TRANSPORTATION PLANNERS AND ENGINEERS

bunt & associates

Living East Village

Transportation Assessment & Management Study

Version 01

Prepared for

Westbank Projects Corp.

Date

January 16, 2025

Project No.

04-24-0040

Bunt & Associates acknowledges and respects the Traditional Territories upon which our work spans, and from which we benefit. We are grateful for the unique cultures and histories of Indigenous Peoples that enrich our understanding and connection to the lands we call home. We honour learning, listening, and truth in our journey to reconciliation.

January 16, 2025
04-24-0040

Mahbod Biazi
Westbank Projects Corp.
6th Floor, 1067 West Cordova Street,
Vancouver, BC
V6C 1C7

Dear Mahbod:

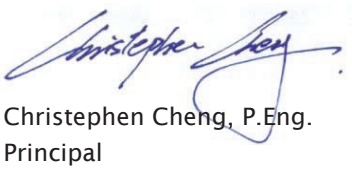
Re: Living East Village
Transportation Assessment & Management Study

We are pleased to provide the attached Transportation Assessment & Management Study (TAMS) to support the proposed rezoning application for the Living East Village project, consisting of three sites located at 1030-1070 East Hastings Street, 1115 & 1127 East Hastings Street, and 1168, 1172, & 1180 East Hastings Street.

The TAMS was prepared based on a study Terms of Reference (ToR) established with the City of Vancouver Engineering Department.

We trust that that attached will be of assistance to support your application.

Yours truly,
Bunt & Associates



Christephen Cheng, P.Eng.
Principal

cc: Adam Mcglennon, ZGF Architects Inc.

CORPORATE AUTHORIZATION

Prepared By: Hana Stoer, EIT
Ian Hancock, EIT
Abbey Seneres, EIT

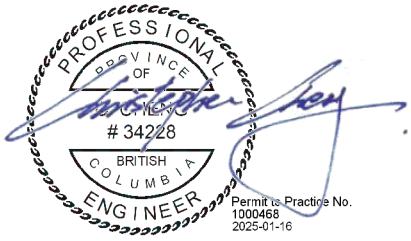
Bunt & Associates Engineering Ltd.
1550-1050 West Pender Street
Vancouver, BC V6E 3S7
Canada

Reviewed By: Christephen Cheng, P.Eng., M.Eng.
Principal

Telephone: +1 604 685 6427
Facsimile: +1 604 685 6579

Date: 2025-01-16
Project No. 04-24-0040

Approved By: Christephen Cheng, P.Eng., M.Eng.
Principal



Written with respect and gratitude for the Traditional Territories upon which we work and live.

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 Study Scope & Area 1
   - 1.3 Organization of Report 1
   - 1.4 Proposed Development 3

2. EXISTING CONDITIONS 7
   - 2.1 Land Use 7
   - 2.2 Existing Transportation Network 7
     - 2.2.1 Road Network 7
     - 2.2.2 Transit Network 7
     - 2.2.3 Cycling & Pedestrian Networks 11
   - 2.3 Current Relevant Policies & Plans 14
     - 2.3.1 Downtown Eastside Plan 14
     - 2.3.2 2023 Vancouver Transportation Fall Survey Report 14
   - 2.4 Existing Traffic Volumes 15
     - 2.4.1 Traffic Data Collection Program 15
     - 2.4.2 Peak Hour Traffic Volumes 15
   - 2.5 Existing Operations 19
     - 2.5.1 Performance Thresholds 19
     - 2.5.2 Existing Conditions Analysis Assumptions 20
     - 2.5.3 Existing Operational Analysis Results 21
     - 2.5.4 Traffic Signal Warrants 22

3. FUTURE TRAFFIC CONDITIONS 23
   - 3.1 Traffic Forecasts 23
     - 3.1.1 Background Traffic Forecasts 23
     - 3.1.2 Site Traffic 23
     - 3.1.3 Total Traffic 31
   - 3.2 Future Traffic Operations 31
     - 3.2.1 Future Conditions Analysis Assumptions 31
     - 3.2.2 Future Background Traffic Operations 31
     - 3.2.3 Traffic Signal Warrants 36
     - 3.2.4 Future Total Traffic Operations 36
     - 3.2.5 Traffic Signal Warrants 39
     - 3.2.6 Summary of Traffic Impacts & Recommended Mitigations 39

4. SITE PLAN DESIGN REVIEW 41
4.1 Site Access Design 41
4.2 Off-Street Supply Review 41
4.2.1 East 1 Supply Review 41
4.2.2 East 2 Supply Review 43
4.2.3 East 3 Supply Review 45
5. CONCLUSIONS & RECOMMENDATIONS 48
5.1 Conclusions 48
5.2 Recommendations 50
APPENDIX A Terms of Reference .....
APPENDIX B Traffic Data .....
APPENDIX C Synchro Reports .....
APPENDIX D Traffic Signal Warrants .....

EXHIBITS

Exhibit 1.1: Site Location & Study Area 2
Exhibit 1.2: East 1 Site Plan 4
Exhibit 1.3: East 2 Site Plan 5
Exhibit 1.4: East 3 Site Plan 6
Exhibit 2.1: Existing Laning & Traffic Control 8
Exhibit 2.2: Transit Routes & Stops 10
Exhibit 2.3: Cycling Facilities 12
Exhibit 2.4: Pedestrian Facilities 13
Exhibit 2.5: Existing Peak Hour Vehicle Traffic Volumes 17
Exhibit 2.6: Existing Peak Hour Pedestrian & Cycling Traffic Volumes 18
Exhibit 3.1: Opening Day (2029) Background Traffic Forecasts 24
Exhibit 3.2: Opening Day + 5 Years (2034) Background Traffic Forecasts 25
Exhibit 3.3: Site Traffic Forecasts 29
Exhibit 3.4: Opening Day (2029) Total Traffic Forecasts 33
Exhibit 3.5: Opening Day + 5 Years (2034) Total Traffic Forecasts 34

TABLES

Table 1.1: Development Statistics 3
Table 2.1: Existing Street Characteristics 7
Table 2.2: Transit Stops within 800m Walking Distance of Site 9
Table 2.3: Summary of Available and Counted Traffic Data 15
Table 2.4: Existing Peak Hour Roadway Link Volumes 16
Table 2.5: Intersection Level of Service Thresholds 19
Table 2.6: Existing Traffic Operations 21
Table 3.1: Peak Hour Vehicle Trip Rates 23
Table 3.2: Estimated Peak Hour Site Vehicle Trips 26
Table 3.3: Estimated Multi-Modal Peak Hour Site Trips 26
Table 3.4: Residential Peak Hour Vehicle Trip Rates – Per Stall 27
Table 3.5: Estimated Peak Hour Site Vehicle Trips – Residential Per Stall Rate 27
Table 3.4: Estimated Trip Distribution 27
Table 3.5: Net Change in Future Intersection Vehicle Volumes with New Site Trips – Opening Day 30
Table 3.6: Net Change in Future Intersection Vehicle Volumes with New Site Trips – Opening Day + 5 30
Table 3.7: Opening Day (2029) Background Vehicle Operations 31
Table 3.8: Opening Day + 5 Years (2034) Background Vehicle Operations 35
Table 3.9: Opening Day (2029) Total Vehicle Operations 36
Table 3.10: Opening Day + 5 Years (2034) Total Vehicle Operations 38
Table 4.1: Vehicle Parking Supply Requirements & Provision – East 1 41
Table 4.2: Bicycle Parking Supply Requirements & Provision – East 1 42
Table 4.3: Loading Supply Requirements – East 1 42
Table 4.4: Passenger Loading Supply Requirements – East 1 43
Table 4.5: Vehicle Parking Supply Requirements & Provision – East 2 43
Table 4.6: Bicycle Parking Supply Requirements & Provision – East 2 44
Table 4.7: Loading Supply Requirements – East 2 44
Table 4.8: Passenger Loading Supply Requirements – East 2 45
Table 4.9: Vehicle Parking Supply Requirements & Provision – East 3 45
Table 4.10: Bicycle Parking Supply Requirements & Provision – East 3 46
Table 4.11: Loading Supply Requirements – East 3 46
Table 4.12: Passenger Loading Supply Requirements – East 3 47

EXECUTIVE SUMMARY

Study Background & Purpose

Westbank Projects Corp. is proposing the development of three sites along East Hastings Street, referred as the "Living East Village" project:

- **East 1:** 1030, 1040, 1050, 1060, & 1070 East Hastings Street.
- **East 2:** 1115 & 1127 East Hastings Street.
- **East 3:** 1168, 1172, & 1180 East Hastings Street.

Living East Village aims to provide affordable and equitable housing. East 1 includes 382 market rental residential units and 462 square metres of commercial area. East 2 includes 385 market rental residential units and 739 square metres of commercial area. East 3 includes 121 senior social housing units, 36 replacement SRA residential units, and 213 square metres of commercial area.

Access to the parking & loading of each site is provided via the rear lanes.

Existing Conditions

Living East Village is located within the Strathcona neighbourhood, situated at the transition of residential to industrial land uses. The proposed development is located in close proximity to transit and cycling networks, and within a 10-minute walk of a multitude of key locations.

The East 1 site is currently vacant, and the East 2 and 3 sites are occupied by vacant buildings.

Bunt collected existing traffic data during the AM (7-9 AM) and PM (3-6 PM) peak periods on October 9, 2024 to determine the peak hours of 8-9 AM and 4:45-5:45 PM. Midday traffic counts were also conducted from 11 AM – 1 PM at Glen Drive & E Hastings Street and Vernon Drive & E Hastings Street to support Traffic Signal Warrant analyses. E Hastings Street carries 2,000 to 2,400 vehicles during the AM and PM peak hours while the residential roads such as Glen Drive carry 110 to 215 vehicles during the AM and PM peak hours.

All intersections, except for Vernon Drive & E Hastings Street, operate within the performance thresholds during the existing AM and PM peak hours. The intersection is stop-controlled on Vernon Drive and high volumes along E Hastings Street result in long delays and Los F for vehicles turning left out of Vernon Drive. However, as there are less than 10 vehicles turning northbound left or southbound left during either peak hour, the v/c ratio is low and no mitigation measures are recommended.

TAC Traffic Signal Warrant analyses were conducted during the existing scenario for the following intersections:

- Glen Drive & E Hastings Street; and,
- Vernon Drive & E Hastings Street.

Glen Drive & E Hastings Street is currently operated with a pedestrian signal and Vernon Drive & E Hastings Street is two-way stop controlled. Neither intersection warranted a full signal during the existing scenario.

Future Conditions

Background traffic was estimated for two horizon years:

- Opening Day (2029); and,
- Opening Day + 5 Years (2034).

The background growth rate was determined by comparing historical traffic data from the City of Vancouver's VanMap portal and Bunt's collected data at:

- Glen Drive & E Hastings Street; and,
- Clark Drive & E Hastings Street.

The comparison found a linear growth rate of 0.5%.

Site trips were estimated using *ITE Trip Generation Manual 11th Edition* rates and adjusting for the vehicle mode split of the Vancouver Port area. Living East Village is estimated to generate approximately 140-175 vehicle trips during the AM and PM peak hours, or 2-3 vehicles every minute during peak times.

Due to the low parking supply at each site, Bunt also reviewed site trip estimations using a residential rate per parking space. With the per parking space residential rate, the development would generate 5-20 vehicle trips during the AM and PM peak hours, or up to 1 vehicle every 3 minutes. To be conservative, the site trip estimation using ITE rates was used for the traffic operation analysis.

Traffic signal phases were optimized during future scenarios to account for changes in traffic volumes. During the background and total Opening Day (2029) and Opening Day + 5 Years (2034) scenarios, all intersections except Vernon Drive & E Hastings Street continue to operate within the performance thresholds. Throughout the scenarios, the volumes and v/c ratio for vehicles turning left out of Vernon Drive at E Hasting Street continue to increase, though the v/c ratios remain within the performance threshold.

Glen Drive & E Hastings Street warrants a traffic signal as of the Opening Day (2029) total scenario, but the intersection is found to operate within performance thresholds. Vernon Drive & E Hastings Street does not warrant a traffic signal in any of the scenarios. However, Bunt recommends that should left-turning vehicle volumes on Vernon Drive increase significantly, turning restrictions should be reviewed.

Site Plan Design Review

Access to parking and loading is provided via the rear lane of each site.

- East 1 is required to provide 14 residential accessible vehicle spaces and 19 visitor spaces. East 1 proposes to provide 36 residential vehicle spaces, including 4 accessible spaces.
- East 1 is required to provide 679 residential Class A bicycle spaces, 1 commercial Class A bicycle space, and 20 residential Class B bicycle spaces. East 1 proposes to provide 751 residential Class A bicycle spaces, 2 commercial Class A bicycle spaces, and 19 residential Class B spaces.
- East 1 is required to provide 2 residential Class A and 2 residential Class B loading spaces, plus 1 commercial Class B loading space. East 1 proposes to provide 1 residential Class B loading space and 1 commercial Class B loading space.
- East 1 is required to provide 3 residential Class A passenger spaces. East 1 is proposing to provide 1 Class A passenger space.
- East 2 is required to provide 14 residential accessible vehicle spaces, 19 residential visitor vehicle spaces, and 1 commercial accessible vehicle space. East 2 is proposing to provide 5 residential accessible vehicle spaces.
- East 2 is required to provide 675 residential Class A bicycle spaces, 2 commercial Class A bicycle spaces, and 20 residential Class B bicycle spaces. East 2 proposes to provide 738 residential Class A bicycle spaces, 2 commercial Class A bicycle spaces, and 19 residential Class B spaces.
- East 2 is required to provide 2 residential Class A and 2 residential Class B loading spaces, plus 1 commercial Class B loading space. East 2 proposes to provide 1 residential Class B loading space and 1 commercial Class B loading space.
- East 2 is required to provide 3 residential Class A passenger spaces, with 2 being proposed.
- East 3 is required to provide 6 residential accessible vehicle spaces and 8 residential visitor vehicle spaces. East 3 proposes to provide 1 residential vehicle space and 4 residential accessible vehicle spaces.
- East 3 is required to provide 246 residential Class A bicycle spaces, 1 commercial Class A bicycle space, and 9 residential Class B bicycle spaces. East 3 proposes to provide 288 residential Class A bicycle spaces, 6 commercial Class A bicycle spaces, and 8 residential Class B spaces.
- East 3 is required to provide 1 residential Class A loading space, 1 residential Class B loading space, and 1 commercial Class B loading space. East 3 proposes to provide 1 Class B loading space shared by residential and commercial users.
- East 3 is required to provide 1 residential Class A passenger space. East 3 is proposing to provide 1 Class A passenger space.

1. INTRODUCTION

1.1 Study Purpose & Objectives

Bunt & Associates Engineering Ltd. (Bunt) has prepared the following Transportation Assessment & Management Study (TAMS) to support Westbank's proposed Living East Village development.

As part of the rezoning application process, the City of Vancouver (CoV) requires a TAMS to be prepared for the development. This TAMS will review existing and future traffic operations, site plan design, vehicle parking, bicycle parking, loading, and passenger space supply.

1.2 Study Scope & Area

Living East Village (LEV) is comprised of three sites located along East Hastings Street in Vancouver, BC:

- **East 1:** 1030, 1040, 1050, 1060, & 1070 East Hastings Street.
- **East 2:** 1115 & 1127 East Hastings Street.
- **East 3:** 1168, 1172 & 1180 East Hastings Street.

Bunt established a TAMS Terms of Reference (**Appendix A**) with CoV, which included confirmation of study intersections for the development. **Exhibit 1.1** illustrates the three sites and the study intersections for the TAMS.

1.3 Organization of Report

The report sections of the study have been organized as follows:

- **Section 1** presents the study background, study scope & area, and details of the proposed development.
- **Section 2** describes the existing conditions of the study area, including current site characteristics, existing road network, and existing traffic conditions on the adjacent street network.
- **Section 3** forecasts the future traffic volumes in the study area with and without the proposed development and presents the future traffic operations.
- **Section 4** reviews the site plan design and required vehicle parking, bicycle parking, loading, and passenger loading provisions.
- **Section 5** provides the conclusions and recommendations of the study based on Bunt's analysis.



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 1.1

Site Location & Study Area

04-24-0040

Living East Village
January 2025

bunt & associates

1.4 Proposed Development

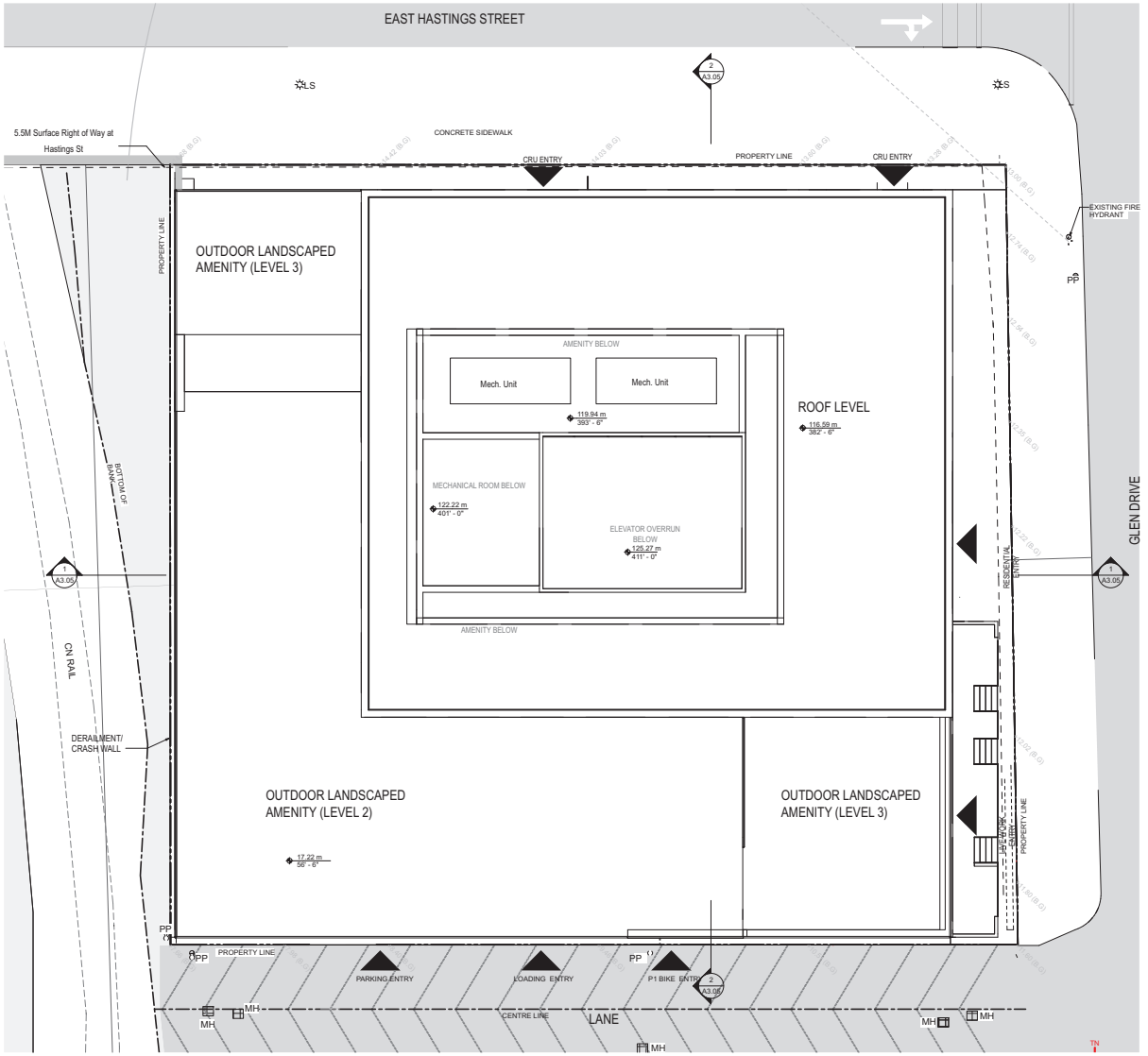
This development aims to provide affordable and equitable housing. Details of the land use statistics are provided in **Table 1.1**

Table 1.1: Development Statistics

LAND USE		UNIT	DENSITY		
			EAST 1	EAST 2	EAST 3
Residential	Market Rental	Dwelling Unit	382	385	-
	Senior Social Housing	Dwelling Unit	-	-	121
	Replacement SRA	Dwelling Unit	-	-	36
Commercial		Square Meter	462	739	213

Vehicle access to the site is via the laneway located by the sites, which provides access to parking & loading. Each site intends to provide a low amount of vehicle parking spaces, with East 1 providing less than 40 spaces, and East 2 & East 3 providing 5 spaces each.

Exhibits 1.2 to **1.4** illustrate the proposed site plans for East 1, East 2, and East 3.



N

Scale: NTS

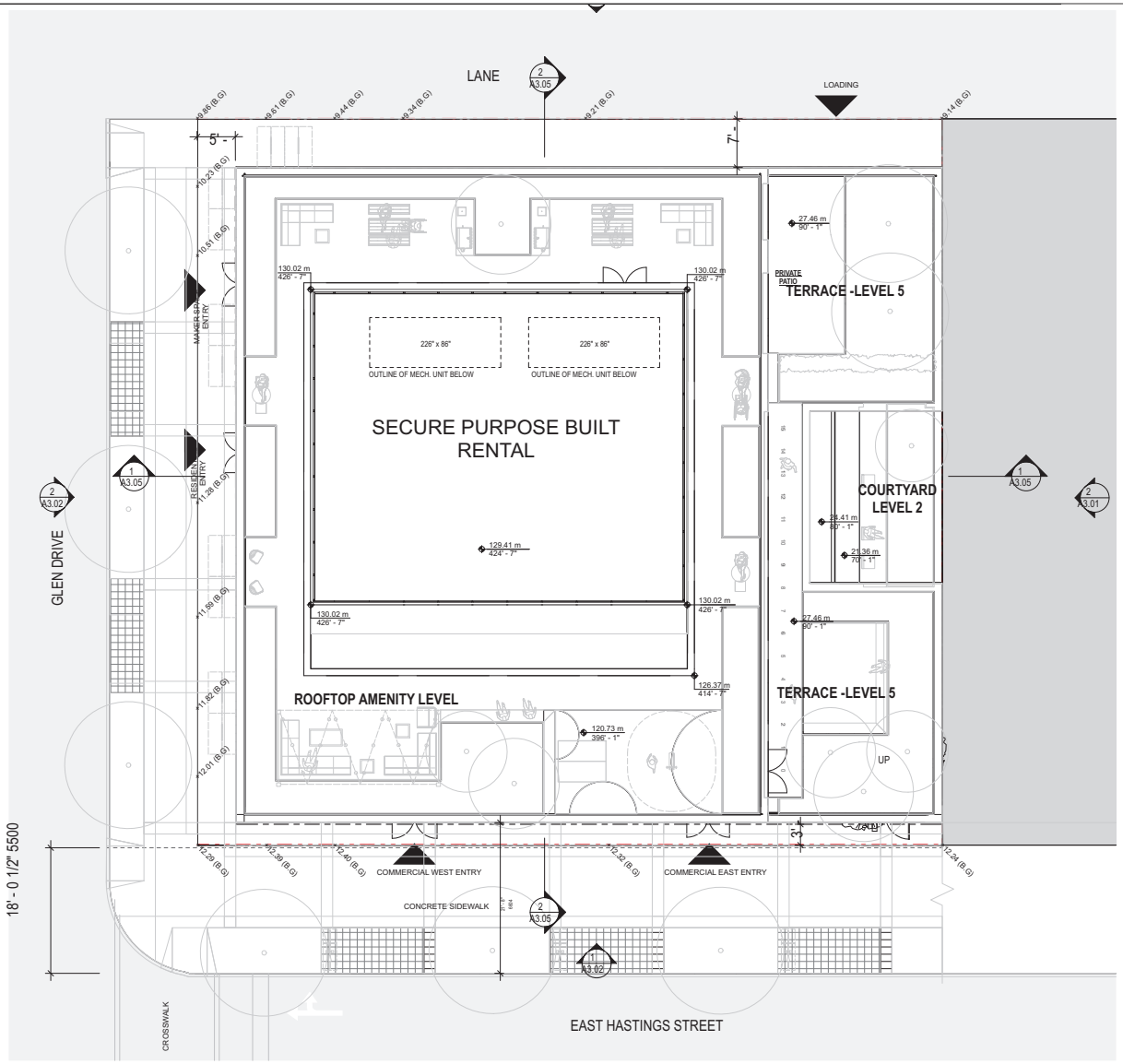
O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 1.2
East 1 Site Plan

04-24-0040

Living East Village
January 2025

bunt & associates



N

Scale: NTS

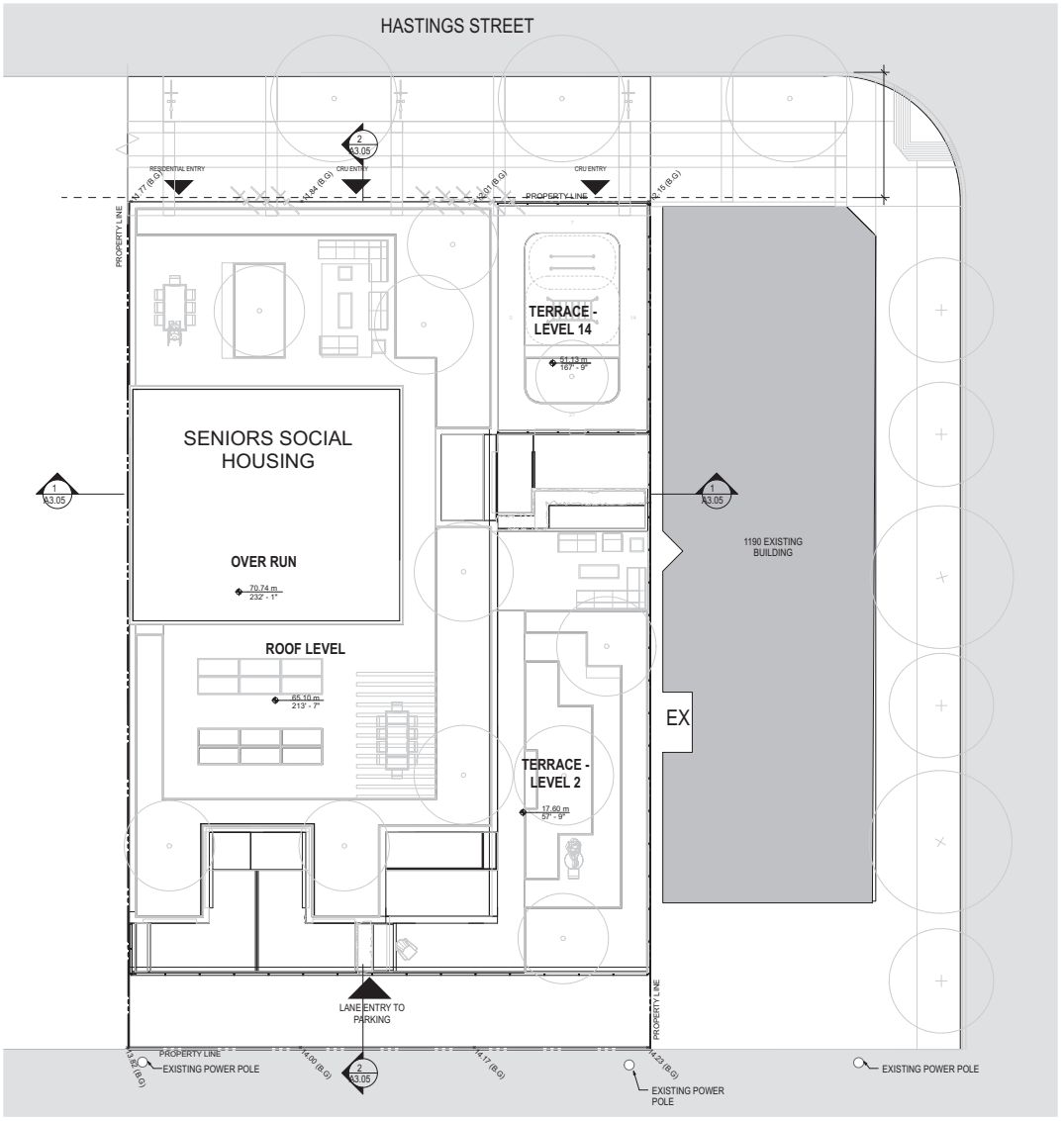
O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 1.3
East 2 Site Plan

04-24-0040

Living East Village
January 2025

bunt & associates



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 1.4

East 3 Site Plan

04-24-0040

Living East Village
January 2025

bunt & associates

2. EXISTING CONDITIONS

2.1 Land Use

Living East Village is located along East Hastings Street, within the Strathcona neighbourhood. Living East Village is situated between residential land uses to the south and west, and industrial land uses to the north and east.

The East 1 site is currently vacant. The East 2 site is currently occupied by one-storey commercial buildings, however the buildings are currently unoccupied. The East 3 site is currently occupied by a low-rise residential building and a single-family home, both of which are also unoccupied.

2.2 Existing Transportation Network

2.2.1 Road Network

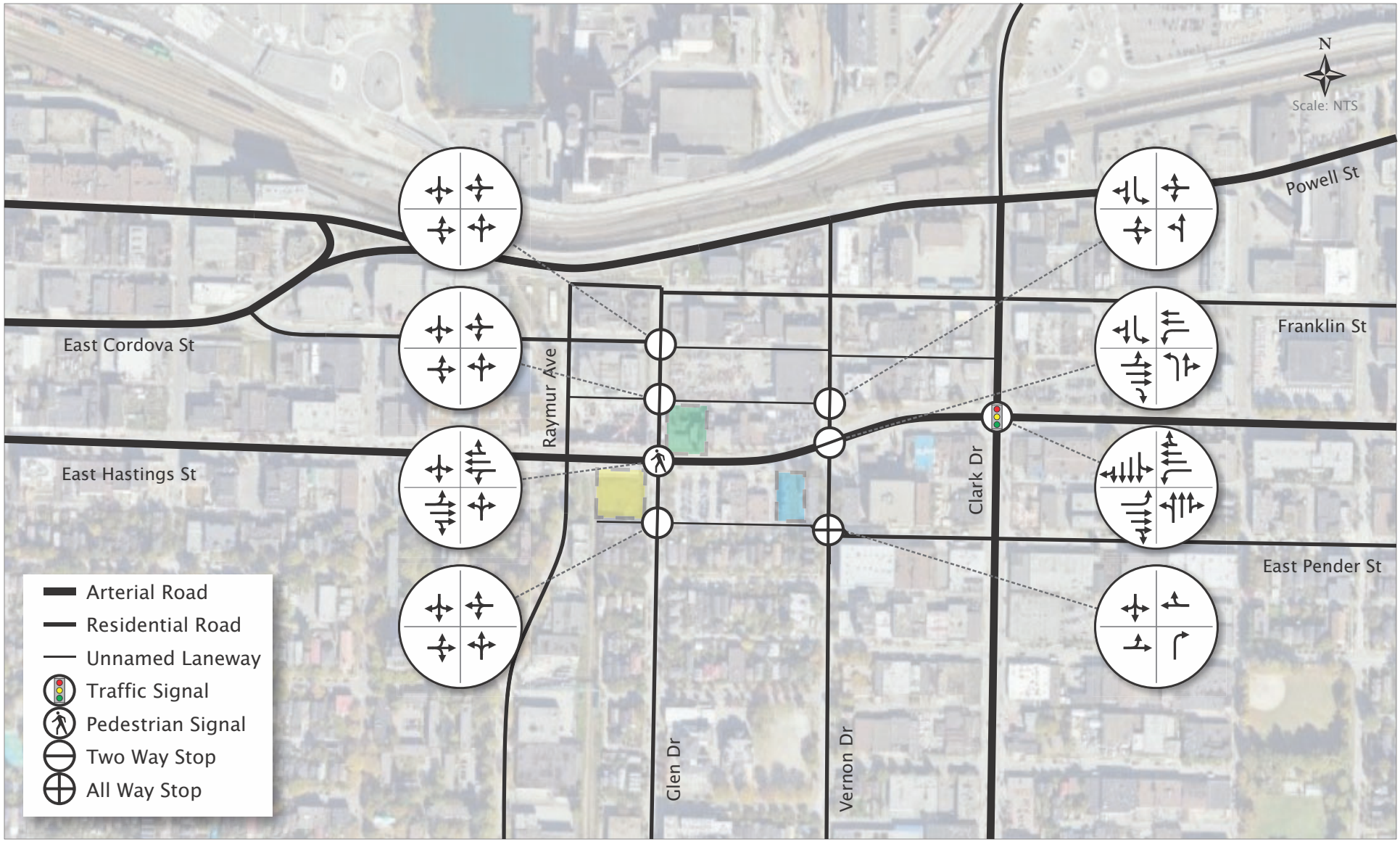
Existing characteristics of the study area streets are summarized in **Table 2.1**. The existing laning and traffic controls are illustrated in **Exhibit 2.1**.

Table 2.1: Existing Street Characteristics

STREET	CLASSIFICATION	NUMBER OF TRAVEL LANES	POSTED SPEED	PARKING FACILITIES
Glen Drive	Residential	2	30 km/h	Yes, Residents only south of E Hastings Street
Vernon Drive	Residential	2	50 km/h	Yes
Clark Drive	Arterial	6	50 km/h	No
E Hastings Street	Arterial	6	50 km/h	No
E Cordova Street	Residential	2	50 km/h	Yes

2.2.2 Transit Network

The site provides future users with excellent access to transit due to its close proximity to an extensive bus network. Within an 800m (10-minute) walk, users can access a RapidBus route (on E Hastings Street) and two Frequent Transit Network (FTN) routes (on Clark Drive / Powell Street and Venables Street). The RapidBus (R5) provides frequent bus service with limited stops and transit priority, servicing at least 20% faster than local buses. FTN routes, as identified by TransLink, are reliable transit corridors that provide 15 minute or better service until 9pm every day and starts at 6am on weekdays, 7am on Saturdays and 8am on Sundays.



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 2.1

Existing Laning & Traffic Control

04-24-0040

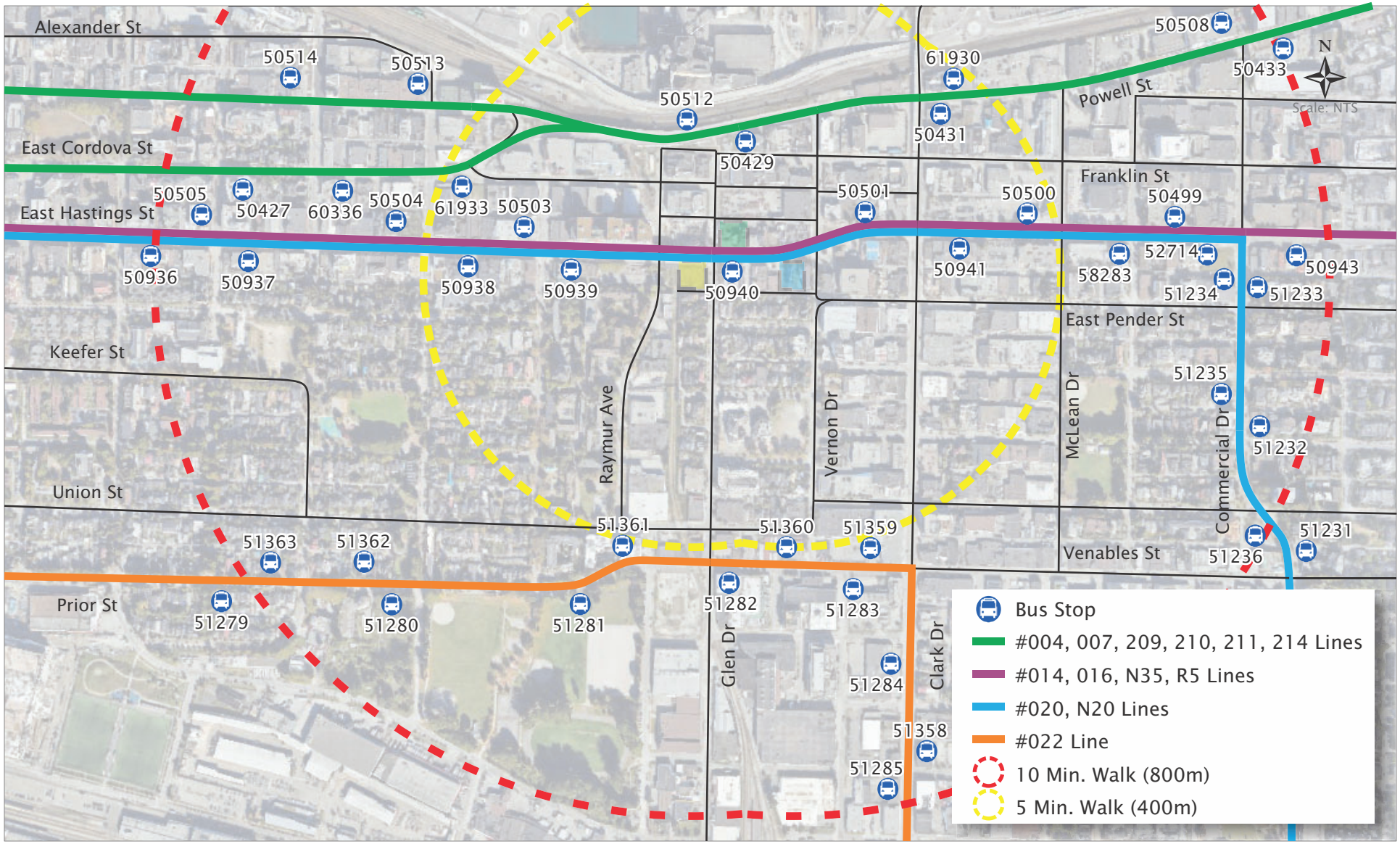
Living East Village
January 2025

bunt & associates

Table 2.2 lists the existing transit stops within 800m walking distance of the site, while **Exhibit 2.2** illustrates the routes and locations of transit stops.

Table 2.2: Transit Stops within 800m Walking Distance of Site

STOP LOCATION	DIRECTION	STOP #	AMENITY	ROUTES SERVICED	WALKING DISTANCE
E Hastings Street at Glen Drive	Eastbound	50940	Shelter / Bench	#014, #016, #020, #N20, #N35	40 m
E Hastings Street at Clark Drive	Westbound	50501	Bench	#014, #016, #020, #N20, #N35	200 m
E Hastings Street at Commercial Drive	Eastbound	52714	Shelter	R5	700 m
E Hastings Street at Commercial Drive	Westbound	50499	Shelter	#014, #016, #020, #N20, #N35, R5	700 m
Powell Street at Glen Drive	Eastbound	50429	None	#004, #007, #209	450 m
Powell Street at Glen Drive	Westbound	50512	None	#004, #007, #209	450 m
E Cordova Street at Heatley Avenue	Eastbound	60336	None	#004, #007, #209, #210, #211, #214	700 m
Venables Street at Glen Drive	Eastbound	51282	None	#022	550 m
Venables Street at Vernon Drive	Westbound	51360	None	#022	600 m



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 2.2

Transit Routes & Stops

04-24-0040

Living East Village
January 2025

bunt & associates

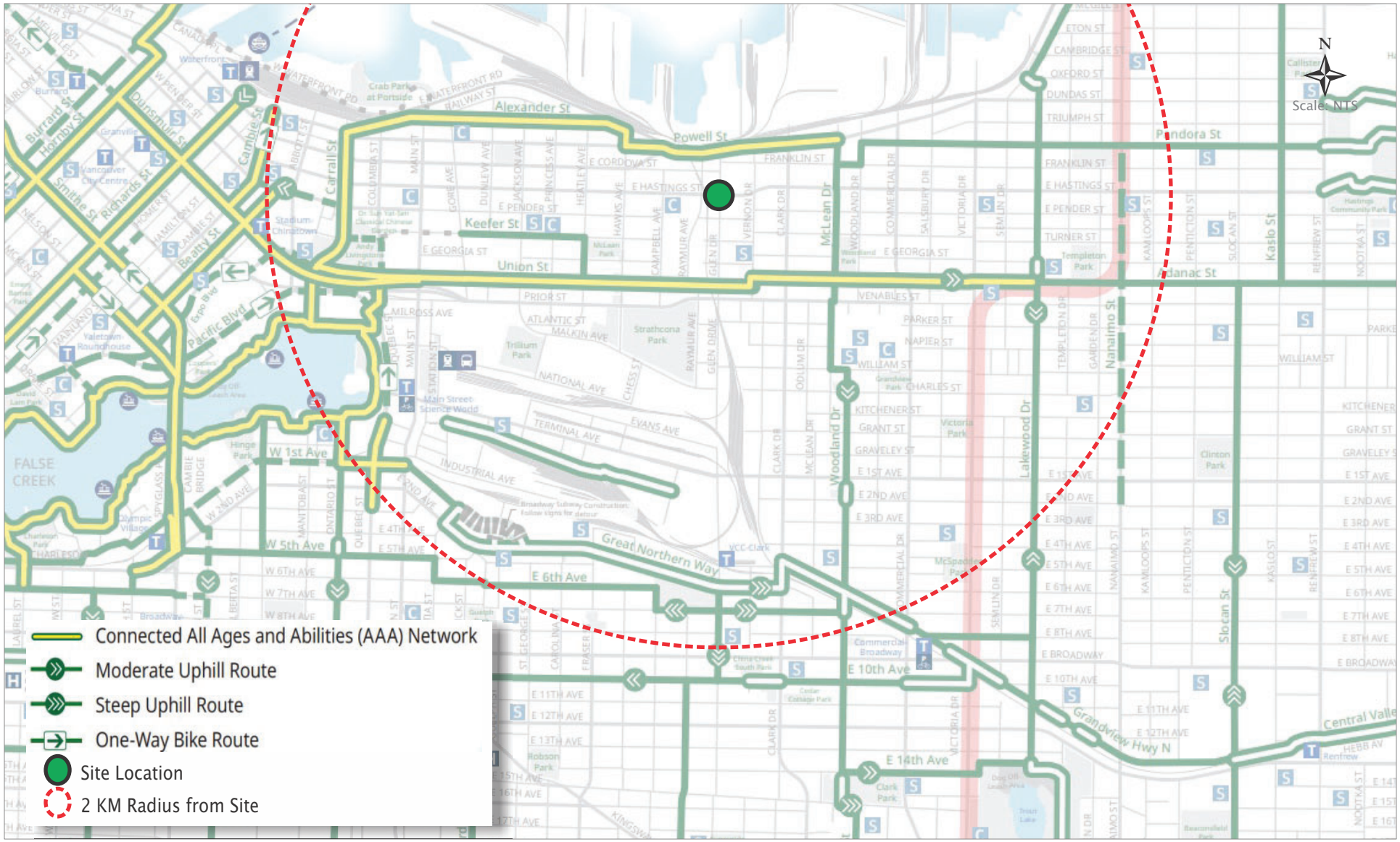
2.2.3 Cycling & Pedestrian Networks

The site is within 400m of 2 corridors of the Vancouver Connected All Ages and Abilities (AAA) Network, on Alexander Street / Powell Street and on Union Street. The Connected AAA Network is a connected network of bike lanes that are mostly separated from traffic or on streets with lower traffic volume and speeds, making it a comfortable network for people of all ages and abilities to use. These routes provide strong east-west cycling connections for the site's future users. In the future, the Alexander Street / Powell Street bikeway will be converted into a City greenway (Portside Greenway), which will provide a major connection for the City.

Within 800m of the site, there is also access to a local street bikeway on McLean Drive. On local street bikeways, cyclists share the roadway on streets with slower vehicle speeds and less traffic. This bike route provides a good north-south connection to the City's cycling network. In the future, this bike route will be converted to a City greenway (Midtown Way) which will serve as a major cycling corridor.

Exhibit 2.3 identifies the City's bike network accessible within 2 kilometres of the site.

The pedestrian network surrounding the site includes sidewalks on both sides of the study area roadway and pedestrian accommodations at the study area intersections. The site is within a 10-minute walking distance (800 m) of multiple points of interest as illustrated in **Exhibit 2.4.**



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

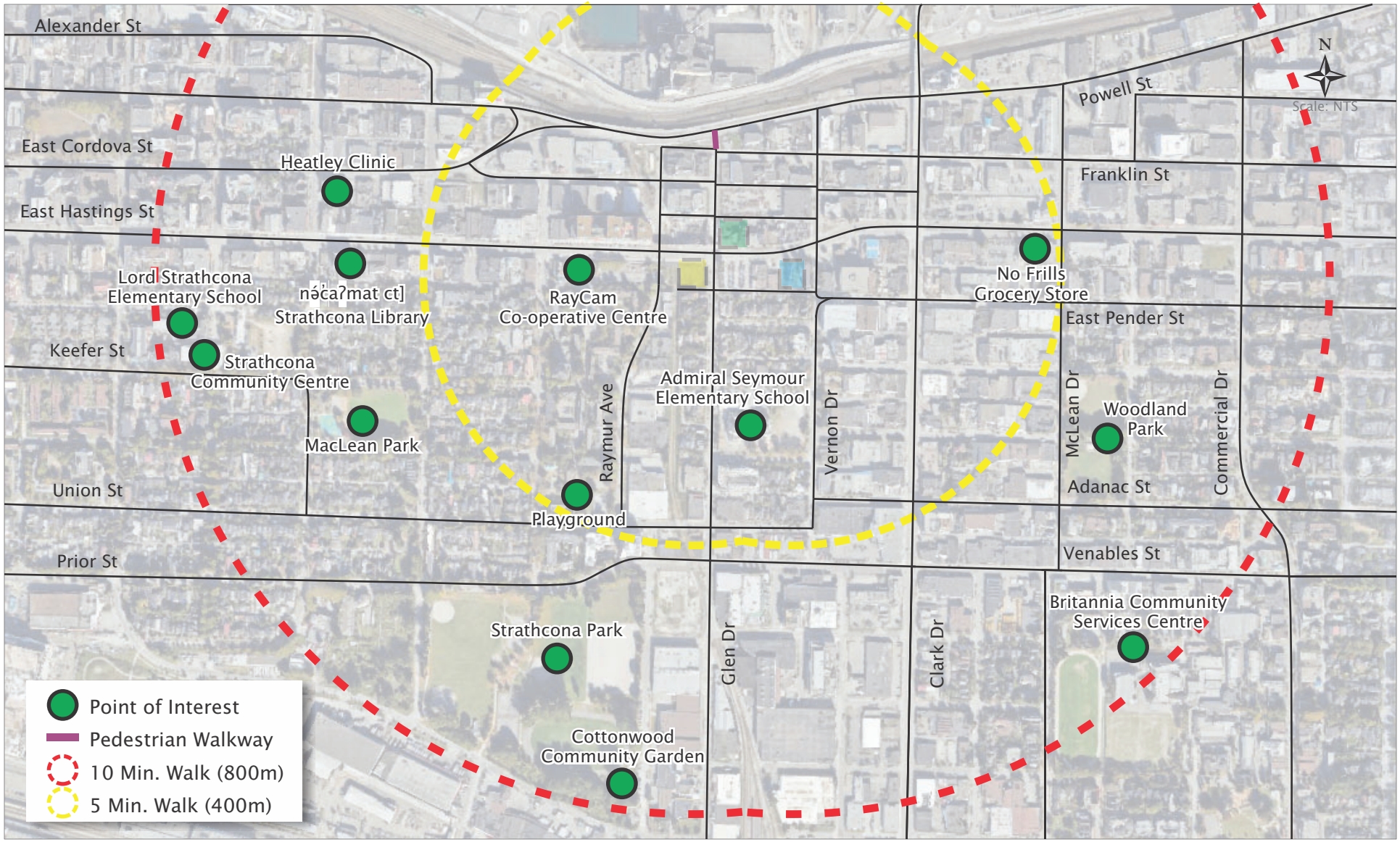
Exhibit 2.3

Cycling Facilities

04-24-0040

Living East Village
January 2025

bunt & associates



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 2.4

Pedestrian Facilities

04-24-0040

Living East Village
January 2025

bunt & associates

2.3 Current Relevant Policies & Plans

This section outlines the City of Vancouver, Province of British Columbia, and other transportation bureau's planning policies and anticipated infrastructure changes that are relevant to the proposed development.

2.3.1 Downtown Eastside Plan

The Downtown Eastside (DTES) Plan was adopted by the City in 2014. The plan outlines the City's long-term future community planning vision that focuses on ways to improve the lives of low-income residents and community members within the area. The key planning directions for the Downtown Eastside area include plans to:

- Increase neighbourhood development while maintaining the distinct character and roles of the existing diverse, mixed-income neighbourhoods.
- Increase access to affordable housing choices for low-income people.
- Strengthen the economy through community economic development (i.e retail and mixed-use centres) to meet local needs.
- Ensure the health and well-being needs of residents are being met.
- Ensure the arts, cultural, and heritage assets of the area are identified and protected.
- Improve transportation networks and connections such that walking and cycling are convenient and safe for people of all ages and abilities.
- Increase and improve parks and public open spaces by increasing neighbourhood safety and accessibility (i.e. improved lighting, sidewalk quality, transportation networks).

2.3.2 2023 Vancouver Transportation Fall Survey Report

The Vancouver Transportation Survey (VTS) is the annual transportation survey conducted to better understand the City's travel behaviour and preferences. The data collected provides metrics on the following:

- Mode share
- Use of car share (i.e. Evo / Modo)
- Number of trips
- Vehicle kilometres travelled (VKT)
- Frequency of working from home

This survey assists the City in assessing the impact of transportation initiatives and making sound decisions about transportation investments.

2.4 Existing Traffic Volumes

2.4.1 Traffic Data Collection Program

Summarized in **Table 2.3** are the transportation data sources for the operational analysis from Bunt's surveys. The traffic data is provided in **Appendix B.**

Table 2.3: Summary of Available and Counted Traffic Data

INTERSECTION	SOURCE	DATE OF COUNT	PEAK HOURS	
			AM	PM
E Hastings Street & Glen Drive	Bunt	October 9, 2024	8:00 am to 9:00 am	4:45 pm to 5:45 pm
E Hastings Street & Vernon Drive	Bunt	October 9, 2024	8:00 am to 9:00 am	4:45 pm to 5:45 pm
E Hastings Street & Clark Drive	Bunt	October 9, 2024	8:00 am to 9:00 am	4:30 pm to 5:30 pm
E Cordova Street & Glen Drive	Bunt	October 9, 2024	7:00 am to 8:00 am	4:45 pm to 5:45 pm
Laneway (N of E Hastings Street) & Glen Drive	Bunt	October 9, 2024	7:00 am to 8:00 am	4:30 pm to 5:30 pm
Laneway (N of E Hastings Street) & Vernon Drive	Bunt	October 9, 2024	7:00 am to 8:00 am	4:30 pm to 5:30 pm
Laneway (S of E Hastings Street) & Glen Drive	Bunt	October 9, 2024	8:00 am to 9:00 am	4:30 pm to 5:30 pm
Laneway (S of E Hastings Street) & Vernon Drive	Bunt	October 9, 2024	8:00 am to 9:00 am	4:45 pm to 5:45 pm
OVERALL STUDY AREA PEAK HOUR			8:00 AM TO 9:00 AM	4:45 PM TO 5:45 PM

Traffic volumes were also collected during the midday peak period of 11:00 am to 1:00 pm on October 9, 2024 at Glen Drive & E Hastings Street and Vernon Drive & E Hastings Street to facilitate traffic signal warrant analyses.

2.4.2 Peak Hour Traffic Volumes

Weekday peak hour periods adopted for the study were as follows:

- AM Peak Hour – 8:00 am to 9:00 am
- PM Peak Hour – 4:45 pm to 5:45 pm

Vehicle turning volumes at the study network intersections were balanced to account for small differences in the counts and are graphically shown in **Exhibit 2.5**. Peak hour pedestrian and cycling traffic volumes are shown in **Exhibit 2.6**.

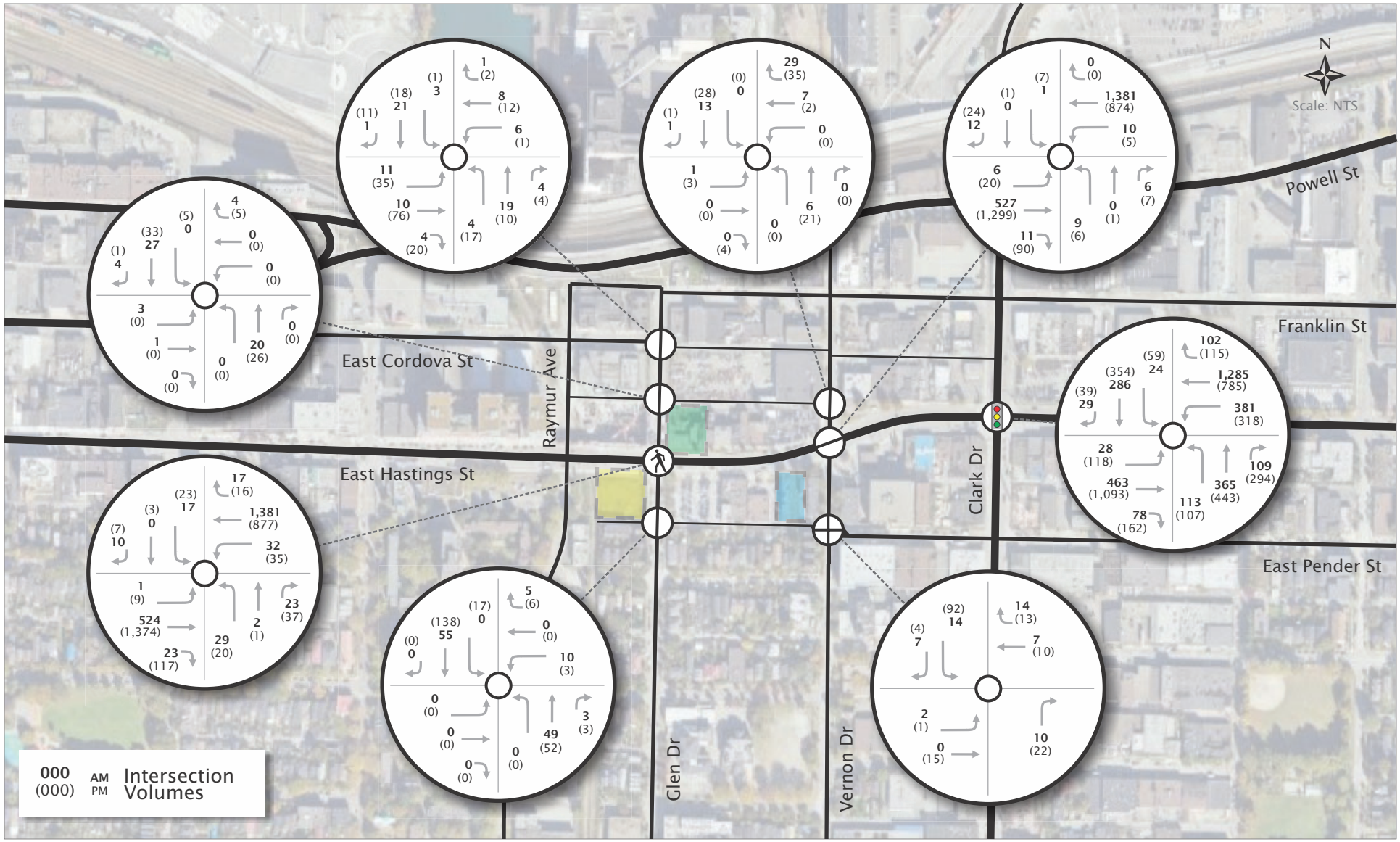
Table 2.4 presents a summary of the two-way peak-hour vehicle movements for the streets in the study area.

Overall, the weekday AM peak hour volumes are noticeably lower than the PM peak hour, and given this, it is thus anticipated to be the most critical period for the operational analysis. The highest link volumes occur on E Hastings Street (2,000 to 2,360 vehicles per hour), followed by Clark Drive (1,330 to 1,680 vehicles per hour).

Table 2.4: Existing Peak Hour Roadway Link Volumes

ROAD LINK	PEAK LINK VOLUMES (VEH/HR)	
	AM	PM
Glen Drive	110	215
Vernon Drive	35	110
Clark Drive	1,330	1,680
E Hastings Street	2,000	2,360
E Cordova Street	40	170

Note: Values rounded



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 2.5

Existing Peak Hour Vehicle Traffic Volumes

04-24-0040

Living East Village
January 2025

bunt & associates



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 2.6

Existing Peak Hour Pedestrian & Cycling Traffic Volumes

04-24-0040

Living East Village
January 2025

bunt & associates

2.5 Existing Operations

2.5.1 Performance Thresholds

The existing operations of study area intersections and access points were assessed using the methods outlined in the 6th Edition of the Highway Capacity Manual (HCM), using the Synchro 11.1 analysis software (Build 3, Revision 34). 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 2.5 below summarizes the LOS thresholds for the six Levels of Service, for both signalized and unsignalized intersections.

Table 2.5: 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 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 common.

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

Signalized Intersections:

- Overall intersection Level of Service = LOS D or better;

- 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: Overall LOS as well as individual movement LOS and V/C is reported. 95th Percentile Queues are reported as estimated by Synchro.
- For unsignalized two-way stop-controlled intersections: LOS and V/C output is reported just for individual lanes as the HCM methodology does not report overall performance.
- For unsignalized All-way Stop controlled intersections: LOS is reported by approach. Degree of Utilization is reported for each approach in place of V/C, which is not part of HCM AWSC reports.

The performance reporting conventions noted above have been consistently applied throughout this document and the detailed outputs are provided in **Appendix C**.

2.5.2 Existing Conditions Analysis Assumptions

Signal Timing:
Signal timing plans were provided by the City of Vancouver and inputted into the Synchro model.

Traffic Control:
Traffic controls have been inputted based on existing controls/signage. For lane intersections, traffic controls were inputted as the most similarly operating unsignalized option.

Synchro Parameters
Peak hour factor (by intersection) and heavy vehicle percentage (by movement) were inputted based on the existing traffic data collection.

Laning and speeds were inputted based on existing conditions, with the exception of additional north and south turn lanes at Vernon Drive & E Hastings Street. The addition of the lanes is based on the street width allowing for vehicles to bypass left-turning vehicles.

2.5.3 Existing Operational Analysis Results

Table 2.6 summarizes the operational analysis for the existing (2024) traffic conditions.

Table 2.6: Existing Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Glen Drive & E Hastings Street *Pedestrian Signal*	*OVERALL*	*A*			*A*		
	EB LTR	A	0.17	10	A	0.43	35
	WB LTR	A	0.43	40	A	0.29	20
	NB LTR	C	0.27	15	C	0.25	15
	SB LTR	C	0.13	5	C	0.13	10
Vernon Drive & E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LT	D	0.04	0	B	0.05	0
	EB R	A	0.00	0	A	0.00	0
	WB LT	B	0.02	0	C	0.02	0
	NB L	D	0.07	0	F	0.09	0
	NB TR	B	0.01	0	D	0.06	0
	SB L	F	0.02	0	E	0.07	0
	SB TR	C	0.05	0	C	0.09	0
Clark Drive & E Hastings Street *Traffic Signal*	*OVERALL*	*B*			*C*		
	EB L	B	0.12	5	B	0.30	15
	EB TR	C	0.43	35	D	0.82	85
	WB L	B	0.64	50	C	0.65	60
	WB TR	B	0.61	85	B	0.40	50
	NB LTR	C	0.53	35	C	0.75	50
	SB LT	C	0.29	20	D	0.42	30
	SB R	B	0.07	0	C	0.09	0
Glen Drive & E Cordova Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.04	0	B	0.22	5
	WB LTR	A	0.03	0	A	0.03	0
	NB LTR	A	0.00	0	A	0.02	0
	SB LTR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.01	0	A	0.00	0
	WB LTR	A	0.01	0	A	0.01	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.01	0
Vernon Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LR	A	0.00	0	A	0.01	0
	WB LTR	A	0.06	0	A	0.05	0
	NB LT	A	0.00	0	A	0.00	0

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
	SB TR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane South of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.00	0	A	0.00	0
	WB LTR	B	0.06	0	A	0.02	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.02	0
Vernon Drive & EW Lane South of E Hastings Street *All Way Stop Control*	*OVERALL*						
	EB LT	A	0.00	0	A	0.03	0
	WB TR	A	0.04	0	A	0.04	0
	NB R	A	0.02	0	A	0.03	0
	SB LR	A	0.04	0	A	0.16	0

All intersections operate within the performance thresholds during the existing AM and PM peak hours, with the exception of Vernon Drive & E Hastings Street. Due to the high volumes on E Hastings Street, vehicles turning left out of Vernon Drive experience long delays, resulting in LOS F. However, the v/c ratio is low during both AM and PM peak hours for the impacted movements, as there are few vehicles turning left out of Vernon Drive.

2.5.4 Traffic Signal Warrants

Bunt conducted TAC Traffic Signal Warrant Analyses during the existing scenario at the following intersections:

1. Glen Drive & E Hastings Street; and,
2. Vernon Drive & E Hastings Street.

Glen Drive & E Hastings Street is currently operated with a pedestrian signal, while Vernon Drive & E Hastings Street is a two-way stop-controlled intersection.

During the existing scenario, traffic signals were not warranted at either intersection. Signal warrants are included in **Appendix D**.

3. FUTURE TRAFFIC CONDITIONS

3.1 Traffic Forecasts

3.1.1 Background Traffic Forecasts

Background traffic is traffic that would be present on the road network if the site did not redevelop.

The background growth rate was determined through review of historical traffic data obtained from the City of Vancouver's VanMap portal. Reviewed intersections include:

1. Glen Drive & E Hastings Street (2019 & 2021)
2. Clark Drive & E Hastings Street (2019 & 2022)

Using the historical traffic data and Bunt's collected data, a linear growth rate of 0.5% was determined, and is considered to be a conservative value. The linear growth rate was applied to the existing (2024) traffic volumes to obtain the Opening Day (2029) and Opening Day + 5 Years (2034) background traffic volumes, as illustrated in **Exhibits 3.1** and **3.2**.

3.1.2 Site Traffic

Trip Generation

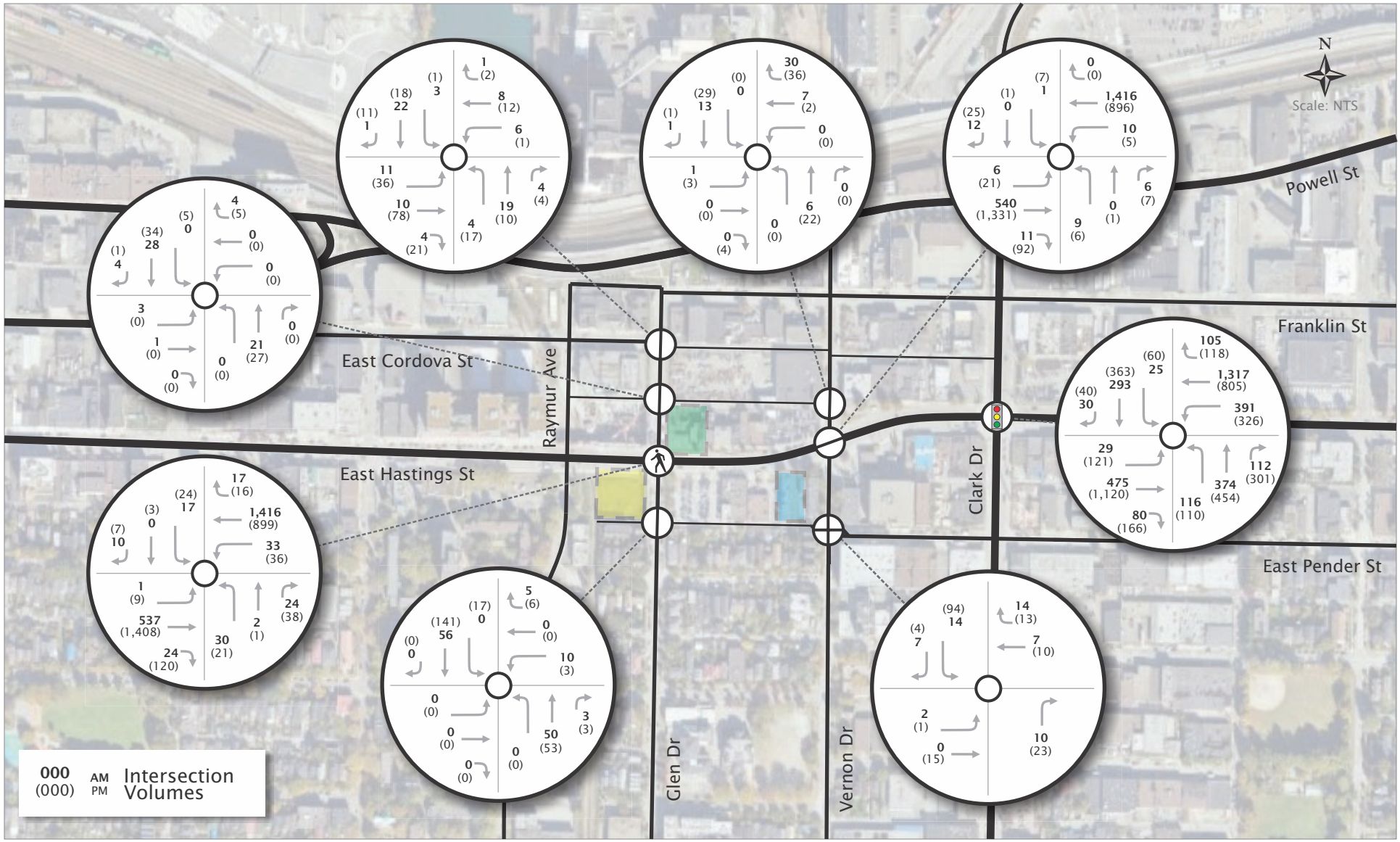
Vehicle trips were estimated using the General Urban/Suburban Institute of Transportation Engineers (ITE) rates from the *Trip Generation Manual 11th Edition* and adjusting the trips based on the vehicle mode split identified for the Vancouver Port area in the *2023 Vancouver Transportation Fall Survey* report.

The mode split adjusted vehicle trip rates are summarized in **Table 3.1** for the AM and PM peak hours.

Table 3.1: Peak Hour Vehicle Trip Rates

LAND USE	UNITS	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Residential	Per DU	26%	74%	0.15	62%	38%	0.18
Retail	Per 1000 SF	62%	38%	0.46	48%	52%	1.86

Table 3.2 summarizes the anticipated future site generated vehicle trips for the proposed development based on the above rates.



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

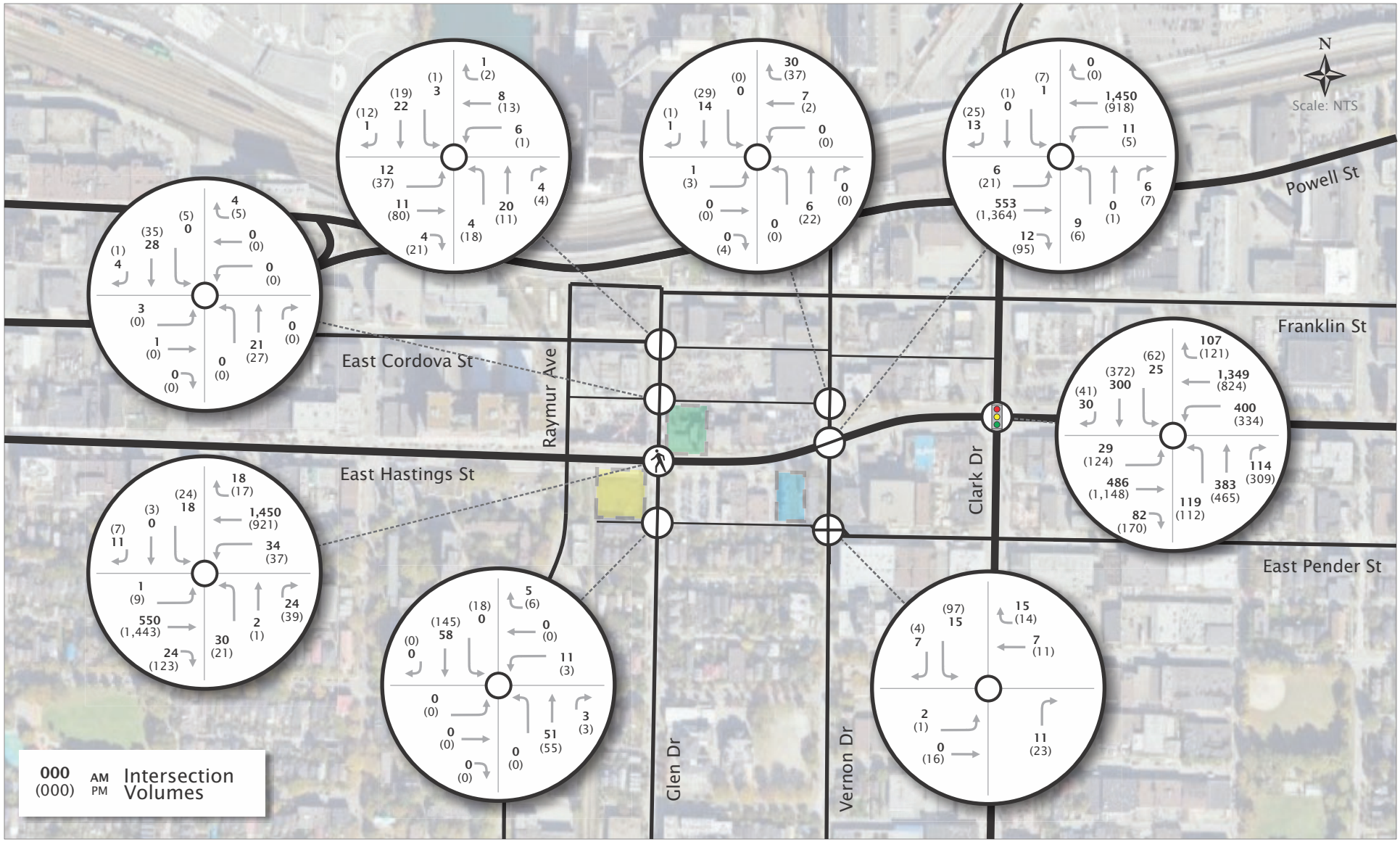
Exhibit 3.1

Opening Day Background Traffic Forecasts

04-24-0040

Living East Village
January 2025

bunt & associates



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 3.2

Opening Day + 5 Background Traffic Forecasts

04-24-0040

Living East Village
January 2025

bunt & associates

Table 3.2: Estimated Peak Hour Site Vehicle Trips

BUILDING	LAND USE	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
East 1	Residential	15	42	57	43	26	69
	Retail	1	1	2	3	3	6
	SUBTOTAL	**16**	**43**	**59**	**46**	**29**	**75**
East 2	Residential	15	43	58	43	26	69
	Retail	1	1	2	4	4	8
	SUBTOTAL	**16**	**44**	**60**	**47**	**30**	**67**
East 3	Residential	6	17	23	18	11	29
	Retail	0	0	0	1	1	2
	SUBTOTAL	**6**	**17**	**23**	**19**	**12**	**31**
TOTAL		38	104	142	112	71	173

Using the ITE rates, the development is estimated to generate approximately 140-175 vehicle trips during the peak hours, or 2-3 vehicles every minute.

Table 3.3 summarizes the multi-modal trip generation for the Living East Village development based on the Vancouver Port mode share. The vehicle trips compose less than 50% of the total site trips for the development.

Table 3.3: Estimated Multi-Modal Peak Hour Site Trips

BUILDING	MODE	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
East 1	Auto	16	43	60	47	31	78
	Transit	4	10	14	11	7	18
	Walk	13	34	47	37	25	62
	Bicycle	5	13	18	14	9	24
	SUBTOTAL	**38**	**100**	**139**	**109**	**72**	**182**
East 2	Auto	17	44	61	50	34	84
	Transit	4	10	14	12	8	20
	Walk	13	35	48	40	27	66
	Bicycle	5	13	18	15	10	25
	SUBTOTAL	**39**	**102**	**141**	**117**	**79**	**195**
East 3	Auto	7	18	25	20	13	33
	Transit	2	4	6	5	3	8
	Walk	6	14	20	16	10	26
	Bicycle	2	5	8	6	4	10
	SUBTOTAL	**17**	**41**	**59**	**47**	**30**	**77**
TOTAL		94	243	339	273	181	454

The estimated residential vehicle trips above exceed the number of provided parking spaces during each peak hour. Though the estimates in Table 3.2 were used for analysis to be conservative, Bunt also

reviewed estimated residential vehicle trips using a per occupied stall rate (**Table 3.4**). These findings are summarized in **Table 3.5**.

Table 3.4: Residential Peak Hour Vehicle Trip Rates – Per Stall

LAND USE	UNITS	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Residential	Per Stall	34%	66%	0.06	55%	45%	0.11

Table 3.5: Estimated Peak Hour Site Vehicle Trips – Residential Per Stall Rate

BUILDING	LAND USE	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
East 1	Residential	1	1	2	2	2	4
	Retail	1	1	2	3	3	6
	SUBTOTAL	**2**	**2**	**4**	**5**	**5**	**10**
East 2	Residential	0	0	0	0	0	0
	Retail	1	1	2	4	4	8
	SUBTOTAL	**1**	**1**	**2**	**4**	**4**	**8**
East 3	Residential	0	0	0	0	0	0
	Retail	0	0	0	1	1	2
	SUBTOTAL	**0**	**0**	**0**	**1**	**1**	**2**
TOTAL		3	3	6	10	10	20

Using the residential rate based on occupied stalls, the development would generate approximately 5-20 trips during the peak hours, or up to 1 vehicle every 3 minutes.

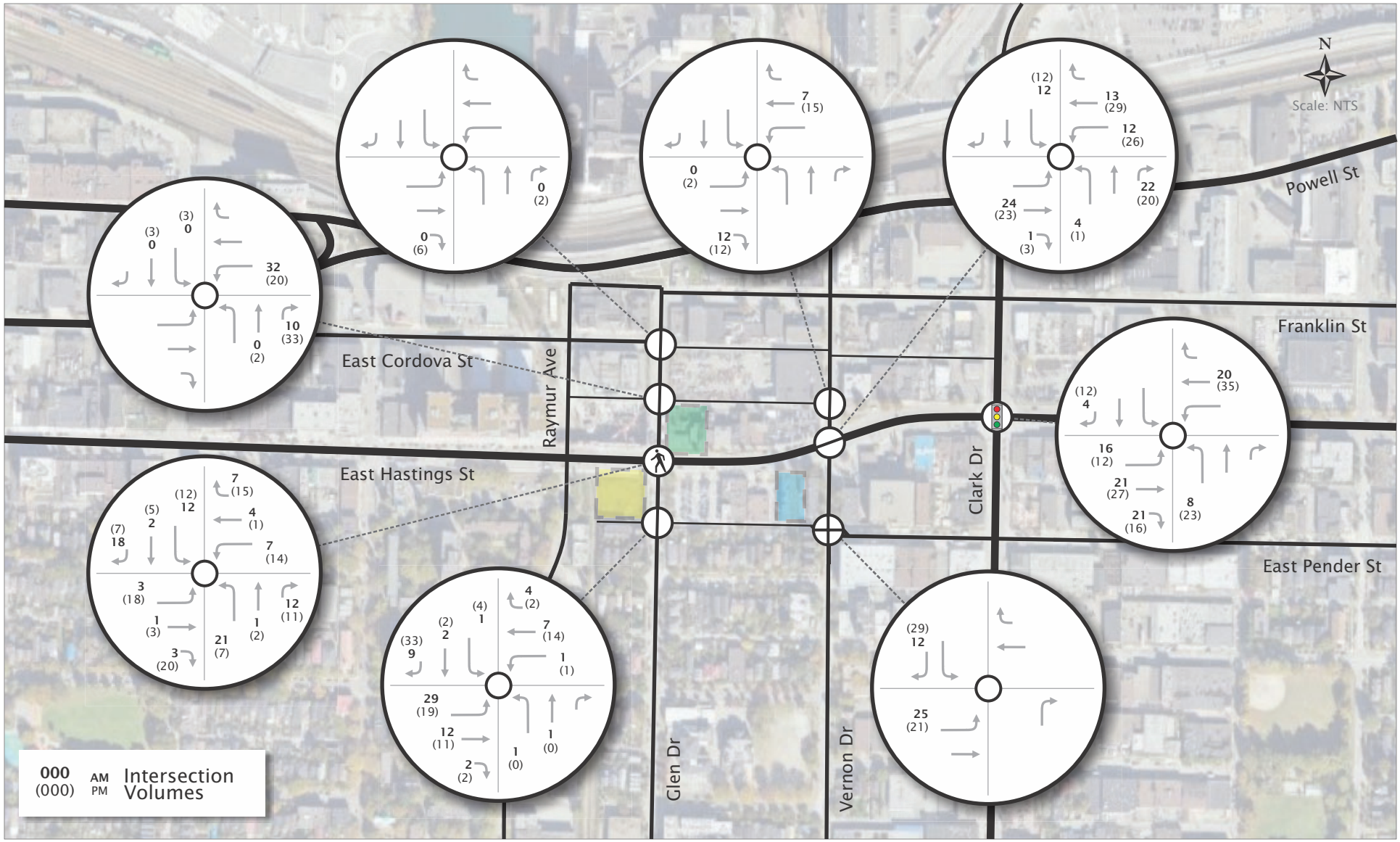
Trip Distribution & Assignment

Trip distribution for the vehicle trips was based on observed traffic patterns within the study area. The resulting trip distribution is shown in **Table 3.4**.

Table 3.4: Estimated Trip Distribution

ORIGIN/DESTINATION	AM PEAK HOUR		PM PEAK HOUR	
	IN (%)	OUT (%)	IN (%)	OUT (%)
E Cordova Street – West	0%	0%	5%	0%
E Cordova Street – East	0%	0%	0%	5%
Clark Drive – North	10%	155	10%	15%
E Hastings Street - West	15%	40%	35%	20%
E Hastings Street – East	50%	20%	30%	35%
Clark Drive – South	20%	20%	20%	20%
Glen Drive - South	5%	5%	0%	5%
TOTAL	100%	100%	100%	100%

Site trips were assigned to the network based on the above trip distribution, turning/movement restrictions, and engineering judgement. The site traffic forecasts are presented in **Exhibit 3.3**.



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 3.3

Site Traffic Forecasts

04-24-0040

Living East Village
January 2025

bunt & associates

The net change in future intersection vehicle volumes due to the new site trips during the Opening Day (2029) and Opening Day + 5 Years (2034) is summarized in **Tables 3.5** and **3.6**, respectively.

Table 3.5: Net Change in Future Intersection Vehicle Volumes with New Site Trips – Opening Day

INTERSECTION	AM PEAK HOUR VOLUMES			PM PEAK HOUR VOLUMES		
	BACK-GROUND	SITE	% CHANGE	BACK-GROUND	SITE	% CHANGE
E Hastings Street & Glen Drive	2,110	90	4%	2,580	115	4%
E Hastings Street & Vernon Drive	2,010	85	4%	2,390	115	5%
E Hastings Street & Clark Drive	3,345	90	3%	3,985	125	3%
E Cordova Street & Glen Drive	95	0	0%	210	10	5%
Laneway (N of E Hastings Street) & Glen Drive	60	40	67%	70	60	86%
Laneway (N of E Hastings Street) & Vernon Drive	60	15	25%	95	30	32%
Laneway (S of E Hastings Street) & Glen Drive	125	70	56%	225	85	38%
Laneway (S of E Hastings Street) & Vernon Drive	55	40	73%	160	50	31%

Note: Values rounded to nearest 5

During the Opening Day (2029), E Hastings Street sees less than 5% change due to the site traffic while the laneways see up to 86% change.

Table 3.6: Net Change in Future Intersection Vehicle Volumes with New Site Trips – Opening Day + 5

INTERSECTION	AM PEAK HOUR VOLUMES			PM PEAK HOUR VOLUMES		
	BACK-GROUND	SITE	% CHANGE	BACK-GROUND	SITE	% CHANGE
E Hastings Street & Glen Drive	2,160	90	4%	2,645	115	4%
E Hastings Street & Vernon Drive	2,060	85	4%	2,615	115	4%
E Hastings Street & Clark Drive	3,425	90	2%	4,080	125	3%
E Cordova Street & Glen Drive	95	0	0%	215	10	5%
Laneway (N of E Hastings Street) & Glen Drive	60	40	67%	75	60	80%
Laneway (N of E Hastings Street) & Vernon Drive	60	15	25%	100	30	30%
Laneway (S of E Hastings Street) & Glen Drive	130	70	54%	230	85	37%
Laneway (S of E Hastings Street) & Vernon Drive	55	40	73%	165	50	30%

Note: Values rounded to nearest 5

During the Opening Day + 5 Years (2034), E Hastings Street sees less than 5% change due to the site traffic while the laneways see up to 80% change.

3.1.3 Total Traffic

Total traffic is obtained by adding the estimated site trips to the background traffic forecasts. The Opening Day (2029) and Opening Day + 5 Years (2034) total traffic forecasts are illustrated in **Exhibits 3.4** and **3.5**, respectively.

3.2 Future Traffic Operations

3.2.1 Future Conditions Analysis Assumptions

Assumptions of the existing conditions analysis were maintained, though signal timing phases were optimized to adjust for future traffic conditions.

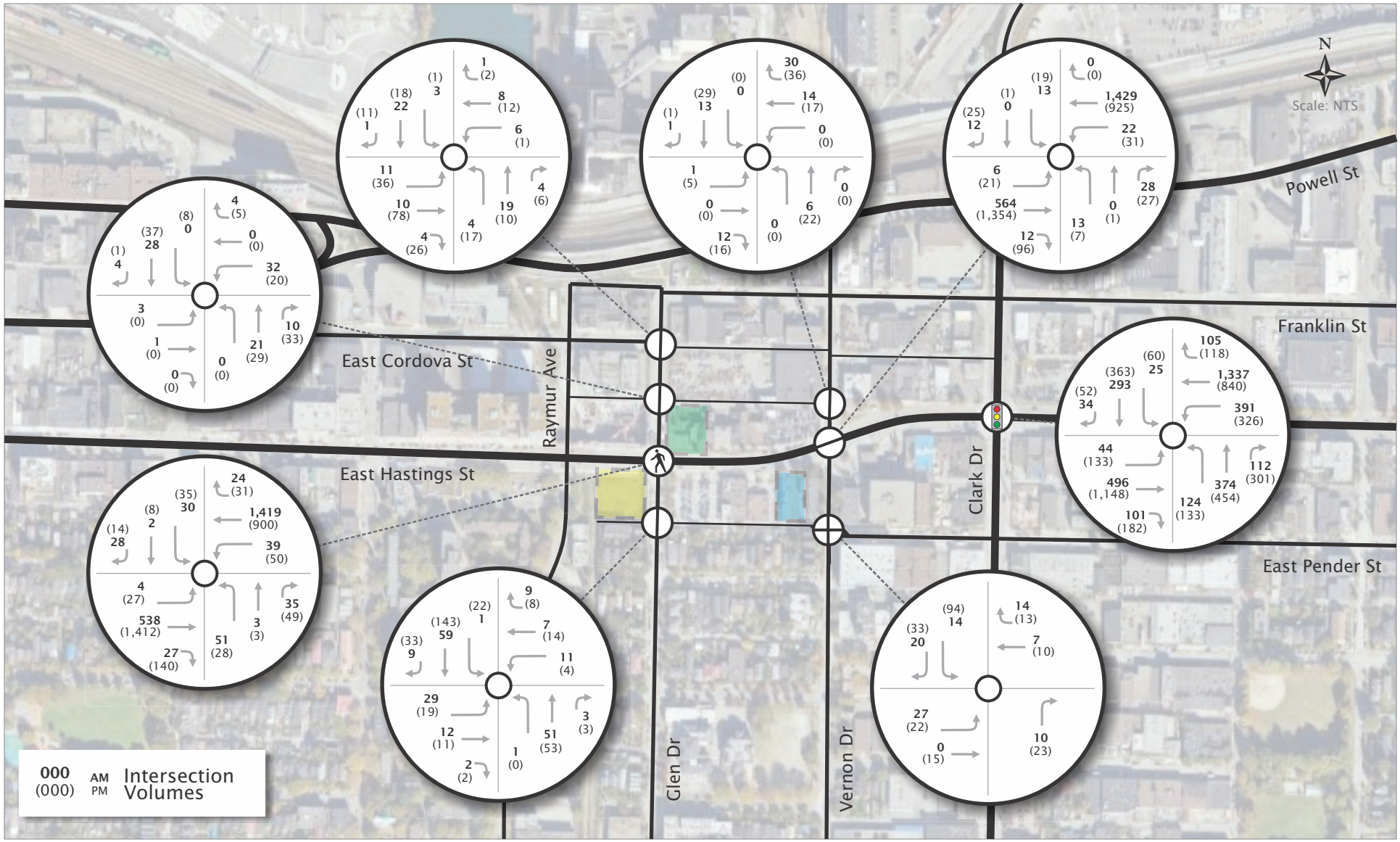
3.2.2 Future Background Traffic Operations

Tables 3.7 and **3.8** summarize the operations for the Opening Day (2029) and Opening Day + 5 Years (2034) background vehicle operations.

Table 3.7: Opening Day (2029) Background Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Glen Drive & E Hastings Street *Pedestrian Signal*	*OVERALL*	*A*			*A*		
	EB LTR	A	0.18	15	A	0.44	35
	WB LTR	A	0.44	40	A	0.30	20
	NB LTR	C	0.27	15	C	0.25	15
	SB LTR	C	0.13	5	C	0.13	15
Vernon Drive & E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LT	D	0.04	0	B	0.05	0
	EB R	A	0.00	0	A	0.00	0
	WB LT	B	0.02	0	C	0.02	0
	NB L	A	0.07	0	F	0.10	0
	NB TR	D	0.01	0	E	0.06	0
	SB L	F	0.02	0	E	0.08	0
	SB TR	C	0.05	0	C	0.10	0
Clark Drive & E Hastings Street *Traffic Signal*	*OVERALL*	*C*			*C*		
	EB L	B	0.13	5	B	0.31	15
	EB TR	C	0.49	35	C	0.78	85
	WB L	B	0.64	55	C	0.69	70

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
	WB TR	B	0.63	80	B	0.40	45
	NB LTR	C	0.55	40	D	0.80	55
	SB LT	C	0.30	20	D	0.45	30
	SB R	B	0.07	0	C	0.10	0
Glen Drive & E Cordova Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.04	0	B	0.22	5
	WB LTR	A	0.03	0	A	0.03	0
	NB LTR	A	0.00	0	A	0.02	0
	SB LTR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.01	0	A	0.00	0
	WB LTR	A	0.01	0	A	0.01	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.01	0
Vernon Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LR	A	0.00	0	A	0.01	0
	WB LTR	A	0.06	0	A	0.06	0
	NB LT	A	0.00	0	A	0.00	0
	SB TR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane South of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.00	0	A	0.00	0
	WB LTR	B	0.06	0	A	0.02	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.02	0
Vernon Drive & EW Lane South of E Hastings Street *All Way Stop Control*	*OVERALL*						
	EB LT	A	0.00	0	A	0.03	0
	WB TR	A	0.04	0	A	0.04	0
	NB R	A	0.02	0	A	0.03	0
	SB LR	A	0.04	0	A	0.16	5



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

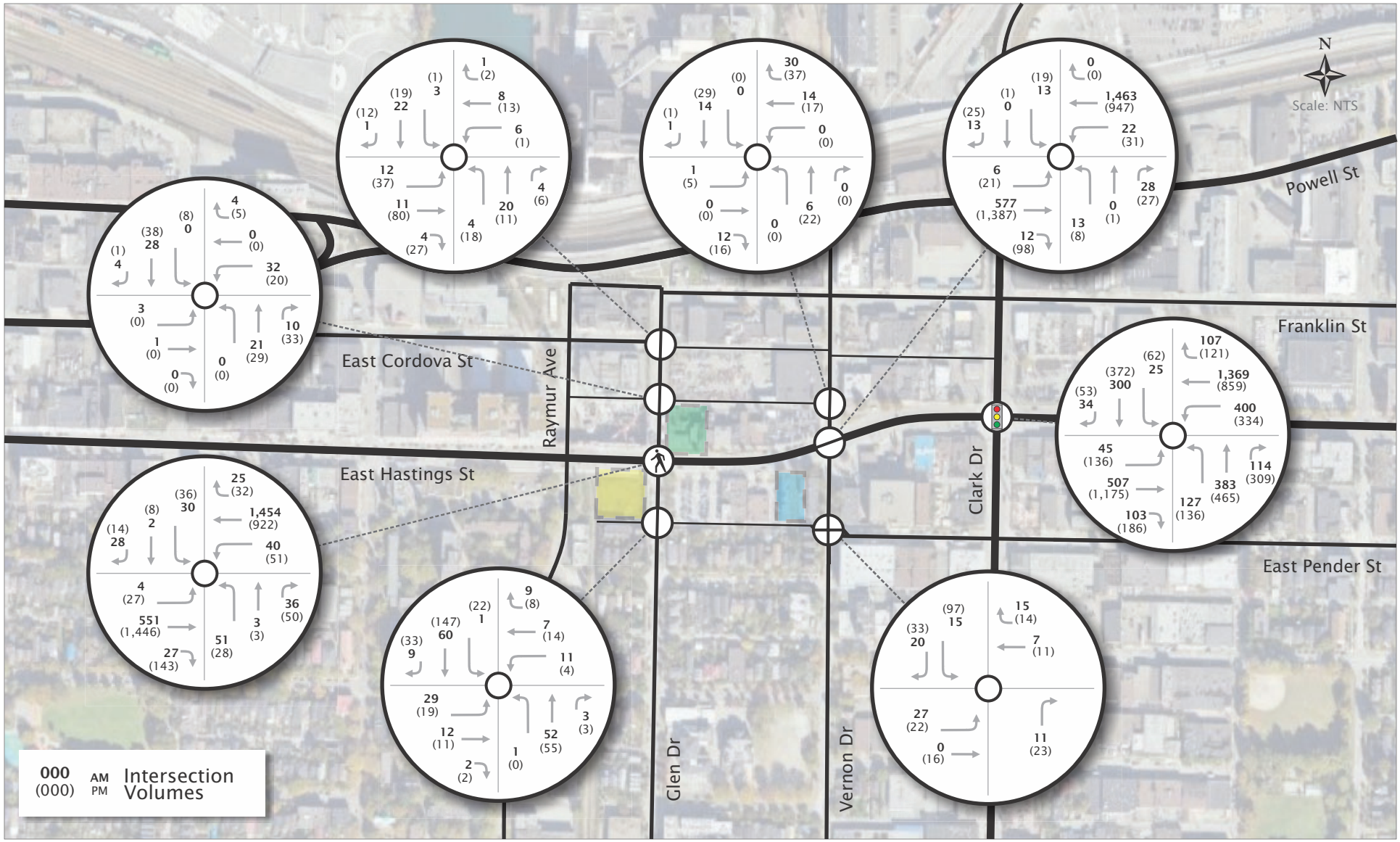
Exhibit 3.4

Opening Day Total Traffic Forecasts

04-24-0040

Living East Village
January 2025

bunt & associates



O:\Dept BC\Projects\2024\04-24-0040 Living East Village\5.0 Deliverables\5.1 Report\Graphics

Exhibit 3.5

Opening Day + 5 Total Traffic Forecasts

04-24-0040

Living East Village
January 2025

bunt & associates

Table 3.8: Opening Day + 5 Years (2034) Background Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Glen Drive & E Hastings Street *Pedestrian Signal*	*OVERALL*	*A*			*A*		
	EB LTR	A	0.18	15	A	0.45	40
	WB LTR	A	0.45	45	A	0.31	20
	NB LTR	C	0.27	15	C	0.26	15
	SB LTR	C	0.14	5	C	0.13	10
Vernon Drive & E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LT	D	0.04	0	B	0.05	0
	EB R	A	0.00	0	A	0.00	0
	WB LT	B	0.02	0	C	0.02	0
	NB L	E	0.08	0	F	0.11	0
	NB TR	B	0.01	0	E	0.07	5
	SB L	F	0.02	0	F	0.09	0
	SB TR	C	0.05	0	C	0.11	0
Clark Drive & E Hastings Street *Traffic Signal*	*OVERALL*	*C*			*C*		
	EB L	B	0.13	5	B	0.32	15
	EB TR	C	0.50	35	C	0.80	90
	WB L	B	0.66	60	C	0.71	75
	WB TR	B	0.64	85	B	0.41	45
	NB LTR	C	0.57	40	D	0.83	55
	SB LT	C	0.31	20	D	0.49	30
	SB R	B	0.07	0	C	0.10	0
Glen Drive & E Cordova Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.04	0	B	0.23	5
	WB LTR	A	0.03	0	B	0.03	0
	NB LTR	A	0.00	0	A	0.02	0
	SB LTR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.01	0	A	0.00	0
	WB LTR	A	0.01	0	A	0.01	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.01	0
Vernon Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LR	A	0.00	0	A	0.01	0
	WB LTR	A	0.06	0	A	0.06	0
	NB LT	A	0.00	0	A	0.00	0
	SB TR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane South of E Hastings Street	*OVERALL*						
	EB LTR	A	0.00	0	A	0.00	0
	WB LTR	B	0.06	0	A	0.02	0

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Two Way Stop Control	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.02	0
Vernon Drive & EW Lane South of E Hastings Street	*OVERALL*						
	EB LT	A	0.00	0	A	0.03	0
	WB TR	A	0.04	0	A	0.04	0
All Way Stop Control	NB R	A	0.02	0	A	0.03	0
	SB LR	A	0.04	0	A	0.17	5

All intersections operate within the performance thresholds during the background Opening Day (2029) and Opening Day + 5 Years (2034) AM and PM peak hours, with the exception of Vernon Drive & E Hastings Street. Due to the high volumes on E Hastings Street, vehicles turning left out of Vernon Drive experience long delays, resulting in LOS F.

3.2.3 Traffic Signal Warrants

Bunt conducted TAC Traffic Signal Warrant Analyses during the existing scenario at the following intersections:

1. Glen Drive & E Hastings Street; and,
2. Vernon Drive & E Hastings Street.

During the background scenarios, traffic signals were not warranted at either intersection.

3.2.4 Future Total Traffic Operations

Tables 3.9 and **3.10** summarize the operations for the Opening Day (2029) and Opening Day + 5 Years (2034) total vehicle operations.

Table 3.9: Opening Day (2029) Total Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Glen Drive & E Hastings Street	*OVERALL*	*A*			*A*		
	EB LTR	A	0.18	15	A	0.46	45
	WB LTR	A	0.46	50	A	0.33	25
Pedestrian Signal	NB LTR	C	0.38	20	C	0.32	20
	SB LTR	C	0.25	15	C	0.21	15
Vernon Drive & E Hastings Street	*OVERALL*						
	EB LT	D	0.04	0	B	0.05	0

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Two Way Stop Control	EB R	A	0.00	0	A	0.00	0
	WB LT	B	0.04	0	C	0.14	5
	NB L	E	0.13	5	F	0.18	5
	NB TR	B	0.06	0	D	0.15	5
	SB L	F	0.29	5	F	0.35	10
	SB TR	C	0.05	0	D	0.14	5
Clark Drive & E Hastings Street *Traffic Signal*	*OVERALL*	*C*			*C*		
	EB L	B	0.19	5	B	0.33	15
	EB TR	C	0.53	40	D	0.80	90
	WB L	B	0.65	60	C	0.70	70
	WB TR	B	0.65	80	B	0.42	50
	NB LTR	C	0.56	40	D	0.84	55
	SB LT	C	0.30	20	D	0.48	30
	SB R	B	0.08	0	C	0.13	0
Glen Drive & E Cordova Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.04	0	B	0.23	5
	WB LTR	A	0.03	0	B	0.03	0
	NB LTR	A	0.00	0	A	0.02	0
	SB LTR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.01	0	A	0.00	0
	WB LTR	A	0.07	0	A	0.04	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.01	0
Vernon Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LR	A	0.02	0	A	0.03	0
	WB LTR	A	0.07	0	A	0.09	0
	NB LT	A	0.00	0	A	0.00	0
	SB TR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane South of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	B	0.20	5	B	0.08	0
	WB LTR	B	0.11	5	B	0.06	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.02	0
Vernon Drive & EW Lane South of E Hastings Street *All Way Stop Control*	*OVERALL*						
	EB LT	A	0.06	0	A	0.07	0
	WB TR	A	0.04	0	A	0.04	0
	NB R	A	0.02	0	A	0.03	0
	SB LR	A	0.07	0	A	0.21	5

Table 3.10: Opening Day + 5 Years (2034) Total Vehicle Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Glen Drive & E Hastings Street *Pedestrian Signal*	*OVERALL*	*A*			*A*		
	EB LTR	A	0.19	15	A	0.47	45
	WB LTR	A	0.47	50	A	0.35	25
	NB LTR	C	0.38	20	C	0.32	20
	SB LTR	C	0.24	15	C	0.22	20
Vernon Drive & E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LT	D	0.04	0	B	0.05	0
	EB R	A	0.00	0	A	0.00	0
	WB LT	B	0.04	0	C	0.15	5
	NB L	E	0.15	5	F	0.24	5
	NB TR	B	0.06	0	D	0.17	5
	SB L	F	0.33	10	F	0.40	10
	SB TR	C	0.05	0	D	0.16	5
Clark Drive & E Hastings Street *Traffic Signal*	*OVERALL*	*C*			*C*		
	EB L	B	0.19	5	B	0.35	15
	EB TR	C	0.54	40	D	0.82	90
	WB L	B	0.67	65	C	0.72	75
	WB TR	B	0.66	85	B	0.43	50
	NB LTR	C	0.57	40	D	0.86	60
	SB LT	C	0.31	20	D	0.52	30
	SB R	B	0.08	0	C	0.13	0
Glen Drive & E Cordova Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.04	0	B	0.24	5
	WB LTR	A	0.03	0	B	0.03	0
	NB LTR	A	0.00	0	A	0.02	0
	SB LTR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LTR	A	0.01	0	A	0.00	0
	WB LTR	A	0.07	0	A	0.04	0
	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.01	0
Vernon Drive & EW Lane North of E Hastings Street *Two Way Stop Control*	*OVERALL*						
	EB LR	A	0.02	0	A	0.03	0
	WB LTR	A	0.07	0	A	0.09	0
	NB LT	A	0.00	0	A	0.00	0
	SB TR	A	0.00	0	A	0.00	0
Glen Drive & EW Lane South of E Hastings Street	*OVERALL*						
	EB LTR	B	0.20	5	B	0.08	0
	WB LTR	B	0.11	5	B	0.06	0

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	AM			PM		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
Two Way Stop Control	NB LTR	A	0.00	0	A	0.00	0
	SB LTR	A	0.00	0	A	0.02	0
Vernon Drive & EW Lane South of E Hastings Street	*OVERALL*						
	EB LT	A	0.06	0	A	0.07	0
	WB TR	A	0.04	0	A	0.04	0
All Way Stop Control	NB R	A	0.02	0	A	0.03	0
	SB LR	A	0.07	0	A	0.21	5

All intersections operate within the performance thresholds during the total Opening Day (2029) and Opening Day + 5 Years (2034) AM and PM peak hours, with the exception of Vernon Drive & E Hastings Street. Due to the high volumes on E Hastings Street, vehicles turning left out of Vernon Drive experience long delays, resulting in LOS F.

3.2.5 Traffic Signal Warrants

Bunt conducted TAC Traffic Signal Warrant Analyses during the existing scenario at the following intersections:

1. Glen Drive & E Hastings Street; and,
2. Vernon Drive & E Hastings Street.

During the total scenarios, Vernon Drive & E Hastings Street does not warrant a traffic signal. Glen Drive & E Hastings Street warrants a traffic signal as of the Opening Day (2029) total scenario, however the operations of the pedestrian signal are within the performance thresholds and do not require mitigations.

3.2.6 Summary of Traffic Impacts & Recommended Mitigations

In all scenarios, all intersections operate within the performance thresholds except for Vernon Drive & E Hastings.

Beginning in the existing scenario, the northbound and southbound left turns experience LOS F as the high East-West volumes on E Hastings restrict left turning vehicles on Vernon Drive.

No mitigations are recommended for Vernon Drive & E Hastings Street as a traffic signal is not warranted in any of the scenarios. Should volumes increase significantly in the future, Bunt recommends reviewing the restriction of left turns out of Vernon Drive.

It is recommended that all signalized intersections have optimized phasing to account for future traffic changes. Glen Drive & E Hastings warrants a full traffic signal as of the total Opening Day (2029) scenario,

though it operates within the performance thresholds as a pedestrian signal through the total Opening Day + 5 Years (2034) scenario.

4. SITE PLAN DESIGN REVIEW

4.1 Site Access Design

Each site is planned to be accessed via a rear lane. East 1 and East 3 propose a vehicle access from the south lane, and East 2 proposes a vehicle access from the north lane.

4.2 Off-Street Supply Review

4.2.1 East 1 Supply Review

Vehicle Parking

The Bylaw vehicle parking supply requirements and provisions are summarized in **Table 4.1**.

Table 4.1: Vehicle Parking Supply Requirements & Provision – East 1

LAND USE	DENSITY	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 4.3.2, 4.3.3, & 4.3.1)	BYLAW REQUIREMENT (SPACES)	SPACES PROVIDED
Residential Rental	382 units	No minimum requirement	0	36 *Including 4 accessible*
Residential Accessible	382 units	Minimum of 1 space for each building that contains at least 7 residential units, plus an additional 0.034 spaces for each additional dwelling unit.	14	
Residential Visitor	382 units	Minimum of 0.05 spaces per DU. Maximum of 0.1 spaces per DU	19	0
Commercial Retail	462 m^2 GFA	A maximum of 1 space per 115 m^2 GFA	0 – 4 MAX	0 *Including 0 accessible*
Commercial Accessible	462 m^2 GFA	Minimum of 1 space for each building that contains at least 500 m^2 GFA	0	

East 1 is required to provide 14 residential accessible spaces, 2 of which must be van accessible spaces, and 19 residential visitor spaces.

Bicycle Parking

Bicycle parking supply requirements and provisions for the project are summarized in **Table 4.2**.

Table 4.2: Bicycle Parking Supply Requirements & Provision – East 1

LAND USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTION 6.2.1.2 & 6.2.5.1)	DENSITY	SPACES REQUIRED
Residential Rental	Class A	Minimum of 1.5 spaces for units under 65 m^2, 2.5 spaces for units between 65 m^2 and 105 m^2, 3 spaces for units over 105 m^2	276 units, 106 units, 0 units	679
	Class B	Minimum of 2 spaces for developments with at least 20 units, plus one space for every additional 20 units	382 units	20
Commercial Retail	Class A	Minimum 1 for each 340 m^2 of GFA	462 m^2	1
	Class B	A minimum of 6 for any development containing a minimum of 1,000 m^2 of GFA		0
			TOTAL	680 CLASS A 20 CLASS B

East 1 is required to provide 680 Class A (secure) bicycle parking spaces (679 residential + 1 commercial) and 20 Class B (visitor) bicycle parking spaces (20 residential + 0 commercial).

The current site plan proposes a total of 751 residential Class A bicycle parking spaces, inclusive of 347 in-suite bike storage spaces, and 2 commercial Class A bicycle parking spaces. 19 Class B visitor spaces are provided, which the developer plans to adjust to meet the Bylaw requirements.

Per Section 6.3.22 of the bylaw, if 100 or more Class A bicycle parking spaces are required, then bicycle maintenance facilities are to be provided.

Loading

The off-street loading supply requirements and provisions are summarized in **Table 4.3**.

Table 4.3: Loading Supply Requirements – East 1

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 5.2.1 & 5.2.6)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	At least one space for 50 to 299 dwelling units, plus one space for any portion of each additional 200 DU.	382 units	2	0
	Class B	At least one Class B space for developments containing 100 to 299 dwelling units, plus one space for 300 to 499 DU.		2	1
Commercial Retail	Class B	A minimum of one space for the first 2,325 m^2 GFA.	462 m^2	1	1
			TOTAL	2 CLASS A 3 CLASS B	0 CLASS A 2 CLASS B

East 1 is required to provide 2 Class A (residential) and 3 Class B (2 residential + 1 commercial) loading spaces. The current site plan provides a total of 2 Class B (1 residential + 1 commercial) spaces.

Passenger Loading

Passenger loading supply requirements and provisions for the project are summarized in **Table 4.4**.

Table 4.4: Passenger Loading Supply Requirements – East 1

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 7.2.1 & 7.2.5.1)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	A minimum of one Class A passenger space for any development with 50 to 125 dwelling units, plus one space for every additional 150 dwelling units.	382 units	3	1
Commercial Retal	Class A	1 for each 4,000 m^2	462 m^2	0	0
			TOTAL	3	1

East 1 is required to provide 3 residential Class A passenger loading stalls.

The current site plan provides 1 Class A passenger loading stall. As indicated by the CoV Design Supplement, at least 1 Class A passenger space should be located at-grade.

4.2.2 East 2 Supply Review

Vehicle Parking

The Bylaw vehicle parking supply requirements and provisions are summarized in **Table 4.5**.

Table 4.5: Vehicle Parking Supply Requirements & Provision – East 2

LAND USE	DENSITY	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 4.3.2, 4.3.3, & 4.3.1)	BYLAW REQUIREMENT (SPACES)	SPACES PROVIDED
Residential Rental	385 units	No minimum requirement	0	5 *Including 5 accessible*
Residential Accessible	385 units	Minimum of 1 space for each building that contains at least 7 residential units, plus an additional 0.034 spaces for each additional dwelling unit.	14	
Residential Visitor	385 units	Minimum of 0.05 spaces per DU. Maximum of 0.1 spaces per DU	19	0
Commercial Retail	739 m^2 GFA	A maximum of 1 space per 115 m^2 GFA	0 – 6 MAX	0 *Including 0 accessible*
Commercial Accessible	739 m^2 GFA	Minimum of 1 space for each building that contains at least 500 m^2 GFA	1	

East 2 is required to provide 14 residential accessible spaces, 2 of which must be van-accessible spaces, and 19 residential visitor spaces. One commercial accessible space is required.

Bicycle Parking

Bicycle parking supply requirements and provisions for the project are summarized in **Table 4.6**.

Table 4.6: Bicycle Parking Supply Requirements & Provision – East 2

LAND USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTION 6.2.1.2 & 6.2.5.1)	DENSITY	SPACES REQUIRED
Residential Rental	Class A	Minimum of 1.5 spaces for units under 65 m^2, 2.5 spaces for units between 65 m^2 and 105 m^2, 3 spaces for units over 105 m^2	288 units, 97 units, 0 units	675
	Class B	Minimum of 2 spaces for developments with at least 20 units, plus one space for every additional 20 units	385 units	20
Commercial Retail	Class A	Minimum 1 for each 340 m^2 of GFA	739 m^2	2
	Class B	A minimum of 6 for any development containing a minimum of 1,000 m^2 of GFA		0
			TOTAL	677 CLASS A 20 CLASS B

East 2 is required to provide 677 Class A (secure) bicycle parking spaces (675 residential + 2 commercial) and 20 Class B (visitor) bicycle parking spaces (20 residential + 0 commercial).

The current site plan proposes a total of 738 residential Class A bicycle parking spaces, inclusive of 351 in-suite bike storage spaces, and 2 commercial Class A bicycle parking spaces. 19 Class B visitor spaces are provided, which the developer plans to adjust to meet the Bylaw requirements.

Per Section 6.3.22 of the bylaw, if 100 or more Class A bicycle parking spaces are required, then bicycle maintenance facilities are to be provided.

Loading

The off-street loading supply requirements and provisions are summarized in **Table 4.7**.

Table 4.7: Loading Supply Requirements – East 2

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 5.2.1 & 5.2.6)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	At least one space for 50 to 299 dwelling units, plus one space for any portion of each additional 200 DU.	385 units	2	0
	Class B	At least one Class B space for developments containing 100 to 299 dwelling units, plus one space for 300 to 499 DU.		2	1
Commercial Retail	Class B	A minimum of one space for the first 2,325 m^2 GFA.	739 m^2	1	1
			TOTAL	2 CLASS A 3 CLASS B	0 CLASS A 2 CLASS B

East 2 is required to provide 2 Class A (residential) and 3 Class B (2 residential + 1 commercial) loading spaces. The current site plan provides a total of 2 Class B (1 residential + 1 commercial) spaces.

Passenger Loading

Passenger loading supply requirements and provisions for the project are summarized in **Table 4.8**.

Table 4.8: Passenger Loading Supply Requirements – East 2

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 7.2.1 & 7.2.5.1)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	A minimum of one Class A passenger space for any development with 50 to 125 dwelling units, plus one space for every additional 150 dwelling units.	385 units	3	2
Commercial Retal	Class A	1 for each 4,000 m^2	739 m^2	0	0
			TOTAL	3	2

East 2 is required to provide 3 residential Class A passenger loading stalls.

The current site plan provides 2 Class A passenger loading stall. As indicated by the CoV Design Supplement, at least 1 Class A passenger space should be located at-grade.

4.2.3 East 3 Supply Review

Vehicle Parking

The Bylaw vehicle parking supply requirements and provisions are summarized in **Table 4.9**.

Table 4.9: Vehicle Parking Supply Requirements & Provision – East 3

LAND USE	DENSITY	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 4.3.2, 4.3.3, & 4.3.1)	BYLAW REQUIREMENT (SPACES)	SPACES PROVIDED
Residential Rental	157 units	No minimum requirement	0	5 *Including 4 accessible*
Residential Accessible	157 units	Minimum of 1 space for each building that contains at least 7 residential units, plus an additional 0.034 spaces for each additional dwelling unit.	6	
Residential Visitor	157 units	Minimum of 0.05 spaces per DU. Maximum of 0.1 spaces per DU	8	0
Commercial Retail	213 m^2 GFA	A maximum of 1 space per 115 m^2 GFA	0 – 2 MAX	0 *Including 0 accessible*
Commercial Accessible	213 m^2 GFA	Minimum of 1 space for each building that contains at least 500 m^2 GFA	0	

East 3 is required to provide 8 residential accessible spaces, 1 of which must be a van accessible space, and 6 residential visitor spaces.

Bicycle Parking

Bicycle parking supply requirements and provisions for the project are summarized in **Table 4.10**.

Table 4.10: Bicycle Parking Supply Requirements & Provision – East 3

LAND USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTION 6.2.1.2 & 6.2.5.1)	DENSITY	SPACES REQUIRED
Residential Rental	Class A	Minimum of 1.5 spaces for units under 65 m^2, 2.5 spaces for units between 65 m^2 and 105 m^2, 3 spaces for units over 105 m^2	147 units, 10 units, 0 units	246
	Class B	Minimum of 2 spaces for developments with at least 20 units, plus one space for every additional 20 units	157 units	9
Commercial Retail	Class A	Minimum 1 for each 340 m^2 of GFA	213 m^2	1
	Class B	A minimum of 6 for any development containing a minimum of 1,000 m^2 of GFA		0
			TOTAL	247 CLASS A 9 CLASS B

East 3 is required to provide 247 Class A (secure) bicycle parking spaces (246 residential + 1 commercial) and 9 Class B (visitor) bicycle parking spaces (9 residential + 0 commercial).

The current site plan proposes a total of 288 residential Class A bicycle parking spaces, inclusive of 157 in-suite bike storage spaces, and 6 commercial Class A bicycle parking spaces. 8 residential Class B visitor spaces and 2 commercial Class B visitor spaces are provided, which the developer plans to adjust to meet the Bylaw requirements.

Per Section 6.3.22 of the bylaw, if 100 or more Class A bicycle parking spaces are required, then bicycle maintenance facilities are to be provided.

Loading

The off-street loading supply requirements and provisions are summarized in **Table 4.11**.

Table 4.11: Loading Supply Requirements – East 3

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 5.2.1 & 5.2.6)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	At least one space for 50 to 299 dwelling units, plus one space for any portion of each additional 200 DU.	157 units	1	0
	Class B	At least one Class B space for developments containing 100 to 299 dwelling units, plus one space for 300 to 499 DU.		1	1
Commercial Retail	Class B	A minimum of one space for the first 2,325 m^2 GFA.	213 m^2	1	
			TOTAL	1 CLASS A 2 CLASS B	0 CLASS A 1 CLASS B

East 3 is required to provide 1 Class A (residential) and 2 Class B (1 residential + 1 commercial) loading spaces. The current site plan provides 1 Class B (residential + commercial) space.

Passenger Loading

Passenger loading supply requirements and provisions for the project are summarized in **Table 4.12**.

Table 4.12: Passenger Loading Supply Requirements – East 3

USE	TYPE	MINIMUM BYLAW REQUIREMENT RATE (BYLAW SECTIONS 7.2.1 & 7.2.5.1)	DENSITY	SPACES REQUIRED	SPACES PROVIDED
Residential Rental	Class A	A minimum of one Class A passenger space for any development with 50 to 125 dwelling units, plus one space for every additional 150 dwelling units.	382 units	1	1
Commercial Retal	Class A	1 for each 4,000 m^2	462 m^2	0	0
			TOTAL	1	1

East 3 is required to provide 1 residential Class A passenger loading stall.

The current site plan provides 1 Class A passenger loading stall. As indicated by the CoV Design Supplement, at least 1 Class A passenger space should be located at-grade.

5. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

Proposed Development

1. Living East Village is comprised of three development sites located along E Hastings Street. East 1 and East 2 are primarily comprised of market rental residential units, and East 3 of senior's social housing and replacement SRA units.
2. East 1 is composed of 382 residential units and 462 square metres of commercial area.
3. East 2 is composed of 385 residential units and 739 square metres of commercial area.
4. East 3 is composed of 157 residential units and 213 square metres of commercial area.
5. Vehicle access is provided at the rear lane of each site.

Existing Conditions

1. The East 1 site is currently vacant. The East 2 and East 3 sites are currently occupied by buildings, however the buildings are vacant.
2. Living East Village is located within the Strathcona neighbourhood, where the residential areas begin to transition into industrial uses.
3. Living East Village is located in close proximity to transit and cycling networks, and within a 10-minute walk of an abundance of points of interest.
4. Existing traffic volumes were collected during the AM and PM peak periods on October 9, 2024. The peak hours were determined to be 8-9 AM and 4:45-5:45 PM.
5. All intersections except for Vernon Drive & E Hastings Street operate within the performance thresholds during the existing AM and PM peak hours.
6. High volumes along E Hastings Street result in long delays and LOS F for vehicles turning left out of Vernon Drive.
7. TAC Traffic Signal Warrant Analyses were conducted during the existing scenario for the following intersections:
    a. Glen Drive & E Hastings Street (pedestrian signal); and,
    b. Vernon Drive & E Hastings Street (two way stop control).
8. Traffic signals are not warrants at either Glen Drive & E Hastings Street nor Vernon Drive & E Hastings Street during the existing scenario.

Future Conditions

1. Background traffic volumes were estimated for the following horizon years:
    a. Opening Day (2029); and,
    b. Opening Day + 5 Years (2034).
2. The background growth rate was determined to be a linear 0.5% through a comparison of historical traffic data and the data collected in October 2024.

3. Using *ITE Trip Generation Manual 11th Edition* rates and adjusting for the vehicle mode split of the Vancouver Port area, the proposed development was estimated to generate approximately 140-175 vehicle trips during the AM and PM peak hours. This is equivalent to 2-3 vehicles every minute at peak times.
4. In the background and total Opening Day (2029) and Opening Day + 5 Years (2034) scenarios, all intersections except Vernon Drive & E Hastings Street continue to operate within the performance thresholds.
5. The v/c ratio for vehicles turning left out of Vernon Drive at E Hastings Street continue to increase throughout the background and total scenarios, though still remaining within the performance threshold.
6. A traffic signal is not warranted at Vernon Drive & E Hastings Street through any of the background or total scenarios.
7. A traffic signal is warranted at Glen Drive & E Hastings Street as of the Opening Day (2029) total scenario, however the intersection operates within performance thresholds.

Site Plan Design Review

1. Access for each site is proposed from the rear lanes.
2. East 1 is required to provide 14 residential accessible vehicle spaces and 19 residential visitor vehicle spaces. East 1 is proposing to provide 36 residential vehicle spaces, including 4 accessible spaces.
3. East 1 is required to provide 679 residential Class A bicycle spaces, 1 commercial Class A bicycle space, and 20 residential Class B bicycle spaces. East 1 is proposing to provide 751 residential Class A bicycle spaces, 2 commercial Class A bicycle spaces, and 19 residential Class B spaces.
4. East 1 is required to provide 2 residential Class A loading spaces, 2 residential Class B loading spaces, and 1 commercial Class B loading space. East 1 is proposing to provide 1 residential Class B loading space and 1 commercial Class B loading space.
5. East 1 is required to provide 3 residential Class A passenger spaces. East 1 is proposing to provide 1 Class A passenger space.
6. East 2 is required to provide 14 residential accessible vehicle spaces, 19 residential visitor vehicle spaces, and 1 commercial accessible vehicle space. East 2 is proposing to provide 5 residential accessible vehicle spaces.
7. East 2 is required to provide 675 residential Class A bicycle spaces, 2 commercial Class A bicycle space, and 20 residential Class B bicycle spaces. East 2 is proposing to provide 738 residential Class A bicycle spaces, 2 commercial Class A bicycle spaces, and 19 residential Class B spaces.
8. East 2 is required to provide 2 residential Class A loading spaces, 2 residential Class B loading spaces, and 1 commercial Class B loading space. East 2 is proposing to provide 1 residential Class B loading space and 1 commercial Class B loading space.
9. East 2 is required to provide 3 residential Class A passenger spaces. East 2 is proposing to provide 2 Class A passenger spaces.

10. East 3 is required to provide 6 residential accessible vehicle spaces and 8 residential visitor vehicle spaces. East 3 is proposing to provide 1 residential vehicle space and 4 residential accessible vehicle spaces.
11. East 3 is required to provide 246 residential Class A bicycle spaces, 1 commercial Class A bicycle space, and 9 residential Class B bicycle spaces. East 3 is proposing to provide 288 residential Class A bicycle spaces, 6 commercial Class A bicycle spaces, and 8 residential Class B spaces.
12. East 3 is required to provide 1 residential Class A loading space, 1 residential Class B loading space, and 1 commercial Class B loading space. East 3 is proposing to provide 1 Class B loading space shared by the residential and commercial users.
13. East 3 is required to provide 1 residential Class A passenger space. East 3 is proposing to provide 1 Class A passenger space.

5.2 Recommendations

Recommendations of the analysis are as follows:

1. Traffic signal phases should be optimized in future years to account for changes in traffic volumes.
2. As a traffic signal is not warranted at Vernon Drive & E Hastings Street, left turn volumes out of Vernon Drive should be monitored and restrictions of left turns out of Vernon Drive should be reviewed if the volumes increase significantly.