, 14 vehicles.
- Two-bedroom units (13) = 1.00 vehicles per unit, 13 vehicles

4.2 AFFORDABLE HOUSING PARKING DEMAND

Residents of affordable housing typically have a lower rate of vehicle ownership compared to those living condominium units. As part of the recent review of the City of Victoria's Schedule C Off-Street Parking Regulations, vehicle ownership information obtained for condominium strata sites, apartment rental sites, and affordable housing sites found that affordable housing have (on average) a 30% lower parking demand than typical multi-family residential rates.⁹

The review also reported differences in parking demand among affordable housing sites. Specifically, it reported that non-subsidized sites had moderately higher vehicle ownership than subsidized units and sites targeting families had vehicle ownership rates that were nearly double those targeting seniors, for example.

⁹ City of Victoria. (2016). Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.3: Parking Demand Assessment.

To estimate the expected parking demand for the proposed affordable housing units, ICBC vehicle ownership data were reviewed. **Table 5** presents 2016 ICBC data for a number of subsidized affordable housing sites in the City of Victoria representing 262 units. The average rate is <u>0.40 vehicles per unit</u> among the six sites.

Site*	Units	Vehicles	Vehicle Ownership (vehicles / unit)
918 Collison Street	101	23	0.23
2105 Dowler Place	66	17	0.26
3015 Jutland Road	30	18	0.60
950 Humboldt Street	44	15	0.34
1025 North Park Street	10	5	0.50
510 Dalton Street	11	5	0.45
		Average	0.40

TABLE 5. VEHICLE OWNERSHIP AT REPRESENTATIVE SUBSIDIZED SITES

*Vehicle ownership information obtained from Insurance Corporation of British Columbia (ICBC). These data do not include visitor vehicles. Information for all sites is current as of March 31, 2016.

Even though the vehicle ownership data from the six subsidized sites provide insight on affordable housing parking demand, they do not represent the affordable housing units at the subject site, which are proposed to be non-subsidized and 10% below market.¹⁰ Recognizing this distinction, parking demand data were obtained from the Greater Victoria Housing Society for three non-subsidized sites in the City of Victoria. Notwithstanding the small sample size, the average vehicle ownership rate among the non-subsidized sites is <u>0.54 vehicles per unit</u>, shown in **Table 6**.

Site	Units	Vehicles (rented parking spaces)	Vehicle Ownership (vehicles / unit)
35 Gorge Road East	68	55	0.81
411 Sitkum Road	75	22	0.29
2558 Quadra Street	19	10	0.53
		Average	0.54

TABLE 6. VEHICLE OWNERSHIP AT REPRESENTATIVE NON-SUBSIDIZED SITES

¹⁰ Confirmed with the applicant via email on March 27, 2019.



4.2.1 PARKING DEMAND BY UNIT TYPE

Similar to condominium units, research has demonstrated that parking demand in affordable housing buildings varies by unit size. 12 of the 14 affordable housing units are 310 sq.ft. to 382 sq.ft, which meet the Urban Land Institute's definition for a "Micro Unit" – *a small studio apartment, typically less than 350 square feet with a full functioning kitchen and bathroom*.¹¹

Examples of recently constructed multi-family buildings—comprising a significant share of bachelor / studios and small one-bedrooms—with little to no parking include the Janion¹² building in Victoria and the N3¹³ in Calgary's East Village. Interviews with contacts for each building confirmed that the impacts of providing no parking have been minimal as residents already had a lifestyle that was conducive to not owning a vehicle, while other residents have adjusted to using more sustainable forms of transportation.¹⁴ Data from the City of Seattle are also showing a trend of new small efficiency dwelling unit (SEDU) buildings being constructed with little or no parking—a trend that will likely continue as vehicle ownership declines.¹⁵ These findings generally confirm that smaller units do not require as much parking, if any parking at all.

The review of the City of Victoria's off-street parking regulations (Schedule C) also reported that smaller affordable housing units do not require as much parking. As part of that project, a focus group meeting was hosted with five affordable housing organizations working in the Capital Region to better understand what they thought was the right amount of parking for affordable housing units. A "blanket rate" for affordable housing sites was determined to not be appropriate given the full spectrum (and diversity) of affordable housing needs.¹⁶

Focus group participants also explained how the minimum supply rates for new affordable housing should differentiate by unit size recognizing that the parking demand needs of those living in smaller units may be completely different from those living in larger units.¹⁷

As two of the three non-subsidized affordable housing sites contain primarily one-bedroom units, applying the ratios from the Metro Vancouver study to the sites is not appropriate due to

¹³ More information about the N3 condo building is available online at: <u>http://www.n3condo.ca/</u>

¹¹ The Macro View on Micro Units, Urban Land Institute Multifamily Housing Council, 2015, pg. 4.

Available online at: http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit_full_rev_2015.pdf

¹² More information about the Janion is available online at: <u>http://www.janion2013.com/neighbourhood.html</u>

http://www.evexperience.com/n-3/

¹⁴ Phone conservation held with Senior Vice-President of Strategy & Business Development at the Calgary Land and Municipal Corporation on September 15, 2017.

¹⁵ According to the City of Seattle, a SEDU is a micro-housing unit that is a minimum of 150 square feet with a full kitchen or kitchenette. More information is available online at: <u>http://www.seattle.gov/dpd/codesrules/codes/efficiencydwellings/default.htm</u>

¹⁶ City of Victoria. (2016). Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.4: Focus Groups + Stakeholder Outreach.

¹⁷ City of Victoria. (2016). Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.5: Preliminary Recommendations. Available online:

http://www.victoria.ca/assets/Departments/Planning~Development/Community~Planning/Documents/Victoria%20Schedule%20C_W orking%20Paper%20no5_Oct25-16_FINAL.pdf



the small sample sizes of bachelor and two-bedroom units. Therefore the overall average demand rate of the representative sites (0.54 vehicles per unit) was used to determine the affordable housing parking demand, <u>resulting in a demand of 8 vehicles</u>.

4.3 VISITOR PARKING DEMAND

Visitor parking demand rates have been demonstrated in the range of 0.05 to 0.07 vehicles per unit for multi-family sites in Victoria and Metro Vancouver¹⁸. Specifically, the 2012 Metro Vancouver Apartment Parking Study reported that observed parking demand rates were well below 0.1 vehicles per unit and that visitor parking was generally over supplied. Research completed as part of the City of Victoria's Schedule C update reported that average visitor parking demand among 16 multi-family residential sites in proximity to downtown Victoria was 0.07 vehicles per unit¹⁹. Given the location of the subject site, a rate of 0.05 vehicles per unit is supported, which results in a peak visitor parking demand of <u>2 vehicles</u>.

4.4 SUMMARY OF EXPECTED PARKING DEMAND

The summary of expected parking demand is shown in **Table 7**. Total parking demand is <u>40</u> vehicles.

Class of Use	Unit Type	Quantity	Parking Demand Rate	Quantity (Spaces)
	Bachelor	4 units	0.66 per unit	3
Condominium	One-Bedroom	18 units	0.78 spaces per unit	14
	Two-Bedroom	13 units	1.00 spaces per unit	13
Affordable	All Unit Types	14 units	0.54 per unit	8
Visitor		49 units	0.05 per unit	2
			Total Demand	40 spaces

TABLE 7. SUMMARY OF EXPECTED PARKING DEMAND

www.metrovancouver.org/services/regionalplanning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

¹⁸ Based on observations of visitor parking conducted in 2015 for two studies of multi-family residential sites (one adjacent to downtown Victoria, the other in Langford) and findings from the 2012 Metro Vancouver Apartment Parking Study (Table 31, pg50) available at:

¹⁹ City of Victoria. (2016). Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.3: Parking Demand Assessment.



5.0 ON-STREET PARKING

On-street parking conditions were observed surrounding the site bounded by Vista Heights to the north, Higgins Street to the east, Kings Road to the south and Blackwood Street to the west. On-street parking observations were conducted on Wednesday, April 3, 2019 and Thursday, April 4, 2019 at 11:00PM (an additional count of Higgins Street was conducted on Wednesday, April 10, 2019 at 11:00PM as Higgins Street was not included in the April 3 on-street parking count). The observation results are summarized in **Table 8**.

Peak occupancy was observed on Thursday, April 4, 2019 with 98 parked vehicles observed out of 227 total spaces, an occupancy rate of 43%. This total includes the restricted parking spaces located on Kings Road and on Higgins Street; for unrestricted parking only, 72 parked vehicles were observed out of 192 unrestricted spaces, an occupancy rate of 38%. A total of 120 unoccupied unrestricted parking spaces were observed during the on-street parking count, indicating that there is sufficient availability of on-street parking in case of spillover.

The highest occupancies were noted on the roads closest to the site, with Kings Road and Basil Avenue having a peak occupancy of 82% and 70% respectively. Parking on Kings Road is restricted to Residential Parking Only and is not expected to be affected by spillover.

	Section	Side Restr		Parking	Vehicles Observed	
Street			Restrictions	Supply (spaces)	Wed. 4/3/2019 @ 11:00pm	Thurs. 4/4/2019 @ 10:00pm
Vista	Blackwood St –	Ν	Unrestricted	33	6	7
Teights	THE MISE	S	Unrestricted	31	13	10
Basil Ave	Blackwood St –	Ν	Unrestricted	24	13	16
	1116 1 (136	S	Unrestricted	32	25	23
Blackwood St	Vista Heights – Hillside Ave	W	Unrestricted	26	7	6
	Vista Heights – Basil Ave	Е	Unrestricted	14	1	0
	Basil Ave – Hillside Ave	Е	Unrestricted	6	3	4
Kings Rd	Cook St – Blackwood St	Ν	Residential Parking Only	7	6	5
		S	Residential Parking Only	10	8	9
The Rise		W	Unrestricted	7	1	1 [·]

TABLE 8. SUMMARY OF ON-STREET PARKING CONDITIONS



	Section	Side	Restrictions	Parking Supply (spaces)	Vehicles	Observed
Street					Wed. 4/3/2019 @ 11:00pm	Thurs. 4/4/2019 @ 10:00pm
	Vista Heights – Cook St	Е	Unrestricted	6	0	1
Higgins St	Hillside Ave – Basil Ave	W	2-hr Parking 9AM – 8PM Mon – Sat	18	5*	12
	Basil Ave – Cook St	W	Unrestricted	13	3*	4
	Hillside Ave – Cook St	Е	No Parking	0	0*	0
			Total	227	91	98
			Occupancy		40%	43%
		Total (un	restricted only)	192	72	72
	Occup	ancy (un	restricted only)		38%	38%

*counted on 4/10/2019 at 11:00PM as Higgins St was not included in 4/3/2019 count.

6.0 TRANSPORTATION DEMAND MANAGEMENT

Given that the expected parking demand for the site is 16 parking spaces greater than the proposed supply, the applicant should consider committing to transportation demand management strategies. Transportation demand management (TDM) is the application of strategies and policies to influence individual travel choice, most commonly to reduce single-occupant vehicle travel. TDM measures can be pursued to encourage sustainable travel, enhance travel options and decrease parking demand. TDM is also supported in the City's OCP, Downtown Core Area Plan, and Mayor's Task Force on Housing Affordability to help manage parking demand in new developments.

The applicant can consider the following TDM strategies at the site.

6.1 CARSHARING

The Modo Car Cooperative ("Modo") is the most popular carsharing service in Greater Victoria. In 2015, there were 23 cars and 800 members; as of November 2018, there are 79 Modo vehicles and 2,565 members across the Greater Victoria region, suggesting that Modo is growing in popularity.²⁰ As reported in Section 1.2, there are five Modo vehicles are located within a 15-minute walk of the site. As such, the applicant should consider providing carshare memberships for each unit (\$500 refundable membership X 49 units = \$24,500), and the

²⁰ Email correspondence with Modo's Business Development Manager on November 14, 2018.



resident would be responsible for usage fees. The carshare program would "fill the gap" and provide residents an opportunity to have access to a vehicle on an as-needed basis.

Research has shown that carsharing programs have a significant impact on reducing vehicle ownership and thereby lowering parking demand. Below is a summary of key findings:

- One of the most comprehensive North American studies to date surveyed 6,281 households in carsharing organizations across the continent. The study found a statistically significant decrease in average vehicle ownership from 0.47 to 0.24 vehicles per household among households that joined carshare services, an approximately 50% reduction in vehicle ownership.²¹
- A study of carshare programs in the City of Toronto found that vehicle ownership rates at condominium sites without carshare vehicles was 1.07 vehicles per unit, whereas buildings with one or more carshare vehicles had significantly lower rates at 0.53 vehicles per unit, which represents a 50% reduction in vehicle ownership rates.²²
- A 2013 study from the City of Toronto looked at the relationship between the presence of carsharing in a residential building and its impact on vehicle ownership. This was one of the first studies to examine this relationship at the building level as previous research explored impacts at the neighbourhood or city level. The study surveyed residents of buildings with and without dedicated carshare vehicles. According to the author's regression model, the presence of dedicated carshare vehicles had a statistically significant impact on reduced vehicle ownership and parking demand.²³
- Two studies from Metro Vancouver explored the impact of carsharing on vehicle ownership. Over 3,400 carshare households participated in the study. The key findings are as follows:
 - On average, up to 3 private personal vehicles were shed per carshare vehicle.
 - A regression analysis found that those living in rental housing and in a smaller household size are statistically more likely to give up vehicle ownership compared to the reference case.²⁴
 - The number of carshare vehicles within walking distance has a small but statistically significant relationship with apartment household vehicle holdings.²⁵

Some municipalities use their development regulations and off-street parking requirements to provide a parking reduction in exchange for a carsharing program. The City of Vancouver, as an

https://www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/car_share_2009-04-02,pdf

²¹ Martin & Shaheen. (2011). The Impact of Carsharing on Household Vehicle Ownership. Access Magazine, Spring 2011. Available online at: http://sfpark.org/wp-content/uploads/carshare/access38_carsharing_ownership.pdf

²² City of Toronto. (2009). Parking Standards Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards. Available online at:

²³ Engel-Yan, D., & D. Passmore. (2013). Carsharing and Car Ownership at the Building Scale. *Journal of the American Planning Association*, 79(1), 82-91.

²⁴ Ibid, pg. 54.

²⁵ Metro Vancouver. (2014). The Metro Vancouver Car Share Study: Technical Report. Available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MetroVancouverCarShareStudyTechnicalReport.pdf



example, allows for a reduction of five spaces for each carshare vehicle purchased and parked on-site²⁶, where a model regulation for King County (Seattle) suggests a reduction of four spaces.²⁷

Similar regulations are in place in New Westminster, Coquitlam, and Richmond allowing for a 5-15% reduction where carshare vehicles are accessible. Correspondence with the Victoria Carshare Cooperative (now Modo)²⁸ supported a 5-10% reduction in parking demand where memberships are provided and where a vehicle is easily accessible. A similar reduction of 5-10% is recommended in *Parking Management Best Practices*.²⁹

Overall, the research cited above confirms that proximate access to a carsharing vehicle and the provision of memberships is associated with reduced vehicle ownership and parking demand and is therefore appropriate as a TDM measure for the site. With the provision of the carshare memberships (\$500 per unit), a <u>10% reduction</u> in resident parking demand is supported and recommended. This would lower resident parking demand by <u>4 vehicles</u>.

If the applicant also provides a vehicle (for Modo) on site or in the vicinity, an additional 5% reduction would be supported, resulting in a <u>15% reduction</u> in resident parking demand, which would lower demand by <u>6 vehicles</u>. However, the provision of a carshare vehicle on site would remove a parking space from residents or visitors. As such, the applicant should consider providing the vehicle on a nearby residential street, if they choose to purchase a vehicle for the site.

6.2 TRANSIT PASSES

As discussed above, the site has good transit access and as the Transit Future Plan becomes implemented, transit service is anticipated to improve significantly, which will make transit more appealing to future residents.

Consideration may be given to providing a subsidized transit pass program for residents. BC Transit currently offers the EcoPASS Program for New Developments, which is a program that provides Capital Regional District developers with a potential transit-oriented solution for parking variance requests. Under the EcoPASS Program, the occupants of a new residential, commercial or mixed-use development receive annual bus passes for a pre-determined number of years that are valid for use throughout the Victoria Regional Transit System. Each annual pass has a cost to the developer of \$1,000. The size and value of the TDM program is established by the municipal government, with a minimum required program value of \$5,000.

²⁶ Refer to City of Vancouver Bylaw no.6059, Section 3.2.2, available at: <u>http://vancouver.ca/your-government/parking-bylaw.aspx</u>

²⁷ King County Metro, Right Size Parking Model Code, December 2013, pg21, available at: http://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/140110-rsp-model-code.pdf

²⁸ Correspondence from Victoria Carshare Cooperative (now Modo), received August 2009.

²⁹ Litman, T. (2007). Parking Management Best Practices, American Planning Association.



The applicant could consider approaching the City and BC Transit in the future to learn more about this program and whether it may be feasible during long-term operations of the building. If the applicant is able to secure and administer a transit pass program, a <u>10% reduction</u> in resident parking demand would be supported, which would lower demand by <u>4 vehicles</u>.

6.3 ELECTRIC BIKE PARKING

Electric Bikes (E-Bikes) are an emerging transportation phenomenon that are gaining popularity worldwide. With supportive cycling infrastructure in place, E-Bikes have the potential to substitute for, or completely replace, almost all trips taken by a gasoline powered car, which could address congestion issues and mitigate parking challenges within urban areas.

Research has reported that one of the main barriers facing prospective E-Bike users is the lack of secure parking available, which is critical for helping minimize theft of the electric bike.³⁰ As part of a larger strategy to discourage vehicle ownership for future residents, the applicant could consider designing up to 10% of the long-term bicycle parking spaces to accommodate electric bikes. Electric bikes are typically longer than regular bicycles because they are capable of carrying cargo and/or multiple passengers with the assistance of the battery. Electric cargo bikes can be as long as 2.5m.

In addition to designing larger long-term bicycle parking spaces, the applicant could consider the provision of additional security features such as video surveillance and self-contained bicycle lockers as well as access to an 110V wall outlet for each E-Bike parking space. Specifically, the applicant should consider providing 50% of the long-term bicycle parking spaces with direct access to an 110V electrical outlet, which is what the City of Vancouver is now requiring in their off-street bicycle parking regulations.³¹

As electric bikes are an emerging phenomenon, there is limited research that has quantified the impact of these bikes on vehicle ownership / parking demand. A recent study presented results of a North American survey of electric bike owners. The study reported that E-Bikes have the capacity to replace various modes of transportation commonly used for utilitarian and recreational trips including motor vehicles, public transit, and regular bicycles. Specifically, the study reported that 62% of E-Bike trips replaced trips that otherwise would have been taken by car. Of these trips previously taken by car, 45.8% were commute trips to work or school, 44.7% were other utilitarian trips (entertainment, personal errands, visiting friends and family, or other), and 9.4% were recreation or exercise trips. The average length of these previous car trips was 15 kilometres.³²

³⁰ WATT Consulting Group. (2018). Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Backgrounder. Available online at: <u>https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/electric-vehicle-and-e-bike-infrastructure-backgrounder-sept-2018.pdf?sfvrsn=a067c5ca_2</u>

³¹ City of Vancouver. (2016). Section 6: Off-street Bicycle Space Regulations. Available online at: https://bylaws.vancouver.ca/parking/sec06.pdf

³² MacArthur, J., Harpool, M., & D. Scheppke. (2018). A North American Survey of Electric Bicycle Owners. National Institute for Transportation and Communities, NITC-RR-1041.



Given that E-Bikes have the potential to replace private motor vehicles, especially in the Victoria context, a <u>10% reduction</u> in resident parking demand would be supported at the site if applicant commits to designing 10% of the long-term bicycle parking spaces to accommodate larger bicycles such as cargo bikes and 50% of the spaces are provided with access to an 110V wall outlet to facilitate charging for the user. If the applicant committed to designing a larger share of the long-term bicycle parking spaces to accommodate E-Bikes, a larger reduction in resident parking demand would be supported.

A 10% reduction would lower resident parking demand by <u>4 vehicles</u>.

6.4 ELECTRIC BIKE REBATE

According to research completed in Greater Victoria, the cost of an electric bike is the largest barrier preventing residents of the region from purchasing an E-Bike. Other research has confirmed the high purchase price as a barrier; however, one study found that those who were given access to an E-Bike had much higher willingness to pay for one.³³

As an overall strategy to encourage more cycling at the subject site and promote a car-free lifestyle, the applicant should consider providing a \$500 gift card or cash to each unit that would go towards the purchase of an E-Bike. This would help make E-Bike ownership more attainable for residents. A similar incentive was used in the N3 condominium building in Calgary's East Village neighbourhood. The N3 is a 167 unit building with no resident parking.³⁴ As part of purchasing a condo unit, residents obtain several transportation incentives including a \$500 gift card from Bow Cycle, which is a bicycle store in downtown Calgary.

6.5 TDM SUMMARY

In summary, a reduction of up to 45% in resident parking demand would be supported if the applicant commits to [a] the provision of Modo memberships for each unit and a carshare vehicle on-site or in proximity to the site, [b] a transit pass subsidy, [c] designing 10% of the long-term bicycle parking spaces for electric bikes and 50% of the spaces with access to a 110V wall outlet, and [d] an electric bike rebate. A 45% reduction results in 18 fewer vehicles, which would lower resident parking demand from 38 vehicles to 20 vehicles (see **Table 9**). This would result in a total site parking demand of 22 spaces, which is 2 lower than the proposed supply.

³³ Popovich, N., Gordon, E., Shao, Z., Xing, Y., Wang, Y., & Handy, S. (2014). Experiences of electric bicycle users in the Sacramento, California area. Travel Behaviour and Society, 1(2), 37–44.

³⁴ More information about the N3 condo building is available online at: <u>http://www.n3condo.ca/</u>

http://www.evexperience.com/n-3/



	Parking Reduction		
TDM Option	Quantity	Approx. Total Reduction (resident vehicles)	
Carsharing (Vehicle + Memberships)	15%	- 6	
Transit Passes	10%	- 4	
Electric Bike Parking	10%	- 4	
Electric Bike Rebate	10%	- 4	
TOTAL	45%	- 18	

TABLE 9. SUMMARY OF TDM PROGRAMS + PARKING DEMAND REDUCTIONS

7.0 CONCLUSIONS

The proposed development at 1301 Hillside Avenue is for a market condominium building with a total of 49 units with 14 units designated as affordable housing. The proposed parking supply is 24 spaces, which is 19 spaces less than the City of Victoria's Schedule C parking requirement of 43 spaces.

Expected parking demand for the market condominium units was generated based on observations of representative condominium sites while the demand for the affordable housing units was generated based on parking space rental data for representative non-subsidized affordable housing developments provided by the Greater Victoria Housing Society. <u>The expected parking demand for the site is 40 spaces</u>, including 8 spaces for use by the affordable housing residents as well as 2 visitor parking spaces. This is 16 spaces higher than the proposed parking supply of 24 spaces.

A review of available nearby streets and parking restrictions showed that there is sufficient availability of on-street parking in case of spillover. TDM strategies were also outlined for the applicant's consideration, which would result in a 45% reduction (18 vehicles) in resident parking demand if pursued.

7.1 RECOMMENDATIONS

1. The applicant should commit to the recommended TDM strategies to align the expected parking demand with the proposed parking supply.