TRANSPORTATION PLANNERS AND ENGINEERS

bunt &associates

602 Nelson Street

Parking Study

Version 4

Prepared for

Nelson Esquimalt Developments Ltd.

Date

July 4, 2022

Project Number

02-21-0098

CORPORATE AUTHORIZATION

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Date: 2022-07-04
Project #: 02-21-0098
Status: Version 4

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1. EXECUTIVE SUMMARY

The February 2022 report (V2) was updated in June 2022 (V3) to account for an increase of 3 affordable. A further revision (Version 4) is now completed to address a change in parking allocation to increase the resident supply ratio.

A multi-family development (99 market units + 10 affordable units + coffee shop) is proposed at 602, 608, 612 Nelson Street in Esquimalt. The proposed parking supply is 110 stalls requiring a variance from bylaw requirements. Bunt & Associates was retained to complete a Parking Study to determine if the proposed parking variance is supportable. Study findings and recommendations are summarized below.

1.1 Development

Proposed development densities, bylaw requirements, and parking supplies are summarized in **Table 1.1**.

Table 1.1: Vehicle Parking Requirement & Supply

USE	DENSITY	VEHICLE PARKING STALLS		
		Bylaw	Supply	Difference
Resident (Market)	99 units	107	99	-8
Resident (Affordable)	10 units			
Visitor	*109 units*	35	11	-38
Restaurant (Coffee Shop)	185 m² GFA	14		
TOTAL		156	110	-46

1.2 Findings & Recommendations

Study findings and recommendations are described in **Table 1.2**.

Table 1.2: Findings & Recommendations

SECTION		FINDINGS
Trip Generation		A Transportation Impact Assessment (TIA) is not required as the site will generate 44 new peak hour trips, which is below the industry standard 100 hourly trip threshold for a TIA.
Parking	Visitor + Coffee Shop	A visitor parking supply ratio of 0.10 spaces per units (11 spaces) is appropriate as: - *Municipal Requirements:* Esquimalt's requirement of 0.325 spaces per unit exceeds all other Vancouver Island municipalities (18 communities). - *Observed Demand:* Ratios of 0.04 to 0.08 spaces per unit have been observed. - *Comparable Sites:* The ratio is consistent with other study recommendations. Shared parking analysis based on anticipated demand confirms a combined supply of 11 stalls will accommodate visitor/ coffee shop demand. These uses have alternate peak periods (visitor in the evening; coffee shop in the morning).
	Resident	The resident parking supply ratio of 0.91 spaces per unit is supportable as: - *Observed Demand:* Observed auto ownership is 0.65 to 0.80 spaces per unit. - *Transportation Demand Management (TDM):* The following are recommended to support the minor resident parking variance: o Cycling – Class A bike parking at 1 space per unit + repair facility. o Transit – One year of transit passes for all units without parking.
Active Travel	Sidewalks	New sidewalks will be required along site frontages.
	Crossings	No new crosswalks are required to support the site.
	Cycling	The site is serviced by routes on Esquimalt Road *(shared space west of/bike lane east of Fraser St)* and Admirals Road *(bike lane north of Esquimalt Rd).*
	Transit	The site is serviced by four bus routes including one frequent route (#26), one regional route (#15), and two local routes (#25, #46).

2. INTRODUCTION

2.1 Study Scope

The scope of this study includes the following:

Traffic

- *Trip Generation* – Calculate anticipated vehicle trip generation for the weekday AM & PM peak hours.

Parking

- *Bylaw Check* – Calculate vehicle and bicycle parking requirements for the proposed development.
- *Commercial/Visitor Parking Needs* – Confirm non-resident parking needs based on industry standards and observed demand.
- *Resident Parking Needs* – Confirm resident parking needs based on industry standards, observed demand, and available literature.
- *Recommendation* – Confirm the adequacy of the proposed parking supply. Provide parking mitigation measures if necessary.

Active Transportation

- *Pedestrians* – Review sidewalk connectivity and adequacy of crossing controls near the site.
- *Cyclists* – Review connectivity to cycling facilities.
- *Transit* – Review service levels and connectivity to transit stops.

2.2 Site Context

The site is bounded by residential uses to the north, Nelson Street to the east, Esquimalt Road to the south, and an apartment building to the west. The site zoning is currently RM-1. The site context is illustrated in **Figure 2.1**. The site plan is illustrated in **Figure 2.2**.

Figure 2.1: Site Context

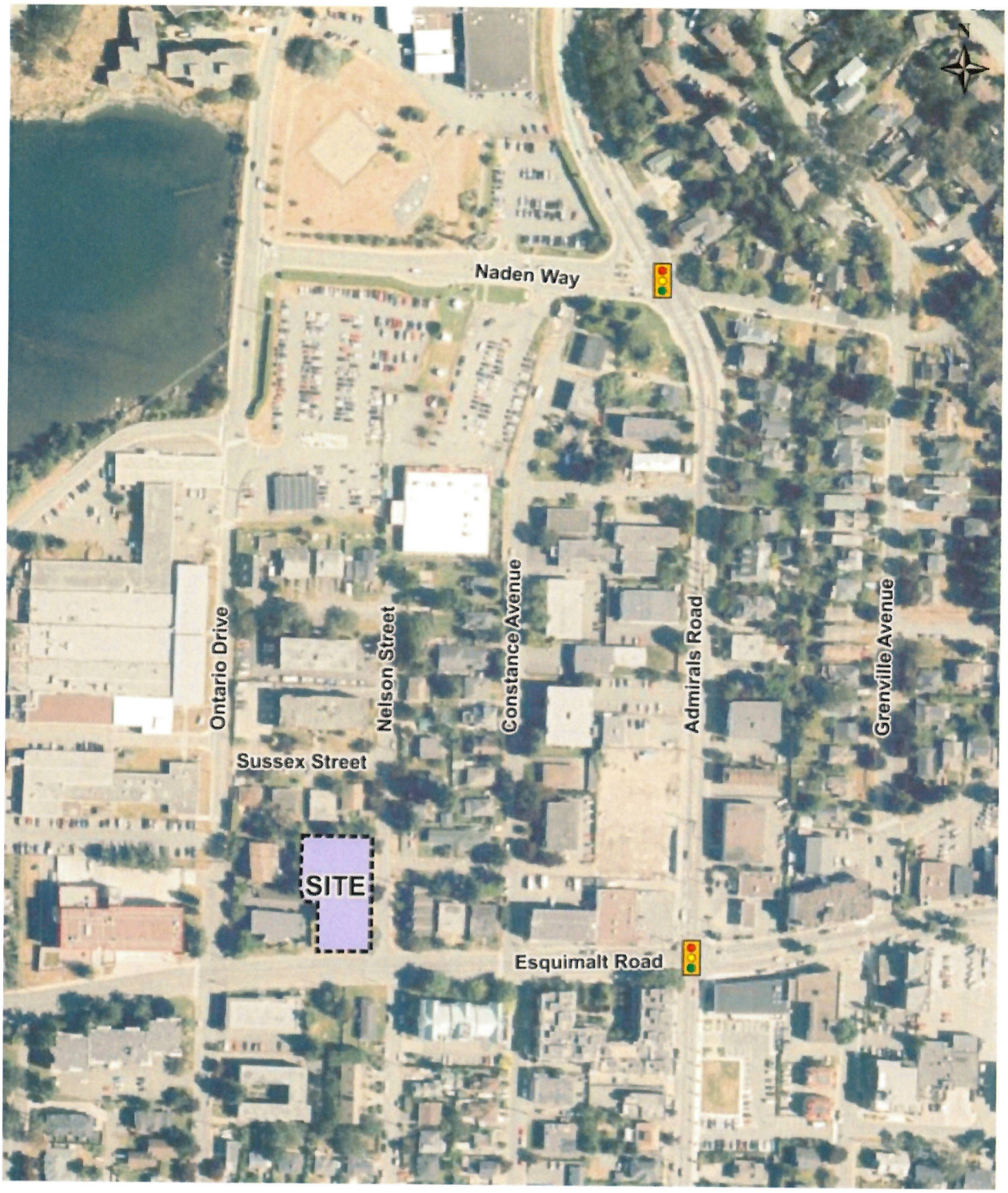
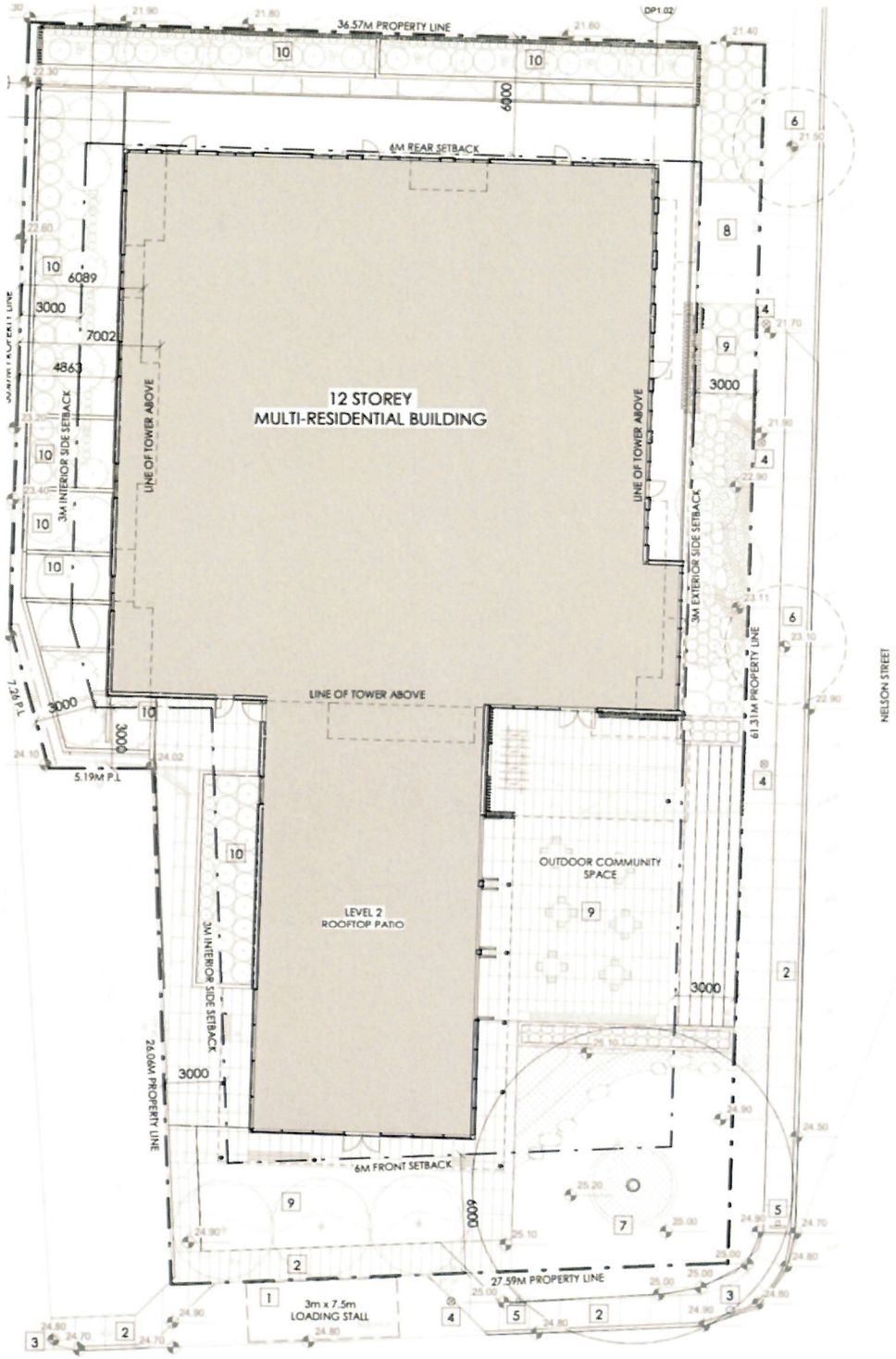


Figure 2.2: Site Plan



3. TRAFFIC

3.1 Study Requirements

The Institute of Transportation Engineers (ITE) recommended practice[1] is *"in lieu of other locally preferred thresholds, it is suggested that a transportation impact study be conducted whenever a proposed development will generate 100 or more added (new) trips during the adjacent roadway's peak hour or the development's peak hour."*

3.2 Trip Generation

A vehicle trip generation analysis is completed in **Table 3.1** based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition).

Table 3.1: Vehicle Trip Generation

HORIZON	ITE USE	DENSITY	TRIP RATE PER UNIT (HOURLY)		TOTAL TRIPS (HOURLY)	
			AM Peak	PM peak	AM Peak	PM Peak
Existing	Multi-Family Low-Rise (#220)	-7 units	0.46	0.56	-3	-4
Proposed	Multi-Family Mid-Rise (#231)	109 units	0.33	0.44	36	48
				NEW TRIPS	+33	+44

**Use #231 (Mid-rise Residential with 1st-floor Commercial) includes traffic generation associated with ground floor commercial.*

3.3 Conclusion

The expected peak hour development trip generation of 33 to 44 trips is well below the 100 trips per hour threshold identified by the ITE for requiring a TIA. Due to this limited increase in trip generation, the development is not expected to appreciably alter network traffic conditions in the area.

[1] *Transportation Impact Analyses for Site Development*, Institute of Transportation Engineers, 2010.

4. PARKING

4.1 Requirements & Supply

4.1.1 Vehicle

Parking Bylaw requirements are calculated in **Table 4.1** for vehicles. The bylaw parking check confirms that the development will require a 46 space parking variance (8 resident + 38 non-resident).

Table 4.1: Bylaw Vehicle Parking Requirement

USER	DENSITY	BYLAW REQUIREMENT		PROPOSED SUPPLY	DIFFERENCE
		Rate	Spaces		
Resident (Market)	99 units	1.30 x 0.75 spaces per unit	107	99	-8
Resident (Affordable)	10 units				
Visitor	109 units	1.30 x 0.25 spaces per unit	35	11	-38
Restaurant (Coffee Shop)	185 m^2 GFA	1 space per 14 m^2 GFA	14		
		TOTAL BYLAW REQUIREMENT	156	110	-46

4.1.2 Bicycle

While the Parking Bylaw does not have any bicycle parking requirements for multi-family developments, the development is proposing the following supply:

- Class A (Resident – indoor secured): 109 spaces (1 space per unit)
- Class B (Visitor – outdoor): 10 spaces

4.2 Non-Resident Parking

4.2.1 Visitor Parking

The bylaw visitor parking requirement is 0.325 spaces per unit (35 spaces). The appropriate visitor parking ratio is determined based on observed demand and comparable sites.

Municipal Requirements

Visitor parking requirements in large Canadian municipalities are summarized in **Table 4.2**. Visitor parking requirements in Vancouver Island municipalities are summarized in **Table 4.3**. Esquimalt's visitor parking ratio exceeds all municipalities reviewed and is therefore an outlier.

Table 4.2: Canadian Bylaw Requirements (Visitor)

PROVINCE	MUNICIPALITY	VISITOR SPACE REQUIREMENT PER UNIT	
		Inner City/TOD/Main Streets	Suburban
British Columbia	*Esquimalt*	*0.325*	*0.325*
	Vancouver	0.05	0.05
	Victoria	0.10	0.10
Alberta	Calgary	0.075	0.10 to 0.15
	Edmonton	No requirement	No requirement
Saskatchewan	Saskatoon	0.125	0.125
Manitoba	Winnipeg	No requirement	0.15
Ontario	Hamilton	First 12 units: 0.00 All other units: 0.10	0.20
	Toronto	0.10	0.15-0.20
Quebec	Montreal	0.00	0.11

Table 4.3: Vancouver Island Bylaw Requirements (Visitor)

MUNICIPALITY	VISITOR SPACE REQUIREMENT PER UNIT
Esquimalt	*0.325*
Colwood	0
Campbell River	0
Central Saanich	0.25
Comox	0.10
Courtenay	10% of required spaces
Ladysmith	0.20
Langford	0.25
Lantzville	0.25
Metchosin	0.15
North Cowichan	0.15
North Saanich	0
Oak Bay	0.25
Saanich	0.30
Sidney	0
Sooke	0
View Royal	0
Saanich	0.30
Victoria	0.10

*Some municipalities do not require visitor parking.

Observed Demand

Observed visitor parking demand is summarized in:

- **Table 4.4** (Metro Vancouver Data) – The *Metro Vancouver Apartment Parking Study*[2] identified that "*Visitor parking supply may be over supplied. Observed demand rates were below 0.1 stall per apartment unit.*"
- **Table 4.5** (Bunt & Associates BC Island/Coast Data) – 3 observations.
- **Table 4.6** (Bunt & Associates Metro Vancouver Data) – 29 observations.
- **Table 4.7** (Bunt & Associates Alberta Data) – 8 observations.

A supply ratio of 0.10 spaces per unit would accommodate observed demand ratios.

[2] http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

Table 4.4: Observed Visitor Parking Demand – Metro Vancouver

LOCATIONS	TYPE	COUNT YEAR	PEAK VISITOR DEMAND PER UNIT
Burnaby	Strata – Condo	2011	0.06
Port Coquitlam	Strata – Condo	2011	0.02
Richmond	Strata – Condo	2011	0.04
		AVERAGE PEAK DEMAND	0.04

Table 4.5: Observed Visitor Parking Demand – Bunt BC

LOCATIONS	TYPE	COUNT YEAR	PEAK VISITOR DEMAND PER UNIT
Gibsons	Strata – Condo	2013	0.02
Nanaimo	Market Rental – Apartment	2017	0.09
Sechelt	Strata – Condo	2013	0.02

Table 4.6: Observed Visitor Parking Demand – Bunt Metro Vancouver

MUNICIPALITY	SITE	ADDRESS	UNITS	PEAK VISITOR DEMAND PER UNIT	
				Weekday	Saturday
Burnaby	Evergreen	4825 Hazel Street	131	0.07	0.04
	La Mirage	6070 McMurray Avenue	141	0.06	0.04
	La Mirage	6055 Nelson Avenue	156	0.06	0.07
	Carleton on the Park	4350 Beresfort Street	119	0.03	0.04
	Grand Central Park	6228 Patterson Avenue	147	0.10	0.08
	Wimbledon Club	6188 Patterson Avenue	130	0.06	0.10
Coquitlam	Madison	2990 Princess Court	71	0.07	0.09
	Montclaire	2890 Princes Court	154	0.06	0.11
	Hudson	1196 Pipeline Road	135	0.04	0.12
	Mackenzie	1190 Pipeline Road	112	0.08	0.08
	Union	518 Whiting Way	111	0.13	0.15
	Regan's Walk	611 Regan Avenue	71	0.07	0.07
	Emerson	618 Como Lake Avenue	63	0.06	0.03
	Cora Towers	555 & 575 Delestre Ave	257	0.01	0.03
	Roycroft	1153 Kensal Place	72	*0.00	0.02
	Burlington Estates	2963 Burlington Drive	64	0.02	0.04
	The Parc	2959 Glen Drive	96	0.08	0.09
	Evergreen	3007 Glen Drive	195	0.04	0.09
	Thomas House	1150 Kensal Place	64	0.15	0.10
	Emerald	1154 Westwood Street	37	*0.00	0.03
	Encore	511 Rochester Avenue	172	0.01	0.04
Richmond	Emporio	6351 Buswell Street	92	0.07	0.07
	Perla	6331 Buswell Street	195	0.03	0.07
	Paloma 1	6068 No. 3 Road	128	0.05	0.07
	Paloma 2	8033 Saba Road	154	0.01	0.02
	Acqua	5811 No. 3 Road	175	0.03	0.06
	Chancellor	8238 & 7288 Saba Road	170	*0.00	0.04
Surrey	Sunwest Estates	14481 103A Avenue	122	0.02	0.05
	The Camelot	14820 104 Avenue	100	0.06	0.07
			Weighted Average	0.05	0.07
			85th Percentile	0.08	0.10

**Zero parking demand not included in averages/85th percentiles.*

Table 4.7: Observed Visitor Parking Demand – Bunt Alberta

MUNICIPALITY	SITE	ADDRESS	UNITS	PEAK VISITOR DEMAND PER UNIT
Calgary	Xenex on 12th	788 12 Ave SW	154	0.10
	Stella/Nova	1110 11 Ave & 1118 12 Ave SW	352	0.07
	Luna	1111 10 Ave SW	218	0.05
	Calla	626 10 Ave SW	168	0.08
	Dalhousie Sites	4844, 4848, 5601 Dalton Dr NW	399	0.08
			Average	0.08

Other Development Studies

The *Esquimalt Town Centre Parking Study* (Watt Consulting Group – 2016) recommended a visitor parking ratio of 0.10 spaces per unit. The *Shoaling Heights Mixed-Use Development Transportation Impact Assessment* (Bunt & Associates – 2020) also recommended a visitor parking ratio of 0.10 spaces per unit

Conclusion

A visitor parking supply of 0.10 spaces per unit is recommended. This ratio would accommodate expected peak visitor parking demand and is consistent with City of Victoria requirements.

4.2.2 Coffee Shop

The bylaw requirement for the coffee shop is 7.14 spaces per 100 m² (1 per 14 m²). Bylaw parking requirements in other Canadian municipalities are summarized in **Table 4.8**. Most municipalities have reduced parking rates for small restaurants and those located in urban locations.

Table 4.8: Bylaw Requirements in Other Municipalities

JURISDICTION		STALL REQUIREMENT PER 100 M²	
		General	Inner City. TOD, or Main Streets
British Columbia	Abbotsford	5.00	N/A
	Langley	5.00	N/A
	New Westminster	*First 100 m²:* 2.00 *Next 400 m²:* 2.50	N/A
	Vancouver	*First 100 m²:* 2.00 *Next 400 m²:* 10.00	N/A
	Victoria	5.00	4.00
Alberta	Edmonton	0	0
Sask.	Saskatoon	*5.00	3.33
Manitoba	Winnipeg	10.76	N/A
Ontario	Hamilton	12.50	*First 450 m²:* 0 *Additional:* 2.00
	Ottawa	10.00	*If <350 m²:* 0 *If >350 m²:* 0 to 5.00
	Toronto	*If <200 m²:* 0 *If 200-500 m²:* 3.00	0

**Saskatoon rate is based on public area. Converted into a GFA rate.*

For the purposes of this study, a demand rate of 5 spaces per 100 m² is assumed for the coffee shop which is consistent with City of Victoria requirements.

4.2.3 Shared Parking

To provide the best use of space, shared parking is proposed for non-resident users (residential visitors and coffee shop users). Shared parking is the concept of pooled parking spaces being used to serve two or more uses whose peak parking demand do not occur at the same time of day (e.g. coffee shop demand peaks in the morning; residential visitor demand peaks in the evening).

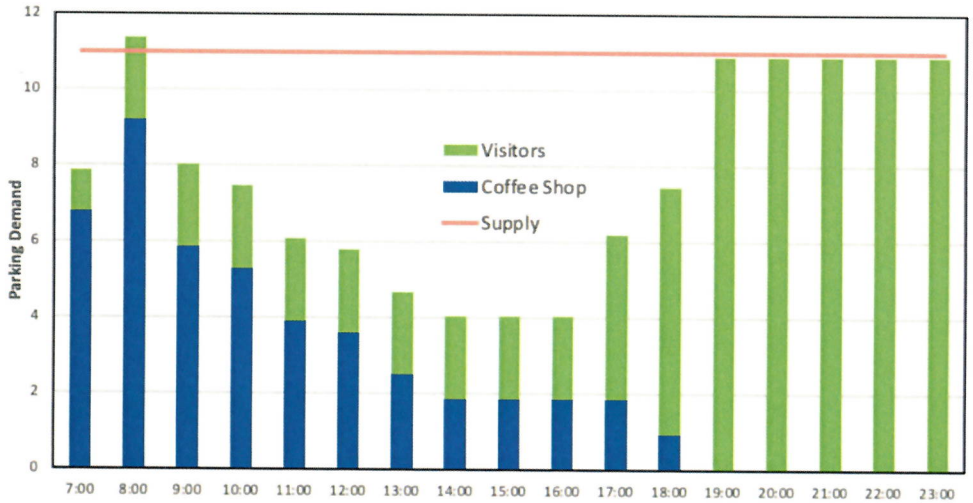
Shared parking analysis is completed to determine the number of stalls needed to accommodate non-resident demand. The demand distributions used in this analysis were obtained from the Institute of Transportation Engineers (ITE) *Parking Generation Manual* (5th Edition) and Urban Land Institute (ULI) *Shared Parking* (3rd Edition). The analysis assumes the coffee shop closes at 7pm.

Shared parking analysis is summarized in **Table 4.9** and **Figure 4.1** with anticipated coffee shop and residential visitor demand. Shared parking analysis identifies an expected peak non-resident parking demand of 11 stalls, which is consistent with the proposed supply for non-resident users (visitor + coffee shop).

Table 4.9: Shared Parking Analysis

TIME	DEMAND DISTRIBUTIONS		PARKING DEMAND		
	*Coffee Shop	Residential Visitor	Coffee Shop	Residential Visitor	Total
Source/Rate	*ITE #936*	*ULI*	*9.3*	*10.9*	*21*
7:00	73%	10%	6.8	1.1	8
8:00	100%	20%	9.3	2.2	11
9:00	63%	20%	5.9	2.2	8
10:00	57%	20%	5.3	2.2	7
11:00	42%	20%	3.9	2.2	6
12:00	39%	20%	3.6	2.2	6
13:00	27%	20%	2.5	2.2	5
14:00	20%	20%	1.9	2.2	4
15:00	20%	20%	1.9	2.2	4
16:00	20%	20%	1.9	2.2	4
17:00	20%	40%	1.9	4.4	6
18:00	10%	60%	0.9	6.5	7
19:00	0%	100%	0.0	10.9	11
20:00	0%	100%	0.0	10.9	11
21:00	0%	100%	0.0	10.9	11
22:00	0%	100%	0.0	10.9	11
23:00	0%	100%	0.0	10.9	11
				MAXIMUM DEMAND	11

Figure 4.1: Shared Parking Analysis



4.3 Resident Parking

The bylaw resident parking requirement is 0.98 spaces per unit (107 spaces). The proposed resident parking supply is 0.91 spaces per unit (99 spaces). The appropriateness of the proposed ratio is reviewed based on literature, observed demand, and comparable sites.

4.3.1 Affordable Housing

The development plan includes 10 affordable housing units. Considerable literature identifies that auto ownership is correlated with household income. The 10 affordable housing units would therefore be expected to have lower auto ownership rates when compared to standard housing units. No parking is proposed for these units.

4.3.2 Observed Demand

Bunt reviewed previous studies to identify vehicle ownership rates at comparable buildings in similar neighbourhoods. The identified resident parking ratios are listed in **Table 4.10**.

Table 4.10: Observed Local Demand (Resident)

LOCATION		TYPE	RESIDENT DEMAND PER UNIT
Victoria	James Bay	Rental	0.60 to 0.70
	Fairfield	Rental	0.60 to 0.70
Saanich	Quadra Street (between Tattersall Dr and McKenzie Ave)	Strata	0.80 to 0.85
	Cloverdale Triangle (between Cloverdale Ave, Quadra St, Tolmie Ave, and Alder St)	Strata & Rental	0.75 to 0.85

The two Victoria sites have the lowest vehicle ownership (~0.65 per unit). The Saanich sites have fewer nearby amenities resulting in highest vehicle ownership (~0.80 per unit). The proposed development context is between these two data sets. Based on this data, a resident parking supply of 0.99 spaces per unit is reasonable and exceeds observed demand.

4.3.3 Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is the application of strategies to reduce or redistribute private vehicle travel demand by incentivizing alternative travel options. Recommended TDM strategies for this development are identified below.

Bicycle

- *Secure Parking* – Class A bike parking at a ratio of 1 space per unit.
- *Maintenance Facility* – An on-site bicycle repair facility for use by site residents.

Transit

- *Bus Passes* – The provision of bus passes for one year for all units without on-site parking.

5. ACTIVE TRANSPORTATION

5.1 Walking

Trip attractors and pedestrian infrastructure within the study area are illustrated in **Figure 5.1**. A review of sidewalk facilities near the site is summarized in **Table 5.1**. A review of major roadway crossings near the site is summarized in **Table 5.2**.

Table 5.1: Sidewalk Review

TYPE	ROADWAY	TYPE	LOCATION	NOTES
Major	Esquimalt Road	Sidewalk	Both Sides	-
	Admirals Road	Sidewalk	Both Sides	-
Local	Nelson Street	Sidewalk	East Side*	Mostly no sidewalk facilities

**Miles Street to Esquimalt Road only*

Table 5.2: Crosswalk Review

INTERSECTION		MAJOR ROAD TYPE	LEG	EXISTING CROSSING		TAC RECOMMENDED TREATEMENT
Major Road	Minor Road			Control	Curb Cut	
Esquimalt Road	Sturdee Street	Major	West	Signage & Paint	Yes	Signage or RRFB
	Constance Ave		West	Signage & Paint	Yes	Signage or RRFB
	Admirals Street		All	Signal	Yes	No change
Admirals Street	Esquimalt Road	Major	All	Signal	Yes	No change

The review of pedestrian infrastructure finds:

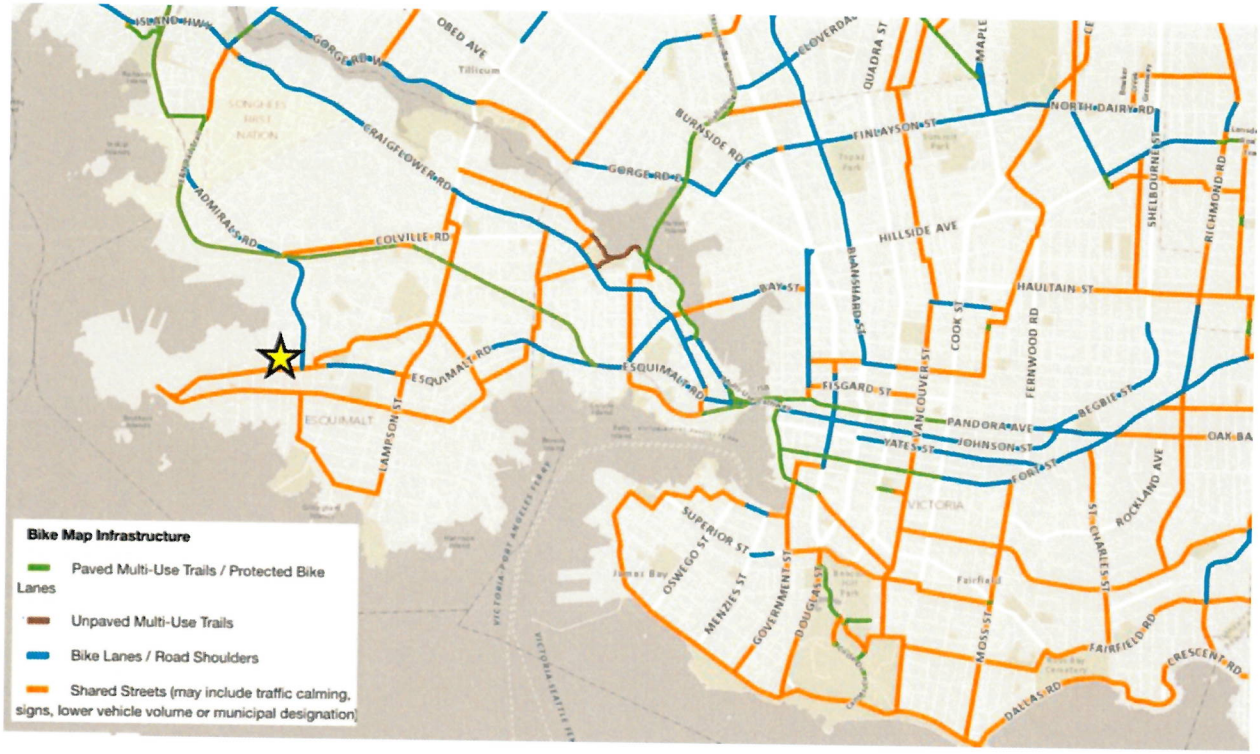
- **Sidewalks** – Sidewalks are generally not provided on Local streets in the area. A sidewalk will be required along both site frontages.
- **Crosswalks** – No additional crossings or treatment changes are required.

Figure 5.1: Pedestrian Network

5.2 Cycling

Cycling facilities near the site are illustrated in **Figure 5.2**. The site is serviced by bike routes on Esquimalt Road (shared space west of Fraser Street / bike lanes east of Fraser Street) and Admirals Road (bike lane north of Esquimalt Road).

Figure 5.2: Existing Cycling Network



5.3 Transit

Transit services are provided on Esquimalt Road and Admirals Road. Stops within 300 metres walking distance are summarized in **Table 5.3**. The existing area transit network is illustrated in **Figure 5.3** and summarized **Table 5.4**. The site is serviced by frequent bus service.

Table 5.3: Existing Transit Stops

STOP LOCATION			STOP	ROUTES SERVICED	WALKING DISTANCE
Roadway	Cross-Street	Direction			
Esquimalt Road	Admirals Road	West	-	15, 26, 46	150m
		East	Shelter	15, 26	225m
	Sturdee Street	East	Shelter	15, 26, 46	125m
Admirals Road	Esquimalt Road	North	-	25	225m
		South	-		225m

Figure 5.3: Existing Transit Service

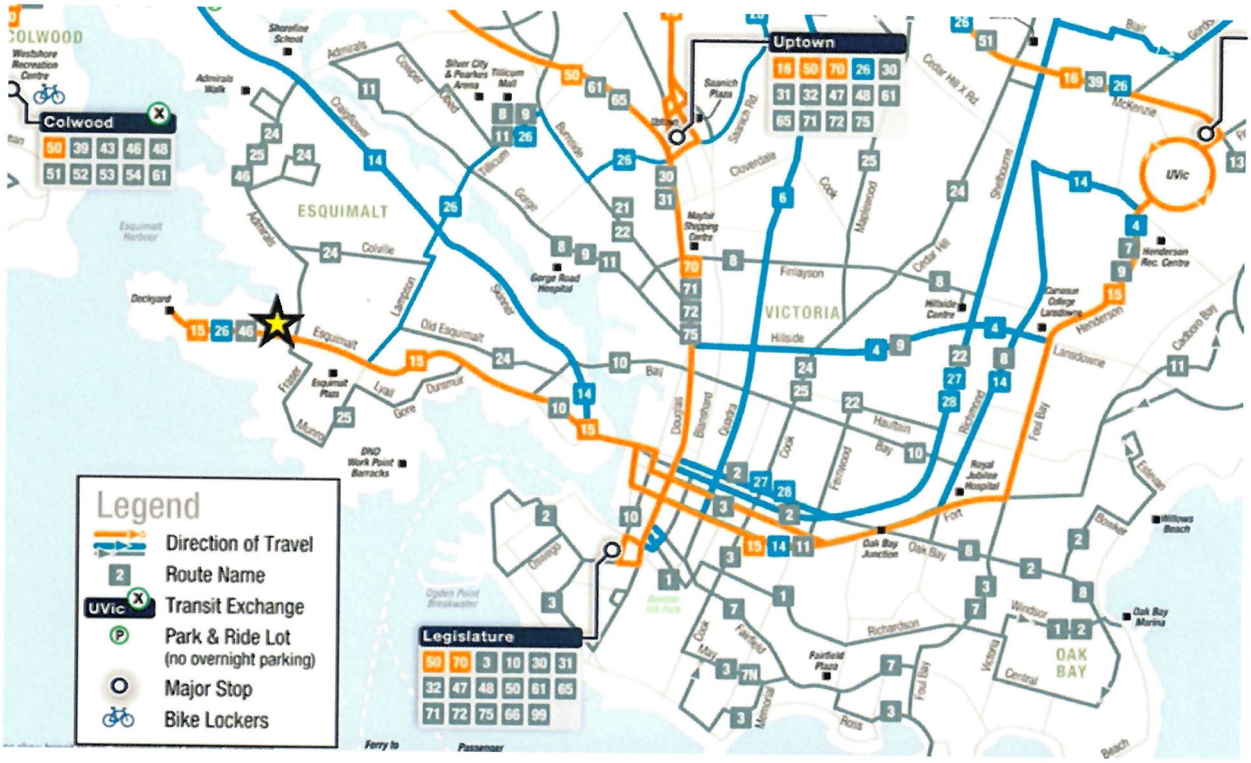


Table 5.4: Existing Transit Frequency

ROUTE		WEEKDAY SERVICE		AVERAGE FREQUENCY	
#	Direction	Start	End	Type	
15	Esquimalt/UVic	5:45	1:30	Regional	15-30 minutes
25	Maplewood/Admirals Walk	6:40	22:15	Local	30-90 minutes
26	Dockyard/UVic	6:00	0:10	Frequent	15-20 minutes
46	Dockyard/Westhills	6:55	18:15	Local	30-60 minutes (weekday only)