



**1636 CLARK DRIVE AND 1321-1395 EAST 1<sup>ST</sup> AVENUE,  
VANCOUVER**

**Part 2: Parking Study – Draft Report**

Prepared for: **BC Housing**

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## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>3</b>
1.1	Study Purpose .....	3
1.2	Study Objectives .....	3
1.3	Subject Site .....	3
<b>2.0</b>	<b>DEVELOPMENT OVERVIEW .....</b>	<b>4</b>
2.1	Proposed Land Use .....	4
2.2	Description of Land Uses .....	5
2.2.1	Affordable Housing .....	5
2.2.2	Withdrawal Management Centre .....	5
2.2.3	Social Enterprise .....	6
2.3	Proposed Parking Supply .....	6
<b>3.0</b>	<b>PARKING REQUIREMENT .....</b>	<b>7</b>
3.1	Vehicle Parking Requirement .....	7
3.2	Bicycle Parking Requirement .....	8
<b>4.0</b>	<b>ESTIMATED PARKING DEMAND .....</b>	<b>9</b>
4.1	Methodology .....	9
4.2	Residential Parking Demand .....	9
4.2.1	Affordable Housing .....	9
4.3	Institutional Parking Demand .....	12
4.3.1	Withdrawal Management Centre (Detox and Sobering) .....	12
4.3.2	Withdrawal Management Centre (STAR) .....	13
4.3.3	Withdrawal Management Centre (The Hub) .....	15
4.3.4	Withdrawal Management Centre (AC/CAIT and START) .....	15
4.4	Commercial Parking Demand .....	17
4.4.1	Social Enterprise .....	17
4.5	Summary of Estimated Site Parking Demand .....	19
<b>5.0</b>	<b>ON-STREET PARKING UTILIZATION .....</b>	<b>20</b>
5.1	Methodology .....	20
5.2	Parking Utilization .....	20
<b>6.0</b>	<b>ON-SITE PARKING MANAGEMENT .....</b>	<b>23</b>
6.1	Shared Parking .....	23
6.2	Visitor Hours .....	24
<b>7.0</b>	<b>TRANSPORTATION DEMAND MANAGEMENT .....</b>	<b>24</b>
7.1	Carsharing .....	24
<b>8.0</b>	<b>CONCLUSION .....</b>	<b>25</b>
8.1	Recommendations .....	26

## LIST OF TABLES

Table 1: Development Site Statistics.....	4
Table 2: Bylaw Required Vehicle Supply Rates .....	7
Table 3: Bylaw Required Bicycle Supply Rates .....	8
Table 4: Parking Demand of Representative Sites for Affordable Housing.....	10
Table 5: Estimated Affordable Housing Parking Demand .....	11
Table 6: Estimated WMC (Detox and Sobering) Parking Demand .....	13
Table 7: Estimated WMC (STAR) Parking Demand.....	14
Table 8: Estimated WMC (The Hub) Parking Demand .....	15
Table 9: Estimated WMC (AC/CAIT and START) Parking Demand .....	16
Table 10: Estimated Social Enterprise Parking Demand .....	18
Table 11: Summary of Estimated Site Parking Demand .....	19
Table 12: Summary of On-Street Parking Utilization.....	22

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## 1.0 INTRODUCTION

### 1.1 Study Purpose

WATT Consulting Group (“WATT”) was retained by BC Housing (“Applicant”) to provide a Traffic Impact Study and Parking Study for a proposed mixed-use development at 1636 Clark Drive and 1321-1395 East 1<sup>st</sup> Avenue, Vancouver. The proposed development will consist of affordable rental housing, Vancouver Coastal Health’s new Withdrawal Management Centre, and a social enterprise program space.

This report (**Part 2: Parking Study**) summarizes the work conducted to fulfill the parking component of the scope of work as agreed to with the City of Vancouver and Applicant in the terms of reference. The findings from this study can be used as part of the rezoning application submission to the City.

This study reflects the current development proposal and latest assumptions as of May 1, 2018.

### 1.2 Study Objectives

The purpose of the Parking Study is to:

1. Compare the bylaw-required vehicle and bicycle parking supply with the proposed parking supply;
2. Forecast the peak vehicle parking demand for all uses of the proposed development to justify a parking variance; and
3. Recommend appropriate vehicle parking supply rates for the proposed development as part of the rezoning application in consideration of on-site parking management and transportation demand management options.

### 1.3 Subject Site

The proposed development is located at 1636 Clark Drive and 1321-1395 East 1<sup>st</sup> Avenue, Vancouver in the Grandview-Woodland neighbourhood. The subject site is on the northeast corner of the Clark Drive and East 1<sup>st</sup> Avenue intersection. The surrounding area is characterized by a mix of single-family and multi-family residential uses and a range of industrial uses.

## 2.0 DEVELOPMENT OVERVIEW

### 2.1 Proposed Land Use

The subject site is located on a consolidated 44,691 square foot parcel and is proposed to be rezoned from I-2 (Light Industrial) and RM-4N (Multiple Dwelling) Districts to CD-1 (Comprehensive Development) District under the City of Vancouver’s Zoning & Development Bylaw (No. 3575). The proposed mixed-use development consists of approximately 131,234 square feet of gross floor area with the following residential, institutional, and commercial uses:

- Residential: affordable rental housing (97 units);
- Institutional: Withdrawal Management Centre (45,349 sq. ft.); and
- Commercial: social enterprise (3,632 sq. ft.).

**Table 1** provides a breakdown of the proposed floor space by use and unit type.

**Table 1: Development Site Statistics**

Proposed Use	Total Area (sq. ft.)	Unit Type	No. Units	
<b>Residential</b>				
Affordable Housing	82,253	Studio	13	units
		1 BR	45	units
		2 BR	27	units
		3 BR	12	units
<b>Subtotal</b>	<b>82,253 sq. ft.</b>		<b>97</b>	<b>units</b>
<b>Institutional</b>				
Withdrawal Management Centre	45,349			
<b>Subtotal</b>	<b>45,349 sq. ft.</b>			
<b>Commercial</b>				
Social Enterprise	3,632 sq. ft.			
<b>Subtotal</b>	<b>3,632 sq. ft.</b>			
<b>Total</b>	<b>131,234</b>			

The land is owned by the City of Vancouver and will be leased to BC Housing pending successful consolidation and rezoning approval. The development proposal is a result of a partnership between BC Housing, Vancouver Coastal Health, and the City of Vancouver.

Full build-out opening year of the development is anticipated to be 2021.

## 2.2 Description of Land Uses

### 2.2.1 Affordable Housing

The affordable housing component of the proposal would include 97 secured rental units for low-to-moderate-income households, including single people, people with disabilities, seniors, and families. The housing would be owned by BC Housing and operated by a non-profit operator. The studio, two-bedroom, and three-bedrooms units would be rented at Housing Income Limits (HIL) or below and the one-bedroom units would be rented at 80 percent below local-area market rent.

### 2.2.2 Withdrawal Management Centre

The Withdrawal Management Centre (WMC) will be operated by Vancouver Coastal health and provide state-of-the-art withdrawal management services, including the following.<sup>1</sup>

- **Inpatient Detox Centre (“Detox”)**: 51 beds for adult clients 19-years and older who have a form of substance misuse and are seeking medically-supported residential detox services. Clients typically arrive to the site by foot, transit, or drop-off by taxi, family members, or friends. In some cases, the client will arrive by ambulance.
- **Sobering Centre (“Sobering”)**: 15 units for involuntary (Subject Intoxicated in a Public Place, “SIPP”) clients who are intoxicated in a public place and unable to care for themselves and/or require health care services, and five units for voluntary clients who seek care to sober-up. Involuntary clients will arrive to the site through the Vancouver Police Department, the Transit Police, or the Saferide service. Voluntary clients are relatively rare and would arrive by foot, transit, or drop-off by taxi, family members, or friends.
- **Short Transitional Access to Recovery (“STAR”)**: 20 transitional beds for clients who are transitioning to longer-term care options such as residential treatment programs. Virtually all the clients accessing STAR will be the same clients who previously completed a stay on-site at the Inpatient Detox Centre.
- **The Hub (“Hub”)**: The Hub will be a new integrated addiction care teaching, learning, and research centre for medical, nursing, and allied health professionals. It will also provide limited specialty services to the existing clients at the WMC. The specific programming at this facility will be clarified over time.
- **Access Central (“AC”)** and **Central Addictions Intake Team (“CAIT”)**: AC and CAIT will be a call center office that manages patient intake and provides a screening and referral telephone line for detox services and addiction housing services.
- **Substance Use Treatment and Response Team (“START”)**: START provides home-based outreach detox services for clients that can safely withdraw or stabilize their substance use in their homes or community. Clients complete an intake assessment on-site and typically arrive by foot, transit, or drop-off by taxi or family members.

<sup>1</sup> Based on information provided in Vancouver Coastal Health’s *Draft Functional Program: VCH Withdrawal Management and Addictions Center* (April 19, 2016, v4) and *Addendum to the Vancouver Detox Redevelopment Project (April 2016) Functional Program* (January 17, 2018).

The Inpatient Detox Centre and Sobering Centre will be relocated from the existing Vancouver Detox Centre at 377 East 2<sup>nd</sup> Avenue and the existing Vancouver Harbour Light at 119 East Cordova Street. AC/CAIT and START will be relocated from the existing facility at Robert and Lily Lee Family Community Health Centre at 1669 East Broadway.

### **2.2.3 Social Enterprise**

The social enterprise space will focus on opportunities for Indigenous healing and wellness through employment. The City of Vancouver is currently working with partners to clarify the specific programming and opportunities for this space.

### **2.3 Proposed Parking Supply**

The proposed parking supply will be a total of 39 vehicle parking spaces and 100 bicycle parking spaces.

## 3.0 PARKING REQUIREMENT

This section summarizes the parking requirements for the development proposal. The City of Vancouver’s requirements are found in the Parking Bylaw (No. 6059) under Section 4 (Off-Street Parking Space), Section 5 (Off-Street Loading Space), and Section 6 (Off-Street Bicycle Space).

### 3.1 Vehicle Parking Requirement

A total of 177 vehicle parking spaces are required if the bylaw is applied directly for the subject site (excluding accessible spaces). Based on the 39 proposed parking spaces, a parking variance of 138 spaces would be required. See **Table 2** for a summary of the City’s bylaw vehicle parking supply rates.

**Table 2: Bylaw Required Vehicle Supply Rates**

Proposed Use	Type	Quantity	Supply Rate	Spaces	Bylaw
<b>Residential</b>					
Affordable Housing					
HIL	Studio	13 units	1.0 space / 2 dwelling units	7	4.2.1.9
	2 BR	27 units	1.0 space / 2 dwelling units	14	4.2.1.9
	3 BR	12 units	1.0 space / 2 dwelling units	6	4.2.1.9
Market Rental	1 BR	45 units (28,427 m <sup>2</sup> )	1.0 space / 125 m <sup>2</sup> GFA (with 20% transit reduction)	17	4.5.B1
Market Rental Visitor	1 BR	45 units	7.5% of total dwelling units	3	4.5.B1
			<b>Subtotal</b>	<b>46</b>	
<b>Institutional</b>					
Withdrawal Management Centre					
Detox and Sobering*		71 beds 2,923 m <sup>2</sup> (31,463 sq. ft.)	1.0 space / 28 m <sup>2</sup> GFA	104	4.2.3.2
STAR		18 beds	1.0 space / 4 beds	5	4.2.3.1
The Hub		303 m <sup>2</sup> (3,261 sq. ft.)	1.0 space / 28 m <sup>2</sup> GFA	1	4.2.5.12
AC/CAIT and START		224 m <sup>2</sup> (2,411 sq. ft.)	1.0 space / 28 m <sup>2</sup> GFA	8	4.2.5.12
			<b>Subtotal</b>	<b>118</b>	
<b>Commercial</b>					
Social Enterprise		303 m <sup>2</sup> (3,261 sq. ft.)	1.0 space / 100 m <sup>2</sup> GFA	3	4.2.5.1
			<b>Subtotal</b>	<b>3</b>	
<b>Total</b>				<b>167</b>	

Note: The floor area attributed to the “Detox and Sobering” component includes the proposed “Admin” and “Logistical/Support” space.



### 3.2 Bicycle Parking Requirement

A total of 100 bicycle parking spaces are required if the bylaw is applied directly, including 123 Class A spaces and 6 Class B spaces. Class A spaces are secure parking spaces intended to serve long-term residents and employees, and Class B spaces are intended to serve short-term visitors. Based on the 100 proposed bicycle spaces, a parking variance of 38 spaces would be required. See **Table 3** for a summary of the City’s required bicycle parking supply rates.

**Table 3: Bylaw Required Bicycle Supply Rates**

Proposed Use	Quantity	Class A		Class B		Bylaw
		Supply Rate	Spaces	Supply Rate	Spaces	
<b>Residential</b>						
Affordable Housing	97 units	1.25 spaces / 1 dwelling unit	121	6.0 spaces / 20 dwelling units	6	6.2.1.2
		<b>Subtotal</b>	<b>121</b>	<b>Subtotal</b>	<b>6</b>	
<b>Institutional</b>						
Withdrawal Management Centre						
Detox, Sobering, and STAR	91 beds	1.0 space / 100 beds	1	No requirement	0	6.2.2.1
The Hub	303 m <sup>2</sup> (3,261 sq. ft.)	1.0 space / 500 m <sup>2</sup>	1	6.0 space / min 2,000 m <sup>2</sup>	0	6.2.4.1
AC/CAIT and START	224 m <sup>2</sup> (2,411 sq. ft.)	1.0 space / 500 m <sup>2</sup>	0	6.0 space / min 2,000 m <sup>2</sup>	0	6.2.4.1
		<b>Subtotal</b>	<b>2</b>	<b>Subtotal</b>	<b>0</b>	
<b>Commercial</b>						
Social Enterprise	303 m <sup>2</sup> (3,261 sq. ft.)	No requirement	0	No requirement	0	6.2.2.5
		<b>Subtotal</b>	<b>0</b>	<b>Subtotal</b>	<b>0</b>	
<b>Total</b>			<b>123</b>		<b>6</b>	

Note: The floor area attributed to the “Detox and Sobering” component includes the proposed “Admin” and “Logistical/Support” space.

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## 4.0 ESTIMATED PARKING DEMAND

### 4.1 Methodology

To estimate the peak parking demand for the subject site, the following tasks were undertaken.

1. Conduct **off-street parking utilization surveys** of existing facilities when possible or appropriate representative sites.
2. Synthesize the data and **estimate parking demand rates** for the proposed development.
3. Conduct an **on-street parking utilization survey** to estimate the available on-street parking supply in the event of parking spillover from the subject site and determine any potential impacts to the surrounding neighbourhood.

### 4.2 Residential Parking Demand

#### 4.2.1 Affordable Housing

##### Background

The parking demand for the proposed Affordable Housing was estimated using appropriate representative sites in the area, identified through the recommendation of BC Housing in consideration of the unit mix, planned tenant profile, and rent levels.

Six comparable buildings were selected to determine off-street parking utilization (see **Table 4**). The number of dwelling units and registered vehicles associated with the building was obtained directly from the property manager. When this information was unavailable, observations were conducted at the building's parking lot on a weekday evening during peak residential demand.

**Table 4: Parking Demand of Representative Sites for Affordable Housing**

Proposed Use	Tenant Profile	No. Dwelling Units	Parking Demand	
			No. Vehicles	Demand Rate
1353 East 1 <sup>st</sup> Avenue (College Apartments) <sup>1</sup>	Individuals	13	7	0.54
2067 East 12 <sup>th</sup> Avenue (Lakewood Terrace Housing Co-op) <sup>2</sup>	Individuals, Families	52	20	0.38
1823 East 11 <sup>th</sup> Avenue (Victoria Gardens Housing Co-op) <sup>3</sup>	Individuals, Families	30	44	1.47
1455 East 3 <sup>rd</sup> Avenue (Grandview Tower I) <sup>4</sup>	Seniors (Independent)	144	32	0.22
1425 East 3 <sup>rd</sup> Avenue (Grandview Tower II) <sup>5</sup>	Seniors (Independent)	77	29	0.38
3075 Nanaimo Street (Chelsea Lodge) <sup>6</sup>	Seniors (Independent)	49	14	0.29
<b>Average (All Sites) - High Scenario</b>				<b>0.55</b>
<b>Average (All sites, excluding Victoria Gardens Housing Co-op) - Low Scenario</b>				<b>0.36</b>

Notes: <sup>1</sup> Observations conducted on May 3, 2018 and May 11, 2018 at 9:30 PM. <sup>2</sup> Observations conducted on May 11, 2018 and May 17, 2018 at 9:30 PM. <sup>3</sup> Email correspondence with Spice Management Group on May 16, 2018 <sup>4-5</sup> Telephone correspondence with Baptist Housing on May 15, 2018 <sup>6</sup> Email correspondence with New Chelsea on May 17, 2018

### Demand from Residents

The estimated resident parking demand rates for the proposed Affordable Housing will be from 0.36 vehicles per dwelling unit (low scenario) to 0.55 vehicles per dwelling unit (high scenario).

- To estimate resident parking demand, the demand rates for the representative sites were averaged together to develop a low and high scenario. The low scenario included all representative sites except Victoria Gardens Housing Co-op and the high scenario included all sites. The low scenario is considered to be more reflective of the subject site's parking demand as the Victoria Gardens Housing Co-op is an outlier relative to the other surveyed buildings as it does not exhibit typical demand for non-market housing based on the Metro Vancouver Apartment Parking Study.<sup>2</sup>
- As the subject site is planned to have a broad tenant profile, the demand rates across all representative sites were blended together with no weighting applied.
- The estimated demand rate was not adjusted for proximity to the Frequent Transit Network (#022 Knight/Downtown bus route and the VCC–Clark SkyTrain Station), as this should already be captured by the rates at the representative sites.

<sup>2</sup> Metro Vancouver (2013). *Metro Vancouver Apartment Parking Study*. Retrieved from: <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/AptParkingStudySummaryBooklet.pdf>

### Demand from Visitors

To estimate visitor parking demand, demand rates were obtained from the Metro Vancouver Apartment Parking Study which suggests a maximum visitor parking demand rate of 0.10 vehicles per dwelling unit. This demand rate is appropriate for the subject site.

### Summary of Parking Demand

**Table 5** provides a summary of the estimated Affordable Housing peak parking demand.

**Table 5: Estimated Affordable Housing Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate		Vehicle Parking Space Demand	
		Low Scenario	High Scenario	Low Scenario	High Scenario
Affordable Housing					
Studio	13 units	0.36 per unit	0.55 per unit	5	7
1 BR	45 units	0.36 per unit	0.55 per unit	16	25
2 BR	27 units	0.36 per unit	0.55 per unit	10	15
3 BR+	12 units	0.36 per unit	0.55 per unit	4	7
Visitor	97 units	0.10 per unit	0.10 per unit	10	10
<b>Total</b>				<b>45</b>	<b>63</b>

An estimated total parking demand of 45 vehicles (low scenario) to 63 vehicles (high scenario) is anticipated for the **Affordable Housing** component of the subject site, based on the current proposal of 97 dwelling units.

## 4.3 Institutional Parking Demand

### 4.3.1 Withdrawal Management Centre (Detox and Sobering)

#### Background

The parking demand for the proposed Detox and Sobering component of the WMC was estimated using the existing Vancouver Detox Centre and Vancouver Harbour Light facilities. The majority of vehicle parking demand generated by the WMC is expected to be from employees.

1. All of the employees associated with the Detox and Sobering component of the proposed WMC will be relocated from the existing facilities.
2. The type of clients the WMC will serve will remain the same. Based on existing data from VCH, clients are typically low income and lack stable housing. As a result, vehicle ownership rates among clients are very low.
3. As a result, the parking demand of the proposed WMC facility is expected to be very similar to the existing facility.

The following sources of information were collected for the month of April 2018 to calculate a parking demand profile throughout the day to determine the peak hour of parking demand for the existing Vancouver Detox Centre site. No observations were conducted at the site's parking lot.

- Number of employees and professional visitors by day-of-week and time-of-day.
- Number of clients and client visitors by day-of-week and time-of-day.
- Vehicle ownership rates and/or mode of travel.
- Building floor area and number of beds.

#### Demand from the Facility

The estimated parking demand rates for the proposed WMC (Detox and Sobering) will be 1.05 vehicles per bed (both low and high scenario).

These demand rates were calculated by normalizing the peak demand by the current number of beds (41 beds) at the Vancouver Detox Centre. Peak parking demand occurred during the weekdays from 1:00 PM to 2:00 PM with a demand of 43 vehicles associated with the facility (31 employees, 4 professional visitors, and 8 client visitors), either parked on-site or off-site in the adjacent on-street parking.

## Summary of Parking Demand

**Table 6** provides a summary of the estimated WMC (Detox and Sobering) parking demand.

**Table 6: Estimated WMC (Detox and Sobering) Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate	Vehicle Parking Space Demand
Withdrawal Management Centre (Detox and Sobering)	71 beds	1.05 per bed	74
<b>Total</b>			<b>74</b>

An estimated total parking demand of 74 vehicles is anticipated for the **Withdrawal Management Centre (Detox and Sobering)** component of the subject site, based on the current proposal of 71 beds, including 51 beds for the Detox space and 20 beds for the Sobering space.

### 4.3.2 Withdrawal Management Centre (STAR)

#### Background

The parking demand for the proposed STAR component of the WMC was estimated using a representative site at the Quibble Creek Health and Phoenix Transition Housing Centre located at 13670 94A Avenue, Surrey. The Phoenix Society's STAR program is similar in programming to the proposed WMC's STAR component, providing 15 beds for adult male clients 19-years and older who are homeless or at the risk of homelessness due to substance misuse.

The following sources of information were collected to calculate a parking demand profile throughout the day to determine the peak hour of parking demand. No observations were conducted at the site's parking lot.

- Number of employees by day-of-week and time-of-day.
- Number of clients and client visitors by day-of-week and time-of-day.
- Vehicle ownership rates and/or mode of travel.
- Number of beds.

### Demand from the Facility

The estimated parking demand rates for the proposed WMC (STAR) will be 0.73 vehicles per bed (low scenario) to 0.85 vehicles per bed (high scenario).

These demand rates were calculated by normalizing the peak demand by the number of beds (15 beds). Peak parking demand occurred on Tuesday and Thursday from 2:00 to 4:00 PM with a demand of 11 to 13 vehicles associated with the facility (6 employees, 2 to 4 clients, and 3 client visitors), either parked on-site or off-site in the adjacent on-street parking.

### Summary of Parking Demand

**Table 7** provides a summary of the estimated WMC (STAR) parking demand, associated with the proposed facility.

**Table 7: Estimated WMC (STAR) Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate		Vehicle Parking Space Demand	
		Low Scenario	High Scenario	Low	High
Withdrawal Management Centre (STAR)	18 beds	0.73 per bed	0.85 per bed	13	15
<b>Total</b>				<b>13</b>	<b>15</b>

An estimated total parking demand of 15 vehicles (low scenario) and 17 vehicles (high scenario) is anticipated for the **Withdrawal Management Centre (STAR)** component of the subject site, based on the current proposal of 18 beds.

### 4.3.3 Withdrawal Management Centre (The Hub)

#### Background

The parking demand for the proposed The Hub component of the WMC was estimated using generalized demand rates as a representative site was not able to be identified.

#### Demand from the Facility

The estimated parking demand rates for the proposed WMC (The Hub) will be 2.50 vehicles per 1,000 sq. ft.

This was based on an average of the employee rate for “Office (<25,000 sq. ft.)” of 3.5 vehicles per 1,000 sq. ft. and “Medical/Dental Office” of 1.5 vehicles per 1,000 sq. ft. from the Urban Land Institute (ULI)’s *Shared Parking* manual.<sup>3</sup> More clarity on the specific use of the Hub will clarify the estimated parking demand. As a result, the current estimated demand may be overestimated.

#### Summary of Parking Demand

**Table 8** provides a summary of the estimated WMC (The Hub) parking demand.

**Table 8: Estimated WMC (The Hub) Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate	Vehicle Parking Space Demand
Withdrawal Management Centre (The Hub)	3,261 sq. ft.	2.50 per 1,000 sq. ft.	8
<b>Total</b>			<b>8</b>

An estimated total parking demand of 5 vehicles is anticipated for the **Withdrawal Management Centre (The Hub)** component of the subject site, based on the current proposal of 3,261 sq. ft.

### 4.3.4 Withdrawal Management Centre (AC/CAIT and START)

#### Background

The parking demand for the proposed AC/CAIT and START component of the WMC was estimated using the existing AC/CAIT and START facilities at the Robert and Lily Lee Family Community Health Centre located at 1669 East Broadway, Vancouver.

<sup>3</sup> Smith, M. (2005). *Shared Parking, 2nd Edition*. Washington, DC: Urban Land Institute.



The following sources of information were collected for the month of April 2018 to calculate a parking demand profile throughout the day to determine the peak hour of parking demand for the AC/CAIT and START facilities.

- Number of employees by day-of-week and time-of-day.
- Number of clients by day-of-week and time-of-day.
- Vehicle ownership rates and/or mode of travel.
- Building floor area.

The AC/CAIT program does not currently screen clients in-person. However, Vancouver Coastal Health indicated this may change in the future. As a result, the number of clients expected on a daily basis will be similar to the START program.

### Demand from the Facility

The estimated parking demand rates for the proposed WMC (Detox and Sobering) will be 1.61 vehicles per 1,000 sq. ft. (low scenario) to 1.88 vehicles per 1,000 sq. ft. (high scenario).

These demand rates were calculated by normalizing the peak demand by the building floor area at the AC/CAIT and START facilities. Peak parking demand occurred during the weekdays at some time from 9:00 AM to 1:00 PM with a demand of 13 to 14 vehicles associated with the facility (12 employees and 1 to 2 clients, adjusting for the future programming change to AC/CAIT), either parked on-site or off-site in the adjacent on-street parking.

### Summary of Parking Demand

**Table 9** provides a summary of the estimated WMC (AC/CAIT and START) parking demand.

**Table 9: Estimated WMC (AC/CAIT and START) Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate		Vehicle Parking Space Demand	
		Low Scenario	High Scenario	Low	High
Withdrawal Management Centre (AC/CAIT and START)	2,411 sq. ft.	3.49 per 1,000 sq. ft.	3.76 per 1,000 sq. ft.	8	9
<b>Total</b>				<b>8</b>	<b>9</b>

An estimated total parking demand of 8 vehicles (low scenario) to 9 vehicles (high scenario) is anticipated for the **Withdrawal Management Centre (AC/CAIT and START)** component of the subject site, based on the current proposal of 2,411 sq. ft.

## 4.4 Commercial Parking Demand

### 4.4.1 Social Enterprise

#### Background

The parking demand for the proposed Social Enterprise was estimated using a representative site at the EMBERS Eastside Works, a social enterprise and community economic development charity located at 57 East Hastings Street, Vancouver. Eastside Works is an income generation hub in the Downtown Eastside that partners with businesses, non-profit organizations, and other agencies to create meaningful opportunities for people to generate income, increase their skills, and improve their livelihoods. As the specific program for the Social Enterprise has yet to be determined by the City of Vancouver, this was recommended as an appropriate representative site by the City of Vancouver based on the stakeholder engagement completed to-date.

The following sources of information were collected using a survey administered during the weekdays from May 9 to May 15, 2018 to calculate a parking demand profile throughout the day to determine the peak hour of parking demand for the Social Enterprise. No observations were conducted at the site's parking lot.

- Number of employees and other professionals by day-of-week and time-of-day.
- Number of clients by day-of-week and time-of-day.
- Vehicle ownership rates and/or mode of travel.
- Building floor area.

#### Demand from the Facility

The estimated parking demand rates for the proposed Social Enterprise will be 0.43 vehicles per 1,000 sq. ft. (high scenario).

These demand rates were calculated by normalizing the peak demand by the building floor area at Eastside Works. Peak parking demand occurred during on Monday at 9:00 AM with a demand of 1 vehicle associated with the facility (1 employee), parked off-site in the adjacent on-street parking. There were six visitors on-site during this peak hour period, but all of them travelled by foot. Based on the survey conducted, virtually all the visitors to the facility travel by foot (walk mode share of 95% with the remaining by bike or transit based on the survey conducted).

As the specific use for the proposed Social Enterprise is still to be determined, this demand rate is only preliminary. Further work may be required once the programming has been identified.

## Summary of Parking Demand

**Table 10** provides a summary of the estimated Social Enterprise parking demand.

**Table 10: Estimated Social Enterprise Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate	Vehicle Parking Space Demand
Social Enterprise	2,992 sq. ft.	0.43 per 1,000 sq. ft.	1
<b>Total</b>			<b>1</b>

An estimated total parking demand of 1 vehicle is anticipated for the **Social Enterprise** component of the subject site, based on the current proposal of 3,261 sq. ft.

#### 4.5 Summary of Estimated Site Parking Demand

Based on the analysis of each proposed land use, the total estimated parking demand for the subject site is 149 vehicles under the low scenario, and 170 vehicles under the high scenario (see **Table 11**). As a result, the analysis suggests that parking demand will not be accommodated under the current proposal of 39 parking spaces.

**Table 11: Summary of Estimated Site Parking Demand**

Proposed Use	Quantity	Vehicle Demand Rate		Vehicle Parking Space Demand	
		Low Scenario	High Scenario	Low	High
<b>Residential</b>					
Affordable Housing					
Studio	13 units	0.36 per unit	0.36 per unit	5	7
1 BR	45 units	0.36 per unit	0.36 per unit	16	25
2 BR	27 units	0.36 per unit	0.36 per unit	10	15
3 BR+	12 units	0.36 per unit	0.36 per unit	4	7
Visitor	97 units	0.10 per unit	0.10 per unit	10	10
			<b>Subtotal</b>	<b>45</b>	<b>63</b>
<b>Institutional</b>					
Withdrawal Management Centre					
Detox and Sobering	71 beds	1.05 per bed	1.05 per bed	74	74
STAR	18 beds	0.73 per bed	0.85 per bed	13	15
The Hub	3,261 sq. ft.	2.50 per 1,000 sq. ft.	2.50 per 1,000 sq. ft.	8	8
AC/CAIT and START	2,411 sq. ft.	3.49 per 1,000 sq. ft.	3.76 per 1,000 sq. ft.	8	9
			<b>Subtotal</b>	<b>103</b>	<b>106</b>
<b>Commercial</b>					
Social Enterprise	3,261 sq. ft.	0.43 per 1,000 sq. ft.	0.43 per 1,000 sq. ft.	1	1
			<b>Subtotal</b>	<b>0</b>	<b>1</b>
<b>Total Parking Demand</b>				<b>149</b>	<b>170</b>

## 5.0 ON-STREET PARKING UTILIZATION

### 5.1 Methodology

On-street parking conditions were assessed for the following street segments within the immediate vicinity of the site to determine potential overflow parking supply.

- Grant Street (from Clark Drive to Woodland Drive).
- Graveley Street (from Clark Drive to Woodland Drive).
- East 1<sup>st</sup> Avenue (from Clark Drive to Woodland Drive).
- East 2<sup>nd</sup> Avenue (from Clark Drive to Woodland Drive).
- McLean Drive (from Grant Street to East 2<sup>nd</sup> Avenue).
- Woodland Drive (from Grant Street to East 2<sup>nd</sup> Avenue).

Surveys were conducted to determine on-street parking utilization during the peak period for the existing Vancouver Detox Centre and the residential peak for a typical weekday.

- Thursday, May 3, 2018 at 1:00 AM (afternoon).
- Thursday, May 3, 2018 at 9:00 PM (evening).

### 5.2 Parking Utilization

There are an estimated total of 308 on-street parking spaces in the survey area (see **Table 9**).<sup>4</sup> Based on observed parking utilization, total utilization for all parking spaces was approximately 61% in the afternoon and 63% in the evening, resulting in 121 and 115 available parking spaces respectively.

Based on the expected parking demand of 149 (low scenario) to 170 vehicles (high scenario) and proposed off-street parking supply of 39 spaces, this would result in a spillover of 110 (low scenario) to 131 vehicles (high scenario). As the peak will occur during the afternoon, the 121 available off-street parking space could accommodate the low scenario (surplus of 11 off-street parking spaces), but not under the high scenario (deficit of 10 spaces). This analysis would need to be updated should future development occur in the study area.

A sensitivity analysis was conducted using a more conservative study area to account for the most direct walking distance from a parked vehicle to the site with an upper threshold of one block away from the site using the following street segments.

- Graveley Street (from Clark Drive to Woodland Drive).
- East 1<sup>st</sup> Avenue (from Clark Drive to Woodland Drive).
- McLean Drive (from Grant Street to East 2<sup>nd</sup> Avenue).

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<sup>4</sup> Visual estimation on-site based on available space and the actual number of vehicles parked.

- Woodland Drive (from Graveley Street to East 2<sup>nd</sup> Avenue).

For this limited area, there are a total of 165 parking spaces; occupancy rates were 62% in the afternoon and 76% in the evening, resulting in 63 and 39 available parking spaces respectively. With the available off-street parking supply of 63 spaces in the afternoon, it would not accommodate the overflow of 110 vehicles under the low scenario (deficit of 47 spaces) and 131 vehicles under the high scenario (deficit of 68 spaces).

**Table 12: Summary of On-Street Parking Utilization**

On Street	Side	Cross Streets	Restriction	Estimated Parking Spaces	Utilization Rate	
					Afternoon	Evening
Grant Street	N	Clark Drive - McLean Drive		16	22%	7%
Grant Street	S	Clark Drive - McLean Drive		16	26%	19%
Grant Street	N	McLean Drive - Woodland Drive		13	16%	9%
Grant Street	S	McLean Drive - Woodland Drive	7 Spaces = Temporary No Parking: May 3-10, 7:00 AM - 5:00 PM (Mon - Fri)	13	9%	3%
Graveley Street	N	Clark Drive - McLean Drive		18	24%	19%
Graveley Street	S	Clark Drive - McLean Drive		14	18%	19%
Graveley Street	N	McLean Drive - Woodland Drive	14 Spaces = Temporary No Parking: Apr 12 - May 29, 7:00 AM - 5:00 PM (Mon - Fri)	14	0%	8%
Graveley Street	S	McLean Drive - Woodland Drive		16	21%	27%
East 1st Avenue	N	Clark Drive - Woodland Drive	No Parking Zone	0	0%	0%
East 1st Avenue	S	Clark Drive - Woodland Drive	No Parking Zone	0	0%	0%
East 2nd Avenue	N	Clark Drive - McLean Drive		17	25%	20%
East 2nd Avenue	S	Clark Drive - McLean Drive		16	23%	20%
East 2nd Avenue	N	McLean Drive - Woodland Drive	19 Spaces = Temporary No Parking: May 3-10, 7:00 AM - 5:00 PM (Mon - Fri)	19	0%	5%
East 2nd Avenue	S	McLean Drive - Woodland Drive	9 Spaces = Temporary No Parking: May 3-10, 7:00 AM - 5:00 PM (Mon - Fri)	9	0%	2%
Clark Drive	W	Grant Street - East 2nd Avenue	No Parking Zone	0	0%	0%
Clark Drive	E	Grant Street - East 2nd Avenue	No Parking Zone	0	0%	0%
McLean Drive	W	Grant Street - Graveley Street		11	18%	15%
McLean Drive	E	Grant Street - Graveley Street		10	18%	13%
McLean Drive	W	Graveley Street - East 1st Avenue		9	15%	16%
McLean Drive	E	Graveley Street - East 1st Avenue		8	13%	15%
McLean Drive	W	East 1st Avenue - East 2nd Avenue		9	9%	18%
McLean Drive	E	East 1st Avenue - East 2nd Avenue		8	13%	15%
Woodland Drive	W	Grant Street - Graveley Street		12	10%	10%
Woodland Drive	E	Grant Street - Graveley Street		12	10%	14%
Woodland Drive	W	Graveley Street - East 1st Avenue		12	10%	15%
Woodland Drive	E	Graveley Street - East 1st Avenue		13	13%	14%
Woodland Drive	W	East 1st Avenue - East 2nd Avenue	12 Spaces = Temporary No Parking: May 3-10, 7:00 AM - 5:00 PM (Mon - Fri)	12	0%	4%
Woodland Drive	E	East 1st Avenue - East 2nd Avenue	11 Spaces = Temporary No Parking: May 3-10, 7:00 AM - 5:00 PM (Mon - Fri)	11	0%	8%
<b>Total (All Spaces)</b>				<b>308</b>	<b>61%</b>	<b>63%</b>
<b>Total (Spaces Within One Block)</b>				<b>165</b>	<b>62%</b>	<b>76%</b>

## 6.0 ON-SITE PARKING MANAGEMENT

### 6.1 Shared Parking

Shared parking refers to a scenario where parking is shared among multiple land uses and/or user groups. When applied successfully to a site, a shared parking arrangement will meet the combined parking needs of the site with fewer overall parking spaces. A shared parking analysis by time-of-day was conducted for this study.

Time-of-day shared parking refers to making more efficient use of the parking supply for individual land uses/programs at the subject site that have different peak periods. Under a conventional scenario, each land use would provide sufficient parking to satisfy its own peak parking demand. However, under a shared parking scenario, parking is shared and the total parking supply seeks to meet the peak parking demand of all land uses combined, rather than the combined peak demands for all land uses.

An assessment was undertaken to quantify the potential for time-of-day shared parking at the subject site. The assessment was based on the following assumptions and allocation of parking.

- Resident parking for the Affordable Housing use will be reserved and resident parking demand is excluded from the pool of shared parking spaces.
- Employee and visitor parking for the WMC (The Hub) and the Social Enterprise use was excluded as the specific program is unknown at this point in time.
- All other users are expected to share parking (visitors to the Affordable Housing, employees, clients, and visitors to the Withdrawal Management Centre).
- Time-of-day factors for the Affordable Housing use were obtained from the “Residential” use from the ULI’s *Shared Parking* manual. Time-of-day factors for the Withdrawal Management Centre were calculated using the existing Vancouver Detox Centre parking demand profile with an 80 percent employee to 20 percent visitor ratio applied to the estimated vehicle parking demand rate based on the known staffing and visitor levels.

The analysis suggests the total site parking supply needed to meet peak demand can be reduced by 10 vehicles. The resulting peak period parking demand would occur on a weekday at 1:00 PM with 139 vehicles (low scenario) and 160 vehicles (high scenario).

The reduction of 10 vehicles is a result of efficiencies for the client and visitor parking demand for the Withdrawal Management Centre and visitors for the Affordable Housing. Further reduction may be possible if the parking demand for WMC (The Hub) and the Social Enterprise were included.



## 6.2 Visitor Hours

Visitor hours for the existing Inpatient Detox program at the Vancouver Detox Centre are seven days a week from 1:00 PM to 2:00 PM. Two assumptions were made when estimating the parking demand associated with the Withdrawal Management Centre.

- Visitor hours from the Vancouver Detox Centre would carry over and remain the same in the new Withdrawal Management Centre facility.
- The new STAR program at the Withdrawal Management Centre would share the same visitor parking demand and visitor hours as the Inpatient Detox program as the clients are the same.

Based on the findings from the shared parking by time-of-day analysis, the peak vehicle demand is 135 vehicles (low scenario) to 157 vehicles (high scenario) on a weekday at 1:00 PM, coinciding with the visitor hours. Shifting the visitor hours for either the Inpatient Detox or the STAR program by an hour would reduce this peak from 135/157 to 127/150, a further reduction of 7 to 8 vehicles.

## 7.0 TRANSPORTATION DEMAND MANAGEMENT

### 7.1 Carsharing

Carsharing is the use of short-term shared vehicles, typically managed by a co-operative company. The 2014 Metro Vancouver Car Share Study found that on average, up to three personal vehicles were shed per carshare vehicle, with a greater effect for those living in rental housing.<sup>5</sup> As a result, enabling access to carshare at the subject site by funding a designated carshare space will help support a reduction in residential parking demand.

The City of Vancouver currently allows for a reduction of five parking spaces for each carshare space.<sup>6</sup>

- Based on the proposed number of 97 dwelling units, two carshare spaces would be permitted by the Parking Bylaw upon the City of Vancouver's discretion.
- Based on preliminary analysis by Modo of the subject site, there is sufficient demand for one carshare vehicle on opening day, with more vehicles possible if phased over time.<sup>7</sup>

Further reduction of residential parking demand could be achieved by providing carsharing membership to the tenants.

<sup>5</sup> Metro Vancouver. (2014). *The Metro Vancouver Car Share Study: Technical Report*. Retrieved from: <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MetroVancouverCarShareStudyTechnicalReport.pdf>

<sup>6</sup> City of Vancouver. (2017). Parking Bylaw No. 6059, Section 3.2.2. Retrieved from: <http://vancouver.ca/your-government/parking-bylaw.aspx>

<sup>7</sup> Email conversation with Modo on May 17, 2018.

## 8.0 CONCLUSION

The proposed development at 1636 Clark Drive and 1321-1395 East 1<sup>st</sup> Avenue in Vancouver will consist of affordable rental housing, Vancouver Coastal Health's new Withdrawal Management Centre, and a social enterprise program space. The proposed parking supply for the site is 39 spaces. Based on the City of Vancouver's current parking supply requirements, a total of 177 vehicle spaces are required.

Expected parking demand was estimated for the subject site using parking utilization at the existing facilities at Vancouver Detox Centre, Harbour Light Centre, Robert and Lily Lee Family Community Health Centre, and representative sites.

Under a low scenario, total parking demand for the site was estimated to be 149 vehicles:

- 45 vehicles from the residential use.
- 103 vehicles from the institutional uses; and
- 1 vehicle from the commercial use.

Under a high scenario, total parking demand for the site was estimated to be 170 vehicles:

- 63 vehicles from the residential use.
- 106 vehicles from the institutional uses; and
- 1 vehicle from the commercial use.

As a result, the forecast demand is expected to exceed the proposed parking supply. An assessment was conducted of the available off-street parking supply in the event of a spillover. Within one-block away from the site, there are a total of 165 off-street parking spaces; occupancy rates were 62% in the afternoon during the peak period for the subject site, resulting in 63 available spaces. The off-street supply would not be able to accommodate the overflow of 110 vehicles under the low scenario (deficit of 47 spaces) and 131 vehicles under the high scenario (deficit of 68 spaces).

A shared parking analysis by time-of-day found that parking demand could be reduced by 10 vehicles if visitors to the Affordable Housing and employees, clients, and visitors to the Withdrawal Management Centre shared parking. Further reductions are possible by staggering visitor hours to the Inpatient Detox and STAR programs at the Withdrawal Management Centre, and by providing carsharing vehicle spaces and membership to the residential tenants.

## 8.1 Recommendations

- The Applicant consider the use of a shared parking configuration and varying visitor times to reduce the subject site's parking demand.
- The Applicant consider providing access to a Modo carshare vehicle space for the subject site's residential users.