



# 899 Esquimalt Road

## Transportation Impact Assessment

Final Report V02

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Prepared for  
Farzin Yadegari Architect Inc

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Project No.  
08-23-0055

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08-23-0055

Babak Nikbakhtan  
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Dear Babak:

**Re: 899 Esquimalt Road  
Final Report V02**

This report updates a previously prepared Transportation Impact Assessment (TIA) report for subject 899 Esquimalt Road site which was dated October 17, 2019. Changes from that report are revised unit (16 more condo units) and a revised parking space supply.

As presented within, Bunt's previous conclusions regarding parking space feasibility and traffic impacts remain consistent with the previous application.

Yours truly,  
**Bunt & Associates**



Jason Potter, M.Sc., PTP  
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# 1. INTRODUCTION

## 1.1 Study Scope and Objectives

Coastal Priority Property Ltd. is proposing to develop the properties at 899 Esquimalt Road and 896 Wollaston Street. The location of the site is at the intersection of Head Street in Esquimalt, BC and is shown in **Exhibit 1.1**.

The development is located in the centre of one of four commercial-mixed land use clusters in Esquimalt. 899 Esquimalt Road is currently a two-storey building with a convenience store at ground-level and residential above. 896 Wollaston Street is currently a single-family house.

The proposed development will be providing 82 residential condo units, three townhomes and a commercial space fronting Esquimalt Road.

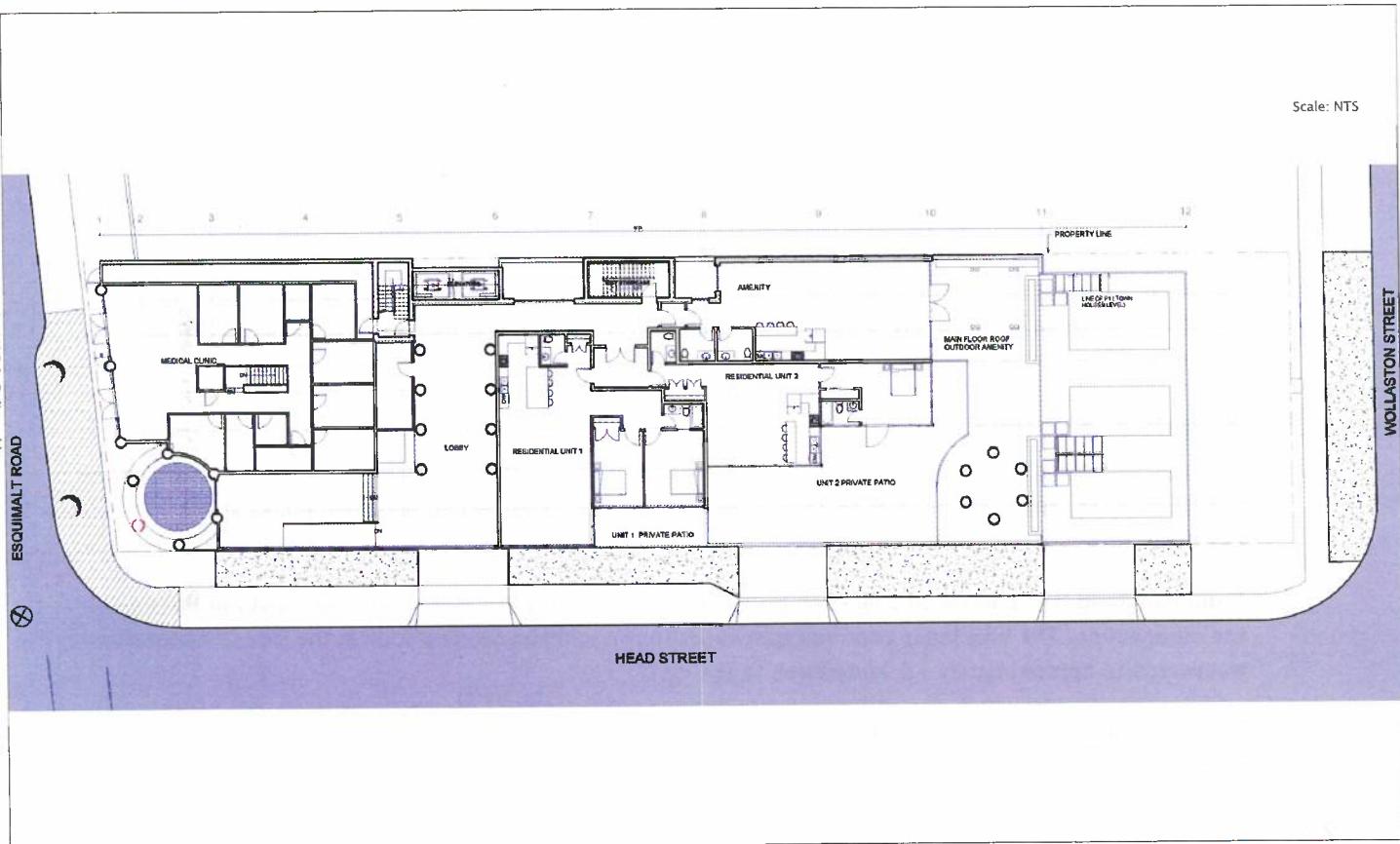
The purpose of this study is to:

- Evaluate the transportation impacts the proposed development has on the nearby road network;
- Review the development's parking and loading strategy and determine its suitability; and,
- Evaluate the proposed site accesses.

## 1.2 Development Details

The development will have a total of 82 residential condo units, three townhomes and a small commercial space of 4,095 square feet fronting Esquimalt Road.

The site plan for the main floor is provided in **Exhibit 1.2**. The site has significant grade changes along Head Street with Esquimalt Road being three storeys higher than Wollaston Street. Because of this grade difference the three levels of underground parking will be accessed from three separate driveways.



**Exhibit 1.2**  
**Site Plan**

899 Esquimalt Road TIA  
6211.01 October 2019



## 3. SITE PLAN DESIGN REVIEW

### 3.1 Vehicle Parking

The Esquimalt Parking Bylaw requires 1.3 parking spaces per dwelling in medium and high-density buildings and 2.0 parking spaces per townhouse. The parking requirement for commercial spaces is dependent on the specific land use. The tenant for the single commercial unit is currently unknown. For this report it was assumed that the tenant would fall under the 'retail sales of goods and services' category in the Parking Bylaw. As shown in Table 3.1, a total of 82 parking spaces are proposed whereas the minimum requirement is 128 spaces.

**Table 3.1: Esquimalt Parking Bylaw Requirements and Proposed Supply**

PARKING SPACE TYPE	BYLAW REQUIREMENT	PROPOSED SUPPLY	MET / NOT MET
<b>Total Parking Spaces</b>	1.3 spaces per condo x 82 condos = 107 spaces 2.0 spaces per townhouse x 3 townhouses = 6 spaces 1.0 space per 25 m <sup>2</sup> of commercial floor area x 380 m <sup>2</sup> = 15 spaces <b>Total = 128 spaces</b>	94 spaces	Not met. 34 spaces short of bylaw. Variance required.
<b>Disabled Persons Parking Spaces</b>	1 space per 50 required total spaces = 2 spaces	2 spaces	Meets requirements.
<b>Small Vehicle Parking Spaces</b>	Maximum of 50% of total required parking spaces = 53 spaces	51 spaces	Met for 50% of Bylaw required spaces, but not met for provided spaces. 50% of provided spaces equates to 47 small vehicle spaces which is 4 spaces above 50%.

The current development plan does not meet the Parking Bylaw requirements for total parking supply and small vehicle parking spaces.

The Parking Bylaw requires that 25% of the residential parking be reserved for visitors. This equates to a visitor parking supply requirement of 22 spaces out of the 86 residential parking spaces. The proposed supply for visitors also represents a variance.

### 3.2 Bicycle Parking

The development offers 84 indoor bicycle spaces, this equates to one space per residential unit plus 15 additional spaces which could be used by commercial employees or residents.

It is anticipated that a visitor parking supply rate of 0.1 spaces per dwelling will be able to meet the visitor parking demand in the proposed development. A visitor parking supply rate of 0.1 spaces per dwelling equates to a visitor parking supply of 9 spaces. The development exceeds this with 10 visitor parking spaces.

The P1 level with 16 spaces will be available for the commercial component of the development which is anticipated to be a medical clinic. This exceeds the Bylaw requirement of 15 spaces for the commercial component. Eight of these 16 spaces are reserved for the Clinic; the remaining 8 spaces can be used by either clinic or residential visitors. Peak residential visitor demand is anticipated to be approximately seven parking spaces and to not coincide with the clinic's peak demand period. The proposed 16 spaces are therefore anticipated to meet peak period parking demands for both the clinic and residential visitors. Proposed parking spaces for residents meet Bylaw requirements.

A comparison between the Esquimalt Parking Bylaw requirements and the developer's proposed supply is shown in **Table 3.2**. The proposed parking supply is anticipated to exceed the anticipated parking demands. Bunt recommends that the strata monitor the visitor parking occupancy and repurpose the parking spaces if there is determined to be an oversupply.

**Table 3.2: Esquimalt Parking Bylaw Requirements and Proposed Supply**

PARKING TYPE	BYLAW REQUIREMENT	PROPOSED SUPPLY	COMMENT
Residential – Resident <sup>1</sup>	86 spaces	78 spaces	Variance Required.
Residential – Visitor <sup>2</sup>	27 spaces	10 spaces which are shared with commercial visitors. <sup>3</sup>	Below Bylaw requirement but exceeds anticipated demand.
Commercial	15 spaces	6 reserved for clinic, plus 2 for ambulances, plus 10 visitor spaces which are shared with residential visitors.	Meets or exceeds Bylaw requirement with consideration of shared use.
<b>TOTAL</b>	<b>128 SPACES</b>	<b>94 SPACES</b>	Below Bylaw requirement but meets anticipated peak demand.

Note 1: 75% of residential parking requirement

Note 2: 25% of residential parking requirement

Note 3: Includes 2 Accessible parking spaces

## 4. TRAFFIC OPERATIONS

### 4.1 Traffic Operations Assessment Methodology

The traffic operations were assessed at the Esquimalt Road / Head Street intersection for the PM peak hour. The analysis was completed for the existing conditions (2017) and for the 2028 horizon year (ten years after development completion). The 2028 analysis includes the vehicle trips generated by the proposed development and background traffic.

The operations of study intersections were assessed using the methods outlined in the 2000 Highway Capacity Manual (HCM), using the Synchro 9 analysis software. The traffic operations were assessed using the performance measures of Level of Service (LOS) and volume-to-capacity (V/C) ratio.

The LOS rating is based on average vehicle delay and ranges from "A" to "F" based on the quality of operation at the intersection. LOS "A" represents optimal, minimal delay conditions while a LOS "F" represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average intersection delay per vehicle. A delay of less than 10 seconds receive an LOS A whereas delays greater than 50 seconds receive an LOS F. In downtown and Town Centre contexts, during peak demand periods, delays greater than 50 seconds (LOS F) are common.

The volume to capacity (V/C) ratio of an intersection represents the ratio between the demand volume and the available capacity. A V/C ratio less than 0.85 indicates that there is sufficient capacity to accommodate demands and generally represents reasonable traffic conditions in suburban settings. A V/C value between 0.85 and 0.95 indicates an intersection is approaching practical capacity; a V/C ratio over 0.95 indicates that traffic demands are close to exceeding the available capacity, resulting in saturated conditions. A V/C ratio over 1.0 indicates a congested intersection where drivers may have to wait through multiple signal cycles. In urban downtown and town centre contexts, during peak demand periods, V/C ratios over 0.90 and even 1.0 are common.

### 4.2 Existing Conditions

Bunt conducted a traffic count at the Esquimalt Road / Head Street intersection on Wednesday April 19<sup>th</sup> from 3:30 to 5:30 PM. During this time period, 4:15PM to 5:15PM was identified as the peak hour.

Bunt observed approximately 1250 westbound vehicles and approximately 1050 eastbound vehicles during the weekday PM peak hour on Esquimalt Road adjacent to the development site.

As shown in **Exhibit 4.1**, there are minimal traffic operations concerns with the existing conditions. The two vehicle movements of potential concern are:

- The westbound through lane is nearing its theoretical capacity. Westbound through vehicles have an average queuing time of approximately 45 seconds. The vehicle queue is cleared each traffic signal cycle.

use from Commercial use represents an approximate 15% decrease to the site's overall trips while the new 16 units are anticipated to counter this decrease. Also it is noted that the reduced parking supply is anticipated to further reduce vehicle trip rates. Therefore, the traffic operation results are considered to remain relevant and conservative.

The new vehicle trips were assigned travel directions based on the existing travel patterns at the Esquimalt Road / Head Street intersection. From this data it is estimated that 50% of the traffic into the site is coming from the north, 40% from the east and 10% from the west. Leaving the site, 60% of traffic is going to the north, 35% is going east and 5% is going west.

#### 4.3.3 Traffic Operations Results

As shown in **Exhibit 4.2**, there the proposed development has minimal impact on the traffic operations of the Esquimalt Road / Head Street intersection. The vehicle queuing times and volume/capacity ratios remain relatively unchanged compared to the existing traffic operations. The westbound through movement and the southbound left-turn movement remain the two critical movements. The development does not add any traffic volumes to either of these movements.

### 4.4 Potential Traffic Mitigation

Bunt tested the impact of adding a protected southbound left turn phase to the signal (protected/permissive) to address the existing traffic delays for the southbound left and westbound through movement. As shown in **Exhibit 4.3**, this is shown to not result in significant improvements to the intersection's operations. The additional phase results in a 120 second cycle length which is longer than desired. In addition, operations for the intersection as a whole do not improve and deterioration is observed for the northbound movements. As such and in recognition that the proposed development does not exacerbate the existing condition we do not recommend alteration to the intersection's signalization.

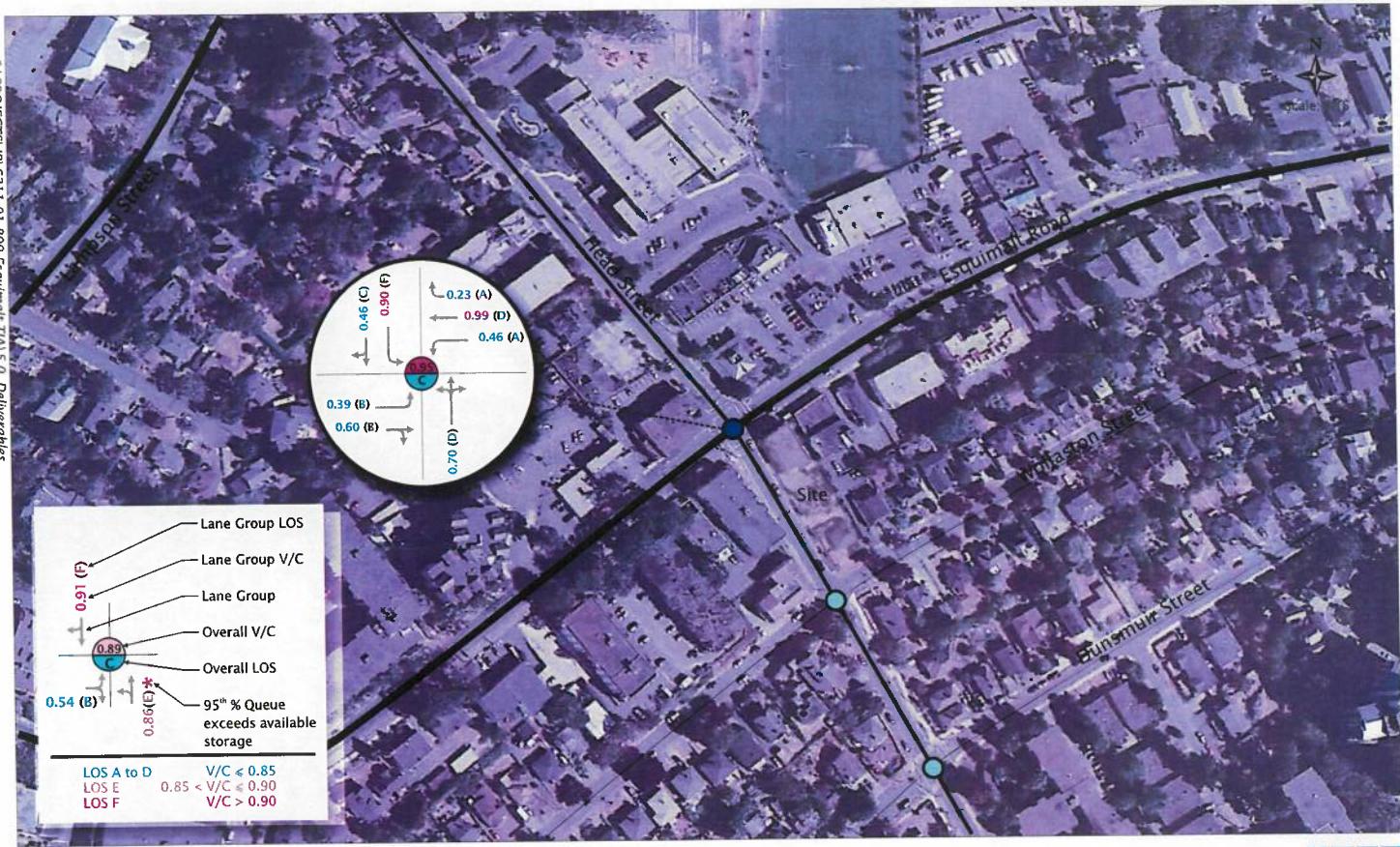


Exhibit 4.2

6211.01 899 Esquimalt Road TIA  
May 2017

bunt  
& associates

## 5. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

- The proposed new residential development at 899 Esquimalt Road has a total of 85 residential units and 4,095 square feet of commercial space.
- The site is well serviced with transit and is within walking range to a wide variety of commercial and service amenities.
- The development offers 84 indoor bicycle spaces, this equates to one space per residential unit plus 15 additional spaces which could be used by commercial employees or residents.
- The development will have three levels of underground parking with each level accessed from a separate driveway.
- The Parking Bylaw requires 113 parking spaces for the residential unit and 15 parking spaces for the 4,095 square feet of commercial space. This equates to a minimum parking requirement of 128 spaces for this project.
- The development plan offers 94 parking spaces which represents a parking variance of 34 spaces.
- With shared parking opportunities between commercial and residential visitors it is Bunt's view that the development's proposed parking supply will meet peak period demands.
- The site is expected to generate approximately 45 total vehicle trips per weekday PM peak hour. This is considered to be a negligible amount traffic considering Esquimalt Road currently has approximately 2,300 vehicles during the PM peak hour.
- The existing Esquimalt Road / Head Street intersection is near capacity, but within an acceptable range for an urban intersection during the PM peak hour.
- The proposed development is anticipated to have minimal impact to vehicle operations at the Esquimalt Road / Head Street intersection.

### 5.2 Recommendations

- Bunt recommends that signage be erected at the three driveway entrances indicating that P1 is for commercial and residential parking whereas P2 and P3 are reserved for residents.
- Bunt recommends the development convert four small vehicle spaces into regular sized spaces.