TRANSPORTATION PLANNERS AND ENGINEERS

bunt & associates

1468 Vancouver Street

Transportation Impact Assessment

Draft Report

Prepared for

Townline

Date

October 5, 2020

Project No.

04-18-0271

October 5, 2020
04-18-0271

Alex Warren
Assistant Development Manager
Townline
1212 – 450 SW Marine Drive
Vancouver, BC
V5X 0C3

Dear Alex:

Re: 1468 Vancouver Street, Transportation Impact Assessment
Draft Report

Bunt & Associates Engineering Ltd. (Bunt) has completed our Transportation Impact Assessment (TIA) for the proposed residential and commercial development at1468 Vancouver Street, Victoria, BC. Our Draft Report is provided herewith, it addresses the potential transportation impacts related to the proposed development.

We trust that our input with this TIA report will be of assistance. Please do not hesitate to contact us should you have any questions.

Best regards,
Bunt & Associates

Jason Potter, M.Sc. PTP
Senior Transportation Planner / Associate

CORPORATE AUTHORIZATION

Prepared By: Jason Potter, PTP
Professional Transportation Planner

Bunt & Associates Engineering Ltd.
Suite 530, 645 Fort Street
Victoria, BC V8W 1G2
Canada

Reviewed By: Simon Button, P.Eng

Telephone: +1 250 592 6122

Date: October 5, 2020
Project No. 04-18-0271
Status: Draft

This document was prepared by Bunt & Associates for the benefit of the Client to whom it is addressed. The copyright and ownership of the report rests with Bunt & Associates. The information and data in the report reflects Bunt & Associates' best professional judgment in light of the knowledge and information available to Bunt & Associates at the time of preparation. Except as required by law, this report and the information and data contained are to be treated as confidential and may be used and relied upon only by the client, its officers and employees. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Bunt & Associates accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY I
1. INTRODUCTION 1
1.1 Study Purpose & Objectives 1
1.2 Proposed Development 3
2. EXISTING CONDITIONS 5
2.1 Land Use 5
2.2 Existing Transportation Network 5
2.2.1 Road Network 5
2.2.2 Transit Network 5
2.2.3 Cycling & Pedestrian Networks 5
2.3 Data Collection 6
2.3.1 Traffic Data Collection Program 6
2.4 Existing Traffic Operations 6
2.4.1 Performance Thresholds 6
2.4.2 Existing Operational Analysis Results 7
3. FUTURE TRAFFIC CONDITIONS 12
3.1 Traffic Forecasts 12
3.1.1 Site Traffic 12
3.1.2 Total Traffic 13
3.1.3 Summary of Traffic Impacts & Recommended Mitigations 13
4. SITE PLAN DESIGN REVIEW 17
4.1 Site Access Design 17
4.2 Parking Supply 17
4.2.1 Vehicle Parking 17
4.2.2 Bicycle Parking 18
4.3 Service Vehicle Operations 18
5. TDM & ACTIVE MODES 19
5.1 Transportation Demand Management 19
5.2 Recommended TDM Measures for Site 19
5.2.1 Marketing Materials & Transportation Information 19
5.2.2 Specialized Parking 20
5.2.3 Bicycle Parking 20

6. CONCLUSIONS & RECOMMENDATIONS 20
6.1 Conclusions 20
6.2 Recommendations 21

EXHIBITS

Exhibit 1.1: Site Location 2
Exhibit 1.2: Site Plan 4
Exhibit 2.1: Existing Laning & Traffic Control 8
Exhibit 2.2: Transit Routes & Stops 9
Exhibit 2.3: 2018 PM Peak Hour Vehicle Traffic Volumes 10
Exhibit 2.4: 2018 PM Peak Hour Traffic Operations 11
Exhibit 3.1: Site Traffic Forecasts 14
Exhibit 3.2: Total PM Peak Hour Vehicle Traffic Volumes 15
Exhibit 3.3: Total PM Peak Hour Traffic Operations 16

TABLES

Table 1.1: Proposed Land Uses 3
Table 2.1: Intersection Level of Service Thresholds 6
Table 3.1: PM Peak Hour Site Trip Generations 12
Table 3.2: Assumed Trip Distribution 13
Table 4.1: Vehicle Parking Supply Requirement & Provision 17
Table 4.2: Bicycle Parking Supply Requirement & Provision 18

EXECUTIVE SUMMARY

Townline proposes the development of a 15 storey, 121 rental residential unit building with 312 m^2 of ground level commercial space at 975, 983 Pandora Avenue and 1468 Vancouver Street, Victoria, BC.

The proposed residential typology where 54 of the 121 units will be 3, 4 or 5-bedroom co-living pods is a unique residential type with little vehicle ownership, parking demand or traffic generation comparative data available. Our research of this, growing in popularity, living design suggests residents are likely to be young professionals, new to Victoria and seeking shorter term rentals. Based on this information it is our belief that these units will have more people per typical residential units, but the vehicle ownership rates will be lower than average resulting in parking demands that are anticipated to be similar to Bylaw requirements.

The site is currently occupied with a Seventh Day Adventist Church, and a two-level office and retail building. Existing conditions traffic analysis using the Synchro traffic model indicates that the surrounding study area intersections operate within operational capacity thresholds during the weekday PM peak hour period.

Based on the proposed parking supply the proposed development is anticipated to generate approximately 50-60 vehicle trips (inbound and outbound combined) during the weekday PM peak hour, but likely less than this given its downtown location with shops and services within walking and cycling distance and good transit access and the anticipated resident demographic.

Our analysis indicates that the proposed development will have minimal impact to the adjacent road network. Most vehicle trips generated by the development will travel through signalized intersections that are currently operating well within operational capacity thresholds.

The proposed supply of 118 parking spaces meets the City of Victoria Zoning Bylaw requirements and is considered appropriate for this development.

Townline will be exceeding Victoria Bylaw bicycle parking requirements with 240 Long-term bicycle spaces and 14 Short-term spaces.

The proposed higher-than average density residential tower in the downtown area is a progressive step toward the use of more sustainable transportation modes. Residents living downtown, in close proximity to amenities and services typically make more trips by walking, cycling and transit than residents living in suburban or lower density areas.

Townline will provide to all new residents of the building a local area Transportation Information package identifying area bike routes, transit routes and stops, car share vehicles and other material designed to encourage residents to consider travel modes other than private vehicle trips.

Townline is also encouraged to provide electric charging abilities to a portion of the development's vehicle parking spaces as well as providing electric charging abilities to the proposed bicycle storage rooms.

1. INTRODUCTION

1.1 Study Purpose & Objectives

Townline is proposing the development of a 15-storey residential rental building in downtown Victoria at 975, 983 Pandora Avenue and 1468 Vancouver Street. The project will feature 121 residential rental units with 365 square meters of ground floor neighbourhood serving, commercial space.

Bunt & Associates was retained by Townline to assess the traffic and parking implications of the proposed development. This Transportation Impact Assessment (TIA) study will accompany Townline's rezoning application. The purpose of this study is to:

- Evaluate the transportation impacts of the proposed development on the adjacent road network;
- Review the development's parking strategy;
- Evaluate the proposed site plan, its proposed access and internal vehicle circulation; and,
- Present Transportation Demand Management (TDM) strategies for lowering the site's traffic and parking demands.

The location of the proposed development is illustrated in **Exhibit 1.1**.

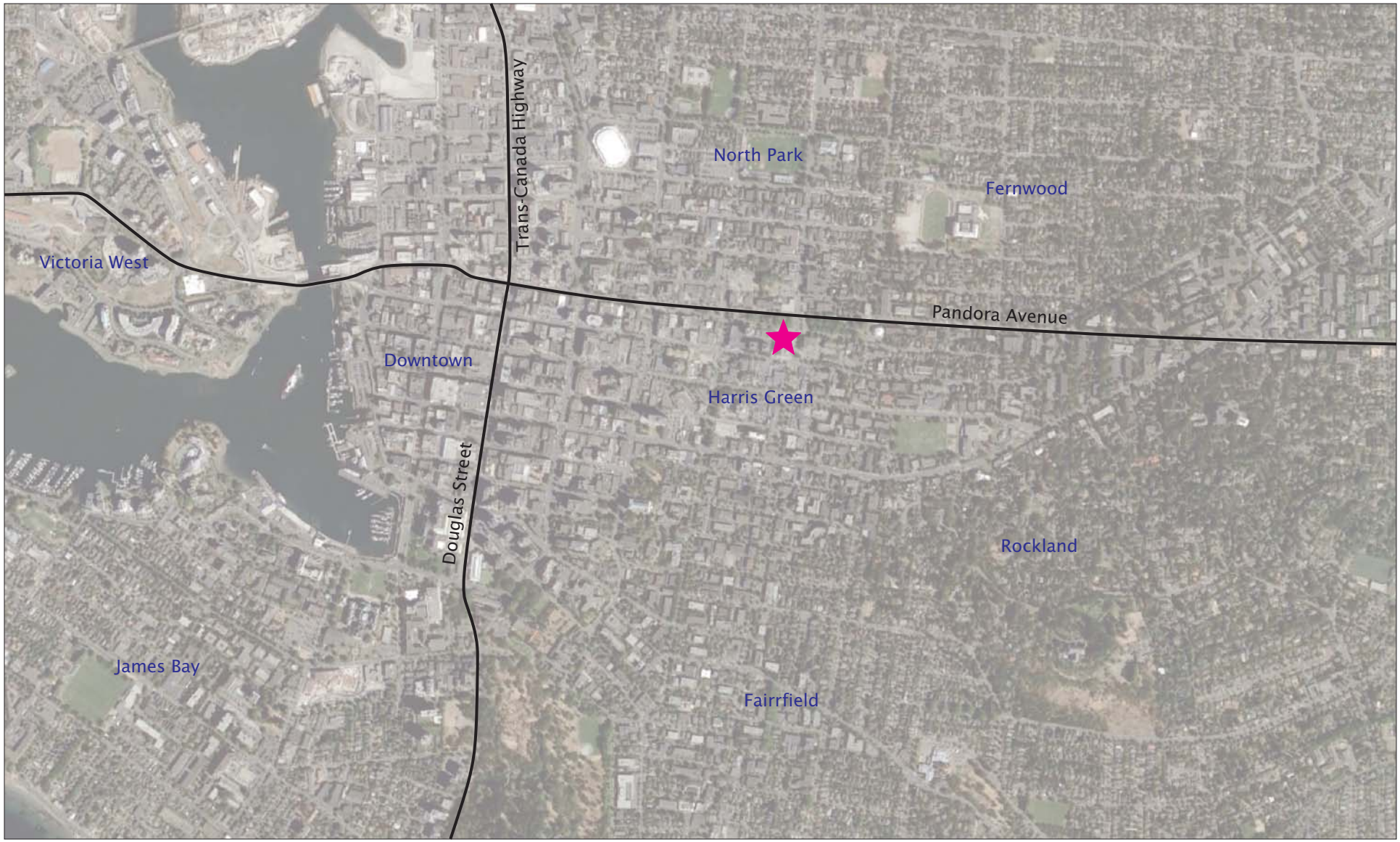


Exhibit 1.1

Site Context

1468 Vancouver Street
April 2020

04-18-0271

bunt & associates

1.2 Proposed Development

The proposed development is summarized in **Table 1.1**.

Table 1.1: Proposed Land Uses

LAND USE	DENSITY/ UNITS
Apartment	121 units
Commercial	365 m^2

54 of the 121 residential units are designed as 3, 4 or 5 bedroom co-living pods. These units are described by the developer as follows:

> *"Co-living pods are the evolution of Townline's vision in creating affordable housing choices that do not sacrifice residents' lifestyle preferences, building location, and building amenities. A single co-living pod, will have either 3, 4, or 5 bedrooms which share a common kitchen and eating area. The bedrooms will be single-occupancy only and will be rented out fully furnished with a murphy bed; the space can be quickly converted from a bedroom to a small living space to relax and/or spend time with friends. The various amenity spaces throughout the building will serve as larger breakout spaces and are designed to encourage socializing outside of one's co-living pod."*

The building will have organized social events available to all units, such as beer tastings and movie nights. As such the proposed development is anticipated to offer a social atmosphere attractive to young professionals newly arriving in Victoria.

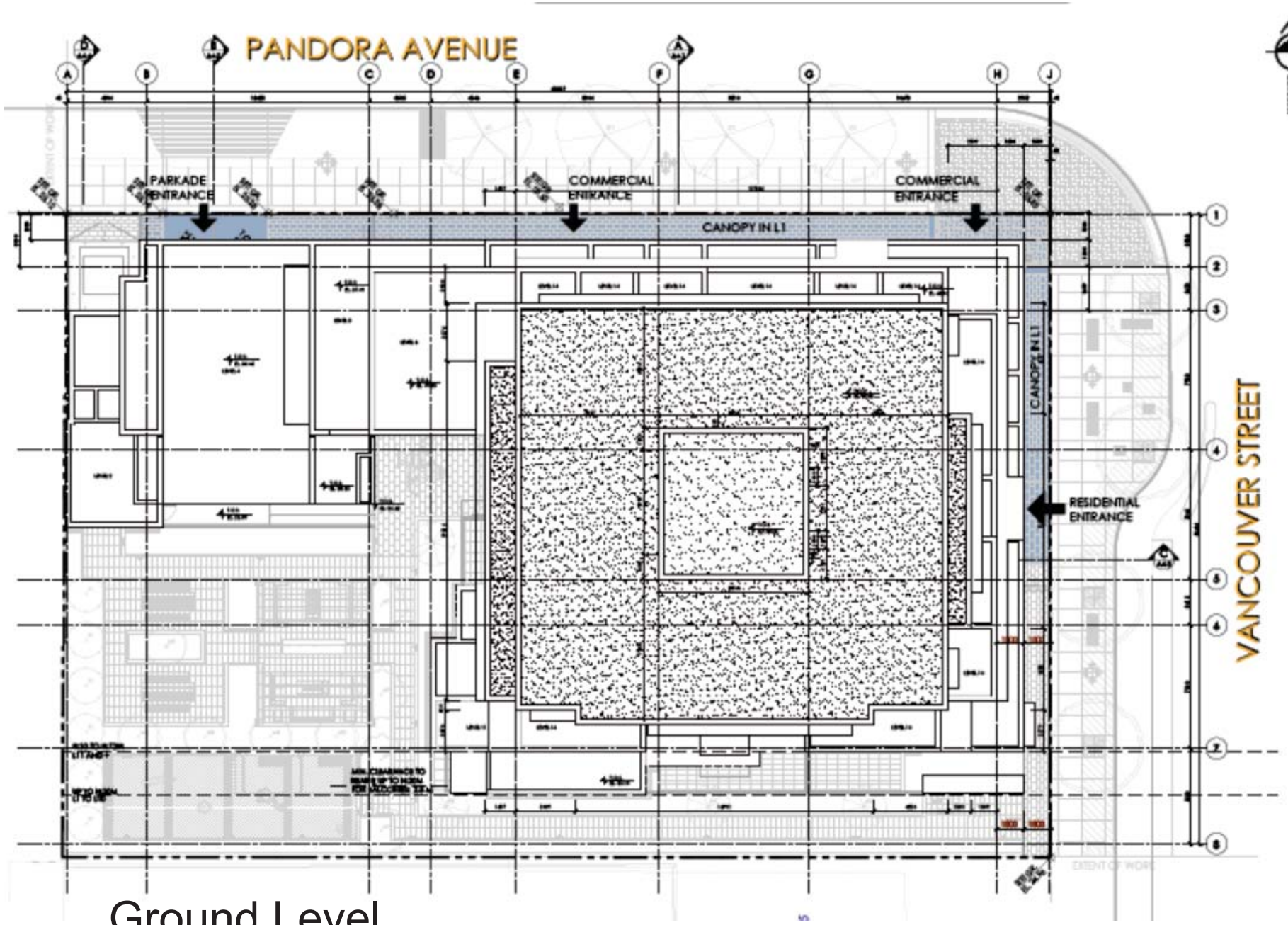
The building's 365m^2 ground level commercial space is intended to be comprised of multiple small-scale neighborhood serving retail.

The development will be supported with 118 parking spaces located in a three-level below ground parkade, 101 for residents, 12 for residential visitors, and 5 spaces for employee/customer use for the commercial units.

The vehicle access to the parkade is on the Pandora Avenue Frontage Road on the north edge of the site.

The site is currently zoned as CA-43 (Pandora Harris Green District).

The proposed site plan (level 1) is shown in **Exhibit 1.2**.



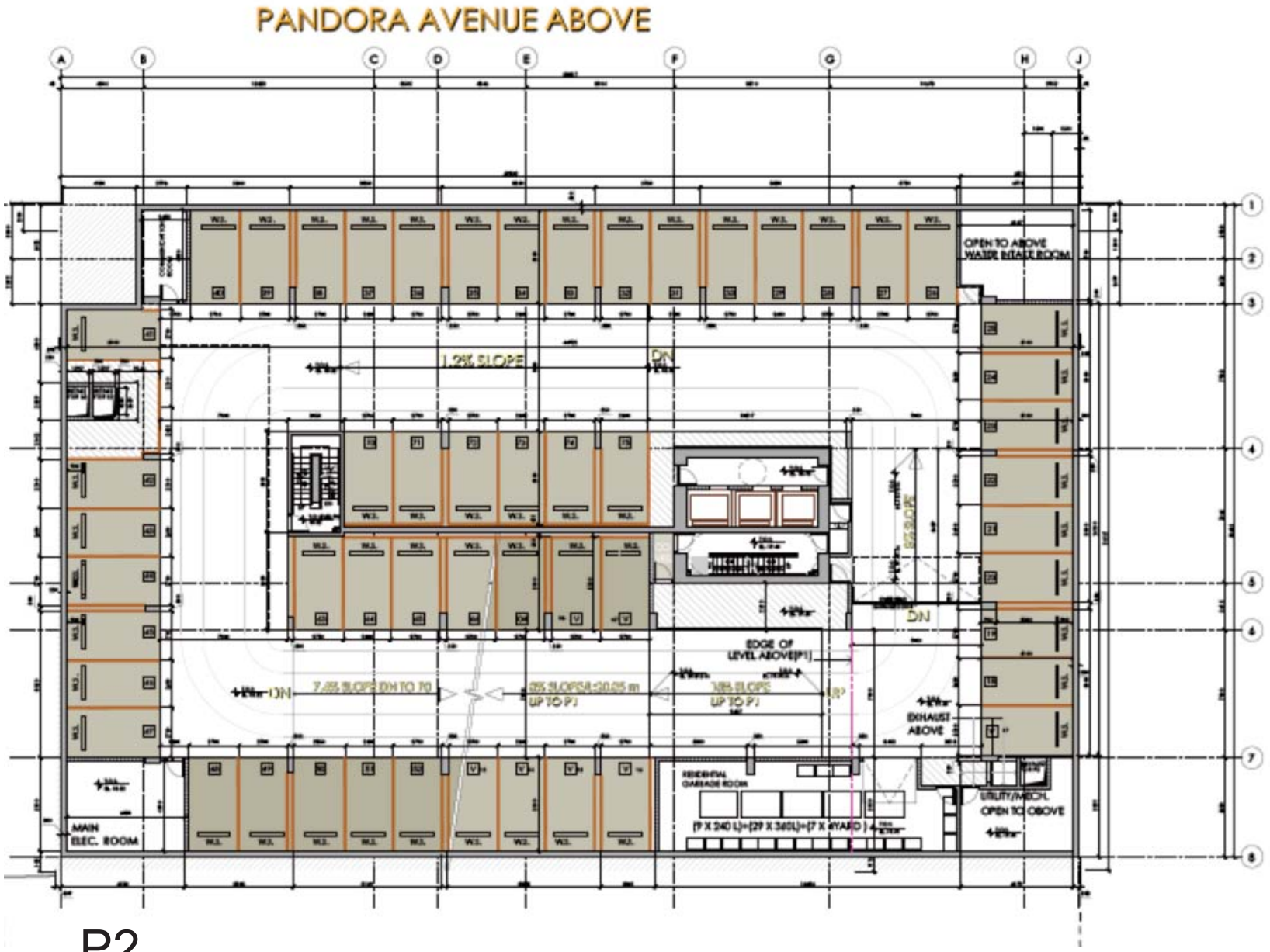
Ground Level

Exhibit 1.2a
Site Plan

1468 Vancouver Street
October 2020

04-18-0271

bunt & associates



P2

Exhibit 1.2b
Site Plan

1468 Vancouver Street
October 2020

04-18-0271

bunt & associates

2. EXISTING CONDITIONS

2.1 Land Use

983 Pandora Avenue is currently occupied with a Seventh Day Adventist Church, while 975 Pandora Avenue is occupied with a two-level office and retail building. The 983 Pandora Avenue site has no vehicular access, while 975 Pandora Avenue has a parking lot which is accessed from the Frontage Road.

2.2 Existing Transportation Network

2.2.1 Road Network

The site is located approximately 400 metres east of Victoria's downtown area in the Harris Green neighbourhood. The study area, the adjacent road network and its laning configuration are illustrated in **Exhibit 2.1** as confirmed in consultation with City of Victoria Engineering Department (Transportation) Staff.

The Frontage Road that is located north of the site operates as a one-way eastbound road for the majority of the site's frontage. It operates under stop control as it approaches Vancouver Street.

Pandora Avenue, north of the Frontage Road is a one-way westbound street with a two-way cycle track on its north edge. Its intersection with Vancouver Street is operated with a traffic signal. West of the signal is a slip lane connecting Pandora Avenue and the Frontage Road.

Vancouver Street is a two-way north/south street. It is classified as a cycling route. Current City of Victoria plans for expansion of its' AAA cycling network include protected bike lanes along the site's Vancouver Street frontage.

2.2.2 Transit Network

The site is well serviced by public transit. There are bus stops along Pandora Avenue approximately 140 m from the site that services westbound passengers and a bus stop approximately 120m south of the site on Johnson Street for eastbound passengers. There are north/ south bus routes on both Quadra Street to the west and Cook Street to the east. Both Quadra Street and Cook Street are approximately 200m from the proposed development site. The area transit network is presented in **Exhibit 2.2**.

2.2.3 Cycling & Pedestrian Networks

The site is well connected to both walking and cycling networks. It is connected to Victoria's regional cycling network through the Pandora Avenue cycle track located north of the site and Vancouver Street a north/south shared bike route which is located immediately east of the site.

All streets surrounding the development site have sidewalks as well as controlled pedestrian crossings at major intersections.

The location is within a walking distance of nearly all typical amenities and services, and daily errands do not require a car. The location receives a Walk Score of 99 out of 100, placing it in Walk Score's "walker's paradise" category. Walk Score is an on-line tool that assesses the walkability of a location based on distances to a wide variety of amenities and services.

2.3 Data Collection

2.3.1 Traffic Data Collection Program

Traffic spot counts were conducted by Bunt on Wednesday August 1st, 2018. These volumes were used to confirm traffic data provided by the City for the intersection of Vancouver Street and Pandora Avenue, as well as to provide a baseline for the Vancouver Street and Frontage Road intersection.

The weekday PM peak hour traffic volumes obtained through this assembly of intersection traffic count data are presented in **Exhibit 2.3**.

2.4 Existing Traffic Operations

2.4.1 Performance Thresholds

The existing operations of study area intersections and access points 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.

Table 2.1 below summarizes the LOS thresholds for the five Levels of Service, for both signalized and unsignalized intersections.

Table 2.1: Intersection Level of Service Thresholds

LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	
	SIGNALIZED	UNSIGNALIZED
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: Highway Capacity Manual

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 very congested intersection where drivers may have to wait through several signal cycles. In downtown and Town Centre contexts, during peak demand periods, V/C ratios over 0.90 and even 1.0 are not uncommon.

The performance thresholds that were used to trigger consideration of roadway or traffic control improvements employed in this study are listed below:

Signalized Intersections:

- Overall intersection Level of Service = LOS D or better;
- Overall intersection V/C ratio = 0.85 or less;
- Individual movement Level of Service = LOS E or better; and,
- Individual movement V/C ratio = 0.90 or less.

Unsignalized Intersections:

- Individual movement Level of Service = LOS E or better, unless the volume is very low in which case LOS F is acceptable.

In interpreting of the analysis results, note that the HCM methodology reports performance differently for various types of intersection traffic control. In this report, the performance reporting convention is as follows:

- For signalized intersections: HCM 2000 output for overall LOS and V/C as well as individual movement LOS and V/C is reported. 95th Percentile Queues are reported as estimated by Synchro; and,

- For unsignalized two-way stop-controlled intersections: HCM 2000 LOS and V/C output is reported just for individual lanes as the HCM methodology does not report overall performance.

The performance reporting conventions noted above have been consistently applied throughout this document.

All signalized intersections were coded with signal timings provided by the City.

2.4.2 Existing Operational Analysis Results

As shown in **Exhibit 2.4** all intersections currently operate within described operational thresholds for the weekday PM peak hour period.

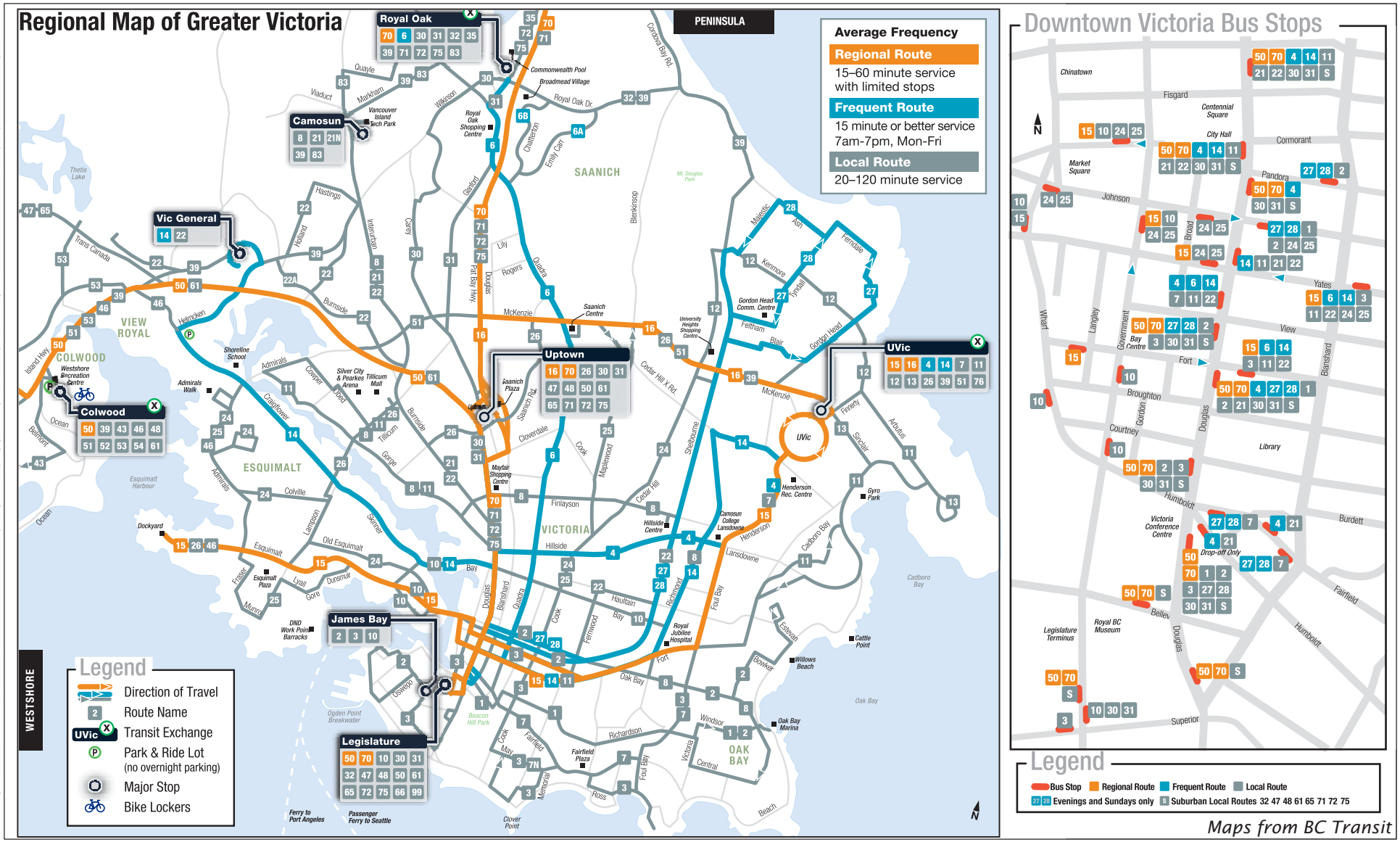
S:\PROJECTS\P\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180802_04-18-0271_Laning_v01.cdr

Exhibit 2.1

Existing Laning & Traffic Control

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates



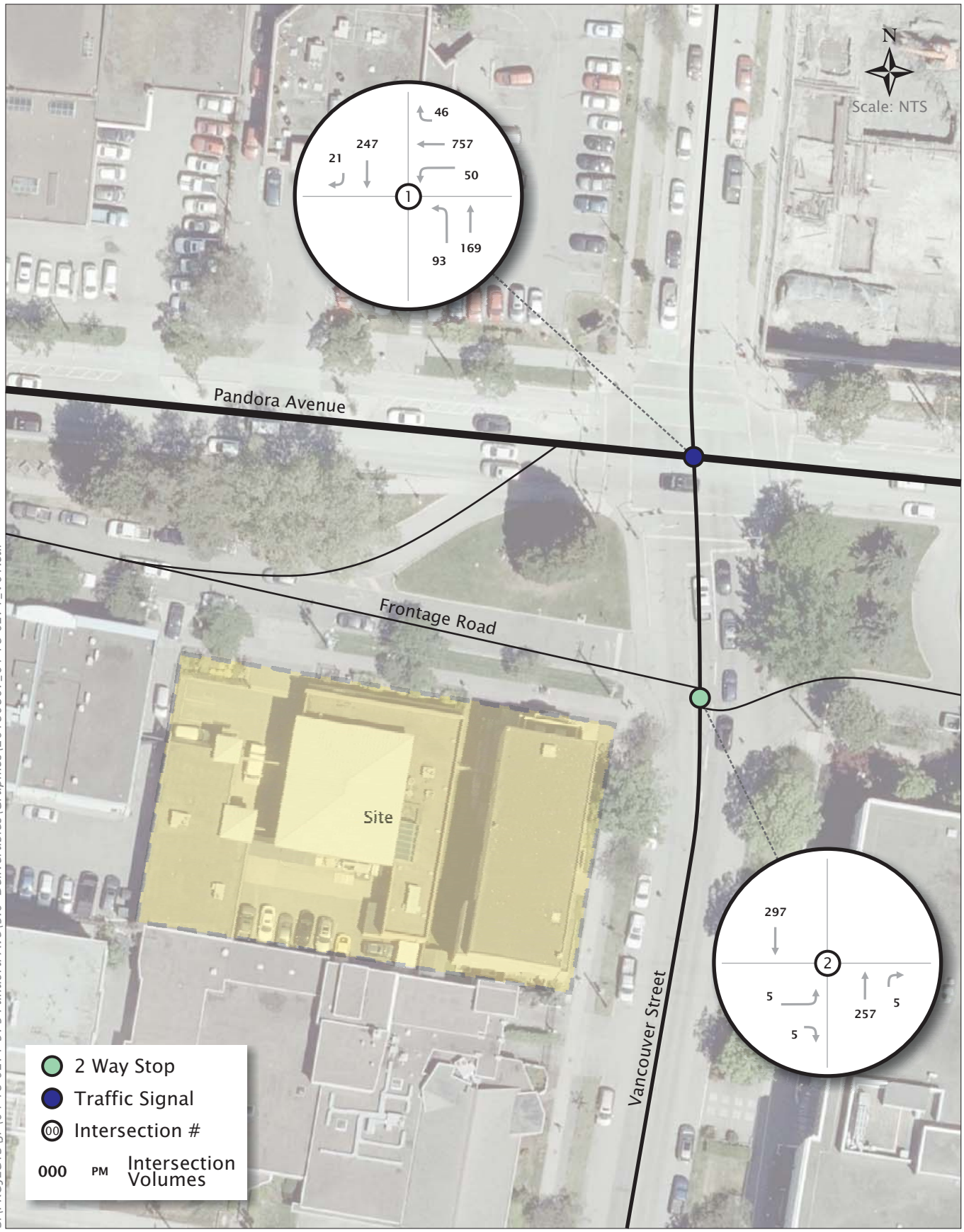
S:\PROJECTS\P\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180813_04-18-0271_Transit_V01.cdr

Exhibit 2.2

Transit Routes & Stops

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates



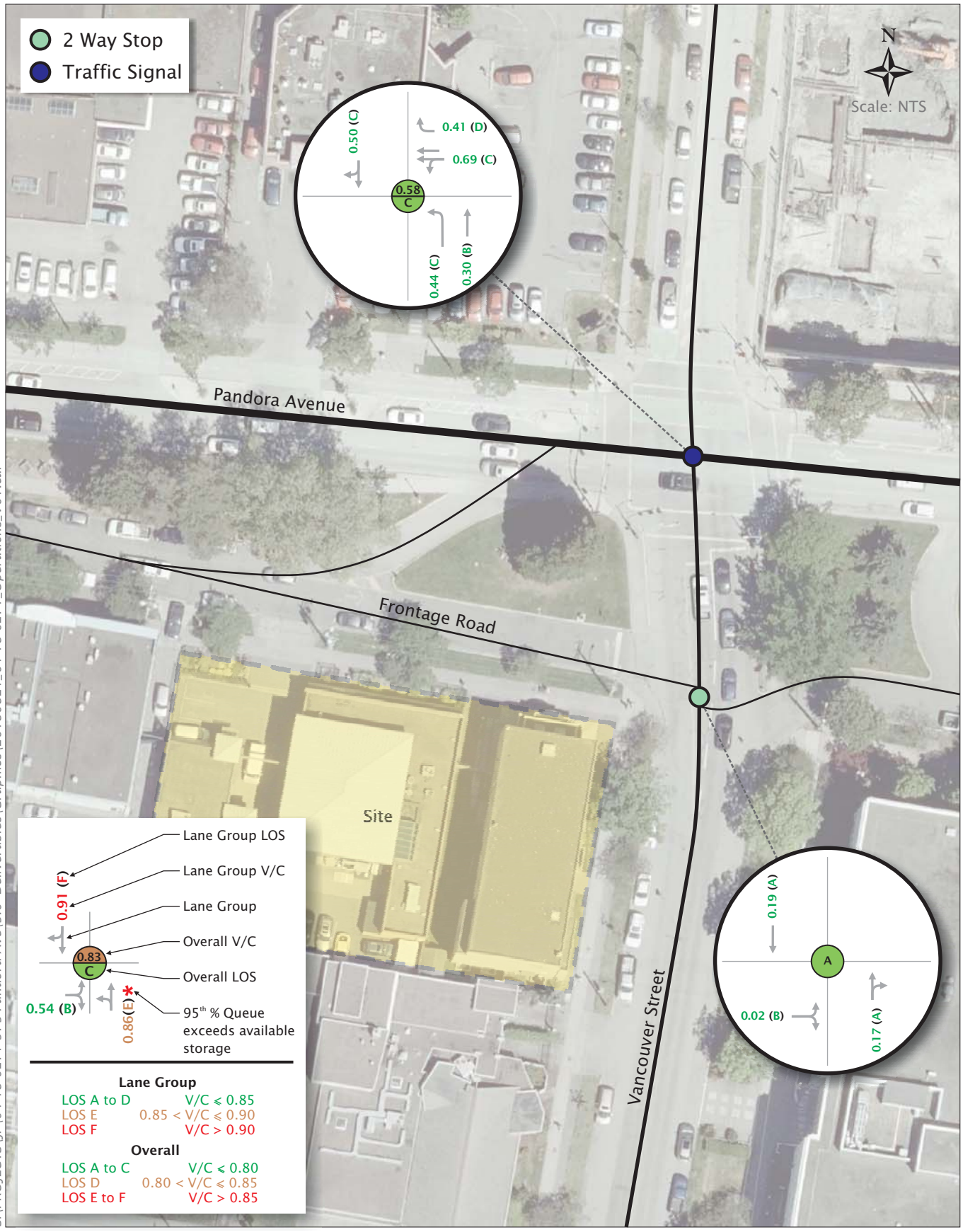
S:\PROJECTS\JP\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180807_04-18-0271_V01.cdr

Exhibit 2.3

Existing PM Peak Hour Vehicle Traffic Volumes

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates



S:\PROJECTS\JP\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180821_04-18-0271_Operations_V01.cdr

Exhibit 2.4

Existing PM Peak Hour Traffic Operations

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates

3. FUTURE TRAFFIC CONDITIONS

3.1 Traffic Forecasts

3.1.1 Site Traffic

Trip Generation

The vehicle trip generation calculation for the proposed development has been based on trip rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

For the proposed development, the vehicle trip generation is summarized in **Table 3.1** below:

Table 3.1: PM Peak Hour Site Trip Generations

USE	SIZE (SF OR UNITS)	RATE (PER 1K SF OR UNIT)	SOURCE	% IN	% OUT	TRIPS IN	TRIPS OUT	TOTAL TRIPS
Residential	121	0.36	ITE 222	70%	30%	30	13	43
Commercial	3,928	3.81	ITE 820	48%	52%	7	8	15
					TOTAL	37	21	58

For more urban context locations with residential and commercial uses within convenient walking and cycling distance and good public transit access, our experience at Bunt has been that the proportion of vehicle trips is reduced in favour of increase walking/cycling and transit trips. As mentioned previously, the 1468 Vancouver Street site in Downtown Victoria achieves a Walk Score of 99 "Walker's Paradise" rating. As such, it is our opinion that ITE Land Use Code 220 trip rates quite likely overstate the volume of vehicle traffic likely to be generated by the proposed development; the actual vehicle trip generation could well be only one-half to two-thirds the trip rates reported.

However, as a conservative measure for the traffic impact assessment of the project, no downward adjustment has been applied to the vehicle trip estimates. In addition, the traffic analysis used the 74 two-way trips, which was calculated from a previous development scheme for the site rather than 58 trips calculated for the current land mix. The impact of the additional trips is negligible and highlight the near indiscernible impact of the proposed development in terms of adjacent intersection traffic operations.

As an additional conservative measure the existing church and office/ retail buildings on 975 and 983 Pandora have not been deducted from the background traffic calculations. This is due to the small volume of traffic observed at the 975 Pandora parking lot access and the low number of vehicle trips anticipated to visit a church during the weekday PM peak hour period.

Trip Distribution & Assignment

Trips generated by the proposed development were assigned to the study area based largely on existing travel patterns observed for the area. Access to the site will come from the east/west frontage lane located north of the site. The distribution of site traffic is influenced by the east/west lane to the north of

the site being a one-way (eastbound) lane for the majority of the site frontage. The assumed site traffic distribution on the area lane and street system is presented in **Table 3.2** and illustrated in **Exhibit 3.1**.

Table 3.2: Assumed Trip Distribution

ROUTE	% OF TRIPS IN	% OF TRIPS OUT
Pandora Avenue from East	40	0
Pandora Avenue to West	0	40
Frontage Road from West	40	0
Vancouver Street to North	15	15
Vancouver Street to South	5	45
TOTAL	100%	100%

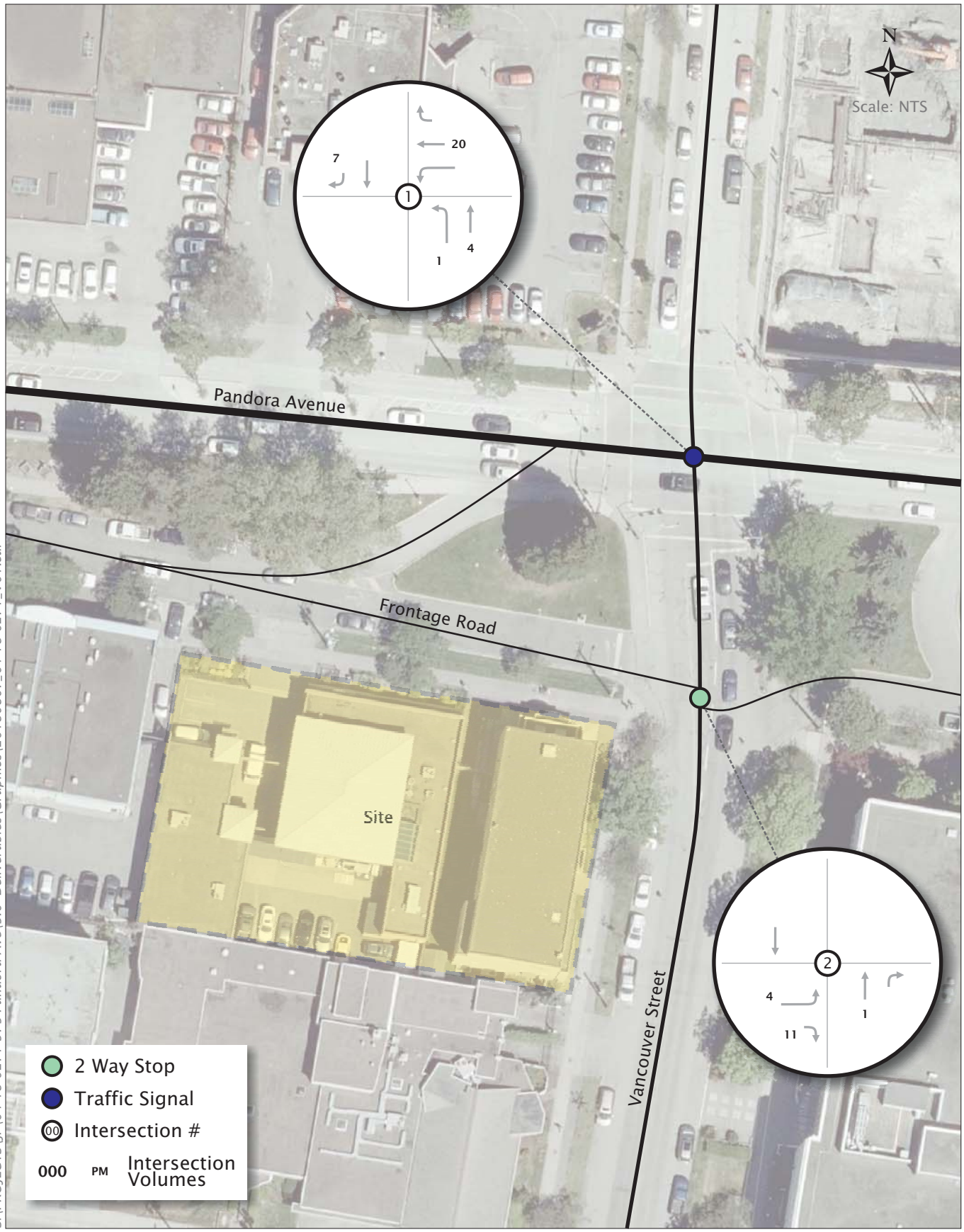
3.1.2 Total Traffic

Total future traffic consists of the proposed development's net new site-generated traffic volumes added to the forecasted background traffic volumes.

Exhibit 3.2 presents the forecasted future traffic volumes for the total PM peak hour scenario, and the traffic operations are presented in **Exhibit 3.3**.

3.1.3 Summary of Traffic Impacts & Recommended Mitigations

Our analysis indicates that the proposed development of 121 residential units and ground level commercial at 1468 Vancouver Street will have near negligible impact to the adjacent road network. The proposed development is a relatively low volume vehicle traffic generator in part due to its downtown location. Most vehicle trips generated by the development will travel through signalized intersections that are currently operating well within operational capacity thresholds.



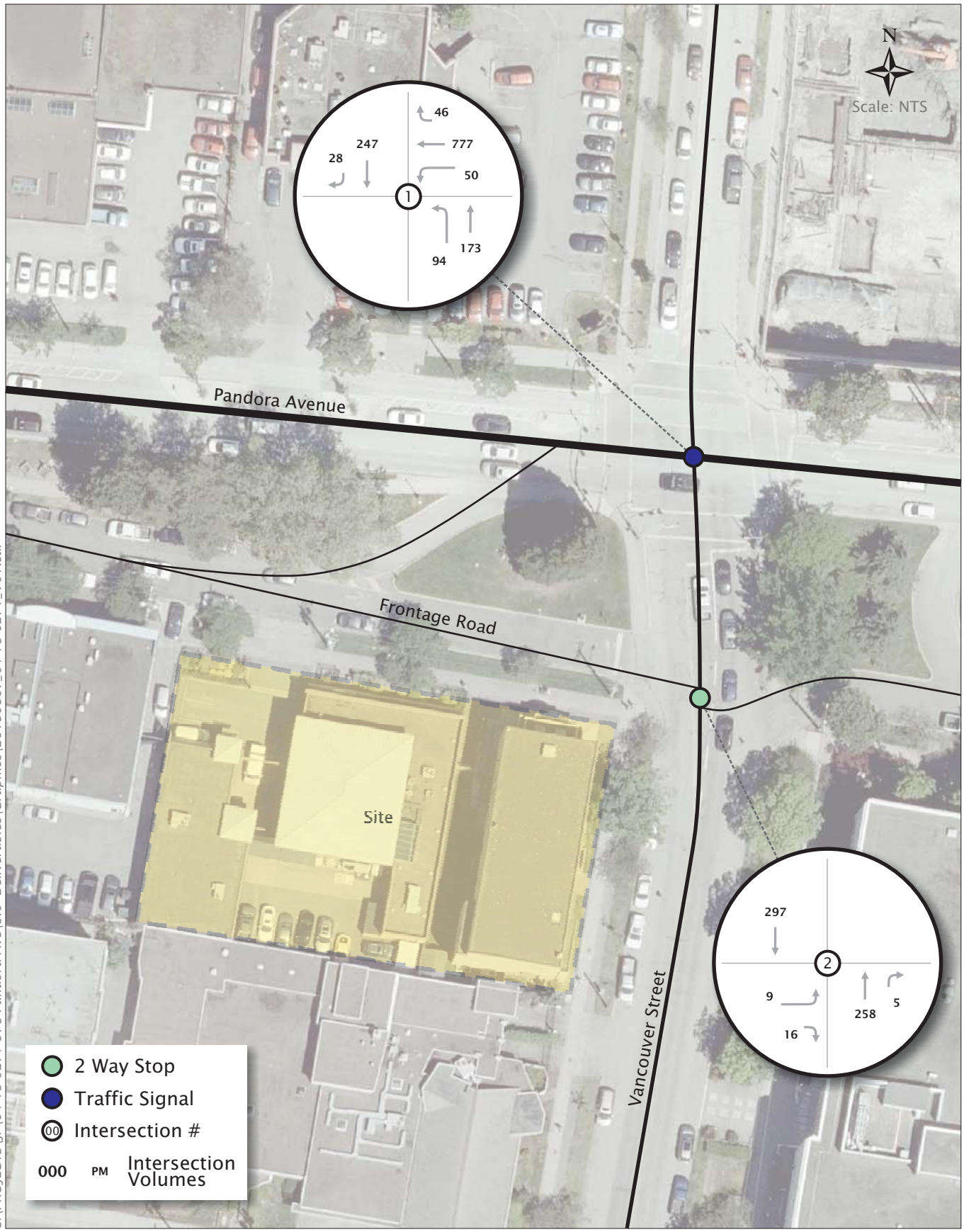
S:\PROJECTS\JP\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180807_04-18-0271_V01.cdr

Exhibit 3.1

Site Traffic Forecasts

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates



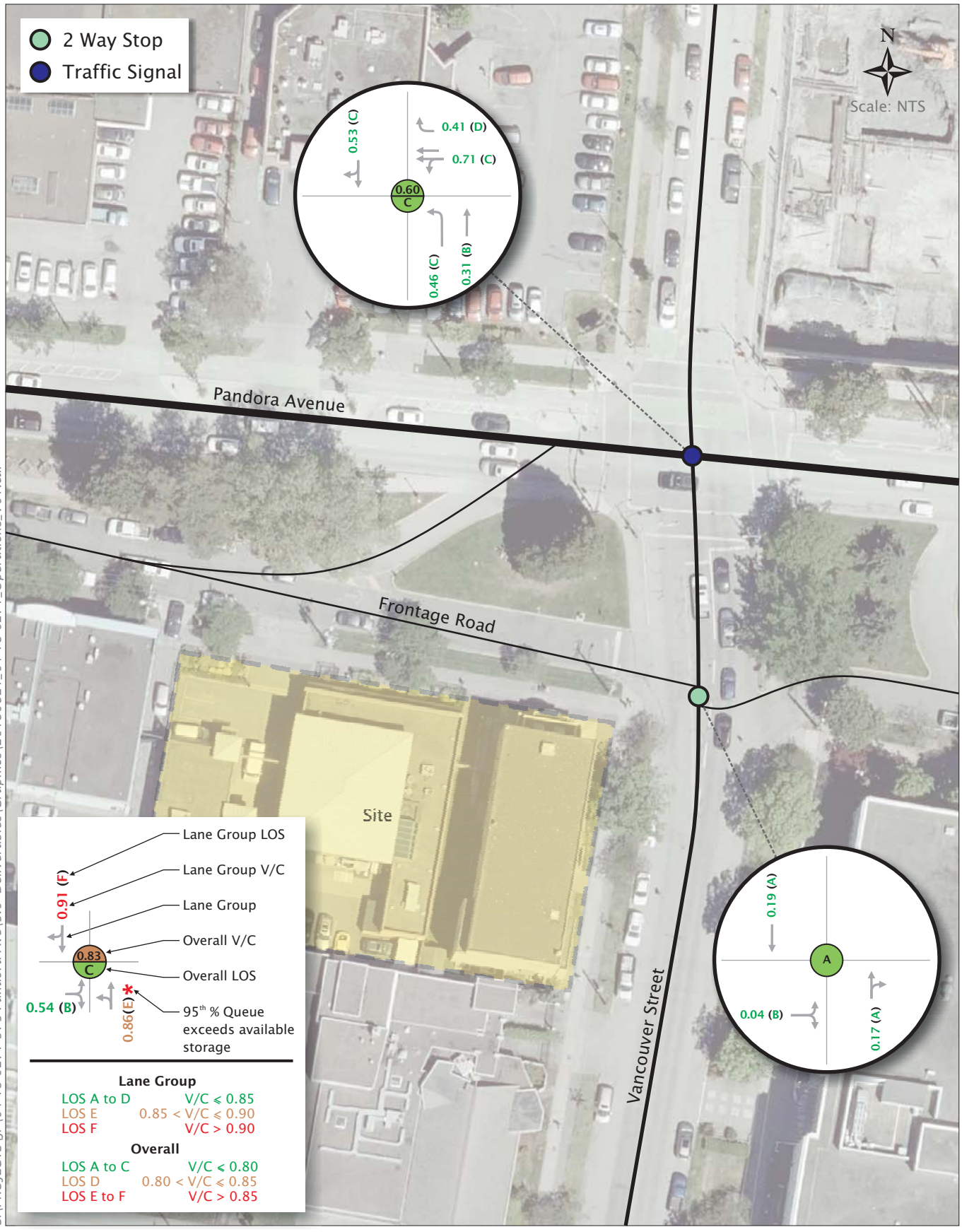
S:\PROJECTS\JP\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180807_04-18-0271_V01.cdr

Exhibit 3.2

Total PM Peak Hour Vehicle Traffic Volumes

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates



S:\PROJECTS\JP\04-18-0271 975 Pandora Ave\5.0 Deliverables\Graphics\20180821_04-18-0271_Operations_V01.cdr

Exhibit 3.3

Total PM Peak Hour Traffic Operations

1468 Vancouver Street
04-18-0271 April 2020

bunt & associates

4. SITE PLAN DESIGN REVIEW

4.1 Site Access Design

The proposed development will have one vehicle access point from the Frontage Road. Pedestrian access to the site's main residential entry will be front Vancouver Street. The two retail outlets will face the Frontage Road.

4.2 Parking Supply

4.2.1 Vehicle Parking

The site is within Victoria's Core Area. As per City of Victoria zoning requirements (Schedule C, Zoning Regulation Bylaw) the residential component of the development must provide a minimum of 0.5 to 1.0 resident parking spaces per residential unit depending on unit size. These rates take into account the location being in the Core area and due to the units being rental units as secured in perpetuity through a legal agreement.

In addition, the development must provide 0.1 residential visitor parking space per unit. The Bylaw rate for commercial land use varies depending on tenant type, as the tenants are unknown at this time the retail rate of 1 space per 80m^2 GFA was applied.

Bylaw requirements are summarized in **Table 4.1**.

Table 4.1: Vehicle Parking Supply Requirement & Provision

LAND USE	DENSITY	BYLAW RATE	BYLAW SUPPLY REQUIREMENT	PROVIDED	DIFFERENCE
Apartment	30 units	0.50 spaces per unit that is less than 45m^2	100.4	101	0
	14 units	0.60 spaces per unit that is equal to 45m^2 and up to 70m^2			
	23 units	1 space per unit that is more than 70m^2			
	29 units	1.0 space per pod unit that is up to 100 m^2			
	25 units	1.0 space per pod unit that is over 100 m^2			
	121 units total	0.10 **visitor** parking spaces per unit	12.1	12	0
Commercial	365 m^2	1 space per 80m^2 floor area	4.6	5	0
			118	**118**	**0**

As shown in Table 4.1, the proposed total parking supply of 118 spaces is compliant with Bylaw requirements.

It is recommended to take advantage of the resident visitor and commercial land uses typically having different peak demand times by sharing visitor spaces.

15 commercial and residential visitor parking spaces will be outside a garage door on P1. The remaining parking spaces will be provided within parkade levels 2 and 3.

4.2.2 Bicycle Parking

Well managed, secure, accessible and covered bicycle parking will be provided as part of the development plan. The site plan indicates a total of 240 Long Term bicycle spaces spread between multiple bicycle storage rooms. The development will also supply electric outlets for a portion of the bicycle parking spaces. In addition, 14 Short Term bicycle spaces will be provided near the building's main Vancouver Street entry in a well lit and highly visible area.

Current City of Victoria Bylaw requirements are provided in **Table 4.2**.

Table 4.2: Bicycle Parking Supply Requirement & Provision

LAND USE	DENSITY	BYLAW RATE	BYLAW SUPPLY REQUIREMENT	PROVIDED	DIFFERENCE
Apartment	121 units	Long Term: 1 space per unit that is less than 45m² 1.25 spaces per unit that is 45m² or greater Short Term: 0.1 spaces per unit that is less 70 m²	145 Long Term 12 Short Term	238 Long Term 6 Short Term (Shared with Commercial)	+93 Long Term
Commercial	365 m²	Long Term: 1 space per 200m² of floor area, or part thereof Short Term: 1 space per 200m² of floor area, or part thereof	2 Long Term 2 Short Term	2 Long Term 2 Short Term (Shared with Residential)	-
TOTAL			**147 LONG TERM 14 SHORT TERM 161 TOTAL**	**240 LONG TERM 14 SHORT TERM 221 TOTAL**	**+93 LONG TERM 0 SHORT TERM +93 PROVIDED**

The proposed development provides 240 Long Term bicycle spaces which is greater than that required by the Zoning Bylaw by 93 spaces.

The proposed 14 Short Term bike parking spaces meets Bylaw requirements. Townline has expressed intent on adding additional short-Term spaces should additional spaces be required. Bunt agrees with the current plan of prioritizing secure bicycle parking with additional long-term spaces.

4.3 Service Vehicle Operations

The City of Victoria Zoning Bylaw does not stipulate a requirement for off-street loading for residential land use. Loading activity for the proposed 121 residential units would likely involve trucks no larger than

a 5-10 tonne single unit vehicle, e.g., (Transportation Association of Canada MSU design vehicle). At 10m in length, a MSU design vehicle could be accommodated along the Frontage Road, where garbage and recycling materials are brought up from the parkade structure for curbside pick-up.

The ground floor commercial space at 365 square metres is relatively small and is not anticipated to require on-site loading by vehicles larger than a Medium Single Unit (Transportation Association of Canada MSU design vehicle). Loading will be accommodated with an on-street (Frontage Road) loading space.

5. TDM & ACTIVE MODES

5.1 Transportation Demand Management

Transportation Demand Management (TDM) is defined as the "application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles), or to redistribute this demand in space or in time"[1]. A successful TDM program can influence travel behaviour away from Single Occupant Vehicle (SOV) travel during peak periods towards more sustainable modes such as High Occupancy Vehicle (HOV) travel, transit, cycling or walking. The responsibility for implementation of TDM measures can range across many groups, including regional and municipal governments, transit agencies, private developers, residents/resident associations or employers.

5.2 Recommended TDM Measures for Site

5.2.1 Marketing Materials & Transportation Information

Travel patterns are most pliable when residents move from one location to another. New developments can assist in influencing travel behaviours, through distribution of marketing materials to potential buyers/renters and through provision of information packages to new residents that emphasize the attractiveness and ease of alternative travel modes. In marketing materials to prospective new residents, clear and simple messages such as cost savings and health benefits (within the context of life style choice and urban living), along with practical information about local transit services, walking and cycle routes to key locations would help attract residents who want to live a car-free lifestyle.

For residents who are moving in, a Transportation Information Package should be provided on move-in day. The package should include:

- Map showing local cycling routes (can be obtained from City of Victoria website);
- Map showing local transit routes (can be obtained from City of Victoria website or BC Transit website);

[1] http://ops.fhwa.dot.gov/tdm/index.htm FHWA Travel Demand Management home page

- Map showing amenities within a typical walking catchment of 800m (can be obtained from Walk Score website: www.walkscore.com); and
- Information pertaining to on-site vehicle and bicycle parking space supply and management.

The developer will provide a commitment to develop such a Transportation Information package and provide to all new residential of the building.

5.2.2 Specialized Parking

For development permit or rezoning applications submitted on or after October 1, 2020, the City of Victoria requires that 100% of required residential parking spaces in new residential developments must have an energized electrical outlet installed that is capable of providing Level 2 (208 to 240 volts) charging for an electric vehicle. This does not apply to visitor spaces or commercial spaces.

The developer is encouraged to provide electric charging abilities to all of the development's parking spaces.

5.2.3 Bicycle Parking

The development will be providing 240 Long Term bicycle parking spaces. This exceeds bylaw requirements.

6. CONCLUSIONS & RECOMMENDATIONS

6.1 Conclusions

1. The proposed development at 975, 983 Pandora Avenue and 1468 Vancouver Street consists of 121 residential apartments and approximately 365 square metres of ground level commercial space.

2. The development site is currently occupied with a church and a two-story office and retail building.

3. All intersections currently operate within capacity and acceptable level of service thresholds during both the weekday PM peak hour period.

4. The proposed development could potentially generate approximately 58 two-way vehicle trips in the weekday PM peak hour. Because the development is located in the Downtown Victoria area within convenient walking and cycling distance of employment, shops and services and good transit access, the vehicle trip generation for the project may well be substantially lower, at between one-half to two-thirds of the volumes noted above.

5. Our analysis indicates that the proposed development of 121 residential units and ground level commercial land uses will have minimal impact to the adjacent road network. Most vehicle trips

generated by the development will travel through signalized intersections that are currently operating well within operational capacity thresholds.

6. The proposed development will be accessed from the Frontage Road, north of the site.

7. The development will be supported with 118 parking spaces located in a three-level below ground parkade. This vehicle parking supply meets Bylaw requirements.

8. The proposed development provides 240 Long Term bicycle spaces which is greater that required through Victoria Bylaw. The proposed 14 Short Term bike parking spaces meet Bylaw requirements. The additional Long-Term bicycle spaces accommodate the larger pod residential units which may have higher than average bike ownership rates.

9. The site location, its high-rise design and inclusion of co-living pods is a progressive step toward more sustainable transport modes as residents living downtown in close proximity to amenities and services are anticipated to take more trips by walking, cycling and transit than residents living in suburban or lower density areas.

6.2 Recommendations

1. It is recommended that Townline provide a commitment to design a local area Transportation Information package and provide to all residential units.

2. It is recommended that Townline provide electric charging abilities to all the development's vehicle parking spaces as well as providing electric charging abilities to the Long-Term bicycle storage rooms.