879 TILLICUM ROAD

Parking Study

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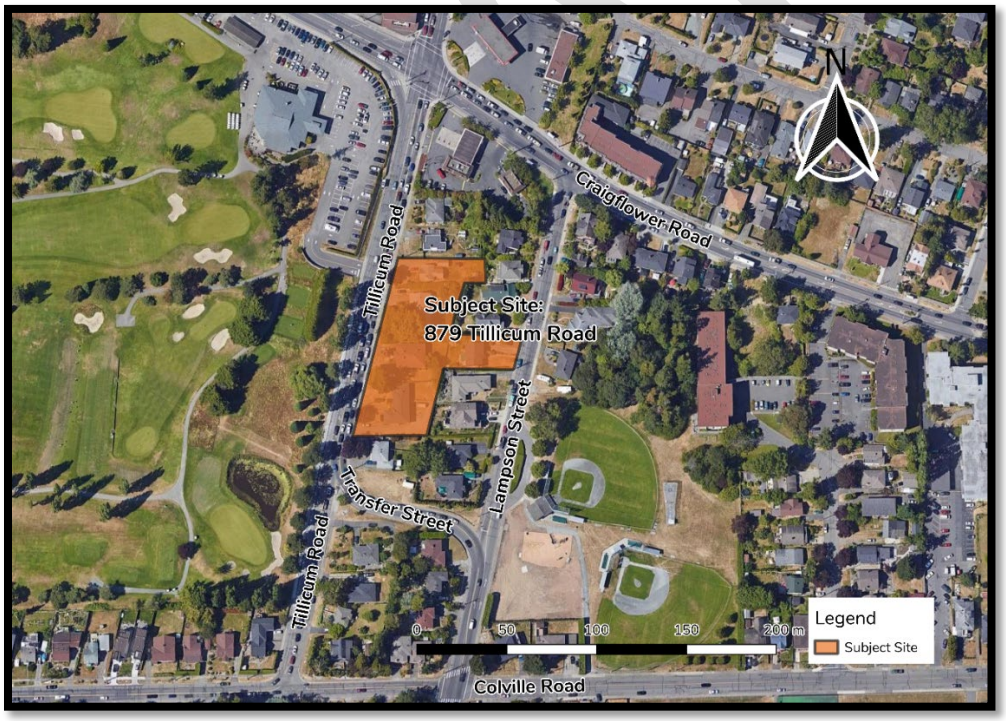
1.0 INTRODUCTION

Watt Consulting Group (WATT) was retained by LIDA Homes Inc. to conduct a parking study for the proposed development at 879 Tillicum Road in the Township of Esquimalt, BC. The purpose of this study is to determine the adequacy of the proposed parking supply, and if necessary, to provide Transportation Demand Management (TDM) strategies to better align parking demand with the proposed parking supply.

1.1 SUBJECT SITE

The proposed development is located at 879 Tillicum Road, and will occupy the lots of 887, 885, 879, and 863 Tillicum road, [1] with a driveway occupying 884 Lampson Street in the Township of Esquimalt (See **Figure 1**). [2]

FIGURE 1. SUBJECT SITE



[1] The Tillicum Road lots 887, 885, 879, and 863 are zoned as RS-1: Single Family Residential, RD-3: Two Family/Single Family Residential, RD-1: Two Family Residential, and RD-1: Two Family Residential, respectively.
[2] 884 Lampson Street is zoned as RS-1 Single Family Residential.

1.2 SITE CHARACTERISTICS AND POLICY CONTEXT

The following provides information regarding services and transportation options in proximity to the subject site. In addition, the Township of Esquimalt's Official Community Plan (OCP) and other community policies pertaining to sustainable transportation and parking management are summarized.

COMMUNITY POLICIES

The Esquimalt Official Community Plan (OCP) contains policies that provide direction on future planning and land use management within the Township.[3] Per Schedule B of the OCP (Proposed Land Use Designations), the subject site is designated as 'Medium Density Residential.'[1] According to Section 5.3 of the OCP (Medium/High Density Residential Development), the Township supports compact, efficient medium density residential development that integrates with existing and proposed adjacent land uses. Additionally, section 5.3 states that the Township will "prioritize medium density and high-density residential development in proposed land use designated areas that:

1. Reduce single occupancy vehicle use
2. Support transit service
3. Are located in proximity to employment centres
4. Accommodate young families

Section 11 of the OCP (Transportation) and Section 13.3 (Reduction of Greenhouse Gas Emissions) contain a series of policies focused on promoting multi-modal and low-carbon transportation. The most relevant policies for the subject site are as follows:

- Support densification along frequent and regional transit routes.
- Consider prioritizing transit along frequent and regional transit corridors.

[3] Township of Esquimalt (2018). Corporation of the Township of Esquimalt Official Community Plan. Available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/OCP/Esqimalt_OCP_2020-01-09.pdf

- Where feasible, improve the continuity of the bike network by linking existing and future bikeways and trails.

SERVICES

Within 250m of the subject site there are several amenities including Gorge Vale Golf Club, several small-scale restaurants, a thrift store, Lampson Park, and Esquimalt High School.

Tillicum Centre is located around 1.4 kilometres north of the subject site containing multiple amenities including a grocery store, drug store, movie theatre, recreation centre, many small-scale restaurants, a medical clinic and other amenities.

The site is also located about 1.5 kilometres north of Esquimalt Plaza on Esquimalt Road, where there is a grocery store, a liquor store, and several small-scale restaurants.

Lastly, the development is located ~3.8 kilometres from downtown Victoria, allowing access to a number of services that residents may require.

TRANSIT

The site has access to transit within walking distance. There are stops along Craigflower Road (servicing Route 14) and Tillicum Road (servicing Route 26) that are within 250m walking distance from site. The Tillicum Road bus stop is within 100 m of the site; however, it is on the opposite side of the street from the subject site and only travels southbound (See **Figure 2**).

Route 14 | Vic General/UVic travels west to Victoria General Hospital and east to Downtown Victoria, then north to the University of Victoria (UVic). This route is classified as a Frequent Transit Route.

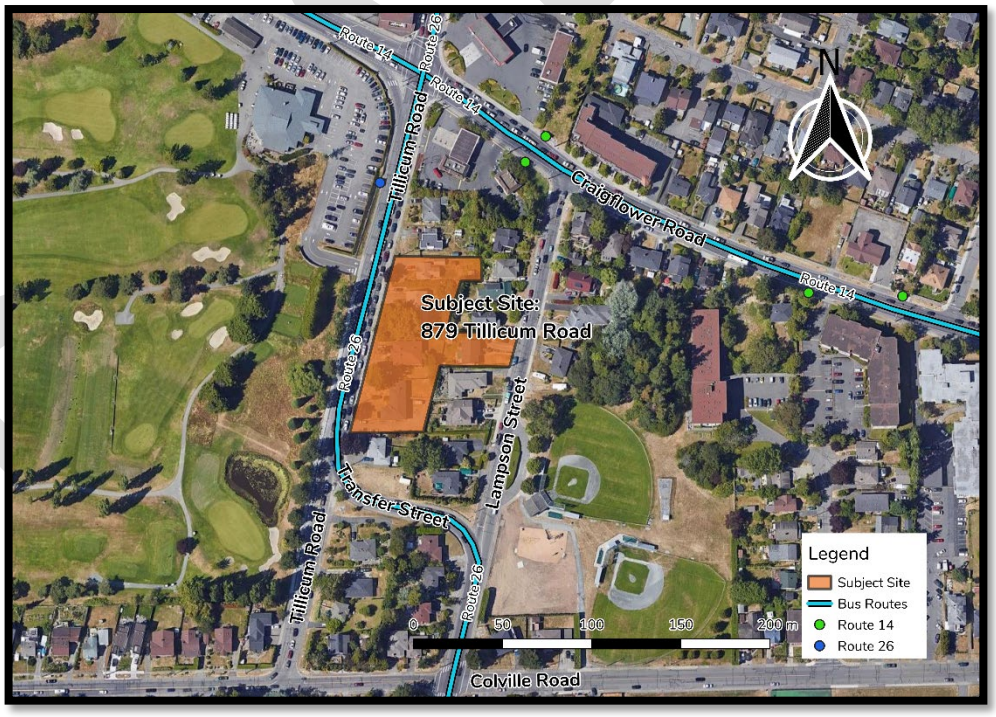
Weekday service starts at ~5:45am and continues until midnight, except on Fridays when the service runs later.

Service runs at a 15-minute frequency between 7am and 10pm, before and after which it runs at 20-minute frequency.

Route 26 | Dockyard/UVic is also a Frequent Transit Route that connects Esquimalt to UVic via Downtown Victoria. It travels along the Craigflower Road, a Frequent Transit Corridor. Weekday service starts at 6am and ends slightly past midnight. This route runs at a 15-minute frequency most of the day except early mornings and late nights when frequency is reduced to 20 minutes.

BC Transit's Transit Future Plan addresses that Frequent Transit Corridors will provide frequent service (15 minutes or better between 7am and 10pm, 7days/week). Another goal of Frequent Transit Corridors is to enhance bus stop infrastructure. Thus, the subject site will benefit from frequent, reliable, and convenient transit service.

FIGURE 2. BUS ROUTE PROXIMITY TO SUBJECT SITE



WALKING

According to Walk Score the development has a score of 64, suggesting that it is somewhat walkable. [4] This means that some errands may be accomplished on foot. The streets immediately adjacent to the site each have sidewalks on both sides allowing good walking access to the local neighbourhood. There are also multiple parks within 250m; despite this, there are few additional amenities within walking distance.

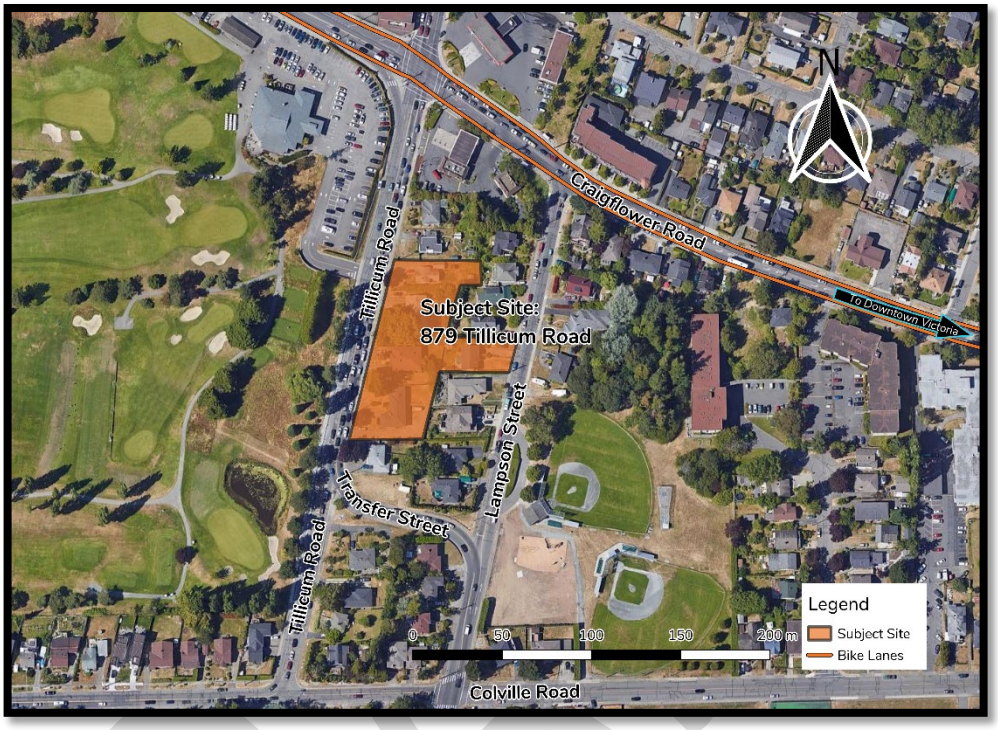
Walk Score is a useful tool in determining the current walkability of a location; however, as areas develop and new amenities are added, Walk Score ratings may change. With high traffic volumes and narrow sidewalks, Tillicum Road does not provide the most walkable environment; however Northern Lampson Street has significantly lower traffic volumes allowing a more pleasant walking experience.

CYCLING

While Tillicum Road does not have bike lanes, the driveway access at the north end of Lampson Street has reduced traffic volumes allowing access to Craigflower Road. Craigflower Road has unbuffered bike lanes on both sides of the street providing a connection to downtown Victoria, the E&N Rail Trail, and Galloping Goose Regional Trail.

[4] Walkscore (2022), More information about the site's walk score is available online at: https://www.walkscore.com/score/878-lampson-st-victoria-bc-canada

FIGURE 3. BICYCLE INFRASTRUCTURE NEAR SUBJECT SITE



CARSHARING

Carsharing programs are an effective way for people to save on the cost of owning a vehicle while having access to a convenient means of transportation. The Modo Car Cooperative (Modo) is a popular carsharing service in Greater Victoria with about 87 Modo vehicles and 3,040 members across the Greater Victoria region. While there is a Modo vehicle at Craigflower Road and Dominion Street, it is not easily accessible from the subject site.

2.0 PROPOSED DEVELOPMENT

2.1 LAND USE

The proposed development will include 119 Multi-family residential (condo) units with the following breakdown:

- 62 - one- bedroom unit
- 49 - two-bedroom units
- 8 - three-bedroom units

2.2 PROPOSED PARKING SUPPLY

2.2.1 VEHICLE PARKING

The development proposes 109 vehicle parking spaces, resulting in a parking rate of 0.92 spaces per unit.

2.2.2 BICYCLE PARKING

A long-term bicycle storage will be accessible through the underground parking garage. This will provide 129 bike secure storage lockers, many of which will have access to an electrical outlet for e-bike charging. Additionally, one 6-space short-term bicycle rack is proposed near the entrance of the building.

3.0 PARKING REQUIREMENT

Based on Part 5 – Table 1 of the Esquimalt Parking Bylaw, a RM-4 and RM-5 class building (Medium and High-Density Apartment) is required to provide 1.3 parking spaces per dwelling unit. In addition to this, one of every four required parking spaces must be designated as a visitor space. By applying this rate to the proposed development, the required parking supply is 155 spaces (116 resident spaces, and 39 visitor spaces). This means that the development is 46 spaces short of the Township's parking requirement as proposed.

4.0 EXPECTED PARKING DEMAND

Expected parking demand for this site was estimated, as described in the following sections, to determine if the proposed supply will adequately accommodate the parking demand. Expected demand is based on parking observations collected from representative sites in the Township of Esquimalt and is informed by research and information from previous parking studies.

4.1 RESIDENTIAL PARKING

Observations of parked vehicles were completed at 15 condo buildings in the Township of Esquimalt representing a total of 445 units. A summary of the representative sites is outlined in **Table 1**. Each location was chosen based of the following criteria:

- Proximity of Frequent Transit Network (FTN). The proposed location of this development is in proximity to the FTN on Esquimalt Road. The BC Transit Future Plan describes the FTN as receiving reliable and frequent service (every 15 minutes or better) between 7:00am and 10:00pm seven days a week. Representative sites were selected based on the criteria that they were either on the FTN or within 400m.
- Walk Score. This is a tool that ranks the walkability of a location based on its proximity to seven types of amenities: Dining and drinking, groceries, shopping, errands, parks, schools/education, and culture and entertainment. It is a useful tool for determining if a trip will require a vehicle and may inform parking needs. The Walk Score of this development is 64, and the average Walk Score of the chosen representative sites is **64**.
- Countable Parking Spaces. To accurately collect observational data, parking lots must be accessible to a data collector. Sites with gated or underground parking were ruled out as they prohibited data collection.

TABLE 1. SUMMARY OF REPRESENTATIVE SITES

Location	Walk Score	Proximity to FTN (m)	Units
853 Selkirk Avenue	55	152	38
885 Ellery Street	59	281	20
477 Lampson Street	48	347	44
826 Esquimalt Road	66	On FTN	30
848 Esquimalt Road	65	On FTN	50
1121 Esquimalt Road	71	On FTN	20
840 Craigflower Road	55	On FTN	58
955 Dingley Dell	49	267	29
710 Lampson Street	66	On FTN	20
726 Lampson Street	66	On FTN	33
190 Gorge Road West	70	On FTN	31
2900 Orillia Street	77	On FTN	27
642 Admirals Road	63	On FTN	12
611 Constance Avenue	63	67	12
614 Fernhill Place	81	155	21
Average	**64**	**81**	

4.1.1 OBSERVATIONS

Observations of parking utilization were conducted at representative sites during the typical weekday peak hour period for residential land uses. For the purposes of this study, the greater number of observed vehicles between each data collection exercise were used for the representative peak demand at each location. Parking demand ranged from 0.50 to 1.37 vehicles per unit, with an average parking demand of 0.91 vehicles per unit as shown in Table 2.

Observations were conducted at the following times:

- 08 December, 2020 at 9:00pm
- 09 December, 2020 at 9:00pm

TABLE 2. OBSERVATIONS AT REPRESENTATIVE SITES

Site / Address	Units	Observed vehicles	Parking Demand (Vehicles/Unit)
853 Selkirk Avenue	38	52	1.37
885 Ellery Street	20	20	1.00
477 Lampson Street	44	45	1.02
826 Esquimalt Road	30	15	0.50
848 Esquimalt Road	50	37	0.74
1121 Esquimalt Road	20	13	0.65
840 Craigflower Road	58	55	0.95
955 Dingley Dell	29	28	0.97
710 Lampson Street	20	16	0.80
726 Lampson Street	33	31	0.94
190 Gorge Road West	31	27	0.87
2900 Orillia Street	27	27	1.00
642 Admirals Road	12	9	0.75
611 Constance Avenue	12	13	1.08
614 Fernhill Place	21	22	1.05
	Average	**27**	**0.91**

4.1.2 ADJUSTMENT FACTORS

Observations are a useful method of assessing parking demand rates; however, there are limitations to this method. The main limitation is that resident(s) vehicles may not be present at the time of observation. To mitigate this factor, observations were conducted after 9:30pm to maximize likelihood of residents being present. There is still a chance that residents' vehicles may not be present for a multitude of factors including being out of town. This would typically by addressed with a 10% adjustment in accordance with a Metro Vancouver Apartment Parking Study. [5] This resulted in an adjusted parking demand ranging from 0.55 vehicles per unit to 1.51 vehicle per unit, with an average

[5] 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

parking demand of 1.00 vehicles per unit or 1 vehicle per unit (rounded) as shown in **Table 3**.

TABLE 3. ADJUSTED OBSERVATIONS AT REPRESENTATIVE SITES

Site / Address	Units	Observed Vehicles	Parking Demand (Vehicles/Unit)	Adjusted Parking Demand (Vehicles/Unit)*1.10
853 Selkirk Avenue	38	52	1.37	1.51
885 Ellery Street	20	20	1.00	1.10
477 Lampson Street	44	45	1.02	1.13
826 Esquimalt Road	30	15	0.50	0.55
848 Esquimalt Road	50	37	0.74	0.81
1121 Esquimalt Road	20	13	0.65	0.72
840 Craigflower Road	58	55	0.95	1.04
955 Dingley Dell	29	28	0.97	1.06
710 Lampson Street	20	16	0.80	0.88
726 Lampson Street	33	31	0.94	1.03
190 Gorge Road West	31	27	0.87	0.96
2900 Orillia Street	27	27	1.00	1.10
642 Admirals Road	12	9	0.75	0.83
611 Constance Avenue	12	13	1.08	1.19
614 Fernhill Place	21	22	1.05	1.15
		Average	**0.91**	**1.00**

4.1.3 PARKING DEMAND BY UNIT TYPE

Unit size type refers to the number of bedrooms provided within a residential unit. Research has shown that larger units will generally have more occupants or a family, therefore increasing the likelihood that additional vehicles will be owned by occupants

and growing the parking demand. [6] Parking data collected for this study was assessed to reflect unit type using the following steps:

- Parking demand was calculated and adjusted by 10%;
- Parking demand by unit type was calculated based on the demand ratios of bedrooms per unit at each site acquired from the Metro Vancouver Parking Study from 2018; and
- The assumed "ratio differences" (from 2018 Metro Vancouver Parking study) for parking demand between each site was applied to unit data and vehicle observations. These "ratio differences" are as follows.[7]
    - 1-Bedroom units' parking demand rates will be 19% higher than studio unit rates;
    - 2-Bedroom units' parking demand rates will be 30% higher than 1-Bedroom unit rates; and
    - 3-Bedroom units' parking demand rates will be 23% higher than 2-Bedroom unit rates.

Table 4 illustrates the average parking demand by unit type.

[6] Potoglou, D., & Kanaroglou, P.S. (2008). Modelling car ownership in urban areas: a case study of Hamilton, Canada. *Journal of Transport Geography*, *16*(1): 42–54.
[7] Metro Vancouver. (2018). Regional Parking Study – Technical Report, pg. 18. Available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RegionalParkingStudy-TechnicalReport.pdf

TABLE 4. PARKING DEMAND BY UNIT SIZE AT REPRESENTATIVE SITES

Site / Address	Adjusted Parking Demand	Studio	1-Bedroom	2-Bedroom	3-Bedroom
853 Selkirk Avenue	1.51		1.05	1.37	1.68
885 Ellery Street	1.10		0.80	1.04	
477 Lampson Street	1.13			0.84	1.03
826 Esquimalt Road	0.55		0.44	0.58	
848 Esquimalt Road	0.81	0.59	0.71	0.92	
1121 Esquimalt Road	0.72		0.53	0.69	0.85
840 Craigflower Road	1.04			0.78	0.96
955 Dingley Dell	1.06		0.76	0.99	
710 Lampson Street	0.88			0.80	
726 Lampson Street	1.03	0.67		1.04	
190 Gorge Road West	0.96		0.71	0.92	
2900 Orillia Street	1.10		0.80	1.04	
642 Admirals Road	0.83			0.75	
611 Constance Avenue	1.19		0.90	1.17	
614 Fernhill Place	1.15			1.05	
Average	**1.00**	**0.70**	**0.82**	**1.02**	**1.24**

Results show that the average parking demand when factored for number of bedrooms and applied to the proposed development, are as follows:

- 1-Bedroom Units | 0.82 spaces per unit X 62 units = 51 (50.80 spaces, rounded)
- 2-Bedroom Units | 1.02 spaces per unit X 49 units = 45 spaces (50.21 spaces, rounded)
- 3-Bedroom Units | 1.24 spaces per unit X 8 units = 10 (9.95 spaces, rounded)
- **Total Resident Parking Demand = 111 (110.96 spaces, rounded)**

4.2 VISITOR PARKING

Observations of visitor parking were conducted at each of the representative sites. The findings showed that average rate was 0.10 vehicles per unit. This is similar to what has

been reported in other studies such as the 2012 Metro Vancouver Apartment Parking Study which concluded that visitor parking typically has a demand of less than 0.10 vehicles per unit.[8]

Additional findings from similar studies conducted by WATT in the City of Langford and the City of Victoria also support these findings and suggest that visitor parking is not strongly linked to location. A recently completed development near to this location, 826 Esquimalt Road, is a 30-unit condo building where the developer provided three visitor parking spaces, a rate of 0.1 spaces per unit.[9] Based on the available research and observational data, a rate of 0.1 is recommended. With 119 units and applying a visitor demand rate of 0.1, the recommended visitor parking is 12 (11.9 spaces, rounded) parking spaces.

4.3 SUMMARY OF EXPECTED PARKING DEMAND

Based on the analysis, total expected parking demand for the site is 123 spaces (see **Table 6**). The proposed parking for this development per the site plan is 109 spaces. Therefore, the expected parking demand is greater than the proposed supply by 14 spaces.

TABLE 6. SUMMARY OF EXPECTED PARKING DEMAND

Land Use		Units	Expected Parking Demand	
			Rate	Rounded
For Sale units	One-Bedroom	62	0.82	51
	Two-Bedroom	49	1.02	50

[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] More information about the 826 Esquimalt Road Parking Study is available online at: https://esquimalt.ca.legistar.com/LegislationDetail.aspx?ID=3663&GUID=B883D3FE-6D24-4C02-9550-0339E2D847A4

Land Use		Units	Expected Parking Demand	
			Rate	Rounded
	Three-Bedroom	8	1.24	10
Visitor		119	0.1	12
		Total Expected Parking Demand		**123**

5.0 ON-STREET PARKING ASSESSMENT

An on-street parking analysis reported 29 on-street parking spaces in proximity to the subject site. Two counts were completed at 9:30pm. The following streets were observed:

- Lampson Street from Transfer Street to Craigflower Road

Peak occupancy was observed on Thursday 08 December 2020 at 9:00 pm when on-street parking was 82% occupied, with only 3 spaces unoccupied. This indicates that there is limited on-street parking available during weekday evenings, which is the peak period for both residential and visitor parking demand.

6.0 TRANSPORTATION DEMAND MANAGEMENT

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 typically aim to encourage sustainable travel, enhance travel options and decrease parking demand. The following sections present TDM measures that the applicant could pursue to reduce the amount of vehicle parking required for the development. All of the TDM measures are recommended but the applicant will ultimately need to decide what they will commit to. For all of the TDM measures, an approximate reduction in parking demand is provided.

6.1 SHARED ELECTRIC BIKE PROGRAM

6.1.1 OVERVIEW

E-bikes are electric bicycles with an electric motor of 500 watts or less and functioning pedals that are limited to a top speed of 32 km/h without pedalling. They 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.

The applicant is considering the provision of a shared electric bike program in the proposed development, which will make cycling more attractive for residents and help them complete a variety of trips that would otherwise be done by car, transit, or another mode. The applicant is proposing 7 shared e-bikes in the site, which represents about 5% of all residential dwelling units.

The provision of electric bikes is anticipated to have an impact on vehicle ownership at the site; however, as electric bikes are an emerging form of mobility, 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.

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.[10] A more recent study

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

found that approximately 39 kilometres of driving per week is displaced by the average e-bike adopter along with 14 kilometres of travel by conventional bicycle.[11]

The applicant's objective of providing the shared e-bike program is to provide a transportation option to residents who may not own a vehicle or for residents who own a vehicle but may not require it for all trip purposes. The e-bike program would include the following:

- A total of 2 electric bicycles would be provided
- The e-bikes would be owned and maintained by the strata corporation
- The cost to use (i.e., reserve) an e-bike will be determined by the strata
- The process to reserve an e-bike will most likely be on a first come first serve basis, but will be determined by the strata

6.1.2 RECOMMENDATION

As the applicant continues to determine the operational and logistical details for the proposed shared e-bike program, it is recommended that they consider the following:

- Overall e-bike utilization should be carefully monitored in the first year. If demand is consistently high, consideration should be given to adding more e-bikes to the fleet after year 1.
- Building tenants should be discouraged from using the e-bikes for work trips. The e-bikes should be intended for various trip purposes including errands, shopping, appointments, etc., which are all shorter duration trips and would allow the e-bikes to be more available to the site for other residents.

With the provision of a shared electric bike program, a <u>10% reduction</u> in resident parking demand is supported.

[11] Bigazzi, A & E Berjisian. (2019). Electric Bicycles: Can they reduce driving and emissions in Canada. Plan Canada Fall 2019.

6.2 ELECTRIC BIKE PARKING

6.2.1 OVERVIEW

As stated previously, electric bicycles can displace trips made by private vehicles and in some cases, substitute for private vehicles altogether. Equally important, though, is the provision of parking facilities to accommodate electric bike users. According to research completed in Greater Victoria, one of the top barriers facing prospective e-bike users is the fear that their bicycle might be stolen.[12] That same research found that prospective e-bike users would feel more comfortable if they could park their bicycle in a locked or supervised area.

The Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Planning Guide[13] includes e-bike parking design guidelines to help address the concerns of current and prospective e-bike owners as well as to increase overall e-bike ownership in the Capital Region. The guide recommends that new developments provide 50% of the long-term bicycle parking with access to an 110V wall outlet. Further, 10% of the long-term spaces are recommended to be provided as cargo racks to accommodate e-bikes.

6.2.2 RECOMMENDATION

It is recommended that the applicant commit to the following:

1. **Cargo Bike Parking** | Design 20% of the long-term bicycle parking spaces (x spaces) to accommodate cargo bicycles (2.6m stall depth), which are harder to fit in a standard bike rack where the stall depth is 1.8 metres. Cargo bikes are typically longer than regular bicycles because they can carry cargo and/or multiple passengers and can be a popular option for young families.

[12] WATT Consulting Group. (2018). Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Backgrounder. Available online at: 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

[13] Ibid.

2. **Access to Charging** | Provide at least 50% of the long-term bicycle parking spaces with direct access to an 110V wall outlet to help facilitate charging for e-bike owners and/or prospective e-bike owners.
3. **Secured Location** | Ensure that all long-term bike parking spaces will be in a secure access-controlled location, which is especially important for e-bike users to minimize bike theft.

With the provision of electric bike parking, a 3% reduction in resident parking demand is supported.

6.3 TDM SUMMARY

A summary of the proposed TDM measures and parking reductions is provided below. Table 7 presents the recommended TDM package, which includes a shared e-bike program, and e-bike parking. This would result in a resident parking reduction of 13%. This represents a reduction in the estimated parking demand by 14 spaces, resulting in a parking demand of 109 spaces (97 resident, 12 visitor), which would be equal to the proposed supply.

TABLE 7. SUMMARY OF ESTIMATED PARKING DEMAND, WITH TDM

TDM Measure	Parking Demand / Reduction
Resident Parking requirement per Bylaw	154 spaces
Estimated Resident Parking Demand, Baseline	111 spaces
Total Parking Demand Reduction	–13%
Shared Electric Bike Program	–10%
Electric Bicycle Parking	–3%
Total Parking Demand Reduction	14 spaces
Estimated Resident Parking Demand with TDM	97 spaces
Total Site Parking Demand with TDM (including 12 visitor)	109 spaces
Proposed Parking Supply	109 spaces

7.0 CONCLUSIONS

The proposed development at 879 Tillicum Road is a 119-unit sale multi-family (condo) building with 109 proposed parking spaces (0.92 spaces per unit). In addition, the applicant is proposing 129 long-term bicycle parking spaces.

Expected parking demand for this development was estimated based on observational data collected from representative sites in Esquimalt and was informed by previously conducted studies. To account for missing vehicles and to improve the rigor of analysis, the observational data was adjusted by 10%. Based on these observations the peak parking demand is determined to be 123 spaces (111 resident and 12 visitor spaces), which exceeds the proposed supply by 14 spaces.

As such, two TDM measures are recommended for the applicant's consideration. These include [a] An electric bike share program for the development [b] electric bike parking [c]. **With the adoption of both these TDM measures, the proposed parking supply at this site is expected to meet the parking demand at site.**

8.0 RECOMMENDATIONS

It is recommended that the applicant:

1. Provide electric bike parking, which includes designing 20% of the total long-term spaces for cargo bikes, and 50% of the total spaces with an 110V outlet.
2. Provide seven e-bikes as part of an e-bike share program.