

bunt & associates



# Jericho Lands Transportation Assessment and Management Study



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# INTRODUCTION

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## Introduction

The Musqueam, Squamish, and Tsleil-Waututh (MST) Nations are developing a Policy Statement to re-develop the ʔəyálməxw/lýálməxw/Jericho Lands into a vibrant new car-light community. A mix of complementary residential, commercial, cultural, and community land uses are proposed to be built alongside two new rapid transit stations through a thoughtfully phased process over a 25-to-30-year time horizon.

The ʔəyálməxw/lýálməxw/Jericho Lands mobility strategy incorporates extensive measures to reduce reliance on auto-vehicles and support active and sustainable modes. A complete network of more than 13km of trails and greenways is designed for people of All Ages and Abilities (AAA) and integrated with local and rapid transit facilities to make walking, biking, rolling, and taking transit the most convenient option for daily trips. Limited vehicle parking supplies, combined with unbundled parking (i.e., separating the cost of parking spaces from the cost of units) and the use of district parking hubs (i.e., centralized locations for parking, which are not necessarily located beneath the building) will inhibit vehicle ownership, creating a car-light community that will be supplemented by shared mobility services when residents do require a vehicle. Sustainable travel options, such as walking, biking, rolling, or taking transit, are planned to account for a progressive 80% of trips generated by the ʔəyálməxw/lýálməxw/Jericho Lands development, creating an overarching mobility network that functions well and supports climate action targets. When considered holistically alongside the complete neighbourhood design, people will be able to live, work, learn and play at ʔəyálməxw/lýálməxw/Jericho Lands with a complete and supportive mobility network.

*Note: At this early stage of the project, this work is preliminary and expected to evolve over time. Future phases of the transportation study will be completed at rezoning, and more detailed project design will allow for more detailed transportation analysis.*

## Site Location

The ʔəyálməxw/lýálməxw/Jericho Lands lie within the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh (MST) Nations. For millennia, the site was part of the lands and waters on which the Nations hunted, gathered, and followed their cultural customs. Today, the ʔəyálməxw/lýálməxw/Jericho Lands refer to a 90-acre site bound by West 4th Avenue, Highbury Street, West 8th Avenue, and West Point Grey Park.

The surrounding area has developed as one of Vancouver's oldest neighbourhoods, West Point Grey, which is a primarily low-medium density residential neighbourhood, and home to some of the City's most popular beaches, Jericho Beach, Locarno Beach, and Spanish Banks. The community's main commercial strip, Point Grey Village, extends along West 10th Avenue, where people come to gather and visit its shops, restaurants, and businesses.



## Site Location



## Proposed Development

The ʔəyálməxw/lýálməxw/Jericho Lands are envisioned to provide a vibrant new car-light community that celebrates culture, embraces sustainability, and fosters a strong sense of belonging. An integrated network of sustainable and active mobility options is imagined to transform the act of getting from place to place into an enjoyable journey of discovery for people of all ages and abilities, creating an overarching mobility network that functions well and supports climate action targets.

Daily trips will be made by walking, cycling, rolling, or taking transit over private vehicle use. Shared mobility services will offer flexibility with stations thoughtfully dispersed throughout the site. Residents will benefit from two new rapid transit stations, Jericho Station and Alma Station, supporting high-level transit services, along with a range activated greenways and pathways that seamlessly connect to the City's broader network.

A mix of complementary residential, commercial, cultural, and community spaces are proposed to revitalize the ʔəyálməxw/lýálməxw/Jericho Lands as a place of gathering and abundance. The land use strategy takes cues from the site's natural features and topography with the greatest mix and intensity of uses centred around the future Jericho transit station, along the Weave Walk, and at key points of arrival. The plan features 30 acres of parks and open space along with 13.6 million square feet of development, estimated to provide 13,000 new homes, attract 24,000 people, and generate 3,000 new jobs.

Acknowledging that the lands will develop over time and the nature of commercial, retail, cultural and community spaces will evolve, development plans currently show approximately:

- 12,700,000 ft<sup>2</sup> of mixed tenure housing, including 13,000 dwelling units;
- 250,000 ft<sup>2</sup> of commercial retail area, including 50,000 ft<sup>2</sup> of grocery store space;
- 400,000 ft<sup>2</sup> of commercial light industrial area including 50,000 ft<sup>2</sup> of hotel area and 400,000 ft<sup>2</sup> of office and cultural space; and,
- 130,000 ft<sup>2</sup> of community facilities including 30,000 ft<sup>2</sup> of public-school space, 50,000 ft<sup>2</sup> of community centre space, and 50,000 ft<sup>2</sup> of childcare space.

A range of household types and tenures are planned to offer levels of affordability and attainability integrated across the site to foster a welcoming and inclusive community, including:

- 1,300 rental units across 1,300,000 ft<sup>2</sup> accounting for 10% of homes;
- 2,600 social housing units across 2,500,000 ft<sup>2</sup> accounting for 20% of homes; and
- 9,100 leasehold strata units across 8,900,000 ft<sup>2</sup> accounting for 70% of homes.

### A Forward-Looking Approach to Mobility

The ᱠᱟᱨᱠᱷᱚᱸᱰ/ᱵᱟᱨᱠᱷᱚᱸᱰ/Jericho Lands mobility strategy places the community benefits of sustainable transportation first and foremost. A comprehensive network of greenways, trails, and bike lanes was established early on to make walking, cycling, rolling, and other forms of micro-mobilities the easiest and most convenient option for most trips. Each building was designed with direct connections to a rapid transit station, extending the range of travel for people walking or cycling. The street network was then layered overtop to facilitate accessibility, loading, and servicing.

This hierarchical approach will be further refined throughout the rezoning process with extensive Transportation Demand Management (TDM) measures in place to help reach sustainable mode share targets and reduce pressure on the vehicle network. Altogether, the mobility strategy is designed to support climate action targets and manage future travel demands in a way that can be sustained for generations to come.



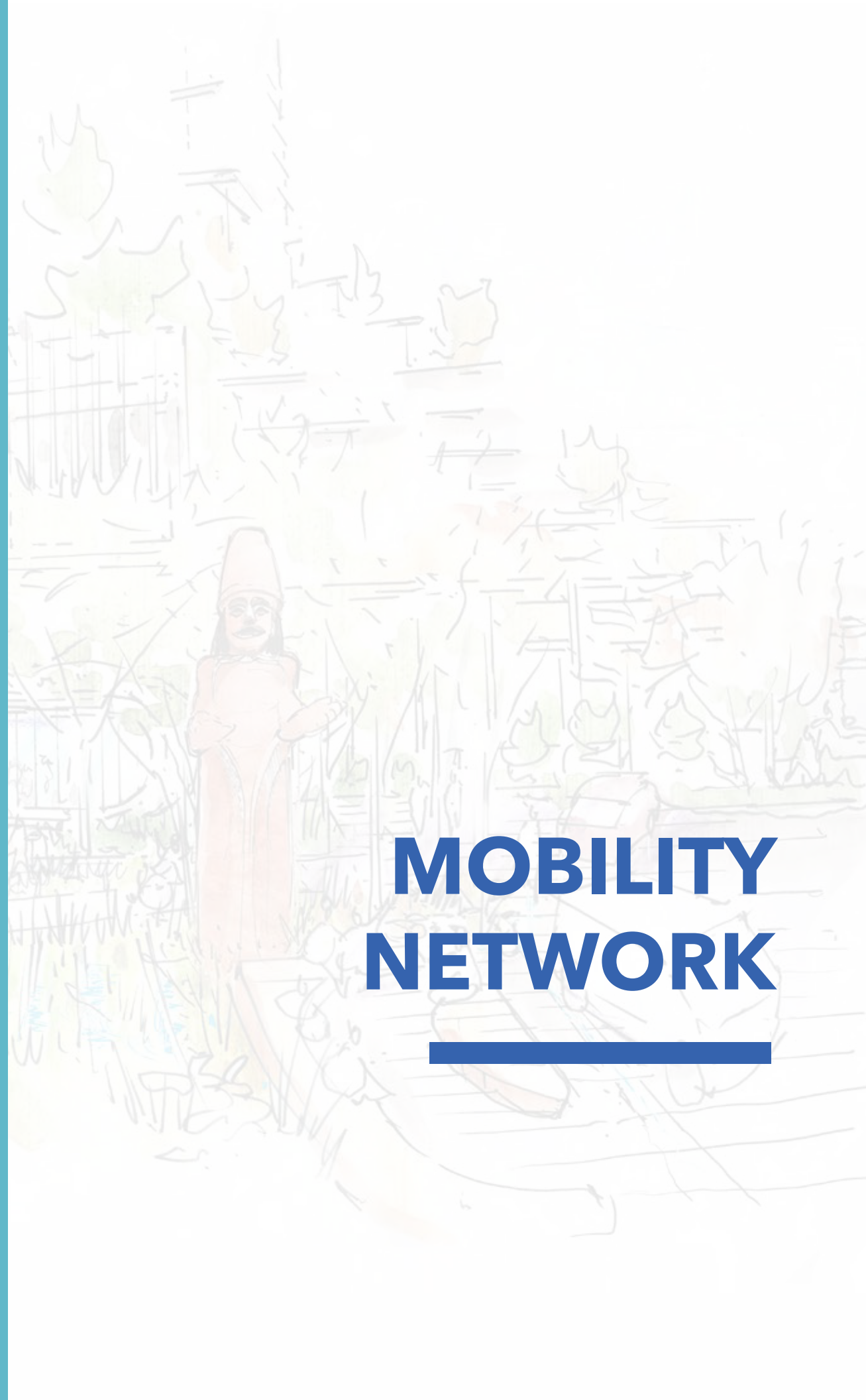
### Policy Context

The City of Vancouver declared a state of emergency in 2019 in recognition of the global climate crisis. The Climate Emergency Action Plan (CEAP) identifies actions to reduce carbon pollution by 50% by 2030 and reach carbon neutrality by 2050. This Plan includes a target for at least 80% of trips being made on foot, bike or transit by 2030 in current and emerging planning areas around rapid transit stations, including ᱠᱟᱨᱠᱷᱚᱸᱰ/ᱵᱟᱨᱠᱷᱚᱸᱰ/Jericho Lands. The ᱠᱟᱨᱠᱷᱚᱸᱰ/ᱵᱟᱨᱠᱷᱚᱸᱰ/Jericho Lands mobility strategy supports the transportation and land use strategies set in the CEAP, with daily needs met within the community along with extensive measures in place to support walking, biking, rolling, and taking transit. By changing how people move, the ᱠᱟᱨᱠᱷᱚᱸᱰ/ᱵᱟᱨᱠᱷᱚᱸᱰ/Jericho Lands will help reduce reliance on fossil fuels, improve air quality, and support resilience in the face of climate change.

With the Broadway Subway expected to bring new development and growth the region, plans and policies have been put in place to help address network gaps and ensure continued progress towards mode split targets, including 2030 sustainable mode share targets of 67% across the City and 80% in current and emerging planning areas near rapid transit. The Metro Vancouver Regional Growth Strategy, Vancouver Plan, and Broadway Plan serve as planning and policy documents that focus on sustainable growth through land use planning and transportation strategies that emphasize active modes, especially in locations near rapid transit stations.

### Relevant Plans & Policies





# MOBILITY NETWORK









## Internal Pedestrian & Cycling Facilities

### Pedestrian Facilities

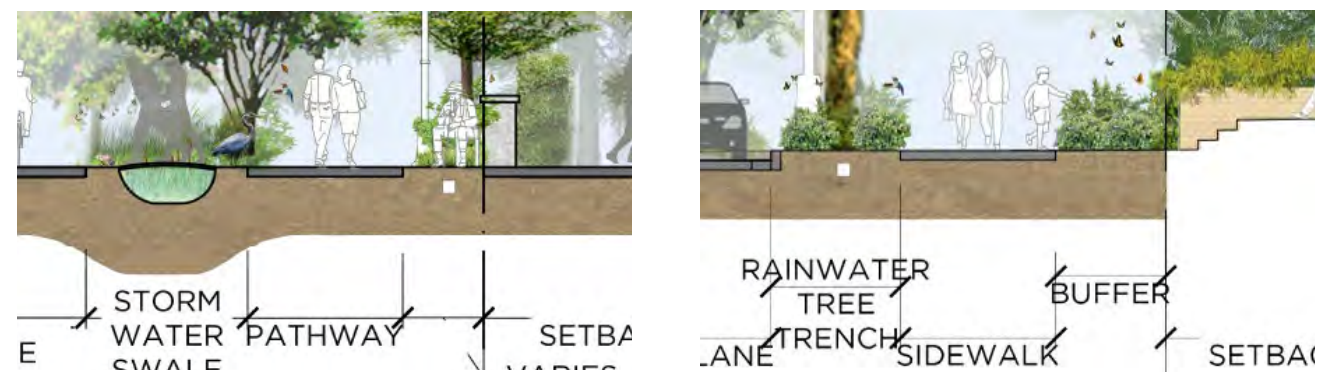
Primary pedestrian connections will extend across the site providing continuous links between entry points and key destinations. The primary network will be supplemented by secondary connections to, from, and in between each building. The pedestrian facilities will be kept separate from vehicular traffic wherever possible, and, where pedestrian facilities cannot be separated from vehicles, raised priority crossings will be provided to help slow vehicles and reinforce pedestrian priority. Pedestrian facilities will also be separated from other modes using cane-detectable barriers wherever possible.

### Pedestrian Infrastructure Typologies

TYPE	FACILITY	PREFERRED WIDTH*	DESCRIPTION
Primary Connection	Pathway	3.0 - 4.0 m	Primary pedestrian connections within AAA trails and greenways and alongside commercial uses at grade
Primary Connection	Sidewalk	2.1 - 2.4 m	Primary pedestrian connections along both sides of all internal and interfacing streets

\*Preferred widths per the City of Vancouver's Engineering Design Manual.

### Pedestrian Infrastructure Cross-Sections



### Cycling facilities

Primary cycling connections will be provided as unidirectional or bidirectional separated bike lanes along various AAA trails and greenways and along each internal and interfacing street. Key cycling connections such as the transit loop from W 4<sup>th</sup> Avenue to the 6<sup>th</sup> Avenue Greenway will be designed with either unidirectional bike lanes on both sides or bidirectional bike lanes on one side, to be determined through the design process. Cycling facilities will also be separated from other modes using cane-detectable barriers wherever possible. Where cyclists cannot be separated from vehicles, streets will operate as shared roadways with traffic calming measures in place to reduce vehicle speeds.

Long term bicycle parking facilities will be accessed through primary feature access points that will feed into several buildings' bicycle parking facilities within the below-grade parking mezzanines. Access will be provided through separated bicycle ramps with gentle grades or through dedicated bicycle elevators.

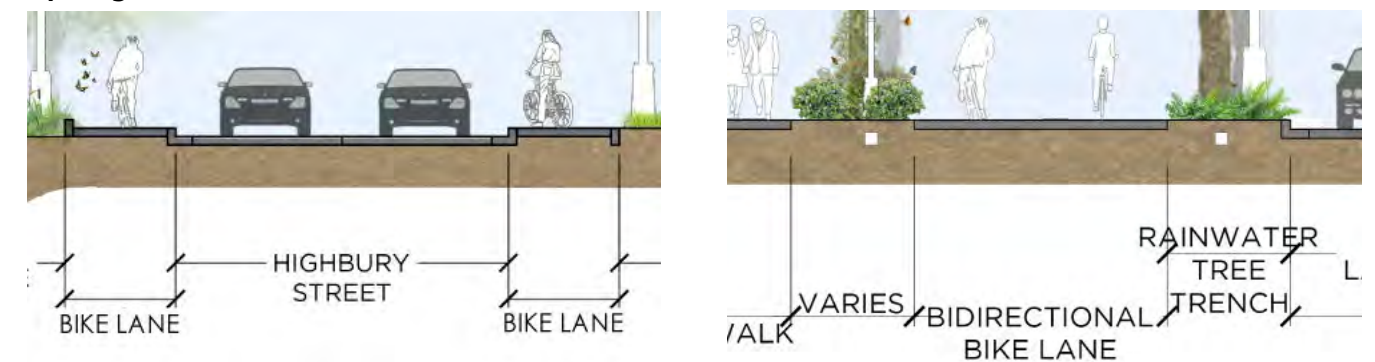
The feature accesses will be supplemented by secondary accesses which will provide direct connections from car-free routes to individual buildings.

### Cycling Infrastructure Typologies

TYPE	FACILITY	PREFERRED WIDTH*	DESCRIPTION
Primary Connection	Unidirectional	2.4 - 3.0 m	Primary cycling connections on both sides of each interfacing street, and along streets as determined by the ongoing design process
Primary Connection	Bidirectional	3.5 - 4.5 m	Primary bicycle connection on trails, greenways, and along streets as determined by the ongoing design process

\*Preferred widths per the City of Vancouver's Engineering Design Manual.

### Cycling Infrastructure Cross-Sections

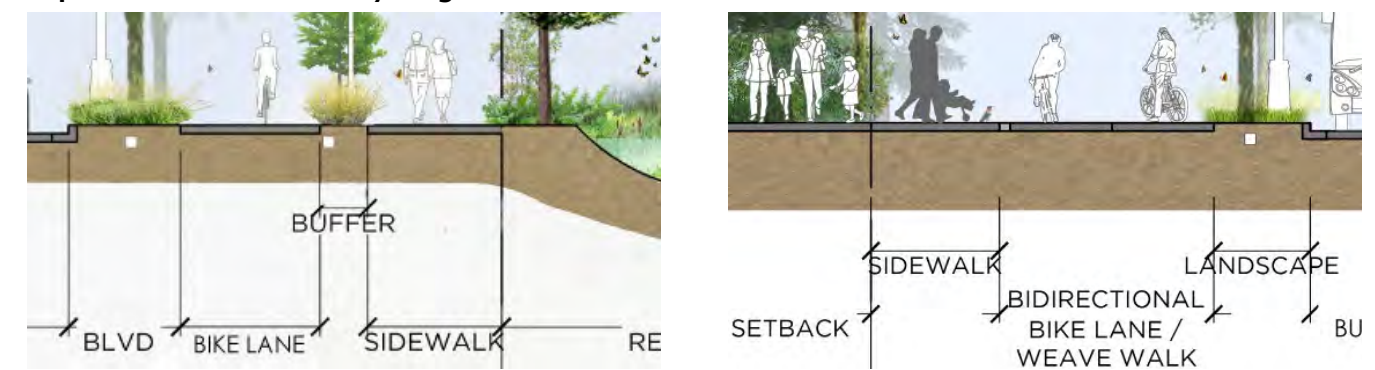


### Separating Pedestrian & Cycling Facilities

Primary pedestrian and cycling facilities will be separated throughout the site, offering safer and more comfortable walking and cycling experiences for all user groups.

The types of separation between pedestrian and cycling facilities may vary between landscaped buffers and beveled curbs; however, cane-detectable separation will be provided wherever possible in accordance with the City of Vancouver's Transportation Design Guidelines for AAA Cycling Routes.

### Separated Pedestrian & Cycling Infrastructure Cross-Sections



## Transit Network

### Existing Connections to the Site

The site is located within a 10-minute walking distance of West 4th Avenue, West 10th Avenue, and Alma Street, which service several transit lines that provide direct connections to UBC, Broadway City Hall, Olympic Village, Downtown, Waterfront, and other major exchanges. Commuters are offered a range of options providing Peak Frequent, All Day Frequent, and B-Line level services, making transit a convenient and reliable mode choice for trips throughout the City and the Greater Vancouver area.

### Future Connections to the Site

The Broadway Subway project, which is currently underway, is extending the Millennium Line from VCC-Clark Station to Broadway and Arbutus, which will eventually be followed by the planned UBCx extension out to UBC, replacing the 99-B Line and serving as a major driver for development within the local area. The new connections will increase transit capacity along one of the most congested transit corridors in Metro Vancouver, providing fast, frequent and reliable SkyTrain services to major job centres, health services, education and research hubs, and rapidly growing residential communities.

Two new SkyTrain stations will service the site, including Jericho Station, which will be located within the development area, and Alma Station, which will be located one block east of the ʔəyalməxw/Iyálməxw/Jericho Lands boundary. These transit hubs will provide residents and visitors with rapid connections across the Broadway Corridor, integrating seamlessly with the existing SkyTrain and regional bus networks.

### Connections within the Site

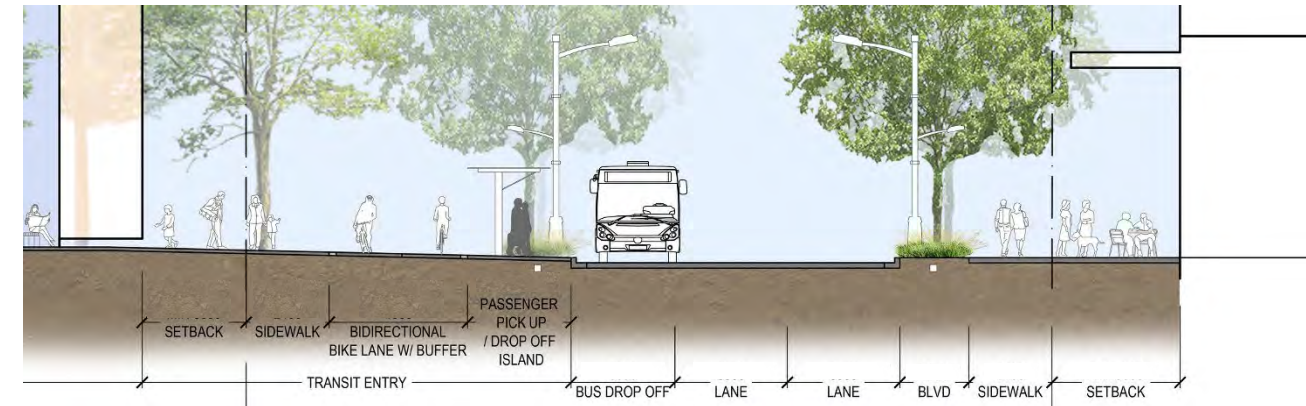
The ʔəyalməxw/Iyálməxw/Jericho Lands' active transportation network will be designed to provide simple and convenient pedestrian and cycling connections to the future planned Jericho and Alma SkyTrain stations, ensuring that each building has a direct connection to a station within a 5-to-10-minute walking distance, and in doing so, extending the range of travel for people walking or cycling.

The station and bus loop will be designed as a neighbourhood transportation hub that will support seamless travel to and from the station by walking, biking, or rolling, making transit and other forms of active transportation an attractive alternative to motor vehicle travel. The station will feature short- and long-term bicycle parking and micro-mobility facilities, effective wayfinding signage and pavement markings, shared mobility services, and other supportive amenities to help integrate the transit and active transportation networks. Bike facilities will be provided as either unidirectional bike lanes on both sides or bidirectional bike lanes on one side, to be determined through the design process.

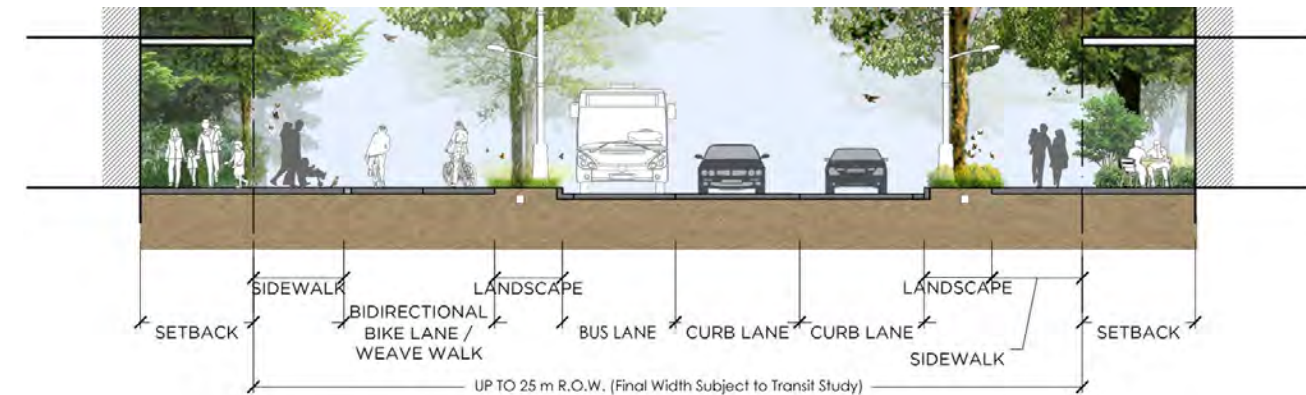
The expanded bus network will feature new stops along the W 4th Avenue frontage, feeding into the new on-site transit loop that will be built alongside Jericho Station. A standalone Transit Integration Study is currently being undertaken in consultation with the City of Vancouver, which will advise future transit access and connection design within the ʔəyalməxw/Iyálməxw/Jericho Lands and its surrounding neighbourhoods. The study will inform the design of future transit stops and the bus exchange in consultation with the City of Vancouver and TransLink.

Up to a 25-metre right-of-way will be provided for the Transit Loop between NW Marine Drive and W 4th Avenue. The final right-of-way width may vary subject to future work on the Transit Study and bus integration study, adjacent uses, mode splits, and on street demands for bus circulation.

### Transit Loop Pick-Up & Drop-Off Area

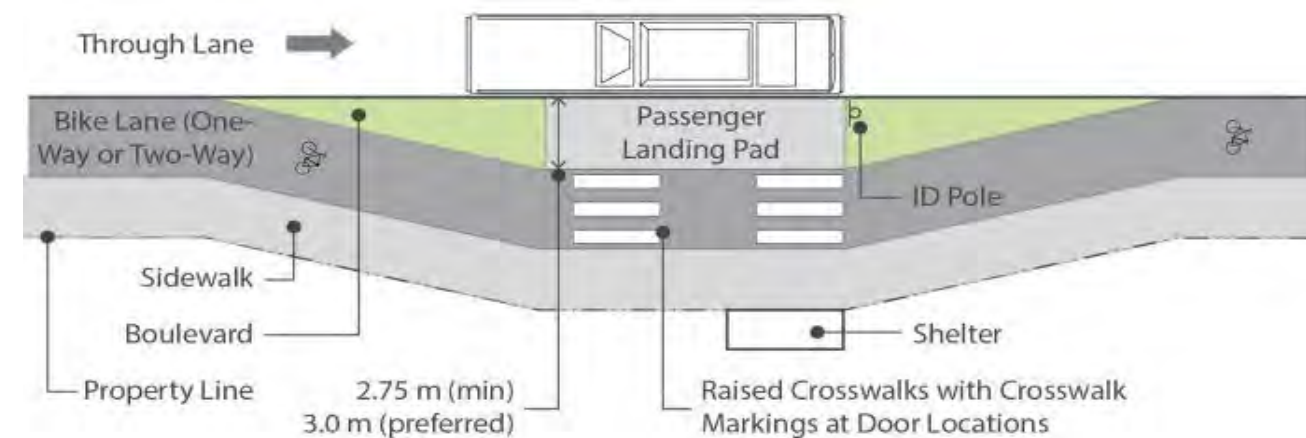


### Transit Loop



The transit loop will feature floating bus stops with specialized design features to ensure that all people, including those with visual and mobility impairments, can safely and comfortably access the transit stops. Each stop will feature accessible design elements including landing pads, transit route identification poles, rear clear zones, pedestrian connections, crosswalks, raised bicycle ramps, tactile surfaces, shelters, benches, and waste bins.

Figure 4.6: Floating Transit Stop Design Standard



Source: TransLink Bus Infrastructure Design Guidelines, 2018

## Street Network

### Existing Street Network

The ᑲᓄᓄᓄᓄᓄᓄ/ᓄᓄᓄᓄᓄᓄᓄ/Jericho Lands are situated adjacent to W 4<sup>th</sup> Avenue, an east-west arterial that lies north of W 10<sup>th</sup> Avenue and W Broadway, which are east-west arterials that form part of TransLink's Major Road Network (MRN). Alma Street and Blanca Street provide north-south arterial connections between W 4<sup>th</sup> and W 10<sup>th</sup> Avenue. All other streets within the area are classified as collectors, local streets, or greenways.

### Future Street Network

The ᑲᓄᓄᓄᓄᓄᓄ/ᓄᓄᓄᓄᓄᓄᓄ/Jericho Lands Framework Plan emphasizes a car-light philosophy with priority given to active modes. The internal street network purposefully does not penetrate deeply into the site, providing limited connectivity to access buildings and district parking facilities. The street cross sections are designed to enhance the pedestrian realm, incorporate landscaping and setbacks, and minimize space required for vehicles.

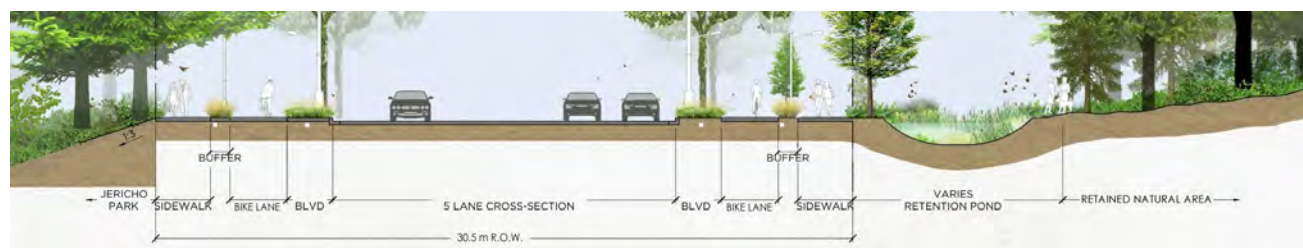
Guiding principles for the development of the internal street network include:

- Internal streets will be designed with single lane in either direction, though additional turn lanes may be provided at the 4<sup>th</sup> Avenue connecting intersections to manage future vehicle traffic;
- Internal crossing points with the pedestrian/cycling network will be minimized with fewer than 5 such crossing points anticipated with appropriate design treatments to prioritize active modes and minimize conflicts with motor vehicles (e.g., raised "tabletop" crossings, delineated paving, signage, lighting, traffic control signals, etc.);
- Curbside flex lanes within the internal street cross sections will provide adaptable space for a variety of supplementary uses including accessible parking, loading, transit facilities, landscaped boulevards, etc.;
- All buildings will be accessible by means of primary entrances that are aligned with the road network in addition to secondary accesses via service lanes in car free areas; and,
- Comfortable and convenient connections will be provided between existing retail on W 10<sup>th</sup> Ave and the connection points into ᑲᓄᓄᓄᓄᓄᓄ/ᓄᓄᓄᓄᓄᓄᓄ/Jericho Lands, by foot, bike, or vehicle.

### W 4<sup>th</sup> Avenue

W 4<sup>th</sup> Avenue will continue to function as a key east-west arterial route for vehicles, and provides several access points to the site, however it will feature significant improvements to the pedestrian realm and cycling facilities. The cross-section features wide sidewalks, and unidirectional bike lanes with buffers.

#### W 4<sup>th</sup> Avenue Cross-Section



### Highbury Street

Highbury Street is the eastern frontage and will function both as a collector road for vehicles and greenway for an enhanced pedestrian and bicycle experience. The plan features wide sidewalks adjacent to generous setbacks and landscaped boulevards, unidirectional separated bike lanes, and narrowed travel ways to reduce vehicle speeds.

#### Highbury Street Cross-Section



### W 8<sup>th</sup> Avenue

W 8<sup>th</sup> Avenue on the south frontage is a prominent east-west greenway that functions as a collector road. The proposed cross-section features wide sidewalks and landscaped boulevards as well as either unidirectional bike lanes on both sides of the street or a wide bidirectional bike lane on the north side fronting the project, to be determined through the design process. Key trade-offs to be considered include minimizing conflicts between people cycling and motor vehicle traffic, with a particular focus on the 8th/Broadway/Wallace intersection and tie-ins to the existing local street bikeway beyond the site.

#### W 8<sup>th</sup> Avenue Cross-Section

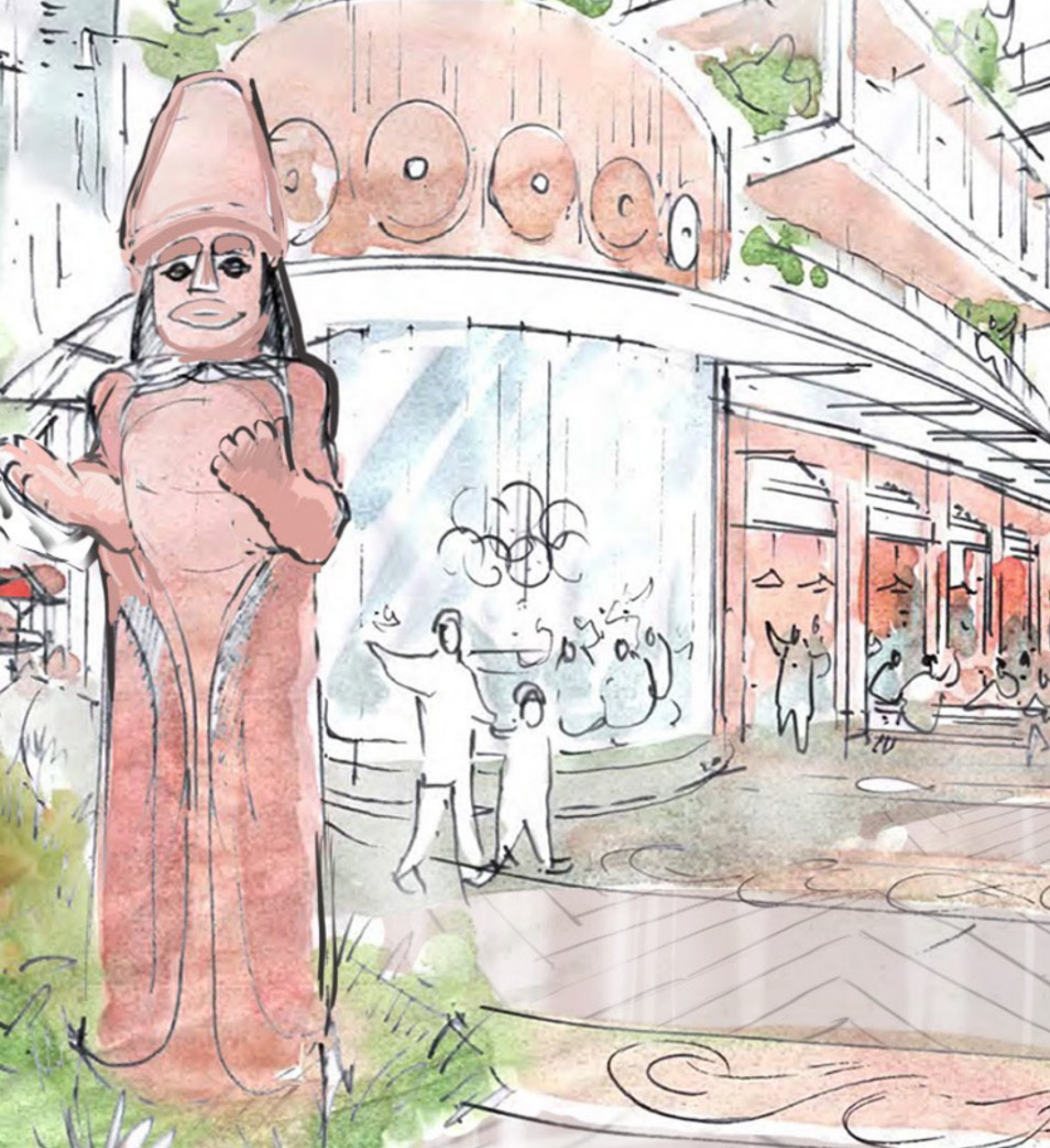


### W 5<sup>th</sup> / W 7<sup>th</sup> Avenue / Courtenay Street Extension / Transit Loop Connector

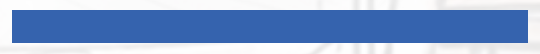
W 5<sup>th</sup> Avenue, W 7<sup>th</sup> Avenue, the Courtenay Street Extension, and the Transit Loop Connector feature similar aspects including wide sidewalks, treed boulevards, narrowed vehicle lanes, and an intermittent flex lane. This design supports the residential character and needs on these streets throughout Jericho.

#### W 5<sup>th</sup> / W 7<sup>th</sup> Avenue / Courtenay Extension / Transit Loop Connector Cross-Section





# **PARKING STRATEGY**



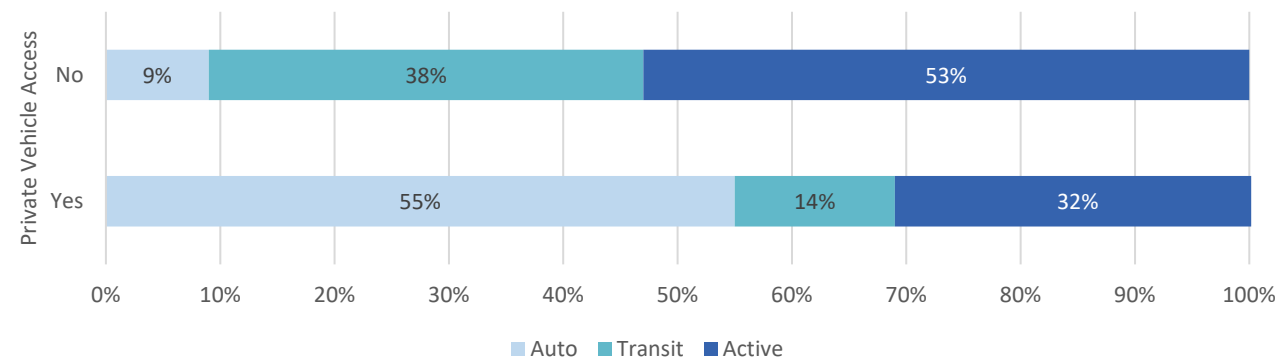
# Parking Strategy

## The Influence of Parking Supply on Travel Behaviour

The more access we have to private vehicles, the more we tend to use them and the less we opt to use alternative, sustainable travel options such as walking, cycling, and public transit. This relationship is evident from the data presented in the annual Vancouver Transportation Panel Surveys and other studies across North America.

As reported in the 2019 Vancouver Transportation Panel Survey, the difference in auto mode share for all trip purposes across the City between households with and without access to private vehicles is remarkable as evident in the figure below. For households with access to a private vehicle, on average 55% of households choose to travel by auto and 45% by active modes (walking/cycling) and transit. For households without access to private vehicles, trips by auto drop to just 9% while active modes and transit average 91% of trips.

### Mode Share Distribution by Private Vehicle Ownership



Source: City of Vancouver 2019 Transportation Panel Survey - Figure 3-17

The 2019 Transportation Panel Survey further provides some interesting travel mode split data among different Vancouver neighbourhoods with differing levels of access to private vehicles. For instance, the Vancouver CBD-West End for which 71% of residents have access to a private vehicle and the Broadway Corridor 80% have access to private vehicles, the average mode split for automobile trips (drivers and passengers) was determined to be 28% for the West End and 31% for Broadway. Vehicle ownership is a major factor in travel mode splits, as residents without access to private vehicles were found to have sustainable mode shares in excess of 90%.

For ʔəyalməxw/Iyálməxw/Jericho Lands, the proposed residential parking supply rates ranging from 0.1 to 0.4 parking spaces per dwelling unit would result in much lower rates of access to private vehicles than even the West End and Broadway, i.e., more like a quarter of the current condition for these two neighbours.

With the enhanced public transit service of the Broadway Subway, the highly connected network of walking and cycling routes, and the resolutely low residential parking supply rates, the automobile mode split of 20% modelled for the future ʔəyalməxw/Iyálməxw/Jericho Lands is reasonable.

### Mode Share Distribution by Private Vehicle Ownership by Neighbourhood

NEIGHBOURHOOD	% OF RESIDENTS WITH ACCESS TO A PRIVATE VEHICLE	AUTO MODE SPLIT	WALKING/CYCLING & TRANSIT MODE SPLIT
Broadway	80%	31%	69%
CBD-West End	71%	28%	72%
Jericho Lands*	25%	20%	80%
City-wide (with no private vehicle access)	0%	9%	91%

Note: \* with resident parking supply rates of 0.10 to 0.40 stalls per dwelling unit

## District Parking Facilities

The conventional approach for providing vehicle parking for new development is to locate it directly below buildings often requiring multiple levels of underground parking. This form of parking, while very convenient to parking users in terms of quick access, is costly and inefficient for sharing parking supply among different users.

For ʔəyalməxw/Iyálməxw/Jericho Lands a different approach to parking supply is proposed that will feature the use of District Parking facilities located in several locations across the site. The introduction of parking districts will enable a consolidation of the parking for individual buildings to a centralized location(s). While there still may be buildings with vehicle parking located beneath, some portion of their parking would be located in one of the District Parking parkades.

- The application of district parking at the ʔəyalməxw/Iyálməxw/Jericho Lands will help to:
- Maximize shared parking opportunities for more efficient use of a smaller supply of parking;
- Facilitate strategic positioning of underground parking to minimize impacts to groundwater movement;
- Promote alternative modes by co-locating car share and bike share at the District Parking facilities; and,
- Manage street traffic volumes by locating the larger groupings of parking nearest to the adjacent road network and thereby lessen the volume of vehicle traffic travelling on the internal street network.

The District Parking facilities also provide an opportunity for the earlier phase development at ʔəyalməxw/Iyálməxw/Jericho Lands to have available additional vehicle parking supply prior to the completion of the Broadway Subway rapid transit line. When the Broadway Subway line opens with its significant enhancement to transit capacity and convenience, the early phase higher residential parking supply at the District Parking facilities can be repurposed to accommodate the later phase development at ʔəyalməxw/Iyálməxw/Jericho Lands.

## Vehicle Parking Supply Rates

### Residential Vehicle Parking

As part of the forward-looking mobility approach for ʔəyalməxw/Iyálməxw/Jericho Lands, an 80% sustainable mode share is being targeted, where private vehicles account for no more than 20% of development trips. Plans to achieve this ambitious mode split target are dependent on a substantially reduced vehicle parking supply as described in the discussion above.





# TRANSPORTATION DEMAND MANAGEMENT STRATEGY

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## Transportation Demand Management Strategy

Transportation Demand Management (TDM) is a crucial component of sustainable mobility, aimed at reducing and re-distributing vehicle travel demands through various initiatives that encourage walking, biking, rolling, and taking transit. TDM techniques also discourage vehicle ownership, lowering parking demands for developments.

### TDM Effectiveness

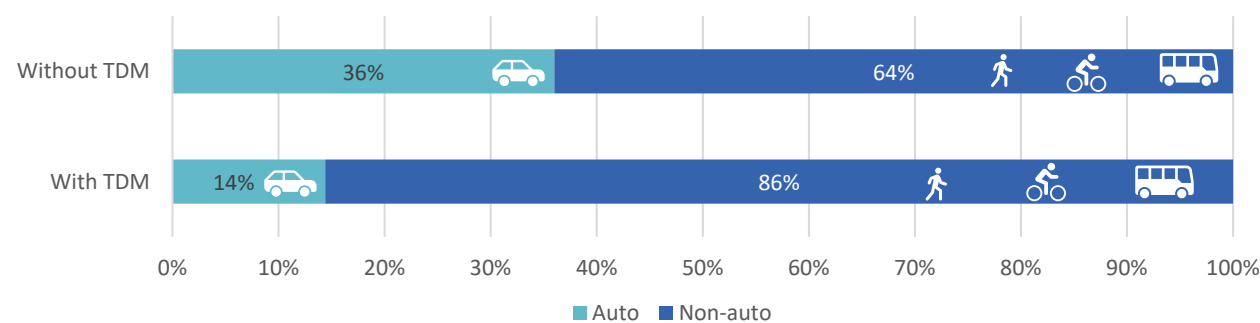
Research conducted by the Victoria Transport Policy Institute (VPTI) indicates that TDM strategies can be very effective when implemented as part of an integrated program including a combination of incentives to travel by walking, biking, rolling, or taking transit (e.g., transit passes, carshare memberships, etc.) and vehicle travel disincentives (e.g., parking pricing, parking supplies, etc.). Vehicle travel reductions resulting from TDM measures have been shown to include:

- 10-15% by reducing parking supplies;
- Up to 20% by providing carshare vehicles & memberships;
- 5-10% by offering transit fare discounts;
- 10-30% by implementing parking pricing strategies;
- 15-20% by providing rapid transit services;
- 5-15% by improving pedestrian and cycling infrastructure; and,
- 10-30% by designing complete streets.

TDM measures tend to interact with one another and are more effective when implemented as part of an integrated strategy with supportive development policies. Designing compact, walkable communities has been shown to reduce driving by 20-40%, and transit-oriented development strategies that incorporate compact, mixed-use neighbourhoods around high-quality transit systems have been shown to reduce driving by up to 60%.

Based on this research, it is possible for a transit-oriented development like ʔəyalməxʷ/lýálməxw/Jericho Lands to reduce driving by up to 60% with an effective TDM strategy. For example, with an assumed baseline 36% auto mode share (the existing Kitsilano/West Point Grey neighbourhood mode share from the City’s 2019 Panel Survey), the site’s planned TDM measures could reduce auto mode shares to as low as 14%, exceeding the CEAP sustainable mode share target of 20% auto/80% non-auto. Mode shares are discussed in greater detail within a subsequent section in this report.

### Potential Reduction in Auto-Mode Share with TDM Measures



Based on a 60% reduction in driving from the 2019 Transportation Panel Survey mode split results in the Kitsilano area.

## Site Wide TDM Strategy

Several TDM measures are proposed to form part of a high-level site wide TDM strategy, providing options which will be refined for each parcel as the project reaches the rezoning phase. These measures are intended to reinforce the car-light philosophy with a combination of strategies that encourage use of sustainable modes and discourage vehicle travel to help reach the project’s 80% sustainable mode share target.

The proposed vehicle parking supply is anticipated to be a major driver in reducing the vehicle travel mode split, with a proposed residential parking rate averaging as 1 space for every 4 dwelling units. Vehicle parking spaces will be located within shared parking districts, making driving less convenient for most trips. The cost of parking spaces will also be separated from unit costs, which has shown to be an effective deterrent to vehicle ownership.

The reduced parking supply will be supported by the ʔəyalməxʷ/lýálməxw/Jericho Lands land use and mobility strategies with built-in TDM techniques creating a compact urban community where daily needs can be met within a short walk or bike ride. Residents will benefit from a range greenways and pathways that seamlessly connect to the City’s broader network, along with two new rapid transit stations supporting high-level transit services, and carshare services offering flexibility when residents need to make trips that require a vehicle.

### Summary of Site Wide TDM Measures

	<b>CAR SHARE</b>	→ Car Share Memberships → Car Share Vehicles & Spaces
	<b>ENHANCED BICYCLE PARKING</b>	→ Improved Access to Long-Term Bicycle Parking → Secure Public Bicycle Parking and E-Bike Charging Facilities
	<b>BIKE AMENITIES</b>	→ Showers, Lockers & Other End-of-Trip Facilities → Bike Repair Stands, Bike Wash Stations & Other Maintenance Facilities
	<b>BIKE SHARE</b>	→ Public Bike Share → Shared Bicycle Fleet
	<b>INFRASTRUCTURE IMPROVEMENTS</b>	→ AAA Pedestrian & Cycling Connections → Rapid Transit Services
	<b>WAYFINDING</b>	→ Real-Time Information Screens → Multimodal Wayfinding Signage
	<b>PARKING SUPPLY &amp; PRICING</b>	→ Reduced Parking Supplies → Separated Costs for Residential Parking Spaces & Paid Public Parking





**CURBSIDE  
MANAGEMENT,  
LOADING &  
SERVICING**

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## Curbside Management, Loading & Servicing

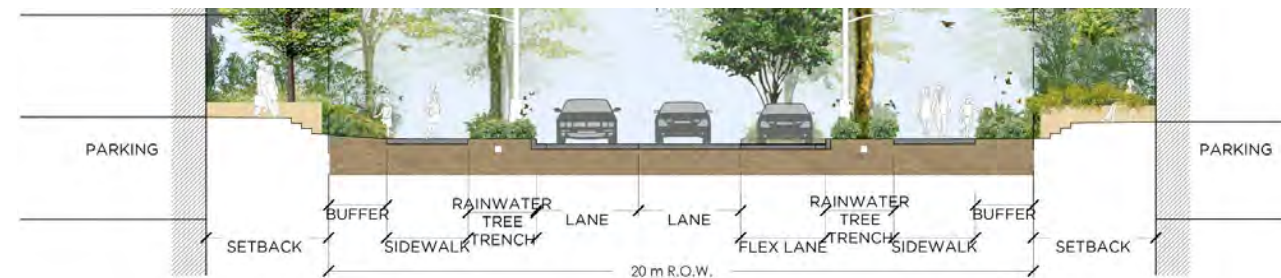
Passenger loading will be provided within the district parking facilities on level P1 beneath the buildings that they are intended to serve wherever possible. Where underground parking is not available, passenger loading, accessible parking, and HandyDart bus stops will be provided at grade to ensure that each building has access to these facilities.

Each internal street cross-section will be designed with a curbside flex lane with the ability to serve a variety of purposes such as accessible parking, passenger loading, transit stops, landscaped boulevards, shared mobility parking, micro-mobility hubs, short-term commercial parking, and short-term loading.

### Notional Distribution of Passenger Loading Opportunities



### Typical Cross Section with Flex Lane



Goods loading facilities will also be provided within the district parking facilities, on level P1 beneath the buildings that they are intended to serve wherever possible. Where underground parking is not available, surface level loading will be provided adjacent to the building. Loading spaces will be shared among uses, which will be explored further during the rezoning phase.

The City of Vancouver Parking By-law sets out the supply requirements for off-street loading facilities covering a range of land-use types. On November 15, 2023, Council approved amendments to the City

of Vancouver's loading rates and loading design standards, effective January 1<sup>st</sup>, 2024. The updated loading supply rates are specified for three sizes of loading vehicle as outlined below:

- Class A Loading Space: 5.5 metres in length x 2.7 metres in width and minimum 2.3 metre vertical clearance*
- Class B Loading Space: 10.2 metres in length x 3.4 metres in width and minimum 3.8 metre vertical clearance*
- Class C Loading Space: 23.1 metres in length x 3.6 metres in width and minimum 4.3 metre vertical clearance*

LAND USE		MINIMUM LOADING SUPPLY REQUIREMENT
Residential	Class A	No requirement < 50 dwelling units. 1 for 50 to 299 dwelling units; 1 additional space for any portion of each additional 200 dwelling units.
	Class B	1 for 100 to 299 dwelling units; 2 for 300 to 499 dwelling units; 1 additional space for any portion of each additional 200 dwelling units.
	Class C	No requirement
Office	Class A	No requirement < 1 000 square metres of gross floor area. 1 for 1 000 to 15 00 square metres of gross floor area; 2 for 15 00 to 20 000 square metres of gross floor area; 3 for 20 000 to 28 000 square metres of gross floor area; 1 additional space for any portion of each additional 7 500 square metres of gross floor area.
	Class B	No requirement < 500 square metres of gross floor area. 1 for 500 to 5 000 square metres of gross floor area; 2 spaces for 5 000 to 10 000 square metres of gross floor area; 3 for 10 000 to 28 000 square metres of gross floor area; 1 additional space for any portion of each additional 15 000 square metres of gross floor area.
	Class C	No requirement
Retail	Class A	No requirement
	Class B	No requirement for less than 100 square metres of gross floor area. 1 for the first 2 325 square metres of gross floor area; 1 additional space for any portion of the next 2 325 square metres.
	Class C	No requirement < 1 900 square metres of gross floor area. 1 for 1 900 square metres to 5 000 square metres of gross floor area; 2 for > 5 000 square metres of gross floor area.

### Waste & Recycling Collection

The City of Vancouver Garbage and Recycling Storage Amenity Design Supplement (Latest Revision July 2022) provides general design guidance for waste and recycling storage facilities, a methodology to estimate the number of required containers, and operational requirements for access to these facilities.

For Large Site developments in the City of Vancouver such as ʔəyálməxw/lyálməxw/Jericho Lands, there are additional study requirements pertaining to sustainability considerations. A more detailed assessment of the waste and recycling design requirements for the project is anticipated as part of the rezoning application and approval process.



# TRAFFIC VOLUMES & VEHICLE OPERATIONS

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## Traffic Volumes & Vehicle Operations

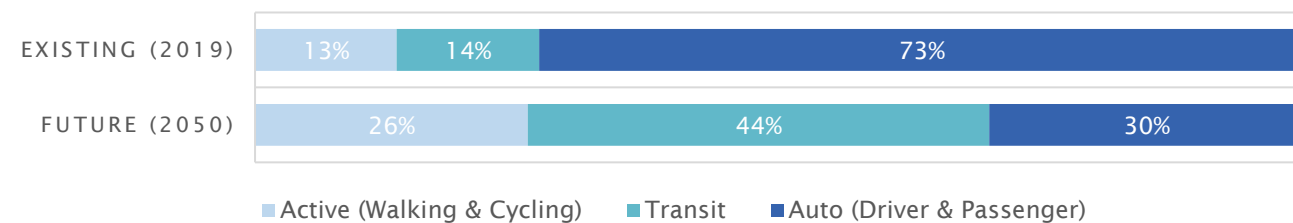
### Evolving Traffic Patterns

The City's Subarea Transportation EMME model (VanSAM), a quantitative transportation demand forecast model, was utilized to estimate future baseline peak hour travel demand. Key inputs to this forecast model include:

- ʔəyalməxʷ/Iyálməxw/Jericho Lands land use
- Future Metro Vancouver demographics (i.e., the Vancouver Plan)
- Planned future transportation infrastructure (i.e., Broadway Subway extension to UBC)

This model provided a preliminary estimate of future travel patterns and travel demands given the evolving lands uses, as well as the integration of the Broadway Extension and other additional fast and reliable transit connections throughout Metro Vancouver. The graphic below illustrates the forecasted shift in travel modes for the ʔəyalməxʷ/Iyálməxw/Jericho Lands site over the next 40 years during the critical PM peak hour.

#### Model-Predicted Site Modal Shift (PM Peak Hour)



Compared to existing conditions, a significant increase in active and transit modes is forecast by 2050 with the Broadway extension and additional transit infrastructure. A mode shift will occur for not only the redeveloped ʔəyalməxʷ/Iyálməxw/Jericho Lands site, but also the broader neighbourhood which will also benefit from the improved transit service and evolving land use plans. Note that the model-predicted existing auto mode shares are significantly higher than those included within the Panel Survey for the entire Kitsilano neighbourhood (36%), indicating that the West Point Grey area sees a higher proportion of automobile trips compared to the rest of the neighbourhood and/or the model may be overestimating auto mode shares. Regardless, the model clearly illustrates how this area will experience a major shift in travel behaviours in the future.

The traffic model has forecast a future 2050 auto mode share of 30% during the PM peak hour for the project site. A similar mode share is predicted for the AM peak hour. While this represents a significant decrease from existing mode shares, the model does not explicitly account for site-specific influences on travel behaviour such as the site's low parking supply and other planned TDM measures. Therefore, the model-predicted auto mode share of 30% is considered conservative and can be further reduced to achieve and surpass the City's 20% auto mode share target with successful implementation of TDM strategies.

### Site Mode Share

With a vast network of cycling and pedestrian facilities, a wide variety of uses and amenities located on and around the site, and with two SkyTrain stations located within walking distance, the majority of ʔəyalməxʷ/Iyálməxw/Jericho Lands site residents and visitors are anticipated to travel to and from the site via walking, cycling, transit, or other sustainable transportation modes.

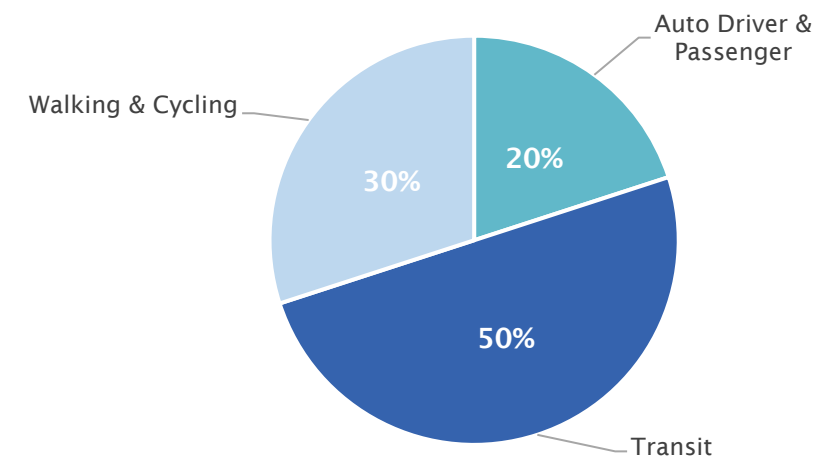
Previous sections within this report have presented the following findings about mode shares and potential reductions in automobile usage.

- The transportation model indicates that the future land use and transit infrastructure will result in future auto mode shares of about 30%
- TDM measures for transit-oriented developments can reduce auto mode shares by up to 60%

Combining the two by evaluating the impact of site-specific TDM measures in addition to the impact of future land use plans and transportation infrastructure will result in auto mode shares lower than the 30% predicted by the model. Simply applying the 60% TDM reduction to the model-predicted 30% would result in an auto mode share of 12%, which is significantly lower than the City's CEAP mode share target of 20% auto/80% non-auto. Put another way, the planned TDM measures will need to only reduce driving by 33% below the model-predicted auto mode shares to achieve the City's sustainable mode share target.

Based on the above, the ʔəyalməxʷ/Iyálməxw/Jericho Lands site can therefore support auto mode shares of 20% or below. For the transportation modelling and analysis, a 20% auto mode split was assumed, though lower mode shares are achievable through effective TDM implementation.

#### Planned Site Mode Share



The mode shares assumed for the traffic analysis are aligned with the City's Climate Emergency Action Plan, which includes an 80% sustainable mode share target for emerging planning areas close to rapid transit. The site will be designed with a comprehensive suite of Transportation Demand Management measures to help achieve these modal splits and ensure compliance with the City's sustainability objectives. The site's great proximity to transit will also play a major role in enabling sustainable transportation.

## Site Trip Generation

Future site trip generation was estimated using rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11<sup>th</sup> Edition for the Weekday AM and PM peak hours.

### Site Trip Generation

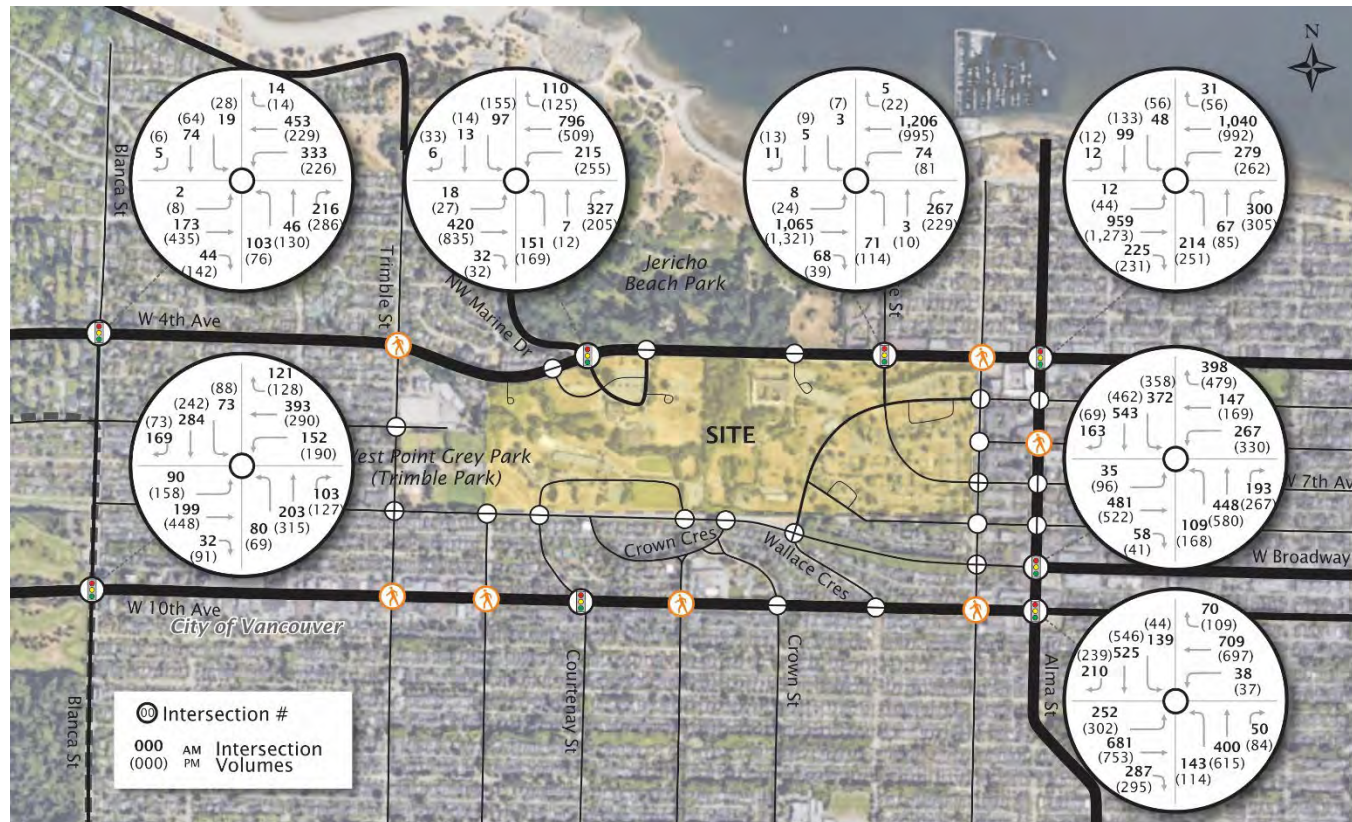
MODE	SHARE	AM			PM		
		IN	OUT	TOT	IN	OUT	TOT
Auto Driver	17%	847	1,267	2,114	1,267	1,091	2,357
Auto Passenger	3%	169	253	423	253	218	471
Transit	61%	3,089	3,822	6,910	3,822	3,291	7,112
Walking	13%	660	1,523	2,183	1,523	1,311	2,835
Cycling	6%	319	735	1,054	735	633	1,368
<b>TOTAL</b>	<b>100%</b>	<b>5,084</b>	<b>7,600</b>	<b>12,684</b>	<b>7,600</b>	<b>6,544</b>	<b>14,144</b>

The development is anticipated to generate approximately 12,700 to 14,100 person trips during the peak hours, including about 2,100 to 2,400 vehicle (auto driver) trips.

## Future Traffic Forecasts

Using the travel demand outputs from the City's VanSAM model and applying the forecasted site trip generation, Bunt developed a traffic model to forecast future peak hour study area traffic volumes.

### 2050 Vehicle Traffic Forecasts



## Future Traffic Impact

The study area intersections were found to operate well and with residual capacity under existing traffic conditions. By 2050, the forecasted study area traffic growth was predicted to occupy much of this residual capacity – leading to increased congestion and delays for vehicles, but still generally within acceptable levels.

This finding is unsurprising and is a natural byproduct of introducing this level of development into a neighbourhood which is today predominantly occupied by single-family housing. Anchored by this redevelopment and supported by the Broadway Extension, the surrounding West Point Grey neighbourhood will experience rapid change and evolution over the next few decades. The pace of new development will eventually outstrip the ability of the existing road network to service it – it is simply not reasonable nor sustainable to expect the existing level of traffic performance to be maintained into the future.

While vehicular traffic growth is constrained by the existing road infrastructure, there is ample incentive opportunity for residents and visitors alike to forgo private automobile travel and instead ride transit or travel via other sustainable modes such as walking and cycling. Some degree of traffic congestion on the road network is actually beneficial in encouraging drivers to shift travel modes towards more sustainable transport modes. Providing major road infrastructure upgrades would detract from the area's walkability and livability. There is still a need to ensure the road network can accommodate vehicles; however, this need must also be balanced with the needs of other travel modes and with the City's sustainability objectives.

Overall, the forecasted future traffic volumes can broadly be accommodated by the road network. Traffic volumes through the site's internal roads are expected to be manageable, with the roadways designed with traffic calming measures to disincentivize vehicle traffic from travelling through the site.

## Intersection Operations Analysis

A comparison of operational results at key study area intersections between existing (2023) and future (2050) traffic conditions is presented in the following table. Overall intersection Level of Service (LOS) and volume/capacity (V/C) ratios are presented. LOS is based on average vehicle delay and is a qualitative measure of traffic performance at intersections, with LOS A representing minimal delays and LOS F representing congested, traffic jam-like conditions. LOS C/D is often considered the target LOS for urban roadways, as it indicates the roadways are 'right-sized' by operating near capacity while still maintaining acceptable delays. V/C ratios present the ratio of traffic at the intersection relative to the theoretical capacity as determined using the Highway Capacity Manual.

## 2050 Traffic Operations

INTERSECTION	SCENARIO	AM		PM	
		LOS	V/C	LOS	V/C
West 4 <sup>th</sup> Avenue & NW Marine Drive	Existing	B	0.34	B	0.39
	Future	B	0.54	B	0.63
West 4 <sup>th</sup> Avenue & Alma Street	Existing	B	0.57	B	0.62
	Future	C	0.66	D	0.82
West Broadway & Alma Street	Existing	B	0.38	B	0.46
	Future	C	0.71	D	1.01
West 10 <sup>th</sup> Avenue & Alma Street	Existing	B	0.60	B	0.55
	Future	C	1.07	C	0.87

As indicated previously, future traffic growth will result in more pressured traffic operations compared to existing conditions, but the future volumes can generally be accommodated by the road network. The future operations results incorporate some recommended improvements. This includes new/modified traffic signals to facilitate site access along West 4<sup>th</sup> Avenue as well as new left turn lanes on select intersections along the busy Alma Street corridor. The new turn lanes would be accommodated within the existing right-of-way and not require additional property dedication; however, portions of on-street parking would need to be removed.

While some intersections were still found to exceed typical vehicle performance thresholds even with these mitigations, these findings are not uncommon for dense urban areas like what is envisioned here.



# CONCLUSION

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