

MARINE LANDING GUIDELINES (DRAFT)

SEPTEMBER 2021

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APPLICATION

These guidelines apply to the Marine Landing neighbourhood of Marpole (**Figure 1 below**). They apply to all privately-initiated rezoning applications in this area for sites identified in **Figure 2** (page 5). The guidelines will be used by City staff and Council when evaluating projects. They also inform future improvements in the public realm. The document supplements the *Marpole Community Plan* (MCP) and *Cambie Corridor Plan* (CCP), which provide land use, housing and other supporting policy for this area.

Built Form (Chapter 2)

- Built form guidelines in this document apply exclusively to sites identified in **Figure 2** (page 5). They supersede any built form guidelines contained in the MCP or CCP.

Public Realm (Chapter 3)

- The public realm plan applies to the Marine Landing area identified in **Figure 2** (page 5).
- The public realm plan in **Figure 3** (page 26)

consolidate directions from the *Marpole Community Plan*, *Cambie Corridor Plan*, and other applicable City plans and strategies (e.g. *Rain City Strategy*, *VanPlay*, *Biodiversity Strategy*). These existing City plans and strategies are also supplemented with additional new priorities needed to support this growing community.

Archaeological and Heritage Management, Transportation, and Utilities (Chapters 4-6)

- Archaeological and heritage management, transportation, and utilities considerations should be referenced for any development sites located in Marine Landing as per **Figure 2** (page 5).

Public Benefits (Chapter 7)

- These guidelines highlight public benefit priorities for the Marine Landing area identified in **Figure 2** (page 5). They should be consulted for any site in Marine Landing going through a rezoning process.

Other

- Other relevant City plans, strategies, guidelines or bulletins continue to apply and may be identified through the rezoning process. Key reference policies include:
 - *Rezoning Policy for Sustainable Large Developments*
 - *Green Buildings Policy for Rezoning*

In any case where there is a conflict with existing community plans, these guidelines should take precedence.

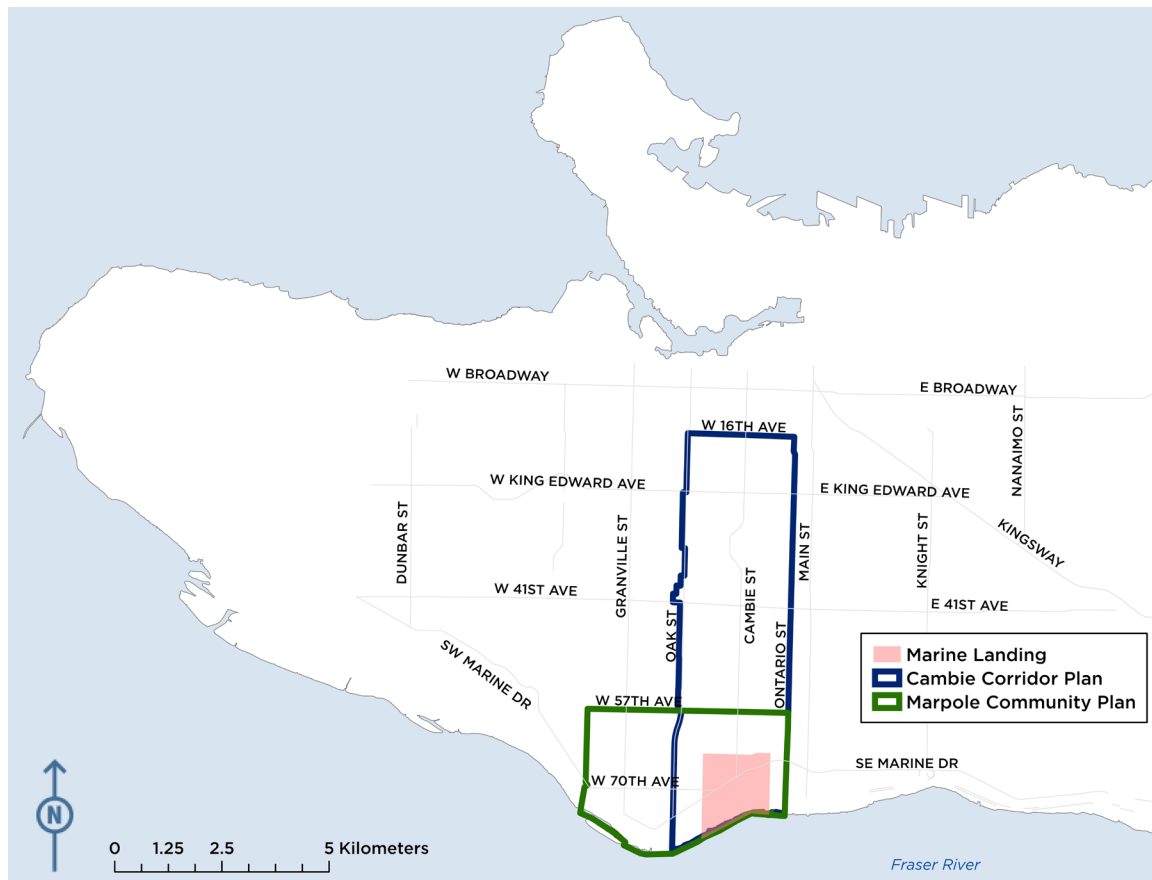


Figure 1: Marine Landing Location

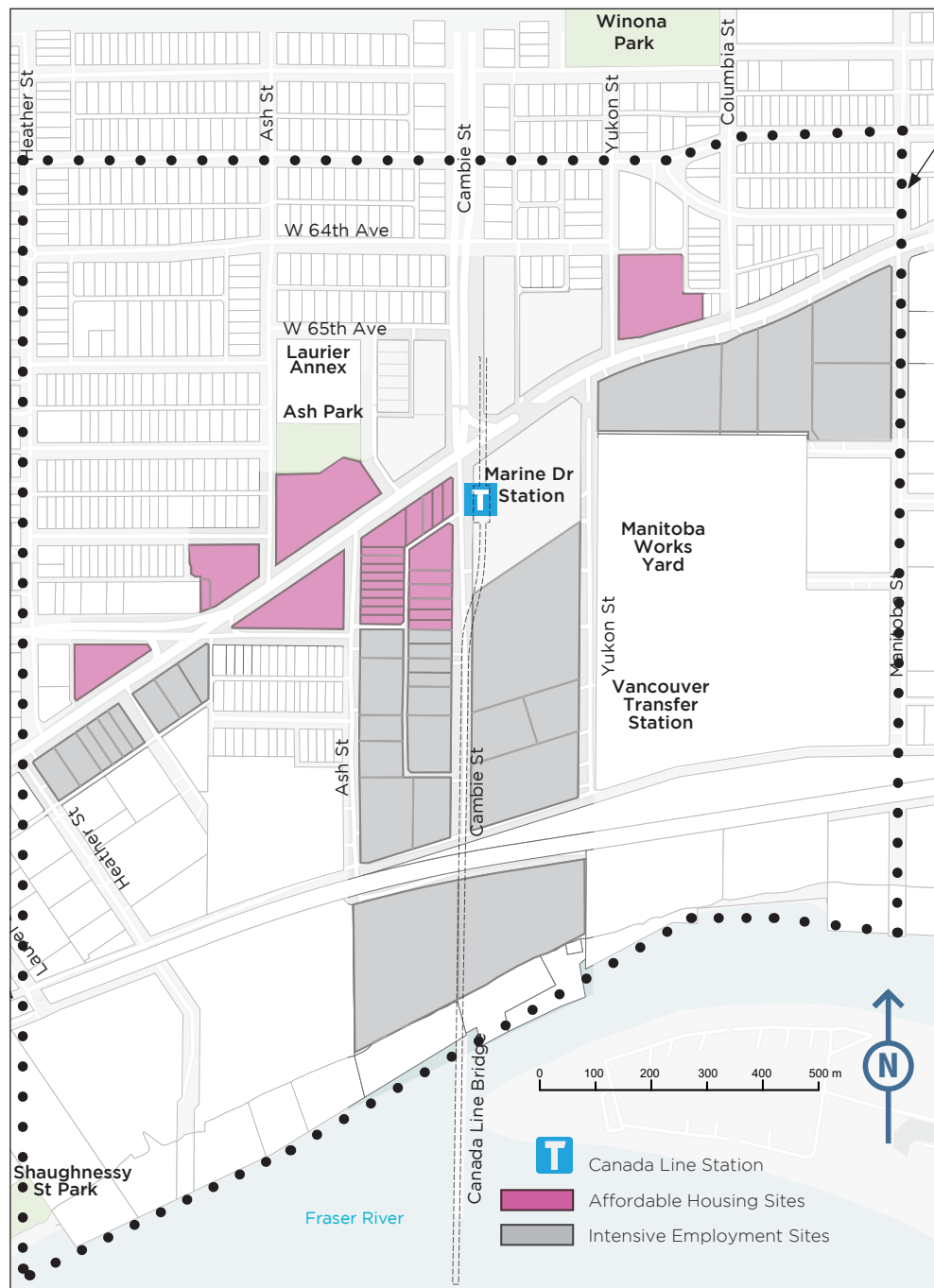


Figure 2: Marine Landing Study Area

Public Realm Guidelines

Extent of Public Realm Guidelines:
Apply to all sites between 63rd Avenue and the Fraser River.

See 3. Public Realm (page 22) for more information.

1 CONTEXT





Marine Drive Canada Line Station

Marine Landing is the southernmost node in the Cambie Corridor. It is focused around Marine Drive Station at the corner of SW Marine Drive and Cambie Street and extends to the Fraser River. Since the introduction of the Canada Line in 2009, the area has been transforming into an urban community with a growing mix of housing, jobs and services.

Marine Landing is a major gateway into the city by providing rapid transit service between Vancouver, Richmond, and the airport. As a transit hub and east-west connection supporting the local and regional transportation network, it experiences high traffic volumes.

HISTORICAL CONTEXT

Musqueam presence and stewardship in what is now known as “Marpole” spans thousands of years and continues to this day. Significantly, Marine Landing is located in close proximity to the site of *čəsnaʔəm*, a Musqueam city and burial ground, and designated National Historic Site.

The unique relationships and rights of local Indigenous communities remain key to navigating the living heritage of the area, future residential and industrial development, the continuing importance of the river and the area’s role in local biodiversity. The City of Vancouver acknowledges that colonial development has done immeasurable damage to this important place. Working sensitively and respectfully in this area needs to be of highest priority.

In the relatively brief period of colonial history, development in this area of Marpole has been focused on agriculture, river transportation and eventually heavy industries. Over time, it has expanded to also include housing, car-oriented commerce and other critical infrastructure.

As the area undergoes further transition, the adjacency of existing heavy industry and mixed use development including housing, commercial and service uses, will need to be carefully managed.

CURRENT STATE

Today, the area is evolving into a mix of residential, industrial, and commercial land uses. In recent years, the *Cambie Corridor Plan* has facilitated construction of new high-density developments around the Canada Line station. Further densification is anticipated away from the station as development under the two community plans continues.

Past land uses have contributed to a high percentage of impervious surfaces and a low urban tree canopy, leading to a significant urban heat island effect, identified by the City’s *Rain City Strategy*. The Vancouver Board of Parks and Recreation (Park Board)’s *Parks and Recreation Master Plan (VanPlay)* also identified park access and urban forest gaps in the southern extents of Marpole, especially in the Marine Landing area.

With climate change, coastal locations in Vancouver, such as Marine Landing, will be subject to sea level rise, as well as more intense and frequent storms. Parts of Marine Landing are located within the Fraser River Foreshore zone, which is prone to flooding. Climate change will exacerbate the existing vulnerabilities.

As development in the area continues, there is an opportunity to:

- Provide resilient measures to address climate change and flood management;
- Increase connectivity to the Fraser River and throughout the neighbourhood and provide spaces for gathering; and
- Enhance access to nature by protecting the ecological, hydrological, and social values of the urban landscape and water cycle.

New Developments along SW Marine Drive (looking west towards Cambie Street)



Looking north over intensive employment area (from Canada Line Bikeway)



Vacant Industrial Land adjacent to the Fraser River



Sidewalk and plating along SW Marine Drive (looking east from Aisne Street)

POLICY CONTEXT

Housing

Vancouver is facing a growing housing affordability crisis. The widening gap between household incomes and housing costs have significantly impacted the ability of residents to own a home or find affordable rental housing. Increasing the supply of purpose-built market rental housing and non-profit social and co-op housing is a priority for the City. Additional heights and densities are often required to support the creation of new non-profit social and co-op housing, and purpose-built market rental housing.

To meet the objectives of the *Marpole Community Plan* and the *Housing Vancouver Strategy*, opportunities to further expand affordable housing options in Marine Landing were supported by Council through the *Ashley Mar Issues Report*.

Economy and Employment

Vancouver has a limited supply of commercial and industrial land, with half of all jobs located on 10% of the city's land base (as of 2020). As the population continues to grow, the economy will need to keep pace. Through the *Employment Lands and Economy Review (ELER)*, sites in Marine Landing within walking distance to rapid transit were identified to provide additional intensive employment spaces. Projects providing 100% job space and multi-level light industrial spaces may be considered at heights and densities beyond those originally identified in the *Marpole Community Plan* and *Cambie Corridor Plan*. The ELER planning process informs the economic foundation for the City's *Vancouver Plan* which relates to the *Metro 2050* regional growth strategy. update.

Updated Guidelines

Changes to affordable housing and intensive employment policies reinforce Marine Landing as a significant population and employment hub. The *Marine Landing Guidelines* support the continuing transformation of the neighbourhood. Building on two existing community plans, these guidelines ensure that Marine Landing continues to evolve into a vibrant, sustainable and resilient urban community.



2014

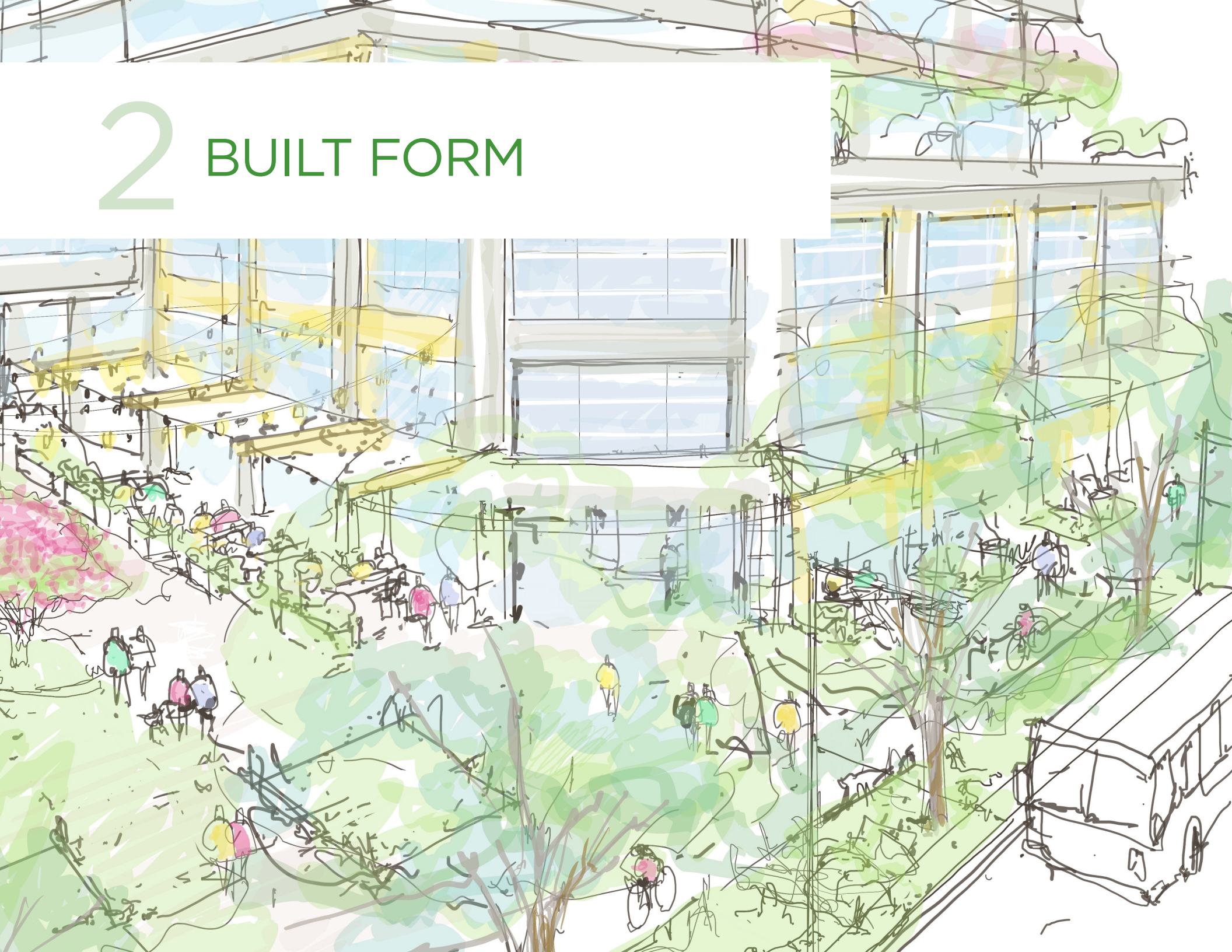
2018

2020

2020

2021

2 BUILT FORM



CHAPTER STRUCTURE

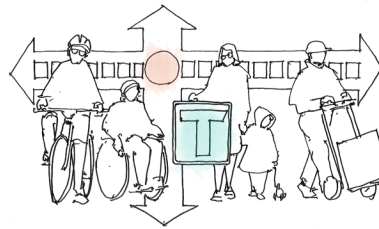
The following chapter provides built form guidance for rezoning sites in Marine Landing identified in **Figure 2** (page 5). The chapter is divided into four sections, starting with built form principles, and follow by built form guidelines. General design considerations will apply to all sites, which are followed by guidelines specific to either affordable housing or intensive employment sites.

Chapter Organization:

1. Built Form Principles
2. General Design Considerations (apply to all sites)
3. Affordable Housing Sites (pink in **Figure 2**)
4. Intensive Employment Sites (grey in **Figure 2** and separated into sites greater or lesser than 8,000 sq. m)

2.1 BUILT FORM PRINCIPLES

Marine Landing is envisioned as a walkable urban node centered around the Marine Drive Station, with a renewed relationship to the Fraser River through blue-green networks and walking/cycling connections. The area will transition to higher intensity residential and employment uses, with tower forms concentrated around the station and a general pattern of descending heights moving west, east, and south in the Marine Landing area. The focus of these built form guidelines is the future renewal of the several affordable housing sites in the area and the intensification of employment sites along Marine Drive (see **Figure 2**). The following principles and general considerations apply to both.



Make a Good First Impression

Marine Landing is a unique gateway to Vancouver. It is the first view and impression of the city for people arriving by air, and travelling to Vancouver on the Canada Line. New buildings in Marine Landing should be designed to recognize this unique and important role.

Enhance Transitions, Connections and Relationships to the Surrounding Neighbourhood

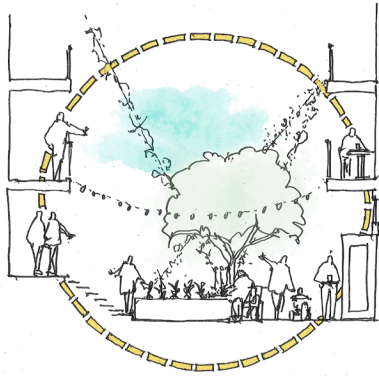
New developments should be well integrated with the surrounding neighbourhood. They should enhance public life through the provision of additional homes, workplaces, shops and services, as well as maintain access to sunlight for significant public spaces such as Ash Park. New buildings and street walls should provide a comfortable interface with the public realm to support and strengthen pedestrian connections from the transit station and throughout the neighbourhood.

Shape and Animate the Public Realm

New buildings should enhance the public realm with active ground floor uses such as shops, restaurant patios, residential entry patios, and common amenity spaces. Public pathways should be provided through large sites to improve pedestrian connectivity. Plazas should be provided in locations that offer respite from the noise and traffic of Marine Drive. Industrial workspaces should be open to adjacent public spaces to highlight the area's industrial character.

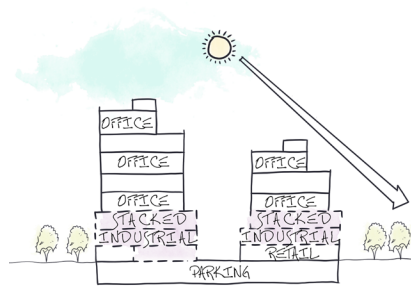
Take Advantage of Unique and Varied Sites

The unique angled orientation of Marine Drive creates a varied block pattern with many irregular sites. Buildings on irregular sites may reflect 'flat-iron' geometries to enhance street-end views and create unique vistas and street scenes.



Design Livable and Social Buildings

Quality of life is greatly improved by access to fresh air, nature, and outdoor space. Natural daylight and ventilation, protection from vehicular noise and pollution, and access to a variety of outdoor spaces (shared and private) all contribute to livable building design and community well being. Livability and sociability should be at the forefront to create healthy homes and workplaces.



Maximize Flexibility and Encourage Industrial Stacking

Flexibility in design is critical to building a resilient supply of employment spaces in Vancouver. Buildings should include stacked industrial and production workspaces and incorporate adaptive planning of workspaces to be responsive to future changes.



Build Neighbourhoods and Buildings that Respond to Sea Level Rise

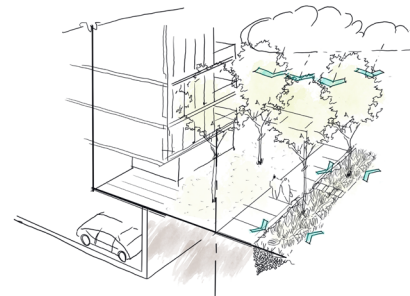
Marine Landing is located in an area vulnerable to sea level rise. Raising new development, exploring adaptive building design and incorporating flood resilient construction methods provide an added line of defense. Innovative parking solutions should respond to existing conditions while ensuring flexibility and adaptability to shifting transportation technology and mode. Sustainably managing rainwater on sites and roads will also help increase the capacity and lifespan of existing drainage infrastructure..



Support Natural Systems

Industrial development in the area has resulted in extensive impervious and paved areas that significantly limit green space. It is therefore important to re-establish urban tree canopy and biodiversity, and to integrate green rainwater management strategies for new development. A number of strategies that support natural systems also align with objectives around livability, walkability, sustainability, and affordability.

Underground parkade construction is costly and a source of carbon emissions. Parkades should be limited in size, and set back from the site edges to provide space for rainwater infiltration and new and retained trees.



As sites develop and densify, space at the ground level may be limited. Rooftop spaces can provide opportunities for social shared outdoor space. Rooftop space should be cross-utilized to provide urban agriculture, tree canopy, alternative energy systems, and green roofs for rainwater management wherever possible.

2.2 GENERAL DESIGN CONSIDERATIONS

Height

Additional heights and densities beyond those outlined in existing community plans will only be considered for developments delivering additional affordable housing or multi-level light industrial job space (sites in **Figure 2**). Consideration of additional height and density is subject to satisfying the objectives of all applicable policies and guidelines, including the evaluation of the impact of height, bulk, massing, location, and overall design of the building on the site, surrounding neighbourhoods, buildings, and streets. Proposals should contribute to the provision of on-site open space, enhanced landscape, and improvements to the general amenity and pedestrian priority of the area. This chapter is intended to provide guidance in establishing how buildings sit within, and relate to, the evolving context.

- 2.2.1 Within the immediate station area, there is a general hierarchy of height and density associated with the four corners of the intersection of SW Marine Drive and Cambie Street, with the southeast corner, the Marine Gateway station site, acting as the highest point.
- 2.2.2 Building heights should generally transition downwards away from the intersection of SW Marine Drive and Cambie Street. The Marine Gateway station site should continue to be the focal point with the tallest towers.
- 2.2.3 The intent is to enable consideration of greater height, including tower forms, for sites in the neighbourhood surrounding the station, while maintaining a general pattern of tower heights which step down moving away from the highest point at the station. The unique considerations of each housing site may result in some variation to this pattern.

- 2.2.4 Maintaining access to sunlight for Ash Park is a primary consideration and no additional height beyond the Plan will be contemplated if the result casts any net new shadow on Ash Park between 10am and 4pm on either equinox.
- 2.2.5 Tower elements, considered to be any portion of a building above six storeys (approx. 70 ft. in height), should have a minimum of 24.4 m (80 ft.) separation from residential towers and a minimum 18.2 m (60 ft.) from commercial tower elements. Proposed developments should demonstrate tower separation to adjacent existing and anticipated future tower forms.
- 2.2.6 Additional tower heights should carefully consider the cumulative impact of all buildings and be located to preserve livability, open space, sunlight on public space, pedestrian scale and experience, while also achieving an overall variation in height.
- 2.2.7 Determination of appropriate tower heights for individual sites will be responsive to the evolving context and cumulative impacts of new towers.
- 2.2.8 Flexibility will be applied in accommodating sloping sites, mezzanines, flexible and adaptable floor to floor heights, rooftop accesses, sculptural rooflines, or similar elements.

Skyline and Architectural Approach

- 2.2.9 Applications for additional height and density should exhibit excellence in architecture that reinforces and enhances Marine Landing as a gateway into the City.
- 2.2.10 Buildings should be shaped at upper levels to contribute to a local gateway identity, provide visual interest and to create a varied and sculptural skyline.

- 2.2.11 Design and scale of architectural elements and frontages should be relatable to the pedestrian environment to create a strong sense of place. Large blank or monotonous street walls must be avoided. Building design should add visual interest that enhances the pedestrian experience and public spaces.
- 2.2.12 Access to varied roof levels for use as amenity space, urban agriculture, and blue-green roof elements should be an integral part of the strategy for massing and skyline expression. Extensive or intensive green roofs should be incorporated on any flat roof when utilizing non-combustible construction, including consideration for soil volumes sufficient to support large or medium tree growth, where appropriate.
- 2.2.13 Massing should be articulated to reduce the visual bulk by breaking long facades into distinct forms through vertical recesses, shadow lines and/or material and colour variations.

Shadow Impacts

- 2.2.14 Careful consideration should be given to building massing, height and the cumulative impact of development on sunlight in Ash Park and on the Laurier School Annex.
 - Proposed additional height beyond existing policy should not result in new shadow impacts on Ash Park at the equinoxes between 10am and 4pm.
 - Limit net new shadowing onto the existing Laurier Annex school site at the equinoxes between 9am and 4pm. Particular regard should be given to playground and playing field areas.

2.2.15 Buildings should be designed to minimize shadow impacts on public space, north sidewalks, mid-block connections, plazas, and the expanded transit plaza as outlined in **3.2.4 Marine Gateway Plaza Enhancements**.

- 2.2.16 Sunlight access on the sidewalks along Marine Drive is an important design consideration.
- Buildings should be designed and placed to create north/south openings and breaks in massing that allow sunlight to penetrate to the street and sidewalks, enhancing the experience for pedestrians.
 - While it is understood that towers located on the south side of SW Marine Drive will shadow the north sidewalk, they will be spaced to minimize impact. Podiums of buildings located on the south side of SW Marine Drive should not shadow the north sidewalk of SW Marine Drive at the equinoxes between the hours of 10am and 4pm.

2.2.17 Building form and massing should also be designed with consideration for sunlight access to plazas, courtyards, pedestrian mews, rooftop amenities, gardens, and common areas, wherever possible.

Land Use Adjacencies

- 2.2.18 Site development and design should consider surrounding land use. Residential uses should be located away from adjacent industrial uses, particularly heavy and noxious industrial uses.
- 2.2.19 Buffer higher occupancy uses (e.g. residential, office) with lower occupancy uses (e.g. light industrial) to mitigate impacts from surrounding heavy and noxious industrial uses.
- 2.2.20 Review and design for current TransLink requirements for developments close to guideways, where applicable.

Public Realm and Shared Outdoor Spaces

- 2.2.21 Buildings should be designed to shape and create public spaces and connections that support public life by:
- Locating and buffering open spaces from the noise and pollution of SW Marine Drive, Cambie Street, and the Canada Line.
 - Ensuring suitable sunlight access to shared open spaces and public realm connections.
 - Providing a comfortable human scale in areas immediately adjacent to and framing the public realm and open spaces.
 - Reducing wind tunnel effects through building design and tree planting and/or retention.
 - Activating ground floor uses to animate open spaces.
- 2.2.22 In some circumstances, an additional road dedication or statutory right-of-way (SRW) may be requested on private property to accommodate public realm improvements. It is the responsibility of the private property of the owner to maintain infrastructure within the SRW. =

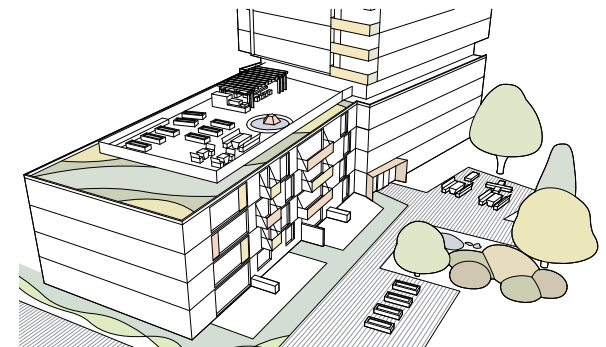
Ground Floor Experience

- 2.2.23 Ground floors should be lively, people-focused, and urban in character, and provide a sense of security at all hours. Primary building entrances should be clearly expressed with distinct signage, canopies, landscaping elements, and/or other architectural features.
- 2.2.24 Retail spaces should be designed with a minimum 4.6 m (15 ft.) ceiling height, significant glazing to maximize visual permeability, and entrances facing the adjacent street or public open space. A ceiling height of 5.5 m (18 ft.) or greater is highly encouraged.

- 2.2.25 A variety of storefront widths is recommended to enable a mix of business types and to improve the experience for pedestrians.
- 2.2.26 Retail which is accessory to principal industrial uses should comply with the I-2 District Schedule and associated guidelines and administrative bulletins.
- 2.2.27 Opportunities for outdoor retail patios integrated into the overall architectural expression are encouraged, with preference for southern exposure.
- 2.2.28 Display windows and individualized tenancy design should be used to enhance pedestrian interest.
- 2.2.29 Buildings should generally be designed to mitigate wind impact at grade.

Livability and Healthy Buildings

Developments that support highly livable, social and healthy environments are critically important in a high density transit node such as Marine Landing. Building design should protect and buffer occupants from noise and pollution from arterial streets and working industrial sites, as well as address open space deficiencies in the area.



- 2.2.30 Buildings should be designed to deliver outdoor spaces and outdoor environments designed for human comfort and health. Design of key outdoor spaces must respond to characteristics of the local environment, in particular:

solar access, wind, rain cover, acoustics and pollution. Key shared outdoor spaces should be designed for year-round use.

- 2.2.31 Design of indoor environments should provide healthy and livable spaces, considerate of daylighting, natural ventilation and healthy material usage.
- 2.2.32 Include high quality shared amenity spaces in the building design. Co-locate indoor and outdoor amenities on rooftops, podiums, at grade, or with building entrances. Rooftop amenity spaces that take advantage of the stunning regional views available in Marine Landing are strongly encouraged.
- 2.2.33 Design stairs and corridors to have access to daylight, wherever possible.

Lighting and Signage

- 2.2.34 Exterior lighting should be used to ensure safety and security, and to focus attention toward site and architectural features.
- 2.2.35 Lighting should be provided to draw attention to, and enhance, key outdoor spaces at all hours. It must serve both a utilitarian purpose and contribute to the overall expression of such spaces without excessive lighting levels, glare or overspill to neighbours.
- 2.2.36 Light pollution should be reduced to enhance and create bird habitat in the city, as outlined in the *Bird Friendly Design Guidelines*.
- 2.2.37 At grade, signage should be oriented and visible to pedestrians to support a walkable neighbourhood, particularly along Marine Drive, Cambie Street and the riverfront.

Parking

- 2.2.38 Parking entries, loading and service facilities will typically be located at the lane. Where lane access is not available, these elements should be located to

minimize impact on key pedestrian connections and frontages.

- 2.2.39 Underground parking structures should be pulled back from the property line to meet the required National Building Code 5.0 m (16.4 ft.) offset from infiltrating Green Rainwater Infrastructure (GRI) to the building foundation where applicable. It is also recommended for the parkade to be notched at the site perimeter to support tree retention and growth.
- 2.2.40 Screening in the form of feature landscaping or architectural treatment should be provided where required to visually divide service areas from the public realm.

Sustainability

- 2.2.41 Large developments (characterized by having a site area over 8,000 sq. m, or containing more than 45,000 sq. m of new development floor area) must comply with all aspects of the City's *Rezoning Policy for Sustainable Large Developments*.
- 2.2.42 It is strongly encouraged that new construction explore innovative low carbon building technologies, such as mass timber construction.
- 2.2.43 Maximize tree retention, new trees and large specimen replacement trees to support a healthy urban forest canopy and reduce urban heat island effects. Tree planting on slab should be avoided. When this is not possible, planting should maximize soil depths to exceed the *Canadian Society of Landscape Architects (CSLA) Canadian Landscape Standard*.
- 2.2.44 Incorporate strategies for integrated rainwater management in frontage improvements, landscaped areas, public plazas and semi public outdoor amenity spaces.
- 2.2.45 Green roof technologies should be incorporated into designs to enhance

open space, reduce stormwater volume, and mitigate heat island effect. Refer to the City's *Roof-Mounted Energy Technologies and Green Roofs* bulletin or similar for further details.

- 2.2.46 Passive solar shading devices integrated into the overall building expression should be incorporated where appropriate.

Coastal Flood Management and Internal Drainage

- 2.2.47 In response to current and future flood risk and sea level rise, individual developments sites will be expected to meet minimum Flood Construction Levels (FCLs) where applicable, and provide flood management strategies for properties in the flood plain and along the shoreline. Individual sites may also need to incorporate additional drainage management features. See also **Chapter 6. Utilities**.
- 2.2.48 Any building located within the coastal floodplain should be located at or above the FCL of 4.6 m (15 ft.), plus a site-specific allowance for land subsidence, in accordance with the City's *Flood Plain Standards and Requirements*.
- 2.2.49 Parking areas may be located below the flood construction level. Resilience to flooding for parking areas can be increased by grading parkade entrances to meet the flood construction level or by incorporating flood gates at parkade entrances. Refer to **6.4 Groundwater Management**.
- 2.2.50 Underground parking structures for sites along the shoreline should also be constructed to be waterproof (i.e. "tanked") to avoid pumping of groundwater into the sewer system. Refer to **6.4 Groundwater Management**.

2.3 AFFORDABLE HOUSING SITES

The following guidelines aim to support innovative, high-quality and green urban design and architecture, vibrant public spaces, and the blue-green network. They encourage an appropriate relationship to the existing and future context. The major affordable housing sites in Marine Landing are collectively a rare opportunity for the renewal, replacement and delivery of additional affordable housing close to transit. It is also recognised that the economics, ownership, site circumstances, desired community amenities, existing conditions and aspirations are unique for each site. As such, specific guidance regarding densities and heights is not given in this document. Height and density will be subject to careful consideration and evaluation of the opportunities and challenges of each site as it comes forward for rezoning.

Livability

- 2.3.1 Units should be designed with livability in mind, especially along SW Marine Drive. Maximize opportunities for more than one orientation to achieve cross-ventilation and energy savings.
- 2.3.2 Units should not be overly deep to ensure high livability and access to daylight, air, and outlook.
- 2.2.3 Maximize natural ventilation in units to allow the exchange of stale indoor air with fresh outdoor air, and to help regulate heating and cooling of spaces.
- 2.3.4 Explore innovative buildings forms, such as courtyard typologies or units accessed by exterior circulation in single-loaded corridor forms to orient living spaces away from noisy arterials, especially on housing sites adjacent to Ash Park.
- 2.3.5 Courtyard or single-loaded corridor forms at podium levels are encouraged to enhance social connection opportunities, provide more flexibility for two- and three-bedroom units, and facilitate cross-ventilation.

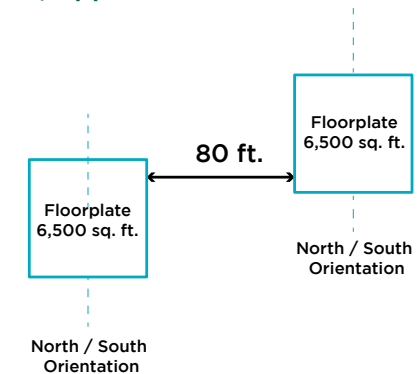
- 2.3.6 Buildings should provide ample and well-designed spaces for building residents to socialize and engage with each other, such as: shared amenity areas on podiums and roof-tops, generous entry lobbies, and shared outdoor spaces of various sizes designed for different activities and year-round use, including urban agriculture, children's play areas and covered spaces.
- 2.3.7 Units should have access to functional private outdoor space designed to facilitate outdoor enjoyment and gardening. Patios or balconies should generally be a minimum of 1.8 m (6 ft.) in depth and 5.0 sq. m (54 sq. ft.) in area.
- 2.3.8 "Juliette" balconies may be considered for social housing units (studios and one-bedroom units), subject to provision of appropriate shared outdoor amenity space in lieu.
- 2.3.9 Utilize balconies and balcony structures in addition to planting to buffer noise and particulate pollution from busy arterials. Consider providing open balconies with retractable glass systems that encourage year-round use and provide additional noise buffering and energy savings. Enclosed balconies can be considered for podium units fronting SW Marine Drive or the Canada Line.

Streetwall and Lower Level Massing

- 2.3.10 Podium design, where possible, should seek to reinforce established street orientations emphasizing street level entrances and storefronts.
- 2.3.11 Podium height in association with a tower should typically not exceed six storeys.
- 2.3.12 Break down long building frontages through secondary active links and/or pedestrian mews as indicated in the public realm plan (see **Figure 3**).

- Building massing should announce entrances to these connections through increasing openings at the entries.
- Building massing at the mews should maximize sun exposure; the mews proportions should prevent a tunnel effect and enhance the sense of openness.
- The clear width of on-site pedestrian mews should be a minimum of 30 ft., with an ideal width to height ratio of 1:1.5.
- Shoulder setbacks of 3.0 m (10 ft.) may be provided adjacent to mews to improve mews proportions (i.e. height to width ratio).
- For primary and secondary active link requirements, refer to the *Cambie Corridor Public Realm Plan*.

Mid-Rise, Upper Level and Tower Massing



- 2.3.13 Tower elements considered to be any portion of a building above six storeys (approx. 70 ft. in height), should have a minimum of 24.4 m (80 ft.) separation from residential towers and a minimum 18.2 m (60 ft.) from commercial tower elements. Proposed developments should

demonstrate tower separation to adjacent existing and anticipated future tower forms.

Orientation

- 2.3.14 Towers should generally be designed in a north-south orientation to minimize shadow impacts.
- 2.3.15 Tower placement, orientation and design should mitigate direct sightlines between units in neighbouring towers (i.e. provide a “checkerboard” pattern).
- 2.3.16 Building form, siting and orientation should respond to and reflect irregular site geometries.

Tower Floorplates

- 2.3.17 Tower floorplates should not exceed an average gross area of 6,500 sq. ft., excluding open balconies.
- 2.3.18 Tower floorplate depth should not exceed 90 ft. to avoid the appearance and impacts of a large slab tower.

Mid-Rise Buildings

- 2.3.19 Mid-rise buildings up to 12 storeys may have larger floorplates and longer forms. Simplicity in massing will be considered to support mass timber proposals.

Height, Pattern and Variation

- 2.3.20 Variation in tower height is desired, with a general pattern of stepping down away from the Marine Drive Station and the Marine Gateway development.
- 2.3.21 Sites with multiple towers should distinguish tower heights by stepping down tower heights in minimum four storey increments.

2.4 INTENSIVE EMPLOYMENT SITES

The *Marpole Community Plan* and *Cambie Corridor Plan* identify numerous sites for intensive employment use in Marine Landing. Industrial lands continue to play an important role in providing jobs in the city and the region. The policies and guidelines in this document aim to expand and intensify employment spaces on these sites while ensuring that the needs of more traditional industrial uses are met. The guidelines also build in flexibility that is key to a successful economic district by ensuring the buildings can adapt and evolve to accommodate changes in economic production and the nature of employment. Intensive employment lands shall not contain residential uses.

Density

- 2.4.1 New developments on intensive employment sites proposing heights and densities beyond the *Marpole Community Plan* and *Cambie Corridor Plan* must provide multi-level light industrial floor area as follows:
 - 1.5-2.0 FSR on sites of 2 acres or more; and
 - 1.0 FSR on sites under 2 acres.
- 2.4.2 Densities up to 4.5 FSR will be considered to accommodate intensification of employment spaces subject to provision of stacked industrial spaces. The proposed FSR is an estimate based on intended design performance with respect to site size, form/typology, height and scale appropriate for respective locations and transition to adjacent properties. The development potential for each site may fall within, below or, for small sites well-served by existing streets and lanes, above the FSR range and will be determined by careful analysis of individual proposals based on urban design and public realm performance. =

Livability

- 2.4.3 In addition to livability guidelines in the general section, daylight and natural ventilation in work environments can improve energy usage as well as promote health and productivity. Considerations should include:
 - Building orientation and massing;
 - Increased floor-to-floor heights;
 - Solar shading devices, light shelves and glazing performance; and
 - Operable windows.

Flexibility of Employment Uses

- 2.4.4 To achieve long-term flexibility of intensive employment spaces, buildings should be designed to accommodate:
 - Robust structural capacity for future uses
 - High ceilings
 - Convenient access to loading, garbage and elevators for all floors and mezzanines
 - Freight elevator(s):
 - Industrial uses not located on the same level as the loading spaces must have access to a freight elevator.
 - If a mixed-use building contains industrial and non-industrial uses, a separate freight elevator and a separate dedicated passenger elevator should be provided.
 - Elevators in North America must follow the safety standards published in *ASME A.17.1/CSA B44 - Safety Code for Elevators and Escalators*.

Vertical Stacking of Uses

As a means of intensifying industry and production spaces, vertically stacked uses are encouraged. Floor to floor heights should accommodate a range of industrial and office tenancies.

- 2.4.5 Generally, office uses should provide 3.7 m (12 ft.) floor-to-floor heights. Additional floor-to-floor height can be considered to accommodate mass timber construction.
- 2.4.6 Generally, industrial uses should provide minimum floor-to-floor heights between 5.2 m to 6.1 m (17-20 ft.), except as outlined below.
- 2.4.7 Objectives for mezzanines include:
- Continuity with the primary use or space;
 - Locating mezzanines away from front or flanking facades as much as possible so that the main volume of industrial space is right at the frontage.
 - The total floor area of the mezzanine does not exceed 50% of the industrial use at the ground floor; and
 - The industrial floor to floor height is a minimum of 8 m (26 ft.) with a minimum floor to floor height of 4 m (13 ft.) above and below the mezzanine.

Architecture

- 2.4.8 Building architecture should reflect the industrial character of the area. High quality materials are expected in a scale that is appropriate to the use of the building and its relationship to pedestrian areas

Entries

- 2.4.9 Multiple entries are encouraged on intensive employment buildings. These entries should be oriented to street frontage, be clearly visible and inviting.

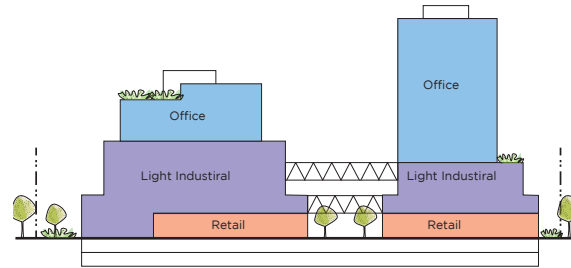
Parking and Loading

- 2.4.10 Surface parking in intensive employment areas should be absolutely minimized. Where provided, it should be screened by buildings or landscaping.

- 2.4.11 Loading and service facilities should be located to minimize impact on pedestrians and cycling routes and be screened by buildings or landscaping.

INTENSIVE EMPLOYMENT SITES GREATER THAN 8,000 SQ.M

This section provides built form guidance for large intensive employment sites. These large sites are not typically well-served by existing streets and lanes. These guidelines aim to balance the aspirations for the public realm and blue-green systems network with the advantages and opportunities for industry and job space that these sites present.



Building Height and Form

On larger sites, active links, pedestrian mews, plazas and open spaces should achieve a high quality public realm and improve pedestrian connectivity. A variety of building heights and forms will support the evolving workplaces in Marine Landing. It is recognized that well-functioning industrial spaces require large floorplates and higher ceiling heights. In general, the following guidelines support taller buildings with office-suitable floorplates, and lower buildings with larger floorplates suitable for industrial uses. Lower-mid level bridging connections are supportable as a way to balance the public realm objectives with the needs of industry.

- 2.4.12 Developments on large sites should be designed with a campus approach to siting and design, with multiple

buildings articulated with varying heights and floorplate sizes. Diverse and complementary building forms and scales will ensure flexibility for various employment uses as well as support the overall amenity and experience of the Marine Landing area.

- 2.4.13 Height should respond to context, considering neighbouring development with an expectation that height generally decreases with distance away from the Marine Gateway node.
- 2.4.14 Tower elements, considered to be any portion of a building above six storeys (approx. 70 ft. in height), should have a minimum 18.2 m (60 ft.) separation from other commercial tower elements, and a minimum of 24.4 m (80 ft.) from residential towers above 21.3 m (70 ft.). Proposed developments should demonstrate tower separation to adjacent existing and anticipated towers.
- 2.4.15 Towers are expected to have a lower podium as a base to provide street enclosure.
- 2.4.16 Tower forms up to 51.8 m (170 ft.) in height should have a maximum floorplate area of 20,000 sq. ft., and be expressed as a narrow bar form. The width of the tower floor plate should be narrower than its length. Bar building orientation should minimize shadowing impact on the public realm and public open spaces. Buildings longer than 45.7 m (150 ft.) should introduce significant breaks in massing; meaningful articulation and a highly engaging architectural expression.
- 2.4.17 Tower forms exceeding 51.8 m (170 ft.) and up to 76.2 m (250 ft.) in height should have a maximum floorplate area of 12,000 sq. ft., and be expressed as a slim and vertical form. The tower floorplate width should be proportional to its depth to present a slender form as viewed from

all directions, minimize bulk, increase openness to the sky, and minimize shadowing impact on the public realm and public open spaces. A high level of massing articulation and architectural expression is expected.

- 2.4.18 Developments with multiple buildings should generally provide a minimum four-storey height differential between towers to create a diverse collection of towers.
- 2.4.19 Floorplates sizes should provide maximum flexibility for job space uses as well as desirable daylighting conditions for building occupants.
- 2.4.20 To support well-designed and functional tower floorplates, floors should not exceed 115 ft. in width (east-west direction; typically frontage) to promote adequate daylighting, ensure slender form and minimize bulk.

Streetwall, Setbacks and Lower Level Massing

- 2.4.21 To facilitate diverse employment uses, including stacking light industrial uses, podium design should be flexible, and respond to the unique needs of the site and desired employment programming.
- 2.4.22 Podium massing should respond to the public realm connections and places on site, including streetwall definition and framing active links and/or pedestrian mews as indicated in **3. Public Realm**.
- 2.4.23 The podium should reinforce the predominant and established streetwall within its context. This may require setting back upper podium levels and towers. Where provided, shoulder setbacks should be a minimum 3.0 m (10 ft.) from building edges.
- 2.4.24 Towers may extend to grade to provide emphasis at corners, or further variety in the expression of the podium base.

- 2.4.25 Where pedestrian mews are not provided for frontages longer than 45.7 m (150 ft.), introduce a significant major break(s) in the building massing as well as variety of articulation to avoid repetitive expression. Breaks in massing should contribute to an engaging pedestrian experience through sidewalk pedestrian plazas.
- 2.4.26 Refer to **3. Public Realm** for guidance regarding setbacks to support public realm and green rainwater infrastructure, and for guidance regarding relationship to the public realm. Given unique frontages, the appropriate setback and treatment will vary and will be determined through the rezoning process for each site.
- 2.4.27 Lower level and -podium massing should be articulated and scaled to allow for sunlight penetration to streets and public spaces.

On-site Pedestrian Mews and Public Spaces

In addition to the Primary and Secondary Active Links and Mid-block Connections identified in the *Marpole Community Plan* and the *Cambie Corridor Public Realm Plan*, development of large intensive employment sites should be organized around a network of on-site public mews and public spaces.

- 2.4.28 Provide universally accessible connections in accordance with **3. Public Realm**.
- 2.4.29 Pedestrian mews should be located approximately every 150 ft. to 250 ft. to support the public realm network and manage scale by limiting the frontage of continuous buildings.
- 2.4.30 Pedestrian mews should be located and oriented to respond to existing and anticipated connections and/or destinations on adjacent sites or public realm where appropriate.
- 2.4.31 Break down long building frontages through secondary active links and/or pedestrian mews as indicated in the public realm plan (see **Figure 3**).

- 2.4.32 Building massing should announce entrances to these connections through wider openings at the entries.
- 2.4.33 Building massing at the mews should maximize sun exposure; the mews proportions should prevent a tunnel effect and enhance the sense of openness.
- 2.4.34 The clear width of on-site pedestrian mews should be a minimum of 40 ft. to support at-grade active uses (e.g. retail spillover), with an ideal width to height ratio of 1:1.5.
- 2.4.35 Shoulder setbacks of 3 m (10 ft.) may be provided adjacent mews to improve mews proportions (i.e. height to width ratio).
- 2.4.36 For primary and secondary active link requirements, refer to the *Cambie Corridor Public Realm Plan*.
- 2.4.37 Consideration should be given to expanding mews into public spaces in areas advantaged by sun and respite from arterial noise.
- 2.4.38 Pedestrian mews should be activated, where feasible, with retail and active frontages displaying the inner workings of the stacked industrial spaces coupled with engaging landscape elements.
- 2.4.39 Pedestrian mews should be open to the sky above; however, a bridging element(s) may be supported for functionality, provided the element is used for circulation and the movement of goods; has a light and transparent appearance; is carefully located to minimize shadowing on the mews; and limited to a single storey. Where multiple connections are required, they should be carefully located to minimize shadowing and increase views to the sky.

INTENSIVE EMPLOYMENT SITES LESS THAN 8,000 SQ.M

This section provides additional built form guidance for smaller intensive employment sites in Marine Landing. These sites generally reflect the more traditional grid subdivision pattern of the city and are comparatively well-served by existing streets and lanes. Desired locations for Primary and Secondary Active Links and on-site pedestrian mews are identified in **3. Public Realm**, as well as in the *Marpole Community Plan* and the *Cambie Corridor Public Realm Plan*.

Building Height and Form

- 2.4.40 A height of approximately 30.5 m (100 ft.) can be considered, with flexibility contingent on achieving functional industrial floor-to-floor heights and adapting to sloping sites.
- 2.4.41 An additional partial storey up to a maximum building height of 36.6 m (120 ft.) may be permitted for a common rooftop amenity space if contiguous with common outdoor amenity space.
- 2.4.42 Additional height may be considered to accommodate the increased structural depth and floor-to-floor height of mass timber construction.
- 2.4.43 Rooftops, and partial roof storeys should be utilized to compose architecturally significant elements of the building, adding visual interest to a diversely shaped roofline.
- 2.4.44 Buildings should be sited on the edge of the public realm as street-wall buildings defining and activating the public space.
- 2.4.45 Floorplates sizes should provide maximum flexibility for job space uses, as well as provide desirable daylighting conditions for building occupants

Streetwall, Setbacks and Lower Level Massing

- 2.4.46 Sites on SW Marine Drive west of

622 SW Marine Drive must provide the required 12.1 m (40 ft.) landscape setback in accordance with the *Zoning and Development By-law*, and should include the following on private property:

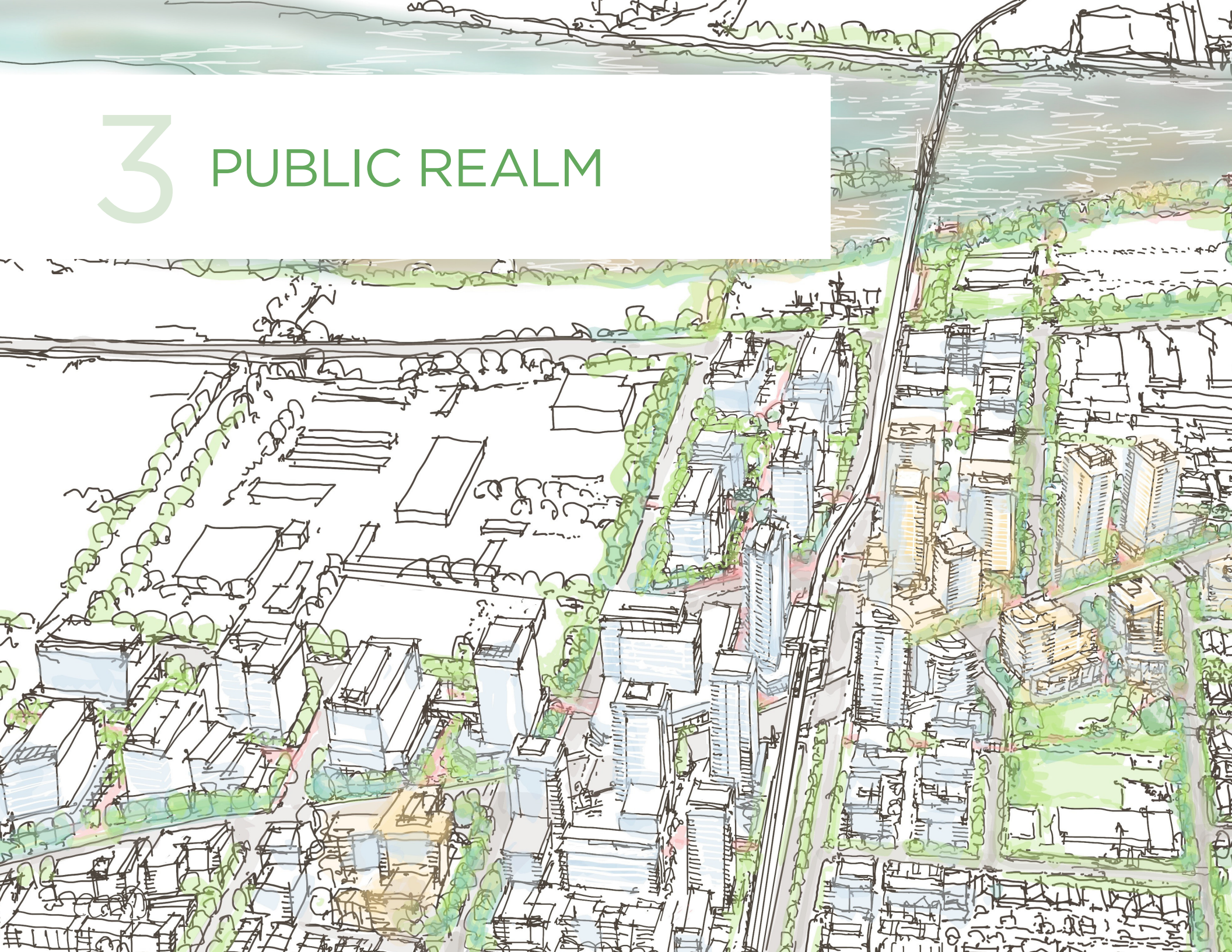
- Planting of large trees to enhance the urban forest canopy; and
- Sufficient underground parking structure setbacks to accommodate healthy tree planting, green rainwater infrastructure and water infiltration.

- 2.4.47 Refer to **3. Public Realm** for guidance regarding setbacks in other locations to support public realm and green rainwater infrastructure, and for guidance in the relationship of lower levels to the public realm
- 2.4.48 Variation in streetwall heights is encouraged to provide visual interest, access to sunlight, and respect local views while contributing to a cohesive context with a strong street wall identity.
- 2.4.49 A zero lot-line at the inside property line should not exceed approximately 21.3 m (70 ft.) in height, above which a minimum 3.0 m (10 ft.) shoulder setback should be provided for the upper levels. This will introduce additional building outlook, as well as accessible and useable rooftops contributing to the view along the streetscape. In all cases, mitigate temporary blank walls with quality finishes and/or green wall treatments, or explore murals (where feasible).
- 2.4.50 Floor levels should be designed to adapt to, and reflect, changing conditions along sloping street frontages to ensure an active pedestrian interface, i.e. stepping down of CRUs to maintain an uninterrupted relationship to the public realm. The commercial level should read as a seamless extension of the public realm. Avoid external steps.

On-site Pedestrian Mews and Public Spaces

- 2.4.51 Sites with frontages less than 61.0 m (200 ft.) will not typically be expected to provide on site pedestrian mews and public spaces, except where Primary and Secondary Active Links and are identified in **3. Public Realm**.

3 PUBLIC REALM



CURRENT STATE

Marine Landing functions as a critical link connecting Vancouver's parks and open spaces from shore to shore. Due to the neighbourhood's recent industrial past and location along a busy arterial, walking and cycling connections are poor and the community is split into areas north and south of SW Marine Drive. Existing conditions, continued growth, climate change impacts and utilities challenges highlight the critical need to re-establish thriving urban natural systems.

LOOKING FORWARD

As the area continues to build out, the focus will be on small, incremental improvements on a site-by-site basis. Combined, these changes will make a difference in the neighbourhood over time. The focus will be on much-needed greening opportunities through the design of streets and lively public spaces for the community to enjoy.

The design of public spaces should support placemaking and contribute to creating a unique neighbourhood identity. It should include functional, enjoyable infrastructure that encourages walking, cycling and transit. Improvements should encourage year-round use, and provide access to open space, nature and outdoor amenities to serve residents, workers and visitors to the area.

Public realm improvements will prioritize generous sidewalks and create shorter blocks through active links and pedestrian mews. Where appropriate, future developments will provide walking connections to rapid transit and between open spaces. Improving overall transportation connections will also make it easier and more enjoyable for people to move around the neighbourhood and find spaces to gather and connect with each other. By integrating green rainwater infrastructure, public spaces will be designed to manage rainwater, strengthen ecological connections, and further improve the quality of our streets.

Due to the need for green, walkable streets and attractive public spaces, these guidelines identify elements for individual sites to integrate into their site design to support natural systems and contribute to creating a vibrant community.

CHAPTER STRUCTURE

This public realm chapter provides updated directions to inform both on- and off-site requirements as they relate to streets and open space in Marine Landing. It builds on, and supplements, the public realm features previously identified in the *Marpole Community Plan*, *Cambie Corridor Plan*, and the *Cambie Corridor Public Realm Plan*.

Chapter Organization:

1. Public Realm Principles
2. Public Realm Plan*
 - Frontage Typologies (location-specific)
 - Enhanced Open Spaces (location-specific)
3. Green Network
4. Urban Elements
5. Public Art

***Figure 4** should be consulted for a summary of all frontage typology and enhanced open space requirements in Marine Landing. Each identified feature has a corresponding section after the map. These sections provide specific guidance and/or references to other City plans or standards (as applicable).

In general, the City's *Engineering Design Manual* should be referenced for general sidewalk, cycling, street tree and boulevard standards.

MARINE LANDING PUBLIC REALM PRINCIPLES

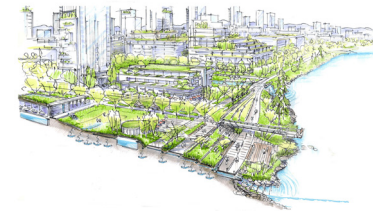
Ecological and Cultural Stewardship

Future flood management approaches and strategies for foreshore rehabilitation will protect sensitive historical, archaeological, cultural and ecological areas. The City will respectfully seek to engage Musqueam in the development of foreshore design and stewardship strategies, recognizing Musqueam's unique on-going relationship, rights and cultural heritage in this area.



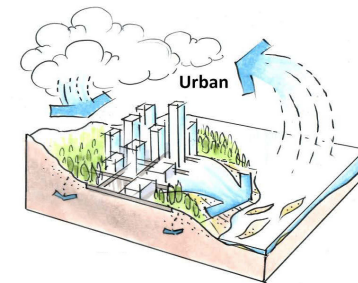
Connection to the River

The Fraser River is a critical part of the community, the city, and the region. Future planning work for the broader Fraser River Foreshore will seek to connect people with open space, nature and each other. This will be achieved by reinforcing the neighbourhood's historical relationship to the Fraser River and reflecting its importance as a complex ecosystem through integration of green rainwater infrastructure and integrated water management strategies in Marine Landing.



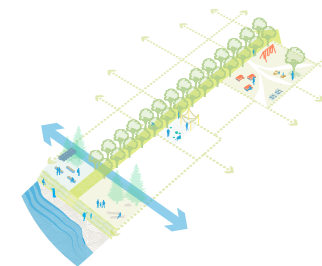
Connected Living Systems

The public realm should be sustainable and resilient to climate change. Green rainwater infrastructure and integrated rainwater management strategies should be designed and implemented to build and integrate resilient urban ecosystems that are responsive to increasing pressures from densification and capacity constraints in the sewer and drainage system. By incorporating these strategies into the design of public spaces, we can also strengthen neighbourhood climate resilience by improving water quality in Vancouver's receiving waterbodies, mitigating urban heat island effects, enhancing the quality of green spaces and connecting habitats while also promoting community stewardship and education.



Connected Places

Streets and the public realm serve as the connective fabric linking residents, parks, businesses, and destinations, creating places for rest and public life. The transportation network will encourage improved access to key destinations by walking, cycling and transit. Provision of smaller, local open spaces will complement access to parks throughout Marpole and enhance natural and urban ecosystems for a growing population and job space hub. Urban rainwater runoff will be managed by integrating green rainwater infrastructure into the design of public spaces to provide environmental, social and economic co-benefit opportunities. Marine Landing will evolve to have a unique sense of place through its strong connection to the greater watershed and through cultural programming in the form of public art, wayfinding and educational opportunities.



OVERVIEW OF PUBLIC REALM ELEMENTS

The public realm plan for Marine Landing (see **Figure 4**) covers the area in around the Marine Drive Station, approximately from Oak Street to Ontario Street, and from 63rd Avenue south to the Fraser River. Specific requirements vary based on geographic location in the study area. The public realm plan should be consulted to confirm which features apply for each individual site.

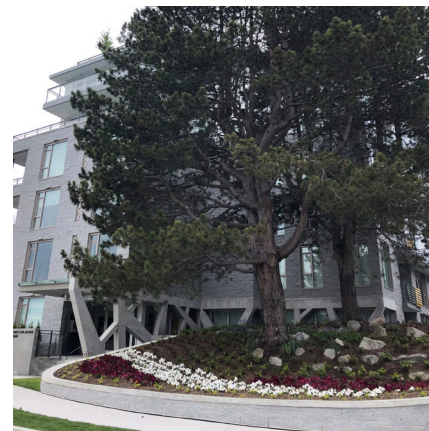
Public realm features are categorized into the following two sections, for which details follow directly after the map:

Frontage Typologies

- General Design Considerations
- Public Realm Widths
- Park Connectors, Bikeways, Greenways and Complete Streets
- Integrated Water Management and Blue-Green Systems
- Active Links and Lane Connectors
- Other Frontage Improvements

Enhanced Open Spaces

















- Continuous Foreshore and Public Access Trail
- Street End Enhancements
- Underutilized Spaces
- Marine Gateway Plaza Enhancements
- On-Site Open Space








PUBLIC REALM

LEGEND

-  Canada Line Station
-  Affordable Housing Sites
-  Intensive Employment Sites
- Connections**
 -  Existing Greenway / Bikeway
 -  Potential New / Improved Walking / Cycling Route (MCP & CCPRP)
 -  Future Fraser River Trail (MCP & CCPRP) & Future City Greenway
 -  Riparian Buffer (MCP)
 -  Complete Street (CCPRP)
 -  Park Connector (CCPRP)
 -  Blue Green Systems (RCS)
 -  Other Frontage Improvements
 -  New Road
 -  Primary Active Link (CCPRP)
 -  Secondary Active Link (CCPRP)
 -  Connector Lane (CCPRP)
 -  On-site Pedestrian Mews & Public Space Enhancements

Enhanced Open Spaces

-  Plaza (MCP/ CPRP)
-  Major Plaza (MCP/ CPRP)
-  Existing Marine Gateway Plaza
-  Marine Gateway Plaza Enhancement
-  Open Space/Park Space (MCP & CPRP)
-  Park Connector Street IRMP Opportunity (CCPRP)
-  Typical IRMP Opportunity (CCPRP)
-  Large IRMP Opportunity (CCPRP)
-  Street End Enhancement
-  Underutilized Spaces

(MCP) Marpole Plan
 (CCPRP) Cambie Corridor Public Realm Plan
 (RCS) Rain City Strategy

Figure 3: Marine Landing Public Realm Plan

3.1 FRONTAGE TYPOLOGIES

3.1.1 General Design Considerations

- Provide a high quality public realm with generous planted boulevards where possible to accommodate large and healthy street trees, landscaping, integrated green rainwater infrastructure (GRI) strategies, lighting, street furniture and urban elements, public art, signage and wayfinding.
- Provide generous and continuous sidewalks along entire site frontages to encourage walking, at a minimum as outlined in the City's *Engineering Design Manual*.
- Integrate on-street bike parking and other urban elements (e.g. zero waste receptacles) so that their placement does not compromise the pedestrian experience of the frontage. Where possible, strive to place bike parking and other streetscape elements so they do not limit the potential for GRI or impact conditions for enhanced planting and optimal tree health.
- Integrate existing or new street trees where possible into all frontage improvements, including along frontages without existing street trees, or where spacing is currently inconsistent. Species, spacing, and locations will be determined through the development process. See City's *Engineering Design Manual* and **Section 3.3 Green Network**.

3.1.2 Public Realm Widths

Road dedications and SRWs will be determined through the rezoning process. Some known dimensions for streets not categorized as specific typologies in **Figure 3** (page 26) are included here for reference.

Park Connector and Blue-Green Systems have specific requirements identified in following sub-sections.

SW Marine Drive

- Mixed and Choice of Use: from intersection of 70th Avenue and SW Marine Drive to Cambie Street: 24 ft. (7.3 m) public realm setback as per *Marpole Community Plan*.

- Intensive Employment Areas:
 - From intersection of 70th Avenue and SW Marine Drive to Heather Street: 40 ft. (12 m) landscape setback as per the City's *Zoning and Development Bylaw* (ZDBL).
 - Yukon Street to Manitoba Street: Setbacks to accommodate a bidirectional bike lane, GRI, street trees, and widened sidewalks. The ZDBL landscape buffer requirement will need to be amended with each rezoning application to accommodate the updated frontage design. See Section 4.1.4 for more details.

Commercial Streets

- With the exception of SW Marine Drive, streets with retail uses at grade should provide an SRW to achieve 3 to 4 m sidewalks and front and back boulevards as necessary.

3.1.3 Park Connectors, Bikeways, Greenways and Complete Streets

Ash Street and Yukon Street (north of SW Marine Drive), and Cambie Street (south of SW Marine Drive), are identified as Park Connector Streets. Park Connector Streets, bikeways and greenways are designed to link arterial and key public spaces and to enhance walking and cycling connections within the community and to the Fraser River.

The primary feature of Park Connector Streets will be to integrate rainwater management opportunities such as planted corner bulges and integrated seating. See *Cambie Corridor Public Realm Plan* Section 4.3 for specific design considerations.

As applicable, public realm improvements along these streets should:

- Provide generous planted boulevards where possible to increase infiltration, water treatment and maximize conditions for healthy tree growth while promoting habitat and biodiversity.

- Provide setbacks to ensure AAA cycling facilities can be delivered.
- Integrate mid-block and corner bulges into the boulevard where appropriate.
- Improve habitat and biodiversity through planted boulevards where possible.

See *Cambie Corridor Public Realm Plan* Section 3.6 Complete Streets, 4.2 Park Connector Street and 4.3 Integrated Rainwater Management Plan for more information.

3.1.4 Integrated Water Management and Blue-Green Systems

Marine Landing sits within the Fraser River floodplain and has major overland flow routes associated with rainfall events. Green rainwater infrastructure (GRI) should be incorporated into the public right-of-way in Marine Landing where appropriate to improve water quality, resilience and livability through creation of a healthy urban ecosystem.

Streets identified in this section should include some form of green rainwater infrastructure (GRI) at a site or district scale, including Blue-Green Systems (BGS) as defined in the City's *Rain City Strategy*. BGS frontages should maximize conditions for street tree health. Large planted street trees should be incorporated into swales where possible. The design of boulevard swales for overland flow routes should generally be around 6 m (20 ft.) in width.

SW Marine Drive (between Yukon and Manitoba)

- This segment is a major overland flow route which floods on a regular basis during rain events. It presents an opportunity to implement BGS with an approximate width of 6 m (20 ft.), subject to a review on a site-by-site basis (e.g. utility conflicts, groundwater) Ultimate dimensions will be reviewed and determined at the time of rezoning.

- A single row of water-tolerant trees with large canopies is desired, and can be accommodated within the BGS.

Manitoba Street

- The section of Manitoba Street south of the SW Marine Drive is a major overland flow route. It presents an opportunity to implement BGS, subject to feasibility study on a site-by-site basis.

Ash Street

- Ash Street is identified as a Park Connector Street north of SW Marine Drive, and a secondary overland flow route.
- Building foundations and underground parking setbacks are needed along this street to accommodate infiltrating GRI and adequate soil volumes to maximize tree health and growth. Buildings may also need to be set back from existing property lines to provide the required 5 m infiltration setback.
- This street includes a planned raised, protected cycling facility on the segment south of SW Marine Drive.

Yukon Street

- The section of Yukon Street south of SW Marine Drive is a major overland flow route with a smaller catchment than SW Marine Drive and Manitoba Streets. It presents an opportunity to implement streetside bioretention and stormwater tree trench elements along the west frontage.
- On the east side, a “green” expression can still be accommodated; however, no infiltrating rainwater is possible due to a water main conflict.

Kent Avenue

- Kent Avenue is located within the Fraser River floodplain. High groundwater levels are not ideal for infiltrating green rainwater infrastructure. Storage and detention system, such as wetland and oversized swales, may

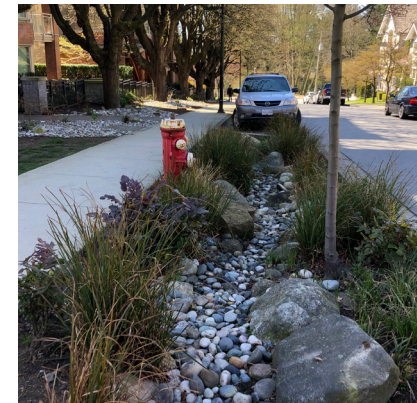
need to be implemented to mitigate ponding from overland flows and lack of drainage conveyance due to high coastal water levels.

3.1.5 Active Links (Primary and Secondary) and Lane Connectors

- A new east-west lane connector is required on the 8600 block of Ash Street to connect with an existing lane on the 8600 block of Cambie Street (see *Cambie Corridor Public Realm Plan* Sections 3.9 and 3.10).

3.1.6 Other Frontage Improvements

- Sections of Manitoba Street from 68th Avenue to Kent Avenue have been identified for potential boulevard and biodiversity enhancements. Explore opportunity for an enhanced open space at the existing grove of trees between 68th and 69th Avenues on Manitoba Street.
- Potential frontage enhancements at 703-704 SW Marine Drive may be possible following a review of the existing building line through the rezoning process.



3.2 ENHANCED OPEN SPACES

3.2.1 Continuous Foreshore and Public Access Trail

The aspiration for a continuous Fraser River Trail has been identified across various City plans and strategies, including the *Vancouver Greenways Plan*, *Marpole Community Plan*, *Cambie Public Realm Plan* and *VanPlay*. Collaboration and partnership with First Nations, primarily Musqueam Indian Band, will be key to determining public access to the water's edge. Further planning work will be undertaken through broader initiatives such as the *Coastal Adaptation Plan - Fraser River Foreshore*.



Design Considerations:

- Establish an ecological network that protects and enhances the integrity of the foreshore while providing public access through street end enhancements and recreation opportunities.

- Plan for an accessible waterfront adaptable to sea levels rise by working with City, First Nations and regional partners to develop policy, acquisition and design solutions.
- Reflect planning and design principles from the *Coastal Adaptation Plan - Fraser River Foreshore* in shoreline flood management systems, including engagement with Musqueam and the broader community.
- Through continued engagement with Musqueam, enhance and re-establish the foreshore as a functioning ecological system and develop strong heritage preservation measures while determining appropriate opportunities to provide public access through a recreational trail along the foreshore.
- Establish walking and cycling routes to and along the waterfront to meet provincial access to water requirements under the *Land Title Act* and to enhance active transportation connections in the neighbourhood as outlined in the City's community plans.
- Explore provision of an enhanced open space in combination with the walking/cycling connection at the foot of the Cambie Street Bridge.
- Provide increased urban tree canopy and tree retention where possible.
- Incorporate moments of interest and reprieve along the waterfront. Integrate urban elements such as seating and lighting, as well as opportunities for public art, signage and wayfinding at strategic locations. Lighting should be integrated thoughtfully to support ecological goals for the waterfront.
- Incorporate environmental educational and interpretative wayfinding signage through engagement with Musqueam.

3.2.2 Street End Enhancements

Explore street end enhancements to improve public access and connectivity to the Fraser River in strategic locations along the riverfront. Size will vary based on location, adjacencies and ability to utilize the public right-of-way.

Design Considerations

- Design for visual and physical openness to riverfront, street and adjacent developments. Consider opportunities to invite pedestrians into or through the space and enhance connection and access to the river.
- Consider flexible use for reprieve, play, programming, passive use and green rainwater infrastructure.
- Integrate streetscape element such as standard benches, seat walls and other informal seating arrangements, trees and other planting, wayfinding and signage into the design.
- Explore opportunities to engage with the water and allow for immersive experience in nature. Balance public access with habitat enhancement and heritage preservation through careful design of piers, boardwalks, docks and platforms. Consider opportunities for birdwatching and fishing.
- Planting should enhance biodiversity, access to food sources and habitat for birds and fish. Planting designs should improve water quality and consider resilient strategies such as absorbent landscapes and areas of intentional flooding.
- Potential programming could include passive open space, visible rainwater management strategies, educational opportunities and children play areas.

3.2.3 Underutilized Spaces

This section expands on the *Marpole Community Plan* policies to repurpose underutilized spaces in the public realm. Opportunities on both public land and private property should be explored to reimagine highly paved, underused and residual spaces as plazas or open spaces, with a focus on green rainwater infrastructure, public art or other types of programming. Potential opportunities could include:

- Residual space resulting from road and intersection realignments and excess public rights-of-way (e.g. SW Marine Drive at 70th Avenue).
- Network redundancies (i.e. areas identified for future lane closures and parking redundancies).
- Paved areas and underused space below guideways in partnership with Canada Line.

3.2.4 Marine Gateway Plaza Enhancements

Provide a public plaza on the south side of the existing bus loop. The plaza is intended to provide a complementary public space to the existing plaza on the Marine Gateway site.

Design Considerations:

- Improve the pedestrian experience by creating a more user-friendly and vibrant public realm that reinforces connectivity south towards the Fraser River.
- Animate the plaza through active ground floor uses, such as cafes, patios and neighbourhood-scale storefronts.
- Provide a north-south link through the bus loop to the existing pedestrian mews at Marine Gateway.
- Explore opportunities to integrate existing space below the guideway into the plaza design. Active the space through public art and light installations.
- Incorporate tree planting, integrated rainwater

management strategies, softscape and hardscape elements, site furnishing, lighting and weather protection.

3.2.5 On-Site Open Space

Open space on development sites should comply with general design considerations outlined in this chapter and reinforce the network of public spaces in **Figure 3** (page 26). Refer to **8. Public Benefits** for additional details regarding park, open space and culture considerations.

General Considerations

On larger blocks and development sites, a network of smaller open spaces will create lively and bright public spaces away from the noise and stressors of busy arterials and truck routes in the area. These spaces will include pedestrian mews, plazas, courtyards and secondary active links.

The following considerations should guide design and location of open spaces on private property:

- Encourage lively building edges and/or green public-private realm interfaces to create a welcoming street experience.
- Create inviting and comfortable places for people supported by activity.
- Reintroduce water and natural systems into open spaces, including potential for temporary storage of overland flood waters.
- Increase urban tree canopy to improve microclimate and provide an acoustic buffer.
- Maximize solar access for open spaces.
- Respect existing public views and explore creating new views of prominent features and/or significant landmarks.
- Support the display of local art, craft or industry (i.e. gallery, studios, or maker spaces). Developers are strongly encouraged to explore design considerations in consultation with Musqueam to promote cultural visibility and emphasize living history and connection to this land.

- Incorporate wayfinding to improve connectivity between key destinations such as the Fraser River, Ash Park and/or bikeways.

Open Space/Park Space & Plazas

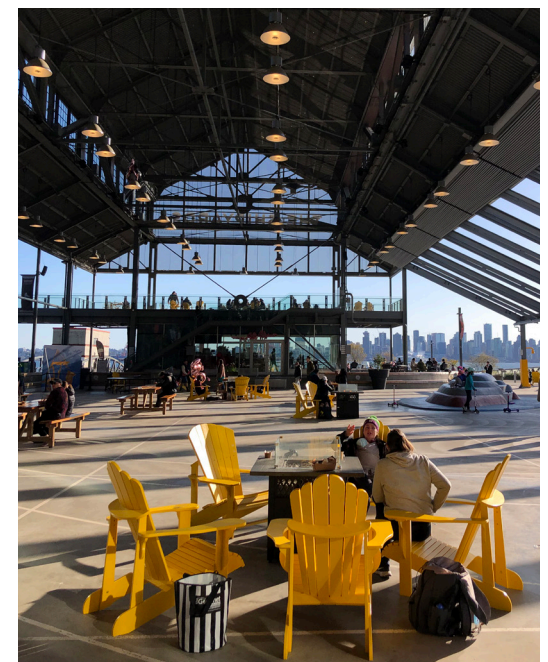
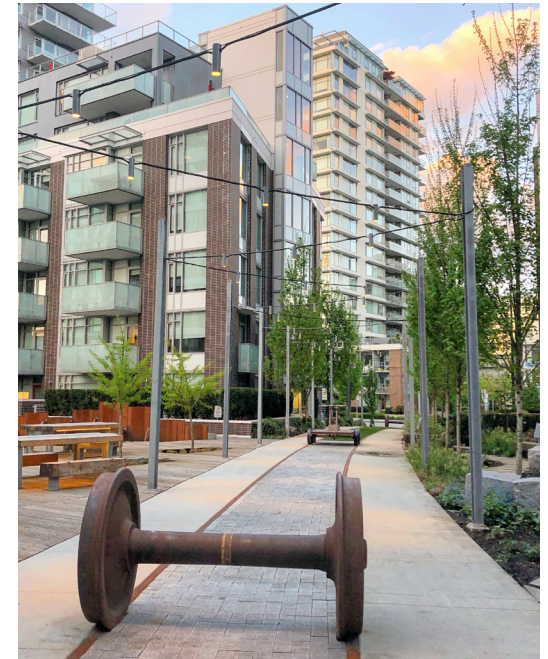
Provide flexibility in the design of public spaces to respond to individual site contexts. Open spaces may be designed as park space or a different type of open space, will range in size, and in some instances may utilize excess public rights-of-way or residual space in atypical lot assemblies. For more detail, refer to **Figure 3** (page 26), the *Marpole Community Plan* Chapter 10, and *Cambie Corridor Public Realm Plan* Chapters 3 and 4.

- Prioritize publicly accessible, at-grade enhanced open spaces and plazas. These spaces should be distinct from any required outdoor amenity space in a private development.
- Incorporate a range of features including integrated site furnishings and landscape elements, rainwater management opportunities, active play elements, informal gathering space, and/or community gardening opportunities, public art, signage and wayfinding.
- Provide large, healthy trees and planting elements supported by adequate soil volume to enhance access to nature.
- Incorporate infrastructure to allow for programming of spaces including arts and culture events (i.e. loading, lighting, power, water, etc.).
- Maximize opportunities for a variety of open spaces that are contiguous, such as accessible rooftops, courtyards, or ground-level spaces. Sites subject to the *Rezoning Policy for Sustainable Large Developments* should also integrate any other applicable requirements into their site design.

On-Site Pedestrian Mews

Pedestrian mews are intended to complement identified primary and secondary active links. They define the scale of building frontages while also supporting walking through sites, improving area connectivity, and providing improved access to green and open spaces. Generally, large sites as defined by the *Rezoning Policy for Sustainable Large Developments* will require pedestrian mews. Refer to **Figure 3** (page 26) for anticipated locations and **3. Built Form** for further guidance.

- Pedestrian mews should relate to adjacent public spaces such as plazas, courtyards, frontages and activated lanes to provide linkages between development sites and open spaces.
- Pedestrian mews should incorporate a range of features such as planting, integrated site furnishings and landscape elements, rainwater management opportunities, public art, signage and wayfinding.
- Opportunities to integrate pedestrian mews should also be explored to activate and connect courtyards and shared spaces for residents in residential developments.



3.3 GREEN NETWORK

The public realm should maintain and improve the urban forest canopy to mitigate urban heat island effect, improve the local micro-climate and support targets identified in the *Urban Forest Strategy*. It should also consider habitat value, improve biodiversity, and address resiliency to climate change in tree and plant selection.

- Reference the *Cambie Corridor Public Realm Plan* for the Planting Strategy for Marine Landing, which includes Neighbourhood Character and Plant Lists specific to Marpole.
- Retain existing trees whenever possible.
- Provide appropriate soil volumes (soil cells and/or structural soil) and infiltrating tree trench (where no utility conflicts) to promote optimal tree health and support large trees. Standards should follow the *Engineering Design Manual*.
- Consider access to sunlight in selection of street trees and planting species.
- Consider water-tolerant species which could be co-located within GRI assets in the public right-of-way.
- Improve biodiversity and overall habitat conditions. Select plants that attract birds and pollinator species, and improve water quality.
- New street trees should be strategically selected; to ensure that once matured, the roots will not heave or crack the adjacent street infrastructure (i.e. adjacent to sidewalks, bike lanes, or roads). This is to ensure the City's assets are resilient and remain accessible over time.
- Allow adequate setback to minimize the impact of infiltration to adjacent utilities. GRI should be offset by a minimum of 3 m (10 ft.) from any potable water mains to meet Vancouver Coastal Health requirements. Refer to the City's design guidelines and construction standards for offsets from other utilities to ensure compliance.

- Landscape design should provide for views into buildings for pedestrian interest, as well as special features such as seating and interactive elements.
- Protect and enhance shoreline habitats, including riparian vegetation and intertidal habitat, by providing setbacks, and consider opportunities for intertidal area shift and adaptation to sea level rise as outlined in the *Coastal Adaptation Plan - Fraser River Foreshore*.

3.4 URBAN ELEMENTS

Integrate consistent signage, wayfinding, streetscape furniture (e.g. benches, bike racks, drinking fountains) and public art (see below) to help create continuity in public space.

See *Cambie Corridor Public Realm Plan* 6.0 Urban Elements. Street furniture should be consistent with city-wide standard models.

3.5 PUBLIC ART

The *Marpole Community Plan*, *Cambie Corridor Public Realm Plan* Section 5.0 Public Art and *Culture|Shift* should be referenced for general recommendations. Public art requirements should be aligned with the *Public Art Policy and Procedures for Rezoned Developments*.

In Marine Landing, the preference is for contributions to be pooled, with the consent of Cultural Services, to create larger budgets for projects sited in significant locations (e.g. along the Fraser River, in plazas, integrated into green rainwater infrastructure features, and on key gateway sites). Priority should be for land-based public art, reflecting the history of the Musqueam peoples, and the on-going relationship of Musqueam, Squamish and Tsleil-Waututh First Nations to the land.

General Ideas to inform an approach to public art include:

- Musqueam representation reflecting Musqueam values/principles and indigenous models of stewardship.
- Movement associated with a historic north-south spine connecting the Fraser River and False Creek.
- Presence and connectivity to the Fraser River, its hydrology and its associated ecosystems, including:
 - Features associated with the use of the river for travel and industry
 - Manipulation of river banks/land forms;
 - Accessibility of the river's edge by the public; and,
 - Habitat and an integrated, sustainable green network ("nature as infrastructure").

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4 ARCHAEOLOGICAL AND HERITAGE MANAGEMENT



4.1 ARCHAEOLOGICAL REVIEW

Marine Landing is part of a larger area that has been home to the *xʷməθkʷəy̓əm* (Musqueam) people from time immemorial. Marine Landing is located near registered archaeological sites, namely the *xʷməθkʷəy̓əm* city and burial ground of *čəsnaʔəm*. The presence of *čəsnaʔəm* and other archaeological sites in the vicinity of Marine Landing strongly suggests that the area has the potential to contain unregistered archaeological sites that are protected under the *Heritage Conservation Act* (HCA).

In British Columbia, all archaeological sites, whether on Provincial Crown or private land (including land under water) that are known, or unknown, and suspected to predate AD 1846 are automatically protected under the provincial HCA. They must not be altered in any way without appropriate authorizations. Alteration of any archaeological site known or as-yet unidentified is a violation of the HCA.

If materials are found at any stage of ground disturbance, all work on the property must stop immediately and the Provincial Archaeological Branch, City of Vancouver and involved local First Nations, must be notified. This could result in considerable delays and cost in project construction while the site undergoes archaeological review and is granted the appropriate authorizations to proceed. To avoid unnecessary delays and manage associated risks, it is in the best interest of the property owner/developer to identify potential archaeological risks or constraints associated with the proposed project, and to outline the means to avoid or mitigate disturbance before proceeding with ground-disturbing activity.

While much of the Marpole Landing area has been altered by past industrial and urban development, archaeological signatures (e.g., stone tools, shell midden) representing early activities and past use could still be present. Therefore, it is advised that an archaeological review (i.e., Archaeological

Overview Assessment) take place for each development site to avoid contravention of the HCA and unauthorized impacts to archaeological sites. The archaeological review should be prepared by a professional archaeologist with experience working in the area and with local First Nations. The archaeologist is to be retained by the proponent (property owner and/or developer), and the archaeological review is to be undertaken prior to the commencement of ground disturbance activities, including any kind of intrusive investigations necessary for geotechnical, environmental, day-lighting utilities, etc.

The intent of the archaeological review is to have a professional archaeologist with direct experience working in the Vancouver area:

- Review relevant information, i.e., Provincial Heritage Register, research records, previous archaeological assessment reports, provide information regarding the property development history (including information on fill deposition and removal) and current land use and activity on site;
- Engage with, involve, and include input from involved (local) First Nations;
- Provide a professional opinion as to archaeological risks or constraints associated with the proposed construction activities at the development site;
- Outline anticipated impacts to registered archaeological sites (if applicable);
- Provide a recommendations for further assessment or investigation (if applicable); and
- Prepare documentation and present recommendations for next steps (if applicable) in an archaeological review letter or memorandum to be submitted to the City and involved First Nations for comment and consideration through the redevelopment process.

Although an HCA permit is not required for the archaeological review, First Nations might request that a Cultural Heritage Investigation permit be obtained to undertake the review and to facilitate a dialogue regarding the proposed project and how it relates to archaeology and each Nation's heritage management expectations/policies. Should Cultural Heritage Investigation permit(s) be required, developers should be aware that it can take more than two months to obtain the permit(s). Note that archaeological assessment under provincial permit (HCA) and First Nation permits may be required if further archaeological work is recommended during the initial archaeological review process, and following discussions with involved First Nations.

4.2 HERITAGE

It is the collective responsibility of all to not only relate to our past, but to identify, protect, and pass on diverse cultural values and assets to future generations. Vancouver City Council approved the *Vancouver Heritage Program (VHP)* to further the stewardship of heritage resources across the city while supporting sustainable development.

- Reference the VHP to support intangible and tangible aspects of cultural heritage in Marine Landing, supporting Musqueam, Squamish, and Tsleil-Waututh Nations', and Urban Indigenous people's self-expressed histories and heritage as applicable.

5 TRANSPORTATION



GENERAL CONSIDERATION

Marine Landing is a busy transit hub along a major east-west connection serving regional and local transportation needs. It is important to plan for change as more people, jobs and services are added to an area primarily used for heavy industry in past decades. Transportation improvements should:

- Increase network and regional connectivity through work between Engineering, Park Board and applicants as applicable to improve walking and cycling connections to, along, and across the Fraser River, per 'Bold Move: Connectivity of Parks and Recreation Experiences', outlined in *VanPlay*.
- Support access to sustainable transportation modes by improving walking/cycling and transit connections identified in the *Marpole Community Plan*, *Cambie Corridor Plan* and any new priorities to support objectives of *Transportation 2040*, the *Climate Emergency Action Plan*, and TransLink's *Transport 2050*.
- Prioritize public realm improvements along streets providing key walking and cycling connections to destinations (see **Figure 3** on page 26).
- Improve connections in the neighbourhood through sidewalk setbacks and walking/cycling routes, creating community nodes at transit stations, and highlighting access routes to existing and future parks and open spaces.
- Prioritize the safety and comfort of people walking, in accordance with hierarchy of modes identified in *Transportation 2040*.
- Support upgrades and new connections as opportunities arise through new development.
- Ensure barrier-free design and universal access.

NEW PRIORITIES SINCE 2018

Development in Marine Landing requires a re-visit of the transportation network from time to time as the *Marpole Community Plan* and *Cambie Corridor Plan* are implemented. This section outlines new transportation improvements identified since the *Cambie Corridor Plan* was approved in 2018. Applicants should review both community plans and items identified below for considerations specific to their development sites. Additional upgrades and improvements not captured here may also be identified through the rezoning process.

5.1 Pedestrian & Cycling Connectivity Improvements

Continue enhancing and improving pedestrian and cycling connections between Marine Landing and Marpole through the following new improvements identified since adoption of the *Cambie Corridor Plan* in 2018:

Walking Improvements

Through partnership with TransLink, construction of 500 m of new sidewalk to fill in gaps in the City's existing sidewalk network, as well as new curb ramps, to improve pedestrian access to transit facilities.

- Improvements include new sidewalks on the east side of Ash Street from Kent Avenue North to West 71st Avenue, and new sidewalks on the east side of Yukon Street from Kent Avenue North to the bus loop.

Safety Improvements

New traffic signal locations and modifications have been identified to improve walking and cycling connections in and around the Marpole area:

- Intersection safety upgrades on SW Marine Drive at Cambie Street and Manitoba Street.
- Potential new signal at the intersection of Kent Avenue and Ash Street.
- Improved crossing and pick-up/drop-off adjacent to the Marine Drive Station Transit Plaza to enhance safety and provide clear visual connections.

- At-grade rail crossing improvements at Laurel Street and Ash Street to comply with provincial regulations.

Cycling Connectivity

- New bi-directional bike lane along the south side of SW Marine Drive between Cambie Street and Main Street to enhance connections between the Canada Line Station and the broader cycling network. The improvements support various *Transportation 2040* and *Climate Emergency Action Plan* policies, including prioritization of critical gaps in the network and connections to key destinations, such as schools, community centres, major transit stations and commercial high streets; and provision of safe, convenient and legible connections between major transit stations and the bicycle network.

Public Bike Share

- Support the expansion of public bike share to enable more bicycle trips to access transit stations, employment sites, commercial areas, and destination-rich streets such as Cambie Street.
- Work to secure and future-proof space for public bike share stations through rezoning opportunities.

5.2 Road Network, Goods Movement, Parking and Loading

- Re-evaluate traffic circulation patterns in the area in response to redevelopment of large sites generating significant traffic volumes, as required.
- Respond to updates to the *Parking By-Law*, including changing requirements for visitor parking, bike parking, passenger loading, and the introduction of Transportation Demand Management (TDM).
- Integrate car sharing to serve different uses and reduce parking demand by providing both one-way and/or two-way car share parking spaces in convenient locations in new developments.

6 UTILITIES



OVERVIEW

The following section provides an overview of high-level utilities upgrades likely required to service future population and employment growth in Marine Landing. More detailed reviews will be completed for each site through the rezoning process to identify specific requirements and timing of implementation. Most rezoning applications in the area (both for affordable housing and intensive employment) will likely be expected to contribute towards on- and off-site upgrades. Some of the costs associated with these upgrades have the potential to be partially reimbursed over time through latecomer agreements.

6.1 Sanitary Sewer Network

Marine Landing is primarily located within the Manitoba watershed (**Figure 4** on page 40). North of SW Marine Drive, the sewer network is predominantly combined, with sanitary flows directed to Metro Vancouver's Kent Avenue Pump Station (Kent PS). Stormwater is directed further east and discharged into the Fraser River via the Manitoba outfall. South of SW Marine Drive, the sewer network is separated. The sanitary and stormwater systems convey flow to the Kent PS and Manitoba outfall, respectively. The westernmost affordable housing site forms part of a different watershed, which is assumed to have sufficient capacity to service future redevelopment of the site. The key system bottlenecks in this area include the sanitary sewers on West Kent Avenue North and Yukon Street and the Kent Avenue PS, which is believed to be operating at capacity.

Future Infrastructure Upgrades

The following area-wide network upgrades will likely be required to support future population and employment growth, and will be confirmed and/or implemented through the rezoning process:

Metro Vancouver Kent Avenue Pump Station

- The service area of this Metro Vancouver asset extends beyond the Marine Landing area. The pump station is currently overextending

capacity of the City's sanitary sewer along Kent Avenue, between Cambie Street and the pump station.

- The review of existing pump station capacity will generally be City-led, in coordination with the developer and Metro Vancouver. Upgrades may consist of replacing the existing pumps with higher efficiency pumps, and/or adding a fourth pump. Any proposed upgrades will need to be coordinated between the City and Metro Vancouver and included in their future capital programs.

Kent Avenue

- The section of Kent Avenue between Aisne Street and Yukon Street conveys flows for the majority of affordable housing and intensive employment sites.
- Approximately 620 m of sanitary sewers will need to be upgraded to avoid surcharging.

East of Manitoba Yard

- These sewers are intended to service all intensive employment sites east of Yukon Street.
- Approximately 190 m of sanitary sewers will need to be upgraded if the existing alignment of sewers are to be retained. There could be construction challenges due to buildings being built on top of some sections of the existing sewers.
- An alternative servicing for these intensive employment sites is to be reviewed and confirmed through the rezoning process (e.g. east along 68th Avenue and/or 70th Avenue to Manitoba Street).

SW Marine Drive

- Sewer separation/renewal along SW Marine Drive between Yukon Street and Manitoba Street is being completed as part of the City's Marine Drive Upgrade Project included in the 2019-2022 Capital Plan.
- This sewer renewal project will address sanitary sewer capacity issues along SW

Marine Drive; however, the downstream sanitary sewer capacity along Manitoba Street will need to be reviewed through the rezoning process. It is likely that sewer upgrades are required along Manitoba Street from SW Marine Drive to Kent Avenue.

6.2 Water Network

In general, the available water supply from the City's water system is capable of handling anticipated growth in Marine Landing without significant upgrades. However, available supply will need to be assessed based on project specifics as redevelopment sites come forward in the future.

Future infrastructure Upgrades

The following potential upgrades may be required following a more detailed review of specific sites at time of rezoning:

West Kent Avenue South (from Ash Street to Yukon Street)

Cambie Street (from West 70th Avenue to West 71st Avenue)

- Upgrade is included in the City's Utilities Development Cost Levy Project List.

Metro Vancouver Water Supply

- The adequacy of the Metro Vancouver (GVWD) water supply is unknown and will need to be reviewed through the rezoning process.
- An additional connection to the GVWD water system may be required within the study area to provide adequate water demands to the area.

Other

- Any large sites re-aligning City roads or lanes may require new water mains.

Some sites may require larger water service connections sizes than the existing City of Vancouver water mains, which could trigger upgrades.

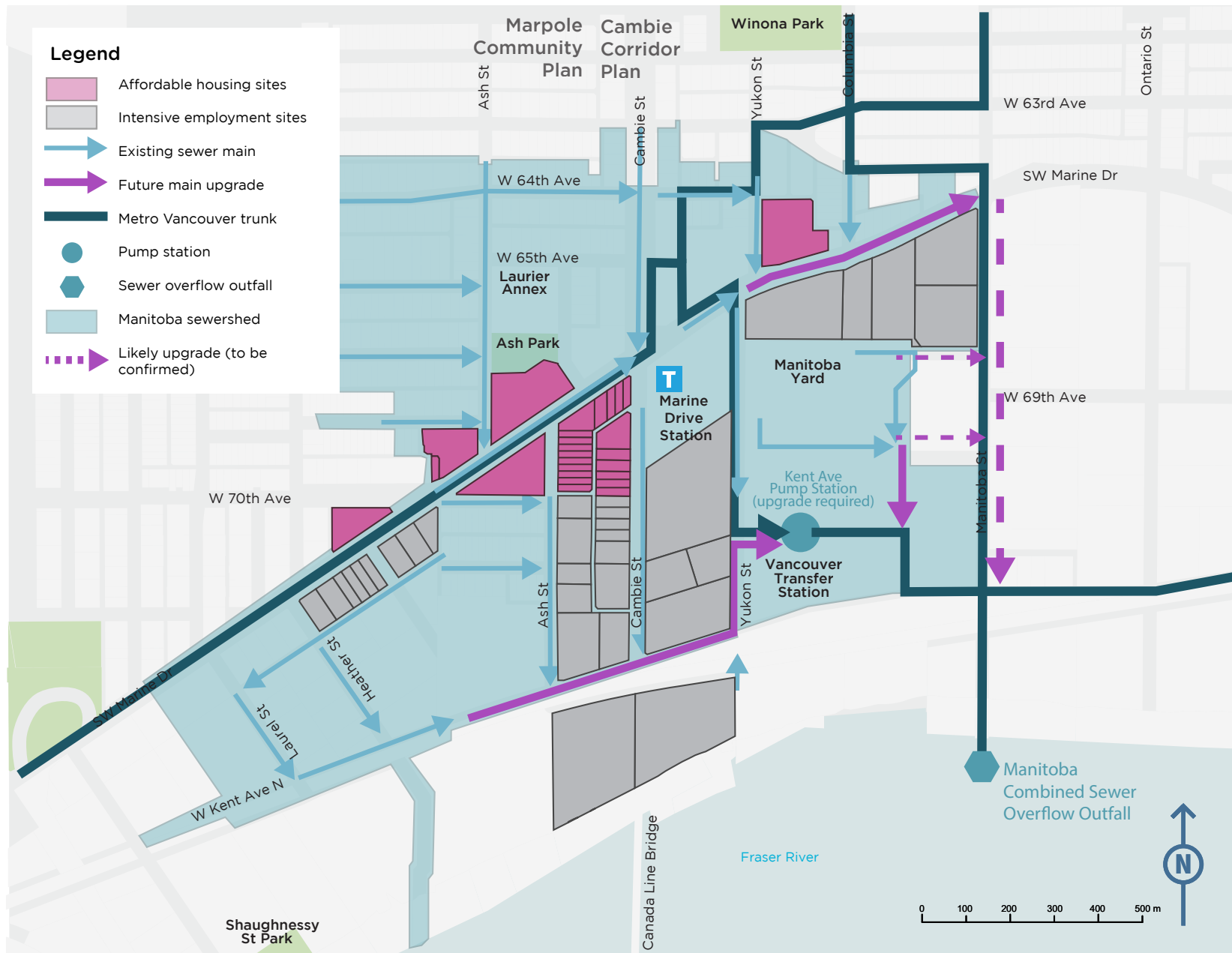


Figure 4: Manitoba Watershed

6.3 Stormwater System

Vancouver faces significant challenges related to its sewer and drainage infrastructure and increasing pressures related to climate change and sea level rise. The City is seeking cost-effective, long-term utility services in both the public and private realm that meet regulatory obligations, increase climate resilience and contribute to improved livability and healthy ecosystem. The following section provides an overview of the stormwater system capacity, coastal flood risk and on-going mitigation actions.

System Capacity

In Marine Landing, minor stormwater systems include separated storm sewers in the lowland area and a combined system north of SW Marine Drive. Metro Vancouver's Manitoba trunk sewer collects all the stormwater from the two systems, which is discharged to the Fraser River through the Manitoba Combined Sewer Overflow outfall. The storm sewers in the lowland area are severely surcharged due to backwater conditions from the Fraser River maximum tidal level, which is expected to increase in the future.

Coastal Flood Risk

A number of sites in Marine Landing are located in the Fraser River floodplain, extending from the shoreline towards SW Marine Drive. These lowlands within the Manitoba watershed are susceptible to overland flooding due to stormwater contributions from upland areas during major rainfall events. Segments of Manitoba Street, SW Marine Drive, Yukon Street and Kent Avenue are considered key overland flow routes and are susceptible to ponding. Industrial properties adjacent to ponding locations, and Metro Vancouver's Kent Avenue Pump Station are at risk of flooding. The lowlands are also susceptible to flooding from the Fraser River. High water levels on the Fraser increase the probability of sewer network back-up and surcharging in the lowlands. Climate change and sea level rise are expected to exacerbate ponding and flooding in this area if no adaptation actions are implemented in the future.

Sea level rise will result in an increase in regular tide levels. Sites with existing ground elevations less than 2.9 m may be exposed to tidal flooding due to sea level rise (1 m by year 2100). Tidal flooding may be a concern regardless of coastal flood protection works (e.g. dikes) as internal flooding could occur from high groundwater levels linked to the Fraser River. This would also increase the pressure on the drainage system and may trigger the need for drainage pump stations. Land raising of low-lying sites above the future tidal level (and potentially further up to the flood construction level) would help mitigate these issues.

Future mitigation actions:

- Refer to Chapter 11: Energy & Climate Change in the *Cambie Corridor Plan* for policies related to climate change adaptation and flood protection.
- Incorporate flood control measures into site planning and building design, as applicable.
- Shoreline flood management systems should reflect the planning and design principles from the *Fraser River Foreshore Coastal Adaptation Plan*. These design principles are the result of public engagement with community members who work, live and play along the Fraser River, as well as Musqueam.
- Projects should limit excavation into the flood plain wherever possible due to the presence of a high groundwater table. Underground parking may not be feasible in the floodplain without adequate foundation tanking to avoid pumping of groundwater into the sewer system.
- The City's preferred alignment of future flood management infrastructure has not yet been determined; however, shoreline sites undergoing development may be required to implement flood management infrastructure (including a right-of-way to the City) which must, at minimum, adhere to:

- City of Vancouver *Shoreline Flood Protection Design Reference* (2021), including a preference for the superdike typology described in the design reference.
- City of Vancouver *Flood Plain Standards & Requirements* (2014) for required shoreline setback details.
- With a minimum flood construction level of 4.6 m elevation for new buildings and an existing road elevation of about 3 m (or less), the interface at the road frontage must be carefully considered. Site and road grades may also need to be raised to provide safe access/egress through urban drainage overland flooding areas during major storm events.
- As per the *Vancouver Building By-law*, structures within shoreline parcels are subject to a 30 m setback from the natural boundary.
- The performance of storm sewers in the lowland area is primarily impacted by Fraser River tidal levels. Additional planning work, including a *Coastal Adaptation Strategy*, may be required to determine the minor drainage system upgrades.
- Internal drainage management infrastructure, including new outfalls, surface pond or underground storage tanks, and drainage pump stations, may be required for the minor drainage system performance. Providing public/private spaces that can safely accommodate temporary urban drainage flooding can help reduce the need and size of infrastructure and help mitigate the risk in major events.
- Sites restoring the boulevard as part of their redevelopment projects may be required to fund Green Rainwater Infrastructure (GRI), either through design and implementation, or cash-in-lieu. Refer to **3. Public Realm** for specific locations and types of GRI opportunities.

- Sites located within the floodplain may need to pay additional levies in the future to manage impacts of development in the floodplain.
- New developments must adhere to the City's *Rainwater Management Bulletin*.

6.4 Groundwater

Groundwater is expected to play an important role in Vancouver's future, including for climate change adaptation and efforts to increase resilience (e.g. during emergencies). Groundwater is also critical for urban ecosystems.

Historically, groundwater has been pumped or drained during and after construction, and then discharged to the sewer system. However, there are a number of concerns with this practice, including: impacts on sewer capacity; combined sewer overflows and their effects on receiving waters; lowering of the water table and reduction of base flow to streams; impacts on fish, wildlife, trees and other vegetation; the potential for subsidence and flooding; and damage to infrastructure and property. Discharging groundwater to the sewer also depletes the aquifer and is a waste of a valuable resource, particularly as traditional water supplies from Metro Vancouver are becoming more constrained.

To date, the City has identified and mapped four 'areas of concern' that represent an increased level of groundwater-related risk.

1. Areas with potential soil sensitivity to water table changes;
2. Designated floodplains;
3. Sewershed within the Cambie Corridor;
4. Potential flowing artesian conditions (BC Well Drilling Advisory Area).

Marine Landing encompasses each of these areas of concern, including near Cambie Street and Interurban Way where all four areas overlap (Figure 5). This map is intended as a general guide, including to potential areas of concern

with respect to groundwater. It is not intended to convey site-specific conditions, and users are advised to conduct their own site investigations as needed.

To reduce groundwater-related risks in these areas of concern, the City has published a *Groundwater Management Bulletin* to provide rezoning and development permit applicants with information on the submission process and requirements related to groundwater management at development sites.

In the coastal floodplain area, groundwater management may need to consider the impact of sea level rise on groundwater levels in the future.

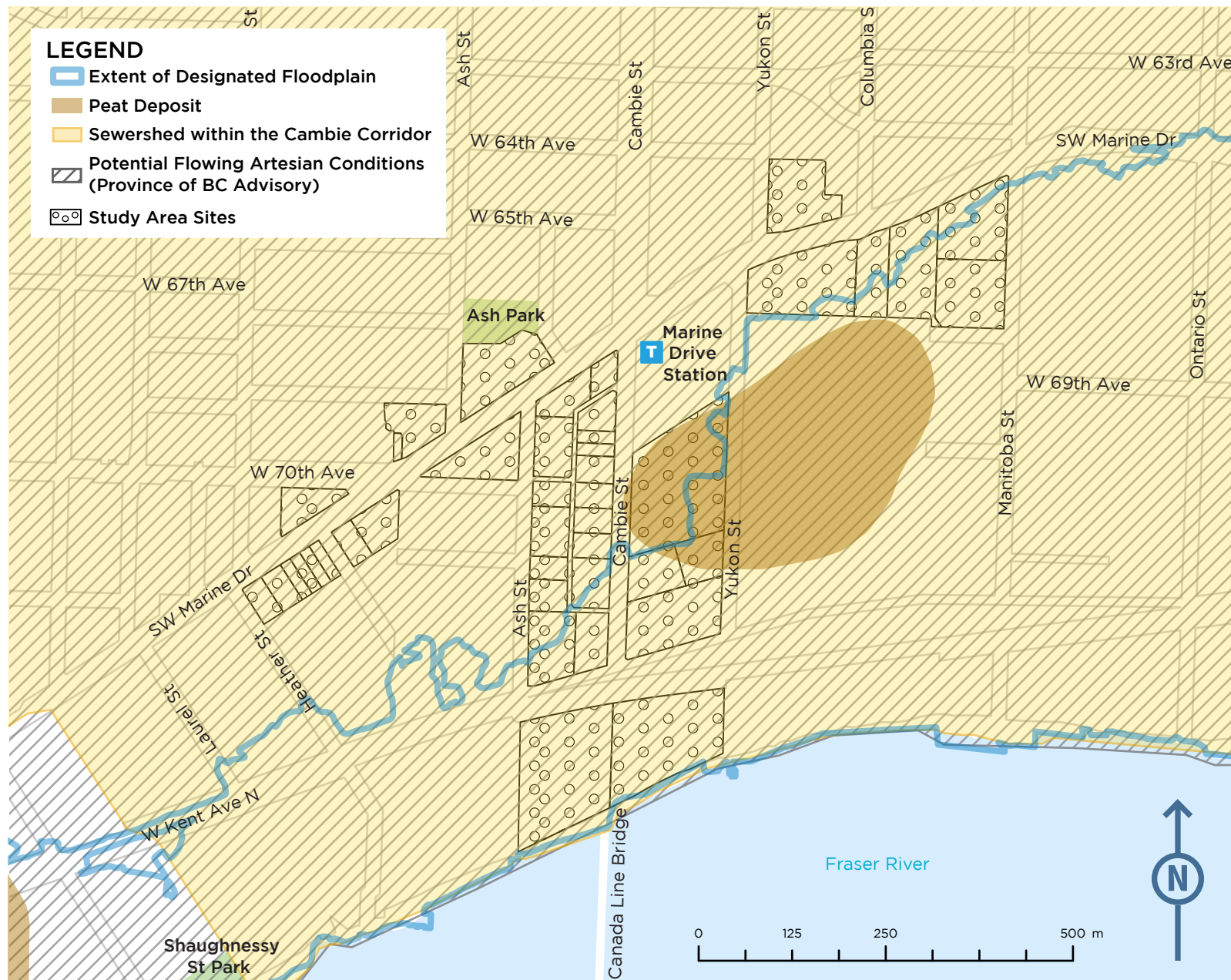


Figure 5: Groundwater Areas of Concern

7 PUBLIC BENEFITS



The *Marpole Community Plan* and *Cambie Corridor Plan* include Public Benefits Strategies which provide strategic direction for future capital investments in the Cambie Corridor, including Marine Landing. These Public Benefits Strategies support livable, healthy and sustainable communities by setting targets for delivery of benefits such as affordable housing, childcare, parks, transportation and community facilities. The following section provides additional guidance on public benefits priorities and their implementation in Marine Landing as the area densifies and continues to grow.

MARINE LANDING PRIORITIES

The *Marpole Community Plan* and *Cambie Corridor Plan* envision Marine Landing as a highly walkable, vibrant, high-density urban area that responds to its evolving residential context, adjacent industrial area, and historical relationship to the Fraser River. The recent policy changes in Marine Landing will result in greater population and job space growth than expected under the two community plans. Additional amenities will be needed to support this high-density transit node as it builds out over time.

Through its 2019-2022 Capital Plan, the City is advancing two key City assets in Marpole: renewal and expansion of Marpole-Oakridge Community Centre at Oak Park, and a new Marpole civic centre on Granville Street which includes renewal and expansion of the existing public library. These district-serving amenities will provide recreational facilities (including a new outdoor pool), a library, social and cultural non-profit organization space, childcare and social housing to better serve existing and new residents in Marpole. Playgrounds at Ash Park and Winona Park are also in the process of being replaced. New amenities in Marine Landing should complement larger civic facilities by responding to more specific needs within the neighbourhood context.

IMPLEMENTATION

Complexities around land use policies, lot configurations, ownership considerations and age/condition of buildings in Marine Landing mean that on-site amenities will need to be negotiated as part of the rezoning process. Opportunities will be reviewed on a site-by-site basis to address gaps and deficiencies in program delivery in Marine Landing, as well as new demands as the area builds out over time.

Where feasible, new amenities in Marine Landing will be delivered through developer contributions and secured through the rezoning process. The City's Community Amenity Contribution (CAC) Rezoning Policy outlines eligibility criteria and exemptions which should be considered for each individual site. Where CACs are negotiated, in-kind amenities will be prioritized over cash contributions. Sites identified for non-market or below-market housing are expected to deliver affordable housing as the identified public benefit. Where other sources of funding are available, affordable housing projects will be encouraged to consider inclusion of uses which are complementary to their service models (e.g. childcare or production space associated with social housing for artists). Intensive employment sites should consider uses which support employment clusters, such as childcare or arts and cultural spaces. All sites will be expected to provide an enhanced public realm and/or open space as part of their developments.

PRIORITIZATION

Where opportunities are identified through the rezoning process, delivery of affordable housing will continue to be the main priority, followed by parks and open space, then childcare and culture.

The following criteria should be used to guide and assess opportunities for public benefits on individual sites:

- CAC expectations
- compatibility of proposed uses;
- parcel size and lot configuration;
- land use adjacencies;
- service delivery models/partnerships; and
- funding availability.

The following section provides additional guidance for each type of public benefit.

7.1 Affordable Housing

Increasing the supply of purpose-built market rental housing and non-profit social and co-op housing is a priority for the City. New affordable housing geared to a broad range of household incomes helps diverse individuals and families make a home in this emerging community hub in close proximity to rapid transit.

Marine Landing is currently home to numerous existing social, cooperative and non-profit owned developments which will continue to provide affordable housing in the future. The *Marpole Community Plan* includes a 20% target for social housing on certain large, low-density commercial sites along SW Marine Drive. Many of these identified affordable housing sites may have capacity to accommodate additional social and rental housing through greater heights and densities than anticipated in the Plan.

Considerations for redevelopment sites:

- Prioritize delivery of affordable housing on these sites above any other uses;
- See **Chapter 8: Housing** in the *Marpole Community Plan* for more detailed requirements; and
- Explore opportunities for artist housing in affordable housing developments.

7.2 Parks and Open Space

In 2019, the Park Board approved *VanPlay*, a new master plan to guide park and recreation service delivery. *VanPlay* identified Marpole overall as an area of medium/high park provision at present as well as through 2041. However, it identified park access and urban forest gaps in the southern extents of Marpole, especially in the Marine Landing area. Ash Park is the only park currently serving this rapidly densifying transit hub, with Winona Park just to the north outside of the Marine Landing area. These parks are supplemented with publicly-accessible plazas typically part of larger developments in the area.

Long-standing aspirations from the *Marpole Community Plan* include the addition of a large park at the Fraser River and completion of a continuous waterfront trail. More park and open space is needed in the future to provide an equitable, livable and healthy environment for new residents and workers in Marine Landing.

Park space is still considered a priority in Marine Landing; however, despite sustained efforts to acquire a large riverfront site for parkland in Marpole near the Fraser River, it is unlikely this will happen in the short- or mid-term future. As a result, the *Marine Landing Guidelines* focus on achieving incremental improvements throughout the neighbourhood as opportunities arise. Over time, these efforts will contribute to an interconnected system of parks and open spaces linked to a Fraser River trail. This includes additional open space opportunities in public rights-of-way and on individual development sites. The City continues to explore opportunities for a large riverfront park on the Fraser River near Marpole.

Considerations for redevelopment sites:

- Maximize opportunities for enhanced open space through public realm improvements along site frontages, walking/cycling connections, identified plazas, and GRI assets. See **3. Public Realm** for details.

- Maximize tree retention and planting to support a robust urban tree canopy
- Take a “multiple benefits approach” where feasible, which considers how lands with the primary purpose of transportation, utilities, water management etc., could provide recreational and leisure benefit to the community.
- Provide enhanced access to nature on large sites subject to City’s *Rezoning Policy for Sustainable Large Developments* to improve community health and well-being, create walkable communities, provide habitat, enhance ecosystem, create public open spaces for socializing, provide opportunities to experience nature, and manage rainwater.
- Prioritize on-site, publicly-accessible park or open space on large sites wherever possible. At-grade parks and open spaces not over structure should be prioritized, but other innovative forms may be considered on a case by case basis (e.g. open spaces over structure or elevated parks above industrial floor plates where form of development accommodates proposed park/open space programming needed to meet community demand, and public safety, wayfinding, access and maintenance objectives can be achieved).
- Through continued engagement with Musqueam, enhance and re-establish the foreshore as a functioning ecological system, develop strong heritage preservation measures and determine where access to the Fraser is needed.
- Waterfront street end enhancements should be provided as part of any foreshore sites undergoing redevelopment as identified in **Figure 3** (page 26).

7.3 Childcare

The *Healthy City Strategy* (2014) aims to create a healthy city for all by supporting healthy people, communities, and environments. This cross-agency plan fosters a socially sustainable city through increasing access to community facilities and high-quality programs, and early development opportunities for children.

The *Marpole Community Plan* supports opportunities for delivery of childcare through renewal and replacement of key civic facilities, co-location with other services in major population and employment hubs, partnerships with external agencies, as part of large site redevelopments, and in new developments in the Marine Landing area.

As of 2020, approximately 30% of the 30-year childcare target in Marpole has been met. In Marine Landing, two new childcare facilities (total of 74 spaces) have been built in recent years to achieve the ten year target for this area. One of the two facilities is co-located within the new Marpole Oakridge Family Place which provides a range of programming for families with young children. Despite these efforts, there continues to be a shortfall of childcare spaces in Marpole based on anticipated population and employment growth to 2041. Renewal and addition of affordable housing in Marine Landing beyond the original estimates in the Plan will generate more family units than anticipated, and an increase in overall childcare need. Sites requesting additional heights and densities should consider the addition of new childcare facilities, where feasible.

Considerations for redevelopment sites:

- Prioritize ownership (or long-term lease) held by the City or non-profit organization.
- Seek new in-kind childcare facilities, with large sites as defined in the City’s *Rezoning Policy for Sustainable Large Developments* being key priority sites.
- Co-locate new childcare amenities in new or existing hubs, such as employment clusters

on intensive employment sites, in affordable housing developments, or schools.

- Develop 37-space facilities at a minimum, with preference for larger 74-space facilities to create more sustainable programming models for operators.
- Orient facilities away from major arterials to reduce exposure to constant noise.
- Consider existing and future land use adjacencies to mitigate impacts of heavy industrial uses, such as noxious fumes.
- Locate childcares on building podiums, with indoor and outdoor space oriented away from SW Marine Drive.
- Design facilities in accordance with the City's Childcare Design Guidelines.
- Explore opportunities to integrate City-owned family childcare units into non-market housing projects.

7.4 Arts and Culture

In September 2019, Council approved *Culture|Shift: Blanketing the City in Arts and Culture*, along with the integrated cultural infrastructure plan, *Making Space for Arts and Culture*. Space affordability and displacement are critical challenges facing artists and cultural workers in Vancouver, and are particularly relevant to industrial cultural production spaces. In addressing these challenges, Making Space for Arts and Culture set a 10-year city-wide target of securing 800,000 sq. ft. of cultural space, including 400 units of social housing for artists, and priorities for artist studios and shared production and rehearsal space, and self-determined Musqueam, Squamish and Tsleil-Waututh cultural space. The *Employment Lands and Economy Review* (ELER) further supported the cultural infrastructure plan through identifying new work-only artist studios in industrial zones as a priority quick start action.

Two artist live-work studios have been delivered in Marine Landing as part of a private development.

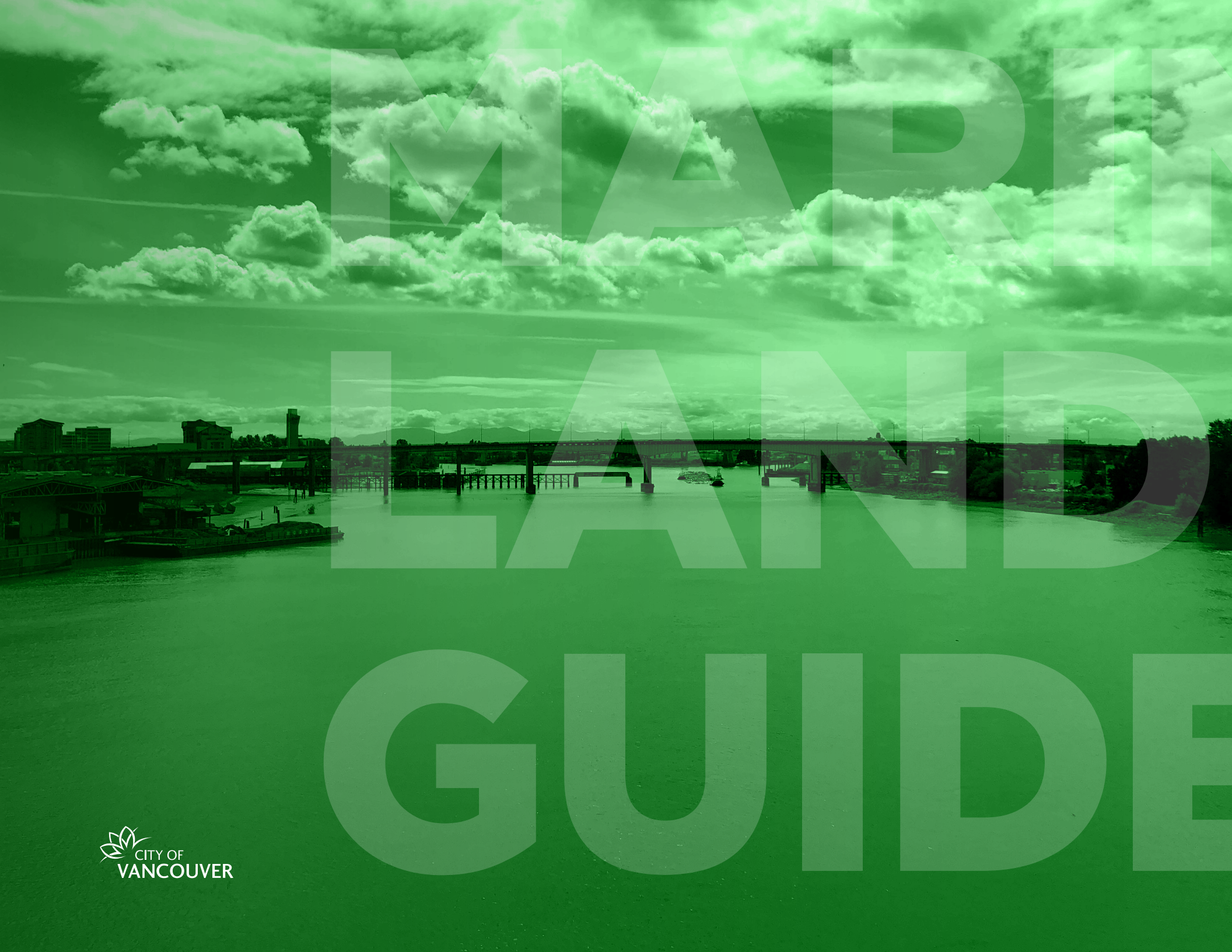
The significant number of intensive employment sites in Marine Landing provide an opportunity to add various arts and cultural spaces.

Considerations for redevelopment sites:

- Explore inclusion of at-grade production spaces on intensive employment sites:
 - Consider light industrial production spaces for Indigenous arts, community arts, dance, interdisciplinary, literary, media, multidisciplinary, music, theatre and visual arts.
 - Prioritize industrial uses such as Class B artist studios and use of premises for the production of:
 - dance or live music involving electronically amplified sound;
 - moving or still photography (excluding video) involving on-site film processing; or
 - paintings, drawings, pottery or sculpture involving the use of fibreglass, epoxy and other toxic or hazardous materials or one or more of the following processes: welding, woodworking, spray painting, silk screening or fired ceramics.
 - Production space should be a minimum of 557 sq. m (6,000 sq. ft.) contiguous space, and ideally 929-1,858 sq. m (10,000-20,000 sq. ft.)
 - Provide minimum clear heights of 3 to 3.7 m (10-12 ft.) to underside of joists, ductwork and sprinklers. Dance and theatre production/rehearsal spaces may require higher clearance.
 - Orient uses to activate street frontages or pedestrian connections through sites
 - Provide direct access to loading, parking, garbage and recycling rooms

to accommodate large equipment, materials and artwork.

- Engage with Musqueam to assess desire for types of self-determined arts and cultural spaces, including but not limited to:
 - Production or rehearsal space, artist studios, gallery and retail uses
 - Outdoor carving pavilion (which may require covering, security and heating)
 - Canoe shed on the Fraser River.
- Explore community use agreements to secure shared spaces and increase affordability for artists.
- Explore opportunities for artist housing in affordable housing developments, subject to funding availability.



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