WATT Consulting Group
Since 1983

#8-2483 Main Street
West Kelowna, BC V4T 2E8

T 250.313.1014 ext. 431
F 250.388.9879
E. tbaumgartner@wattconsultinggroup.com
wattconsultinggroup.com

MEMORANDUM

To: Ryan Jabs – Lapis Homes

From: Tom Baumgartner, M.Sc., P.Eng.
Tanner Vollema, EIT

Our File #: 2503.B01

Project: Colville & Lampson Developments

Date: August 17, 2018

RE: Transportation Review

1.0 INTRODUCTION

Watt Consulting Group was retained by Lapis Homes to conduct a transportation review for two proposed developments located at the southeast corner of the Lampson Street and Colville Road intersection in Esquimalt, BC. The proposed developments include a 6-unit two-bedroom townhouse development at 937 Colville Road and a 10-unit three-bedroom townhouse development at 825 / 827 Lampson Street and 939 Colville Road. This memo will review the existing site conditions and characteristic, the existing operations of the Lampson Street / Colville Road intersection, the location of the proposed accesses, and the predicted trip generation and parking requirements of the proposed developments. **Figure 1** shows the location of the proposed development sites.

Figure 1: Proposed Development Location

2.0 EXISTING CONDITIONS

The proposed development sites are located on the southeast corner of the Colville Road / Lampson Street intersection in Esquimalt, BC. The development sites are currently zoned as follows:

- 825 Lampson Street: CD-90 (Comprehensive Development No. 90);
- 827 Lampson Street: RS-4 (Single Family Bed and Breakfast Residential);
- 937 Colville Road: RS-1 (Single Family Residential); and
- 939 Colville Road: RS-4 (Single Family Bed and Breakfast Residential).

Adjacent land uses include Two-Family Residential (RD-1 & RD-3), Multiple Family Residential (RM-2), Parks and Open Space (P-2), and Comprehensive Development (CD-32 & CD-70). The proposed development sites are currently accommodating single-family residential homes. The Township of Esquimalt OCP (2018) has designated the site as Townhouse Residential in the Proposed Land Use Designations (Schedule B).

Lampson Street is a two-lane major road with a speed limit of 50km/h. Colville Road is a two-lane local road east of Lampson Street and a two-lane collector road west of Lampson Street. The speed limit on Colville Road is 50km/h with a 30km/h playground zone that begins 20m east of Lampson Street and extends west of Carrie Street. The Lampson Street / Colville Road intersection is two-way stop controlled with the stop control located on Colville Road.

2.1 Current Intersection Operations

The Lampson Street / Colville Road intersection was previously studied by Watt and determined to have a failing level of service (~100 sec delay) for Colville Road approaches in the AM and PM weekday peak hours. The operational level of the intersection is the result of existing traffic levels and traffic control; the proposed developments traffic will not have a significant effect on the intersection volumes (as indicated in Section 5).

3.0 SITE CHARACTERISTICS

The transportation options and services within proximity of the site are as follows:

SERVICES

The development sites are located 300 meters west of the Esquimalt High School and about one kilometer northeast of Rockheights Middle School. The nearest grocery stores are within an 8-10 minute walk and include Craigflower Foods (600 metres away) and Esquimalt Wholesale Club (700 metres away). There are several restaurants within a one-kilometer walk. The sites are located about one kilometer away from the light industrial park in the Devonshire / Viewfield Road area and provide access to employment and services.

TRANSIT

Lampson Street is a public transit route with the nearest southbound transit stop located 40 meters from the development sites and the nearest northbound transit stop located 100 meters from the development sites. These stops are currently serviced by Route 24 (Cedar Hill / Admirals Walk) and by Route 26 (Dockyard / UVic). Additional transit stops on Craigflower Road are located 300 metres north of the development sites and are serviced by Route 14 (Vic General / UVic). **Figure 2** shows the proximity of nearby transit stops.

WALKING

There are paved sidewalks on both sides of Lampson Street and Colville Road. The Lampson Street sidewalks are continuous for the length of the road. On Colville Road, the south sidewalk ends 500m east of the sites and the north sidewalk ends 500m west of the sites; the opposite sidewalks continue until the end of Colville Road. The multi-use E&N Rail Trail is located 100m south of the development sites. The Walkscore for the development sites is 64, which indicates that some errands can be accomplished on foot.[1]

CYCLING

The E&N Rail Trail crosses Lampson Street less than 200 meters south of the development sites. The 17-kilometer trail runs from West Victoria to Langford and provides access to the Galloping Goose Trail and to downtown Victoria via the Esquimalt Road and Johnson Street bike lanes. Bike lanes are also located on Craigflower Road, approximately 300 meters north of the development sites. **Figure 2** shows the proximity of nearby cycling facilities.

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 March 2018, there are 60 Modo vehicles and 4,136 members across the Greater Victoria region, suggesting that Modo is growing in popularity.[2] The developer has proposed to provide a Modo membership for each unit in both developments as well as a dedicated Modo carshare vehicle space.

[1] Walkscore. https://www.walkscore.com/score/939-colville-rd-victoria-bc-canada
[2] Email correspondence with Modo's Business Development Manager on March 13, 2018.

Figure 2: Proximity of Site to Alternate Modes

4.0 ACCESS REVIEW

4.1 Corner Clearance

Driveway access to each of the developments will be off of Colville Road. The access to the 825 / 827 Lampson Street and 939 Colville Road development will be located 25 metres east of the Lampson intersection and the 937 Colville Road development access will be located 35 metres east of the Lampson intersection. Section 8.8 of the TAC *Geometric Design Guide for Canadian Roads (2017)* suggests a minimum corner clearance of 15 metres between an access and a stop-controlled major intersection. The proposed driveway locations for both developments exceed the recommended corner clearance distance.

4.2 Sightlines

The TAC Geometric Design Guide sets the criteria for minimum sightlines for a vehicle turning from a stop onto a 50km/h roadway at 105 metres for a left turn and 95 metres for a right turn. Looking east, the sightlines for both accesses are in excess of 200 meters; however, the sightline to the west is obstructed by a vertical crest curve located at the Lampson Street / Colville Road intersection which limits the sightline distance to approximately 45m for the 825 / 827 Lampson St and 939 Colville Rd development and 55 metres for the 937 Colville Road development (see **Table 1**).

TABLE 1: SIGHT LINE DISTANCES FOR PROPOSED DRIVEWAY ACCESSES

Access	Movement	Posted Speed	Required Sight Distance (m)	Actual Sight Distance (m)	Achieved
825/827 Lampson St / 939 Colville Rd	Right Turn	50km/h	95	45	**No**
	Left Turn	50km/h	105	200+	Yes
937 Colville Rd	Right Turn	50km/h	95	55	**No**
	Left Turn	50km/h	105	200+	Yes

Considering that traffic turning off of Lampson Street onto Colville Road would have to slow down to speeds of less than 20km/h in order to negotiate the horizontal alignment, and eastbound Colville Road traffic must stop before crossing Lampson Street. The required sight distance for a stopped vehicle turning right onto a 20km/h road is 40m. The sightlines at the proposed accesses are sufficient to allow for a safe exit onto Colville Road. It is recommended that on-street parking is restricted near the accesses so sightlines are not further constrained.

5.0 TRIP GENERATION

New site trips were estimated from the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)*. The *Trip Generation Manual* provides trip rates for a wide variety of land uses gathered from actual sites across North America over the past 35 years. The trip generation results are summarized in **Table 2**.

TABLE 2: POST-DEVELOPMENT TRIP GENERATION

ITE Code	Land Use	Units	Trip Rate	Trips In	Trips Out	Total Trips
AM Peak Hour						
220	Multifamily Housing (Low-Rise)	16	0.46/unit	2	5	7
PM Peak Hour						
220	Multifamily Housing (Low-Rise)	16	0.56/unit	6	3	9

The proposed developments will generate 7 trips during the AM peak hour and 9 trips during the PM peak hour. The low volume of trips generated is expected to have a minimal effect on the surrounding traffic operations.

6.0 PARKING REQUIREMENTS

6.1 Proposed Parking Supply

The proposed 10-unit 825 / 827 Lampson Street and 939 Colville Road development will provide a total of 16 parking spots consisting of 10 garage spaces (one for each unit), five (5) visitor stalls, and one (1) Modo carshare.

The proposed 6-unit 937 Colville Road development will provide a total of five (5) parking spaces consisting of four (4) owner stalls and one (1) visitor stall. Two units will not have dedicated parking and will be expected to use alternative transportation.

Secure bicycle parking will also be provided at both developments. At the 825/827 Lampson Street and 939 Colville Road site, secure bicycle parking spaces are provided in each unit's garage. At the 937 Colville Road site, a shared secure storage space will be provided for 10 bikes. An outdoor bicycle lockup will be provided at each site for visitor use.

6.2 Parking Bylaw Requirements

The Township of Esquimalt Parking Bylaw No. 2011 requires townhouse developments to provide 2 parking spaces per dwelling unit, with 1 out of every 4 spaces designated as visitor parking. Under this bylaw, the developments would be required to provide 32 parking spaces; however, past experience in Esquimalt and similar communities has shown the parking demand to be lower than the bylaw requirement. Additionally, the proposed developments will be oriented towards alternative transportation, which will lower the demand for parking spaces.

6.3 Expected Parking Demand

Using the ITE *Parking Generation Handbook (4th ed.)*, the expected parking generation rate for an urban townhouse development (using the ITE Land Use No. 221 – Low/Mid-rise Apartments) is 1.2 spaces per dwelling during the peak demand period (Weekdays from 10PM to 5AM). This would result in a peak parking demand of 19 spaces.

Although conducting a parking study was out of scope of this review, a previous parking study was conducted by Watt Consulting Group in August 2017 for a 16-unit townhouse development in the District of Saanich. The Saanich development is similar in the number and type of units, geographic context, and site characteristics (on a transit route, near to cycle facilities, and a similar walk score of 66). During the study, observations were conducted of the parking demand at several representative townhouse sites. The observations suggest an average parking demand of 0.85 vehicles per unit (see summary in **Table 3**). Applied to the proposed developments, this rate would result in a peak parking demand of 14 spaces.

TABLE 3: PARKING DEMAND OBSERVATIONS (SAANICH PARKING STUDY)

Site	Units	Parking Demand (vehicles / unit)
2633 Shelbourne Street	8	0.75
1827 Fairfield Road	4	1.00
229 Ontario Street	13	0.69
242 Ontario Street	9	0.67
245 Ontario Street	9	1.22
290 Superior Street	7	0.71
130 Niagara Street	14	0.93
	Average	**0.85**

6.4 Parking Demand Reduction

The developer is proposing to reduce the parking demand by prioritizing alternative modes of transportation. In addition to the secure bicycle parking, the developer is proposing to provide a Modo carshare membership to each unit and will include a dedicated Modo carshare vehicle parking space. Access to carsharing programs have been shown to reduce vehicle ownership and lower parking demand. Several municipalities have introduced regulations allowing a reduction in parking requirements where carshare vehicles are easily accessible, including the Cities of Vancouver, New Westminster, Coquitlam, and Richmond. In previous studies where carshare memberships are provided and a carshare vehicle is easily accessible, it is Watt's experience that a 10-15% reduction in parking demand is expected.

7.0 SUMMARY & CONCLUSIONS

The proposed 6-unit two-bedroom townhouse at 937 Colville Road and 10-unit three-bedroom townhouse developments at 825 / 827 Lampson Street and 939 Colville Road in Esquimalt are not expected to incur a significant impact on the surrounding transportation network.

The proposed development will generate few vehicle trips volume of trips and provide minimal off-street parking. This is supported by:

- Pedestrian infrastructure and proximity to schools and commercial areas;
- Nearby transit stops servicing routes to downtown Esquimalt, downtown Victoria, and to the University of Victoria;
- Bike parking (secure and bike racks) and nearby access to Craigflower Road bicycle lanes and the E&N Rail Trail; and
- A dedicated Modo carshare parking space and Modo carshare membership for each unit.

There is adequate sightline distance for the proposed development accesses, however on-street parking should be restricted to provide sufficient sightline to the Lampson Street intersection.

Please contact me if there are any questions or comments at 778-313-1014 (ext 431). Thank you.

Sincerely,
Watt Consulting Group

Tom Baumgartner, M.Sc., P.Eng.
Transportation Engineer