

R E P O R T

DEVELOPMENT SERVICES DEPARTMENT

To: Members of the New Westminster Design Panel Date: December 8, 2020

From: Michael Watson,
Senior Planner File: REZ00142

Subject: 97 Braid Street – Application Background Presentation and Master Plan Rezoning Submission

RECOMMENDATION

THAT this report be received by the New Westminster Design Panel;

PURPOSE

A revised Master Plan concept has been submitted in support of the rezoning application for a complete, mixed use, sustainable and transit-oriented master planned community called Sapperton Green at 97 Braid St. The proposed Master Plan concept would include up to 4.455 million square feet of residential floor space of mixed tenure including condo, market rental and affordable housing; 750,000 square feet of office commercial floor space; approximately 100,000 to 150,000 square feet of retail commercial floor space; a 35,000 square foot community centre and child care space, parks and publically accessible open space.

More information on the proposal is provided in the project description section of this report and within the applicant's Master Plan Rezoning Submission attached as Appendix B.

The purpose of this report is to provide initial information on the project to the NWDP, so that a more in depth review of the general project principles and the proposed design guidelines can be discussed at a subsequent meeting of the NWDP.

BACKGROUND

Subject Site Characteristics and Context

The subject site is a 38.35 (1,692,307 sq. ft. / 15.72 hectares) acre site which is unique in the region because of its size and adjacency to a variety of transportation infrastructure, as well as its proximity to natural, ecological and recreational amenities.



Figure 1: Site Context / Location

As shown in figure 1 above, the site is strategically located at the south-eastern gateway to the city on the northwest corner of the Braid Street and Brunette Avenue intersection. Brunette Avenue (which leads into the Brunette interchange) abuts the eastern edge of the property. The current primary access to the site is from Rousseau Street which connects to Braid Street, which runs along the southern edge of the site. The site is adjacent to a mix of different uses, including Hume Park, single detached dwellings, commercial service uses, and Brunette River (which is the boundary between the City of New Westminster and the City of Coquitlam).

The Braid SkyTrain station and bus loop are located on the eastern edge of the property. Access to the station and bus loop uses internal access roads. These access roads (Transit Way) bisect a corner of the site, which includes some undeveloped land but is mostly used for warehouses.

Application History

An Official Community Plan Amendment was completed in November 2015 which anticipated development of a projected 3,700 residential units (3.4 million square feet of residential floor space), a large office employment component (750,000 to 1.5 million square feet), and retail commercial (approximately 100,000 to 150,000 square feet), community centre and child care. It was intended that half the residential units (approximately 1,850 units) would be secured market rental units.

In line with the Official Community Plan Amendment adopted, the developer and their consulting team worked in close collaboration with City staff to prepare a Master Plan which would form the basis for the rezoning of the Sapperton Green site. An application for rezoning the site was received in June, 2017. On July 10, 2017, Council received an update report and endorsed the preliminary Master Plan concept and associated principles as the basis for public consultation and processing the rezoning application for the site.

Following Council direction, in February 2020, the applicant has now submitted a revised Master Plan for the Sapperton Green site which provides additional residential density in order to ensure the provision of affordable housing consistent with the City's Inclusionary Housing Policy.

POLICY AND REGULATIONS

Official Community Plan Land Use Designation

The subject site is designated SGTMC – Sapperton Green Transit-Oriented Mixed-Use Community in the Official Community Plan, which is described as:

This area will include a mix of medium to high density residential, office, retail, open space, and public and other community serving facilities in a transit supportive, complete community. The area will support office uses (750,000 sq. ft. floor space minimum to 1,500,000 sq. ft. floor space maximum), residential uses (3,400,000 sq. ft. floor space maximum equating to approximately 3,700 dwelling units and 7,500 residents) and community supportive retail commercial uses (approximately 150,000 sq. ft. floor space). Public and/or private community serving facilities will be provided as appropriate. Floor space for non-profit community serving facilities will be excluded from the maximum floor space allowable. A minimum 15 % of the site will be publicly accessible open space, including plazas, squares, parks, playgrounds and other open areas that are accessible to the public. Emphasis will be placed on active transportation linkages. Building heights will range from three storeys to a maximum of 35 storeys. Development of the site will require a comprehensive Master Plan including Design Guidelines to be created for the entire site prior to any rezoning

of the site. The Master Plan is subject to a public review process. The area is a Development Plan Area; Design Guidelines developed through the Master Plan process will be adopted through rezoning.

The Official Community Plan Amendment Bylaw also designates the subject site a Development Permit Area with Design Guidelines to be further developed and then implemented through the Master Planning process and rezoning. An Official Community Plan amendment is required to update the anticipated floorspace numbers following the addition of inclusionary affordable housing to the site.

Development Permit Areas

Sapperton Green Mixed Use Neighbourhood Development Permit Area

The subject property is designated as part of the [5.2 Sapperton Green Mixed Use Neighbourhood Development Permit Area](#) (DPA). This DPA is designated:

“in order to in order to facilitate the redevelopment of a large site which offers significant opportunities to emphasize transit-orientation and the mixing of residential and employment activities on a single site, with related energy efficiencies and GHG emissions reductions, and to address water and energy conservation objectives in building and landscape design. The redevelopment also provides an opportunity to protect and enhance riparian habitat along the Brunette River and to ensure that flood protection measures for new buildings and structures meet current standards.”

The DPA is established for the following purposes:

- establishment of objectives for the form and character of commercial, mixed use, and multi-family residential development;
- protection of the natural environment, its ecosystems and biological diversity;
- protection of development from flooding of the Brunette River;
- establishment of objectives to promote energy conservation;
- establishment of objectives to promote water conservation; and
- establishment of objectives to promote the reduction of greenhouse gas emissions;

The DPA notes that the Development Permit Area Design Guidelines would be established in the Zoning Bylaw.

Brunette River Natural Features Development Permit Area

The [Brunette River Natural Features](#) Development Permit Area is designated for the area between the subject site and the ecologically sensitive Brunette River. The DPA is designated :

“in order to preserve its valuable aquatic and wildlife habitat while allowing for the continuation of the Brunette Fraser Greenway, and associated trail features.”

This area is designated as a Development Permit Area with the following purposes:

- protection of the natural environment, its ecosystems and biological diversity;
- establishment of objectives to promote energy conservation;
- protection of development from hazardous conditions;
- establishment of objectives for the form and character of commercial, industrial, multi-unit residential and mixed use development.

The DPA is divided into four ‘reaches’ with distinct characteristics and development patterns. The reach adjacent to the subject site is called the ‘Sapperton Reach and is described as follows:

The Sapperton Reach extends from the eastern property boundary of Hume Park to the approximate location of the SkyTrain overpass. The reach condition is defined by the steep embankment (>30%) of the south bank, riffle-glide stream features and availability of instream cover habitat.

- *Opportunities: ecosystem restoration, improvements to the Central Valley Greenway connection, redevelopment of industrial warehouse site, restoration of natural hydrology, development of new recreational amenities.*
- *Constraints: development encroachment into the riparian zone, invasive species, environmental degradation.*

The Brunette River Natural Features Development Permit Area are attached to the report as Appendix A.

Zoning Bylaw

The site is zoned Commercial Industrial Districts (CM-1) which allows a wide variety of retail, office and industrial uses. Residential is not permitted in this district. The proposed master plan does not comply with the existing zoning and a rezoning would be required.

Family-Friendly Housing Bylaw

As per the Family-Friendly Housing Bylaw No. 7741, 2015:

- 1) multi-unit apartment buildings (rental) are required to have a minimum of 25% two-bedroom and three bedroom dwelling units, of which 5% of the total dwelling units shall have three bedrooms or more; and
- 2) multi-unit apartment buildings (strata) are required to have a minimum of 30% two-bedroom and three bedroom dwelling units, of which 10% of the total dwelling units shall have three bedrooms or more.

The proposed development would be required to comply with these family-friendly regulations.

PROJECT DESCRIPTION

The Master Plan for Sapperton Green proposes a complete community that will include a range of housing options including affordable housing, green and open spaces, employment space, neighbourhood-serving retail, and a community centre and daycare. The neighbourhood design minimizes roadways and emphasizes pedestrian and cycling connections including new connections to the Brunette Fraser Greenway and the Braid SkyTrain station.

This master planned community is proposed to include up to 4.455 million square feet of residential floor space of mixed tenure including condo, market rental and affordable housing; 750,000 square feet of office commercial floor space; approximately 100,000 to 150,000 square feet of retail commercial floor space; a 35,000 square foot community centre and child care space, parks and publically accessible open space. If the application is approved, it is expected that the development of the site would occur over 20-30 years.

The proposed Master Plan concept for this site would include:

- a residential floorspace of 390,192 sq. metres (4.2 million sq. ft.) for a projected 4,700 residents, and would include:
 - a minimum of 104,237 sq. metres (1.12 million sq. ft.) of secured market rental housing, and
 - a minimum of 23,690 sq. metres (255,000 sq. ft.) of affordable housing consistent with the [City's Inclusionary Housing Policy](#);
- employment-generating and office floorspace of 69,677 sq. metres (750,000 sq.ft.) to 139,354 sq. metres (1.5 million sq. ft.);
- approximately 9,290 sq. metres to 13, 935 sq. metres (100,000 to 150,000 sq. ft.) of retail commercial floor space;
- recreational amenities including a 3,251 sq. metre (35,000 sq. ft.) community centre and child care facility; and
- 7.9 acres (3.2 hectares) of publicly accessible open space (19% of site area) including:
 - 1.8 acres central park;
 - 3.5 acres of riparian area adjacent to Brunette River;

- 0.75 acre transit plaza; and
- pedestrian corridors, greenways, pocket parks and accesses to Hume Park and Brunette River.

The applicant has provided a draft Master Plan Rezoning Submission which is under detailed review by City staff, and would be used to develop various regulatory documents includes the Development Permit Area Design Guidelines, the Comprehensive Zoning District, policy support documents and legal agreements. The Master Plan Rezoning Submission is attached as Appendix B. Further information on the project is also available on the City's website at www.newwestcity.ca/sappertongreen.

DESIGN CONSIDERATIONS

This meeting of the New Westminster Design Panel is an opportunity for the applicant to present the Master Plan Concept to the Panel and to answer initial questions that the Panel may have.

Given the high volume of content anticipated the applicant would be presenting the updated Development Permit Area Design Guidelines for formal feedback from the NWDP at a subsequent meeting. These guidelines would be distributed several weeks before that meeting to provide the panel with time to thoughtfully review the high amount of content.

As such, staff are recommending that this report be received for information at this time.

Michael Watson,
Senior Planner

Appendix A:

Brunette River Development Permit Area

7.1 BRUNETTE RIVER

INTRODUCTION

The Brunette River area, identified as Development Permit Area 7.1 [see Map 7.0], is designated in order to preserve its valuable aquatic and wildlife habitat while allowing for the continuation of the Brunette Fraser Greenway, and associated trail features.

Flowing southeast from Burnaby Lake to the Fraser River, the Brunette River provides a critical ecological linkage for many of the highest value riparian systems found within Metro Vancouver. The river corridor is recognized as an important site for green infrastructure and biodiversity within Metro Vancouver, where over 20% of the watershed currently exists as protected park, water bodies, wetlands or undeveloped green space. Flowing towards its outlet at the Fraser River, the natural state of the river's riparian edges within New Westminster become more disturbed and impacted by industrial development. As efforts are made towards restoring and protecting important habitat within this urban context, opportunities are also available to implement regional goals the Brunette Fraser Greenway.

Additional guidelines specific to the Sapperton Reach are included in the Brunette River Master Plan | Sapperton Reach (April 5, 2016).

This area is designated as a Development Permit Area with the following purposes:

- protection of the natural environment, its ecosystems and biological diversity (as outlined in the Justification section of this schedule),
- establishment of objectives to promote energy conservation (as outlined in the Justification section of this schedule),
- protection of development from hazardous conditions,
- establishment of objectives for the form and character of commercial, industrial, multi-unit residential and mixed use development.



- Approximate Wetted Width
- Naturalized Zone (10m)
- Transition Zone (10m)
- Activity Zone (up to 20m)
- Urban Improvement Zone (up to 20m)
- Greenway/Trail
- School/Park/Open Space

7.1 BRUNETTE RIVER

GENERAL PRINCIPLES

GENERAL PRINCIPLES

Natural Features are a significant component of the Brunette River corridor, and their protection and enhancement must be considered during land use and development planning.

A more sustainable built form that ultimately adds value to the relationship between the natural and built environment along the river corridor can be created using comprehensive designs facilitated by integrated, multi-disciplinary, professional design teams. The Brunette River Development Permit Area Guidelines reflect best practices in support of the following the following seven principles:

1. GEOTECHNICAL HAZARD MITIGATION

In the case of steep slopes along the bank of the Brunette River corridor, geotechnical stability must be maintained. Geotechnical and slope stability hazards associated with river banks include erosion and landslides.

2. STORMWATER MANAGEMENT

Stormwater management can be used to improve hydrological function, reduce erosion and control runoff within a development site. Management of stormwater within the Brunette River corridor is intended to safeguard human life and property from flood and erosion damage. Best Management Practices for rainwater management can conserve ecological integrity by protecting both significant aquatic species and habitats, and preserve watershed ecological health while allowing development to proceed.

3. HABITAT PROTECTION + ENHANCEMENT

The City of New Westminster has adopted Provincial guidelines for Riparian Area Regulations (RAR), and as a result, all land use planning and development within the city must comply with the Streamside Protection and Enhancement Area (SPEA) established through RAR. Providing habitat protection and enhancement within the Brunette River corridor will protect fish habitat and the ecological integrity and function of riparian areas.

4. CONTAMINATED SITE MANAGEMENT

The majority of the land within the Brunette River corridor has historically been used for industrial uses, and within that, the majority is classed as heavy industry. As sites are redeveloped, reclamation of former industrial sites is crucial to restoring river and riparian ecological health. Managing contaminated sites, including soil, water, sediment and soil vapour contamination will minimize the risk to people, wildlife and pets. The Provincial Contaminated Sites Regulation applies to the entirety of the corridor.

5. URBAN FOREST MANAGEMENT

Through its Urban Forest Management Strategy, the City has targeted a 27% urban forest canopy cover, a 9% increase from 2016, for all publicly and privately owned trees and supporting vegetation within its boundaries. Protecting and enhancing the urban forest within the riparian zone will contribute to carbon sequestration, reduced stormwater runoff and erosion, increased wildlife habitat, climate management and heat island mitigation, improved air quality, improved aesthetics, and improved psychological well-being.

6. RECREATION PLANNING , EDUCATION + INTERPRETATION

As the city continues to grow and densify more pressure will be placed on well-used and well-loved parks, trails and recreation facilities. Providing for recreation, education and interpretation within publicly accessible areas will help promote community engagement in conservation and climate awareness.

7. MANAGING THE DEVELOPMENT INTERFACE

Ecosystem management relates not only to active natural and habitat areas, but requires careful consideration and integration of adjacent development and land uses. Through thoughtful design at the development interface and beyond, habitat quality, stormwater function and hazard mitigation objectives are better supported. Appropriately managing the development interface will to ensure that adjacent environmental values are protected while acknowledging existing land values, land use entitlements and economic objectives.

7.1 BRUNETTE RIVER

GLOSSARY OF TERMS

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Biodiversity: is defined broadly as the variability of life on earth and the ecological processes that support it.

Bioswale: is a constructed stormwater management drainage feature characterized by the use of plant material filter the flow of runoff.

High Water Mark: is the visible mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and include the active floodplain (British Columbia Riparian Areas Regulation Assessment Methods).

Infiltration Gallery: is a stormwater management drainage feature designed to collect and convey stormwater to soil-based storage (aquifer).

Large Woody Debris: a larger tree trunk that has fallen (may also be called downed wood). These features provide shelter, feeding sites, and movement pathways for wildlife.

Pollinator Garden: a garden specifically designed and planted with flowers that provide nectar or pollen to support a range of pollinating insects, such as hoverflies, bees, beetles, wasps, butterflies and moths.

Riparian Areas Regulation (RAR) Assessment: means a report prepared in accordance with the assessment methods to assess the potential impact of a proposed development in a riparian assessment area and which is certified for the purposes of this regulation by a qualified environmental professional.

Standing Wildlife Trees: dead wildlife trees installed at variable spacing, providing important habitat for birds, mammals, amphibians and other organisms.

Stormwater Pond: a body of water that collects and stores urban stormwater runoff. These ponds are designed to mimic the ecological function of naturally occurring ponds or wetlands to manage water quality and prevent downstream flooding.

Streamside Protection and Enhancement Area (SPEA): an area a) adjacent to a stream that links aquatic to terrestrial ecosystems and includes both existing and potential riparian vegetation, and existing and potential adjacent upland vegetation that exerts an influence on the stream and, b) the size of which is determined according to this regulation on the basis of an assessment report provided by a qualified environmental professional in respect of a development proposal (British Columbia Riparian Areas Regulation Assessment Methods).

Top of Bank (ToB): means a) the point closest to the boundary of an active floodplain of a stream where a break in the slope of land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 15 meters measured perpendicularly from the break, and, b) for a floodplain area not contained in a ravine, the edge of the active floodplain of a stream where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 15 meters measured perpendicularly from the edge (British Columbia Riparian Areas Regulation Assessment Methods).

Urban forest: all of the publicly and privately owned trees and supporting vegetation in an urban area.

Wildlife Corridors: a link of wildlife habitat, generally native vegetation, which joins two or more larger areas of similar wildlife habitat. Corridors are critical for the maintenance of ecological processes including allowing for the movement of animals and the continuation of viable populations.

7.1 BRUNETTE RIVER

RIVER REACHES

RIVER REACHES

Individual reaches, defined by biophysical characteristics, as well as current and future land use considerations have been identified (see Figure 1). This Development Permit Area, including the additional detail in the Brunette River Master Plan | Sapperton Reach (April 5, 2016), applied to the Sapperton Reach. In the future, this Development Permit Area will be extend to the remainder of the reaches.

1. HUME PARK REACH

The Hume Park Reach extends from the Columbia Street overpass to the eastern property boundary of Hume Park.

- Opportunities: environmental values protected as park land, relatively intact ecosystem, existing trails, public access.
- Constraints: active flood plain, active park programming.

2. SAPPERTON REACH

The Sapperton Reach extends from the eastern property boundary of Hume Park to the approximate location of the SkyTrain overpass. The reach condition is defined by the steep embankment (>30%) of the south bank, riffle-glide stream features and availability of in-stream cover habitat.

- Opportunities: ecosystem restoration, improvements to the Central Valley Greenway connection, redevelopment of industrial warehouse site, restoration of natural hydrology, development of new recreational amenities.
- Constraints: development encroachment into the riparian zone, invasive species, environmental degradation.

3. BRAID REACH

The Braid Reach extends from the approximate location of the SkyTrain overpass to the Braid Street bridge within the industrial lands.

- Opportunities: redevelopment of industrial uses within riparian zone, restoration of natural ecosystem, connection to the Brunette Fraser Greenway, regional Sky Train connection.
- Constraints: impact from heavy industry, high potential for contaminated soils, timeline for redevelopment unknown.

4. CANFOR REACH

The Canfor Reach extends from the Braid Street bridge within the industrial lands to confluence with the Fraser River.

- Opportunities: redevelopment of industrial uses within riparian zone, restoration of natural ecosystem, connection to the Central Valley Greenway, regional Skytrain connection.
- Constraints: impact from heavy industry, high potential for contaminated soils, timeline for redevelopment unknown.

7.1 BRUNETTE RIVER RIVER REACHES



Figure 1. River Reaches

7.1 BRUNETTE RIVER MANAGEMENT ZONES

7.1.1 MANAGEMENT ZONES

Intent: Four landscape zones are identified to guide ecosystem management and restoration, landscape programming and design.

- **The Naturalized Zone** – *measured from the active river channel to 5m or 10m* (16.4ft or 32.8ft) above/beyond the Top of Bank* – supports biodiversity, allows for wildlife movement and protects slope stability. Split rail fencing should be used to identify the naturalized zone, and to protect the integrity of the ecosystem from encroachment by humans and pets. Minimal recreational trail connections and/or river crossings are permitted where boardwalks and railings are used to limit impact.

*Where the potential for wildlife corridors exist below ToB (defined as a 10m/32.8ft corridor with slope <3:1), the minimum 5m Naturalized Zone is permitted. Where no corridor exists, the Naturalized Zone measures 10m/32.8ft from ToB.

- **The Transition Zone** – *measured as a minimum 5m, and desirably 10m (32.8ft), where feasible, beyond the boundary of the Naturalized Zone* – allows for a more gradual landscape transition from the Naturalized Zone (fenced/protected edge) towards the amenity programming of the Activity/Urban Improvement Zone (permitting more intensive programming and design intervention). The Transition Zone accommodates habitat (edge) improvements, including the placement of coarse woody debris, raptor perches, and landscape plantings selected for both habitat (food/structure) values and aesthetic quality. The Transition Zone also permits the Brunette Fraser Regional Greenway pedestrian/cycle corridor and associated resting areas or viewpoints.

- **The Activity Zone** – *measured as a maximum of 20m (65.6ft) located between the Transition Zone and the Urban Improvement Zone* – allows for more intensive landscape programming in support of adjacent land use objectives, including recreational programming, stormwater management and habitat enhancement (e.g. pollinator gardens). The Brunette Fraser Greenway pedestrian corridor is permitted within this zone. Where residential uses are proposed, naturalized playscapes and community gardens are encouraged, subject to contaminated sites remediation. Where permitted, non-invasive vegetation, such as gardens and ornamental plants, may be planted in containers designed to complement the natural environment.
- **The Urban Improvement Zone** – *measured as a maximum 20m (65.6ft) along the outermost extents of the DPA (opposite the active river channel)* – permits permanent structures (building program) within the Brunette River DPA, subject to architectural design guidelines (in support of DPA objectives).

Figure 2 provides a general outline of the features and permitted uses identified within each Management Zone.

7.1 BRUNETTE RIVER MANAGEMENT ZONES

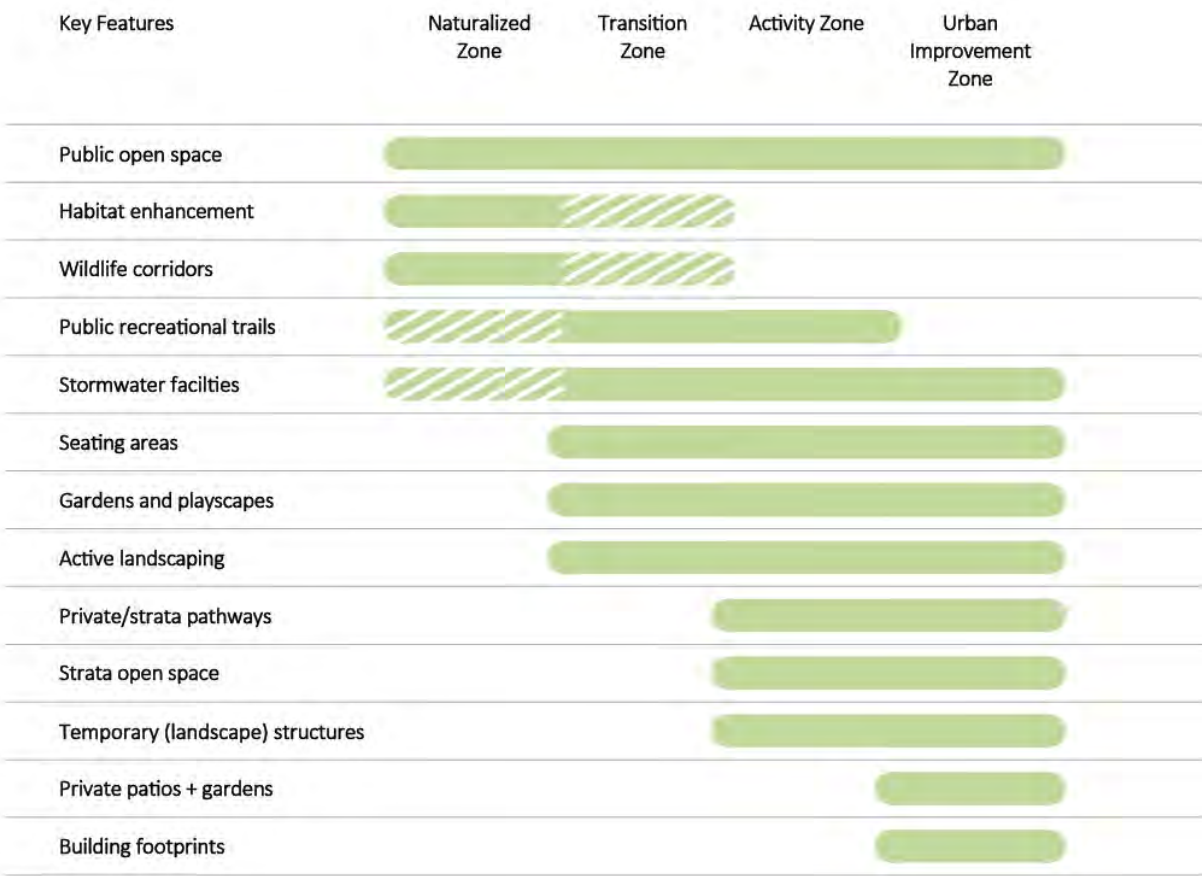


Figure 2. Example Features, Permitted Uses and Management Zones

7.1 BRUNETTE RIVER

GEOTECHNICAL HAZARD + STORMWATER MANAGEMENT

7.1.2 GEOTECHNICAL HAZARD

Intent: RAR requires consideration for various measures that protect the integrity of the SPEA. In the case of steep slopes along the bank of the Brunette River corridor, geotechnical stability must be maintained to ensure no slope instabilities impact the SPEA.

- **Geotechnical Setback** | Conform to the generalized Geotechnical Setback of 5m (16.4ft) from the Top of Bank or 3:1 from the Toe of Slope, whichever is greater. The generalized setback can be varied upon completion of a site specific detailed assessment by a Professional Geotechnical Engineer.
- **Bank Stabilization** | Where steep/unstable slopes occur, additional stabilization measures may be required as per the recommendation of a Geotechnical Engineer. Where stabilization is impractical, an additional setback area of 5 to 10m (16.4ft - 32.8ft) may be required.
- **Forest restoration** | Natural forest should be restored as a means to stabilize the bank, slow stormwater runoff and reduce erosion.

7.1.3 STORMWATER MANAGEMENT

Intent: Redevelopment near the Brunette River proves an opportunity to restore hydrological function to heavily manipulated landscapes and mitigate geotechnical or flood hazard within the riparian area. Towards this end, DPA objectives including controlling stormwater quality, erosion and flood protection within the Brunette River corridor.

- **Permeable Surfaces** | All development and hardscaping should be designed to minimize impermeable surfaces. Where use of impermeable materials cannot be avoided, all runoff should be directed towards stormwater management infrastructure (infiltration galleries, bioswales, stormwater ponds etc).
- **Low Impact Design** | Low Impact Development techniques should be used to minimize stormwater runoff. All runoff should be directed towards low impact (green) stormwater management infrastructure, such as infiltration galleries, bioswales, stormwater ponds etc. Reducing, slowing and cleaning stormwater discharges naturally improves both ecological and economic outcomes compared with using piped systems.

- **Stormwater Facilities** | Where appropriate, incorporate stormwater management facilities to control volume, rates and quality of stormwater runoff into the Brunette River, while creating landscape features, where approved by a geotechnical engineer. Appropriate plantings should be selected for functionality, low maintenance and considered in light of habitat enhancement objectives.
- **Hydrological Function** | Pre-development hydrological function should be restored and new development should address stormwater quantity, quality, reuse and infiltration. Stormwater should be captured as close to where it falls as practical, and concentrated runoff should be avoided.
- **Integrated Stormwater Management Planning** | New development should achieve the Integrated Stormwater Management Plan (ISMP) targets within site programming and design.



Landscape features can minimize stormwater runoff.

7.1 BRUNETTE RIVER

HABITAT PROTECTION AND ENHANCEMENT

7.1.4 HABITAT PROTECTION + ENHANCEMENT

Intent: While maintaining healthy aquatic and riparian habitat is a primary goal of RAR, streamside setbacks provide the additional value of helping to protect wildlife passage and habitat for species at risk, encouraging urban forest cover, and fostering opportunities for recreational use.

- **Environmental Assessment** | Submit a study by a Qualified Environmental Professional (QEP) that identifies sensitive habitats or species at risk, and mitigation measures.
- **Habitat Diversity** | Consider appropriate habitat enhancement measures – including but not limited to: understory enhancement and/or pollinator plantings, wildlife trees and Large Woody Debris (LWD), nesting boxes, and/or raptor perches – according to objectives of each Management Zone. Habitat enhancement should be focused within the Naturalized Zone, and supported throughout adjacent Zones.
- **Invasive Plant Species Management** | Invasive plant species that dominate large tracts of the Brunette River Corridor, primarily represented by Himalayan blackberry and Japanese knotweed, should be removed using the appropriate method.
- **Tree Planting** | All areas treated for invasive species should be replanted with a mix of native tree species. Densities should target 400-800 stems/ha within the Naturalized Zone, and include both native conifer and deciduous species. Tree Planting plans should consider urban forest management objectives. Tree planning within the Transition, Activity and Urban Improvement Zones should be appropriate to the objectives within each respective zone.
- **Large Woody Debris** | Within the Naturalized and Transition Zones, large tree trunks that have fallen, often called downed or coarse wood, that provide shelter, feeding sites, and movement pathways for wildlife should be retained and reintroduced. These large trees also act as nurse logs for plants, add organic matter and nutrients to the soil, and help to stabilize slopes, reduce erosion, and control sediment runoff.

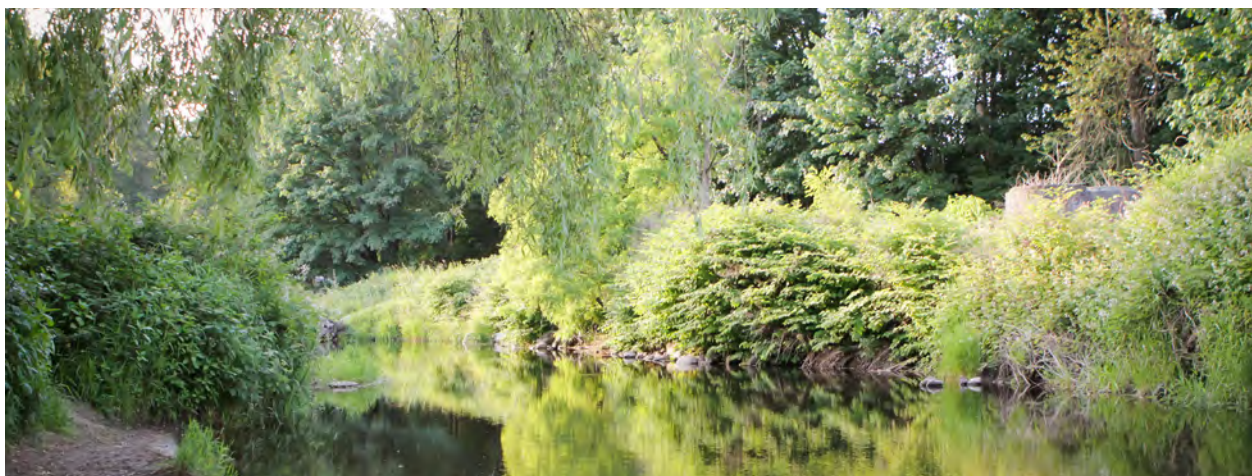


Choose plants that are appropriate for the area.

7.1 BRUNETTE RIVER

HABITAT PROTECTION AND ENHANCEMENT

- **Standing Wildlife Trees** | Planted wildlife trees or standing trees should be installed within the Naturalized and Transition Zones where opportunities present, as important habitat features for birds, mammals, amphibians and other organisms. Wildlife trees provide forage, roosting and nesting sites for a diversity of bird species, as well as providing a source of organic nutrient inputs. Consider the following:
 - Large conifers tend to decay less quickly than deciduous trees; however, a variety of species should be used to provide a range of micro-habitats.
 - One third to one half the length of a wildlife tree should be buried to ensure stability.
 - Trees should be placed leaning away from structures and people.
 - Logs should be a minimum of 40cm (15.7in) in diameter and 6 m (19.7ft) long.
 - Wildlife trees should be installed at variable spacing (single trees no closer than 10m/32.8ft apart) and in clusters (several trees grouped together).
- **Raptor Perches and Nest Sites** | Consider installing raptor perches along the forest edge and in habitat islands within the Naturalized and Transition Zones, at heights that exceed the natural canopy height (30-40m/98.4ft-131.2ft). Raptors have a preference for perching above hunting areas; open spaces, meadow habitat and wetland areas provide good habitat for prey. Perches can be metal or wood poles with a perch/nesting structure at the top.
- **Wildlife Corridors** | Wildlife corridors within the Naturalized Zone should be protected, in addition to the legislated RAR setback which focuses on protecting fish and fish habitat. The minimum natural area setback for functional wildlife movement is 30m (98.4ft), but ideally it is 50 – 100m (164-328ft). Accommodate wildlife movement within the Naturalized Zone where the active flood plain is wide and flat. Otherwise, a wildlife corridor of 15m (49ft) is measured from the top of bank.
- **Species at Risk** | Identify species at risk and develop habitat protection and enhancement strategies in conjunction with a Registered Professional Biologist (RPBio) in light of known ecological communities and species at risk, including but not limited to: Nooksack Dace (Chehalis lineage), Painted Turtle (Pacific Coast population), Great Blue Heron, and the Black cottonwood-red alder/salmonberry, Western redcedar/three-leaved foamflower, Western redcedar /swordfern Dry Maritime forest types.



Brunette River.

7.1 BRUNETTE RIVER

CONTAMINATED SITE MANAGEMENT AND URBAN FOREST MANAGEMENT

7.1.5 CONTAMINATED SITE MANAGEMENT

Intent With a long history of industrial use along the length of the Brunette River, reclamation of former industrial sites is crucial to restoring river and riparian ecological health.

- **Contaminated Soils** | Apply the Provincial Contaminated Sites Regulation to the entirety of the corridor.

7.1.6 URBAN FOREST MANAGEMENT

Intent: The New Westminster Urban Forest Management Strategy provides guidance for improving the environmental, social and economic health of the city through increasing forest cover.

- **Canopy Cover** | Existing canopy cover should be protected, impervious surfaces minimized, and soil volume available for tree planting maximized. Where appropriate, trees should be planted within all management zones, but opportunities for enhancement of riparian values may be most concentrated within the Naturalized Zone.
- **Tree Protection** | Healthy trees outside the development footprint, immediately prior to and during redevelopment, should be retained under the direction of a Registered Professional Arborist. If trees need to be removed, they should be replaced with native tree species that contribute to habitat enhancement objectives. The Tree Bylaw requirements must be met.
- **Specimen Variety** | Urban forest diversity should be improved by planting no more than 10% of any species, 20% of any genus and 30% of any family.



Tree planting.

7.1 BRUNETTE RIVER

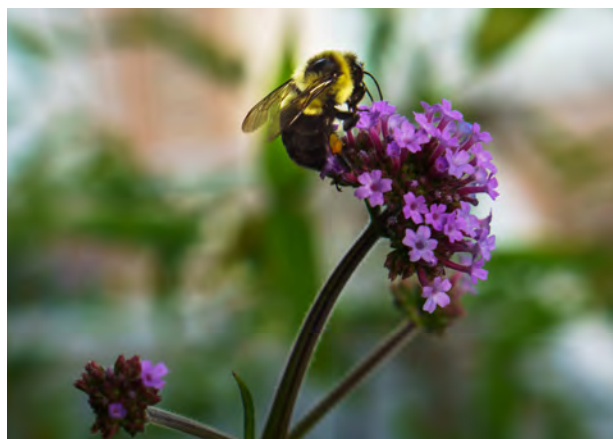
RECREATION PLANNING, EDUCATION + INTERPRETATION

7.1.7 RECREATION PLANNING, EDUCATION + INTERPRETATION

Intent: Beyond the recreational and experiential value of linear parks, interpretive signage along the Brunette River corridor provides an opportunity reveal more specific values and functions of the riparian edge along its length. Community stewardship projects and interpretive programs provide opportunities for more dynamic involvement of citizens with benefits reaching beyond social engagement to greater mental and physical well-being associated with volunteerism.

- **Recreational Corridor** | The regional goal for a major green corridor linking the Fraser River and Burnaby Lake Park should be realized. This nature-oriented corridor has been recognized and is recommended for enhancement within regional biodiversity and green infrastructure planning initiatives. Target a minimum 4m (13.1ft) wide pathway with a minimum 0.5m (1.6ft) horizontal clearance on each side.
- **Playscapes** | Play spaces within the Activity Zone, should provide opportunities for logs, boulders and other natural materials to form the basis of play structures.
- **Gardens** | Pollinator and community gardens within the Activity Zone, with an emphasis on using natural landscape materials, are encouraged.

- **Viewpoints** | Construct viewpoint opportunities for viewing wildlife and scenery, landscape features or other points of interest along portions of the river. Where viewpoints and river crossings encroach into the Naturalized Zone, use boardwalks and fencing to prevent impact into the natural ecosystem.
- **Signage** | Ensure that areas set aside for conservation, protection and enhancement are supported through interpretive signage and ecosystem information including tools for living in and around sensitive habitats and ecosystems. Educational signage can also be used to reinforce the rationale related to the exclusion of people and pets from naturalized areas. Signage should be designed in keeping with the natural aesthetic of the riparian area and its landscaping. Signage should also reflect the history of the Brunette River corridor, its context within an urbanizing watershed, and its changing use over time.



Pollinators are encouraged.



Opportunities for community stewardship are supported.

7.1 BRUNETTE RIVER

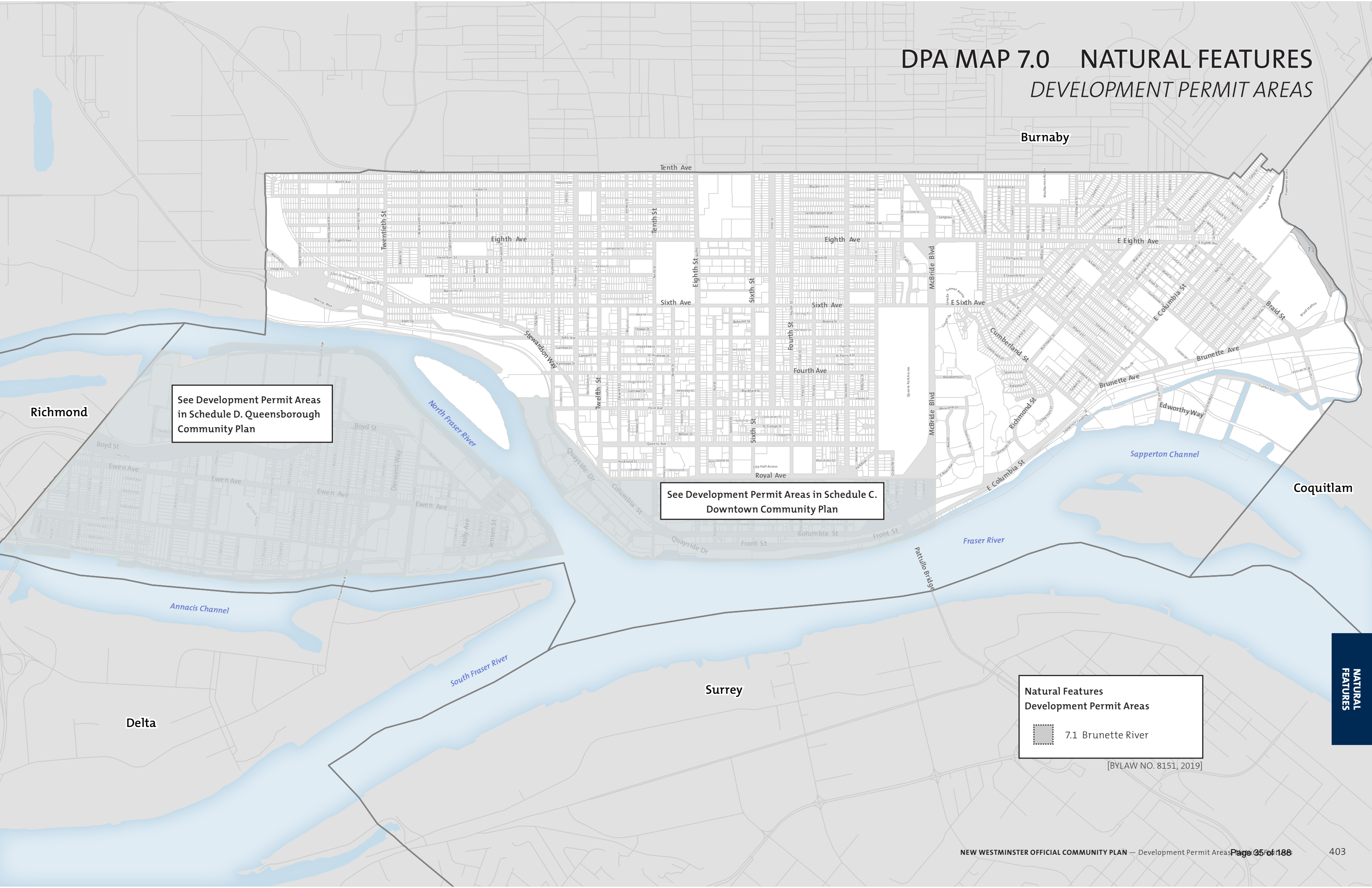
MANAGING THE DEVELOPMENT INTERFACE

7.1.8 MANAGING THE DEVELOPMENT INTERFACE

Intent: Ecosystem management relates not only to active natural and habitat areas, but requires careful consideration and integration of adjacent development and land uses. Through thoughtful building and site design at the development interface and beyond, habitat quality, stormwater function and hazard mitigation objectives are better supported.

- **Buildings** | Buildings and structures are only permitted within the Urban Improvement Zone, and gradual landscape transitions to naturalized habitat should be maximized, to the greatest extent feasible
- **Native Vegetation** | Target the use of at least 50% native plants in landscaping and gardens within the Urban Improvement and Activity Zones, 75% within the Transition Zone, and 100% within the Naturalized Zone. Landscaping with native plants has dual benefits of reducing demand for potable water and increasing infiltration of rainwater.
- **Awareness** | Awareness and stewardship of wildlife habitat and conservation goals should be promoted. Signage can be used to remind and educate residents, employees and the public of adjacent ecological values, and potential for wildlife conflict.
- **Public / Private Interface** | A well landscaped hierarchy of public, semi-public and private green spaces (natural features, gardens, courtyards and patios) should be provided. High quality landscaping within the Active and Urban Improvement Zones should be provided as means to provide buffers and visually soften development edges, and also to improve air quality and moderate temperature.
- **Landscape Buffers** | Planting of landscape buffers should be used mitigate negative impacts to river health from spills of deleterious materials from industrial activities. These may include visual screening of industrial and transportation activities, parking areas and utilities. Planting of additional trees also helps to achieve tree canopy targets.
- **Cohesiveness** | A smooth physical and programmatic transition between Management Zones should be achieved. Zone boundaries should not be delineated with built materials and should utilize same or similar and/or gradual ascending or descending arrangements of landscape elements with varying textures, forms, and colors. Habitat enhancement should be considered in light of objectives of each Management Zone, where such efforts are concentrated within the Naturalized Zone and expanded, as appropriate, into adjacent Zones.
- **Access** | Where appropriate and where in support of regional recreation and transportation objectives, enable access to, and movement throughout the site, except in the case of the Naturalized Zone where human and pet access is prohibited. Special provisions can be made to allow access through the Naturalized Zone (in particular for designated river crossings or to provide viewing platforms) under the direction of a Qualified Environmental Professional.
- **Energy Conservation** | Energy conservation measures should be employed in the design and construction of all buildings, including considerations for massing, shading and glazing.
- **Water Conservation** | Water conservation measures should be employed in the design and construction of all buildings and landscaping, including low flow fixtures, rainwater capture, greywater re-use (where possible) and native plantings.
- **Site Permeability** | Continuous horizontal and vertical building facades adjacent to public spaces should be minimized wherever possible. Permeable and welcoming open space should be created within the Transition, Activity and Urban Improvement Zones, and connect beyond the site.
- **Architectural Design** | Architectural design which complements the natural setting and features (riparian habitat, creek corridor, natural vegetation and wildlife trees) should be implemented.

DPA MAP 7.0 NATURAL FEATURES
DEVELOPMENT PERMIT AREAS



See Development Permit Areas
in Schedule D. Queensborough
Community Plan

See Development Permit Areas in Schedule C.
Downtown Community Plan

Natural Features
Development Permit Areas

 7.1 Brunette River

[BYLAW NO. 8151, 2019]

Appendix B:

Applicant Master Plan Rezoning Submission

An architectural rendering of a city street scene. The street is lined with tall, modern buildings. In the center, there are several trees and a small structure. The sky is dark and cloudy. The overall style is a detailed line drawing with some color washes.

SAPPERTON GREEN

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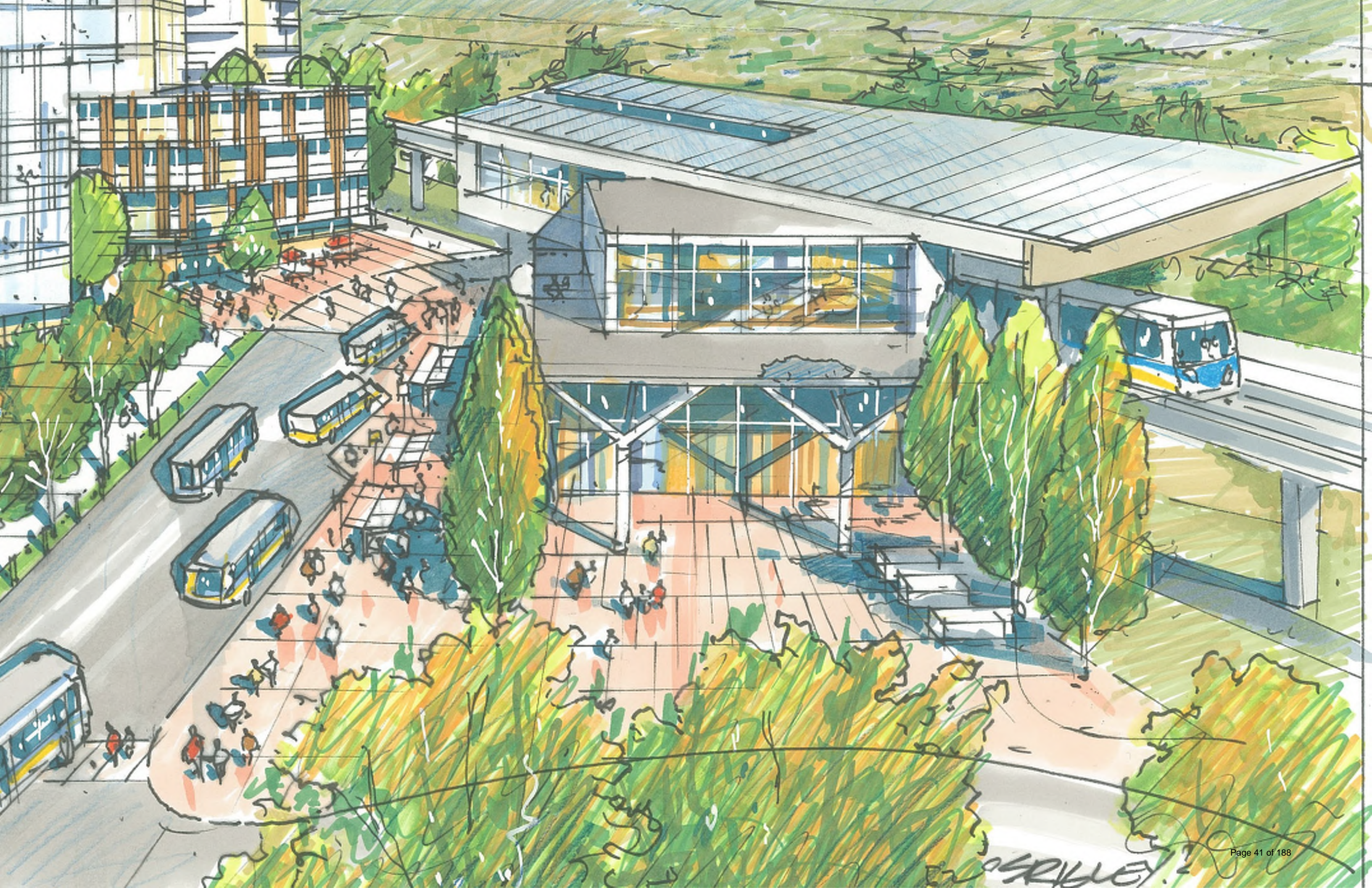
ACKNOWLEDGEMENT

ABOUT QUADREAL

PROJECT TEAM

INTRODUCTION





SITE HISTORY

Over ten thousand years ago, at the end of the last ice age, the great ice sheet receded and opened British Columbia's coastal region for human habitation and activity. Archeological evidence suggests that the ancestors of today's Native Peoples lived, hunted, and gathered materials and supplies in British Columbia from then on. Over time the region's indigenous population became greatly diversified as people adapted to varied natural environments.

The Lower Mainland is the traditional territory of the Coast Salish peoples. The Fraser River and its many tributaries including the Brunette River, are of significant importance to Indigenous Peoples traditionally serving as transportation routes, hunting and fishing grounds.

Archeological evidence points to the Coast Salish peoples coming to the area now known as New Westminster and Coquitlam to hunt deer, elk, seals, salmon and other fish in spring and early summer.



6.1 Women and Children in a dugout canoe in the Fraser River (1890)



6.2 Nuu-chah-nulth (Nootka) women weaving baskets



6.3 Musqueam men in long canoe on river

Sapperton has a long history dating back to early European settlement in the region more than 150 years ago. Sapperton's name originates from the term 'sapper' which was the nickname for the Royal Engineers, who lived in the region in 1858.

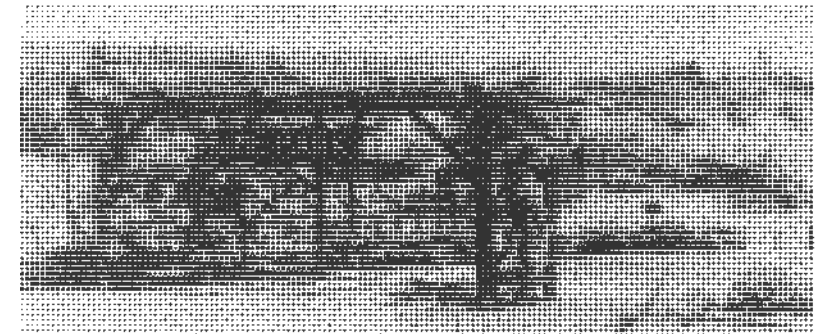
Sapperton officially became a part of New Westminster in 1889 and was still home to many of the Royal Engineers who settled in the area after the detachment was disbanded in 1863.

Years ago, when it was proposed that real estate would sell better if the community changed its name to North Westminster, the change was met with strong disapproval and the name Sapperton was quickly returned.

Historically, the Sapperton community was home to a number of industrial businesses dealing with meat packing, brewing and distilling. The Sapperton Green site is no exception as it was originally home to the B.C. Distillery. A major employer in the community, the distillery's payroll was one of the highest in B.C.

Land that now forms neighbouring Hume Park was acquired from the distillery in 1912. Originally called Brunette Park, given its location adjacent to the Brunette River, the park was renamed for Mayor Fred Hume who proposed a more formal park on the site in the 1930's.

Over time the industrial nature of the site changed and the Woodward's Warehouses were established. Currently, the site is home to a distribution centre, developed in the 1980's prior to the introduction of the Braid SkyTrain Station in 2004.



6.4 Hume Park Entry (1912)



6.5 Brunette River



6.6 Picnic at the Brunette Creek Bridge (1896)



6.7 Heritage Mouth of Brunette Creek (1917)



6.8 Sapperton (1914)

SITE CONTEXT

Site Characteristics and Surrounding Context

Sapperton Green is a 38.52-acre site uniquely situated in New Westminster and in the region due to its proximity to a range of transportation infrastructure, natural and recreational amenities, and its location at the north eastern gateway to New Westminster.

The Brunette River to the north of the property, separated by a steep, heavily treed bank, provides a naturalistic edge. Public trails and pathways on this edge provide activity and connect the riverbank to the east and west.

These trails transition into a continuation of the Central Valley Greenway and the Brunette Greenway at the boundary between the site and Hume Park to the west. Proximity of the site to a major interchange with Highway 1 provides a gateway opportunity for the neighbourhood supported and reinforced by the Braid SkyTrain Station and the bus loop at the edge of the site.

To the west and southwest of the site is an enclave of single-family residential properties. The southern boundary of the site, across Braid Street, is traditionally an industrial area that is seeing mixed-use development per changes introduced in the City’s OCP update from 2017. Urban Academy, a private school, is located in this area with mixed-use development expected in the coming years.

The area east of the site, across Brunette Avenue, is industrial and extends to the City of New Westminster border with the City of Coquitlam. The presence of heavy rail and other transportation infrastructure aligns with this industrial character.

Neighbourhood Context

Sapperton is one of New Westminster’s most distinct neighbourhoods. It is located at the eastern edge of the city adjacent to High-

way 1. The neighbourhood is well served by rapid transit with two SkyTrain stations – Sapperton and Braid Stations. The Central Valley Greenway, which snakes along the Brunette River and Sapperton’s eastern edge, provides bicycle connections to the region.

Neighbourhood Statistics

The Sapperton neighbourhood makes up 8.3% of the City’s population. Between 2011 and 2016, Sapperton’s population increased 4.4%, while the citywide population increased 7.6%. The number of families with children in Sapperton increased 21% between 2011 and 2016. Sapperton is home to more children aged 0 to 4 as well as adults aged 35 to 49 per capita than the rest of the City.

Sapperton is predominantly a neighbourhood of single family dwellings where 26% of homes are single-detached homes compared to 15% citywide. The proportion of owners and renters in Sapperton is 56% to 44%, respectively and is the same as the City’s mix. Common occupations in Sapperton are business, finance, administration, health care and related services.

Royal Columbian Hospital, RCH

Sapperton is home to one of the City’s largest employers, the Royal Columbian Hospital, RCH. The Regional Growth Strategy recognizes Special Employment Areas around hospitals and the City of New Westminster’s Official Community Plan (updated in 2017) reflects this, recognizing the significant role the hospital plays in contributing to local economic activity. The goal is to encourage office development within a five-minute walk of the hospital.

Supportive adjacent uses, such as multi-unit residential, commercial and retail uses, are also encouraged. Royal Columbia Hospital is currently undergoing improvements and an expansion that will have a significant impact on the neighbourhood and the city with

new facilities, additional beds, and expanded support services. Three phases of improvements will take place starting in 2016 and are projected to be completed in 2024. The hospital expansion is expected to generate thousands of new direct and supplier jobs. Based on the City’s own estimations, the Sapperton area is projected to experience an increase of over 5,000 new jobs, including 2,500 additional jobs at the Royal Columbian Hospital as well as 5,500 new residents by 2045.



7.1 Knox Presbyterian Church



7.2 Braid Station



7.3 Residential Neighbourhood Beside Hume Park



7.4 Brunette River



7.5 Central Valley Greenway



7.6 Hume Park

SITE CONTEXT



SITE INFORMATION

Legal Address:

LOT 1, DISTRICT LOT 1, NEW WEST DISTRICT, PLAN BCP44916
SUBURBAN BLOCK 1, SUB 2
PID: 028-225-635

Site Size:

36.82 acres

Current Zoning:

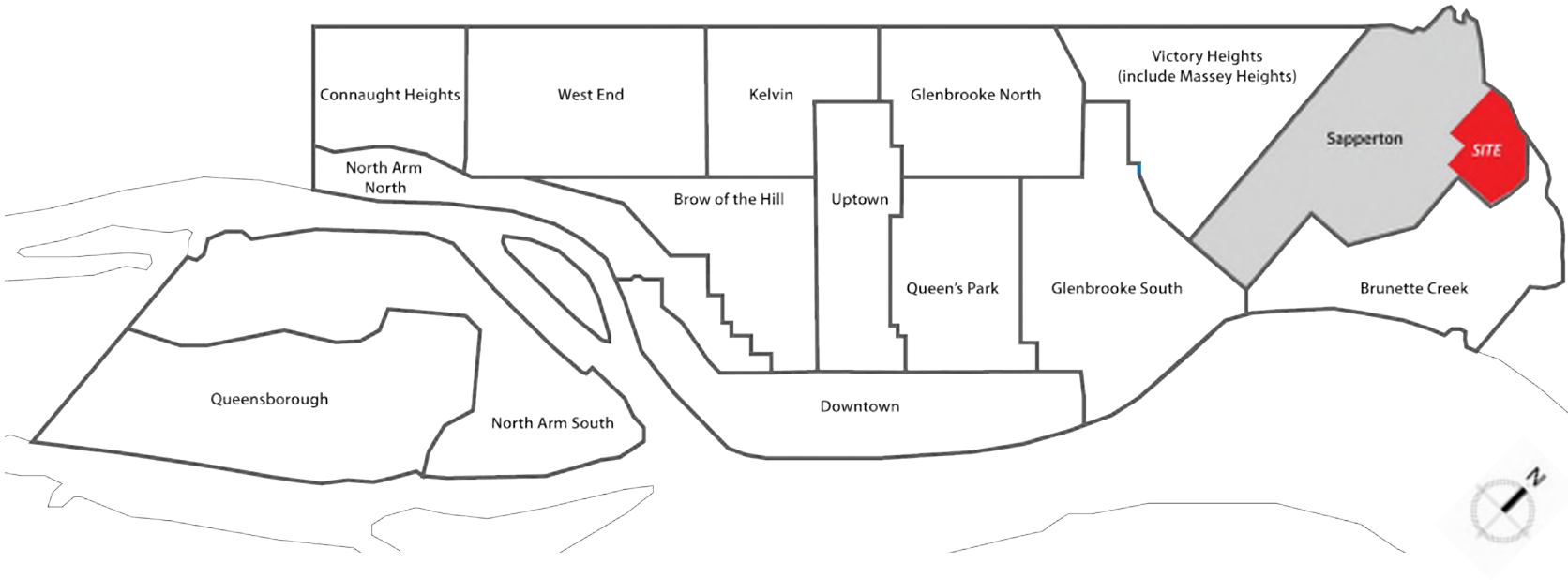
Commercial Industrial Districts (CM-1)

OCP Designation:

Sapperton Green Transit-Oriented Mixed-Use Community (SGTMC)

Existing Uses:

694,394 square feet of Commercial Industrial Uses
584,094 square feet – Warehouse / Distribution



SITE INFORMATION

REGIONAL PLANS, POLICIES, MUNICIPAL POLICIES, AND STRATEGIES

Metro Vancouver Regional Growth Strategy (2010)

The Regional Growth Strategy (RGS) provides the land-use policies that guide future development in the region. The site is designated General Urban, which are areas “intended for residential neighbourhoods and centres, and are supported by shopping, services, institutions, recreational facilities and parks.”The RGS encourages the development of complete communities that provide a diverse range of housing options, employment opportunities, community amenities and support for different modes of transportation (i.e. walking, cycling, transit).

City of New Westminster Regional Context Statement - Official Community Plan (2014)

The site is designated General Urban and located within a Frequent Transit Development Area, within which growth and development is encouraged to be concentrated to take advantage of the proximity to rapid transit.

Affordable Housing Policy (2010)

Adopted by Council in 2010, the Affordable Housing Strategy enables the City to develop policies and tools to promote housing affordability throughout the city. The Strategy focuses primarily on permanent housing, emphasizing the City of New Westminster’s role as a facilitator in the development of affordable housing through the private market.

Family Friendly Housing Policy (2016)

Council implemented the Family Friendly Housing Policy in 2016 to improve housing affordability for families by increasing the supply of two - three bedroom units in new multi-family ownership and rental projects. In addition to bedroom composition, the policy mandates specific design guidelines to ensure units meet basic livability standards for occupants. By attracting new families and

retaining existing ones, the City of New Westminster intends to improve the diversity of its residents.

Secured Market Rental Housing Policy (2013)

The Secured Market Rental Housing Policy, adopted by Council in 2013, seeks to retain, renew, and encourage the development of secured rental housing. Through a variety of regulatory and financial tools the policy will increase the supply of market rental housing and ensure security of tenure over time. As noted in the policy, “a secure and robust stock of rental housing contributes to the social diversity and economic health of the City, and to the development of community sustainability.”

Inclusionary Housing Policy (2019)

The intent of the policy is to increase the supply of new affordable rental housing in the city. The policy requires new strata residential and mixed-use residential rezoning applications to include a percentage of below or non-market rental housing units. Three options for the delivery of affordable housing are available for developers, ranging from the delivery of 5% to 20% of units as below or non-market rental.

In addition, the policy outlines rental rates, unit sizes and unit mix, and what incentives may be available to developers. Affordable housing units will be owned and / or managed by either a non-profit housing provider or BC Housing to ensure the units reach the intended tenants based on income.

While the policy does not apply to Sapperton Green, the affordable housing provided at Sapperton Green is guided by the intentions of this policy.

Livable City Strategy (2008)

Adopted in 2008, the Livable City Strategy is a guiding document for the City of New Westminster that informs economic growth and development. The Plan outlines goals and actions to identify the City’s key industries, building a strategy around them to stimulate the local economy and strengthen its position within the region. In achieving these economic goals, the City of New Westminster will develop the necessary tools and resources to improve the health and vitality of its communities and continue down a path of sustainability.

IDEA Centre

Originated in 2015, Innovation, Discovery, Education and Advancement (IDEA) - formerly known as the Economic Health Care Cluster, is the name given to the health-care district surrounding the Royal Columbian Hospital in New Westminster. The Royal Columbia Hospital will be expanding over the next 5 to 10 years and IDEA has been given the task of leveraging the economic potential of the cluster. The main objective of IDEA is to consult and guide City Council on an economic strategy and implementation plan for this area.

Community Energy and Emissions Plan (2011)

As part of the City’s mandate to reduce its carbon footprint, the Community Energy and Emissions Plan is a policy strategy created for the purpose of energy conservation and reducing our carbon footprint. In practice this means maximizing sustainable transportation modes, diversifying energy supplies, reducing reliance on fossil fuels, and building energy efficient dwellings using modern technology, such as District Energy Systems. With the increasing threat of climate change, this policy works to reduce its impact by creating livable, sustainably-oriented communities for the foreseeable future.

SITE INFORMATION

REGIONAL PLANS, POLICIES, MUNICIPAL POLICIES, AND STRATEGIES

Envision 2032 (2013)

Adopted May 2013, Envision 2032 is the City’s sustainability framework that informs and guides City activities in the future, including plans, policies, projects and practices, using a sustainability lens. Envision 2032 identifies four action areas, or pillars, in its Sustainability Lens, wherein the City advances sustainability through catalyst projects and initiatives. The four pillars are: Community Livability and Social Equity, Arts and Culture, Environmental Leadership, and a vibrant Economy.

Citywide Integrated Stormwater Management Plan (2017)

The Citywide Integrated Stormwater Management Plan, developed in 2017, is a strategy designed to help manage stormwater runoff, issues of water quality and quantity, and watershed enhancement. Through the investment of green infrastructure on public and private property, the City of New Westminster seeks to make critical steps in protecting the environment through water conservation, while encouraging recreational water uses.

Master Transportation Plan (2015)

The City of New Westminster’s Master Transportation Plan was developed in 2015 through consultation with local residents and provides guidance for transportation policies, priorities, and investments for the next 25 years to achieve multi-modal balance in the transportation system. The policy ensures each element of the transportation network operates at peak efficiency and includes improvements to walking, cycling, transit, regional goods movement, and reducing negative impacts of vehicular traffic.

Sapperton and Massey-Victory Heights Transportation Plan (2018)

The plan addresses the Sapperton-McBride and Massey-Victory

Heights neighbourhoods, an area where a substantial amount of development is currently taking place and planned to take place. Taking into account the substantial amount of future development and the already challenged existing network, the Plan aims to implement the following improvements, based on public feedback

1. Traffic Calming Improvements
2. Intersection and Roadway Improvements
3. Improved Parking Management
4. Bicycle and Pedestrian Improvements
5. Transit Improvements

In line with the City’s Master Transportation Plan, the Sapperton/Massey-Victory Heights Transportation Plan aims to enhance the multimodal transportation system throughout the area, and provide better travel mode choices and improvements that can be sustained for years to come. While some local solutions such as traffic calming measures can be implemented, it is recognized that a regional solution is necessary to reduce the traffic burden on the area.

Our city 2041 - official community plan (updated 2019)

Approved in 2017 and updated in 2019, the Official Community Plan was the result of three years of public consultation and policy work. The Plan provides a renewed vision for the long-term success of the city, providing the regulatory foundation for building well-connected, vibrant neighbourhoods throughout New Westminster.

Climate Emergency - 7 Bold Steps

After declaring a climate emergency in 2019, the City of New Westminster put forward its 7 Bold Steps for Climate Action. They include the following:

- Carbon Free Corporation

- Car Light Community
- Carbon Free Homes and Buildings
- Pollution Free Vehicles
- Carbon Free Energy
- Robust Urban Forest
- Quality People-Centred Public Space

Brunette River Master Plan I Sapperton Reach (2016)

The Master Plan serves as the guide to land use planning, protection and enhancement of the areas of the Brunette River corridor that fall within the New Westminster municipal boundary. The Master Plan establishes a Development Permit Area (DPA) for the river’s riparian area which provides guidance for development, landscaping and recreational uses within the sensitive riparian area.

Sapperton Renewable District Energy System – Developing a Clean, Low-Carbon Neighbourhood Energy System in Sapperton

The City of New Westminster has identified the Sapperton Neighbourhood as a primary location for a neighbourhood energy system thanks to substantial new development taking place there. With the system “anchored” by RCH, it would connect to the new community at Sapperton Green and other new developments along East Columbia Street, with opportunities to connect existing buildings as internal building infrastructure is upgraded – overall a 50+ hectare area. The City’s goal is to help ‘future proof’ the community, making it more robust to handle a changing global climate while also supporting multiple objectives associated with creating a more robust, sustainable and diversified economy.



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Sapperton
Green

Master Plan

April
2020

Introduction

RELATIONSHIP TO THE OFFICIAL COMMUNITY PLAN

Our City 2041

Starting in 2014, the City of New Westminster undertook a comprehensive review of its Official Community Plan (OCP) to ensure the document is able to meet the needs of the city and its residents now and in the future. The result of three years of policy and public engagement work, the updated OCP, titled Our City 2041, was approved by City Council in 2017. It provides direction for growth and development taking into account the changing character of each neighbourhood and provides a renewed vision for the long-term success of the City providing the regulatory foundation for building vibrant, well-connected communities throughout the City of New Westminster.

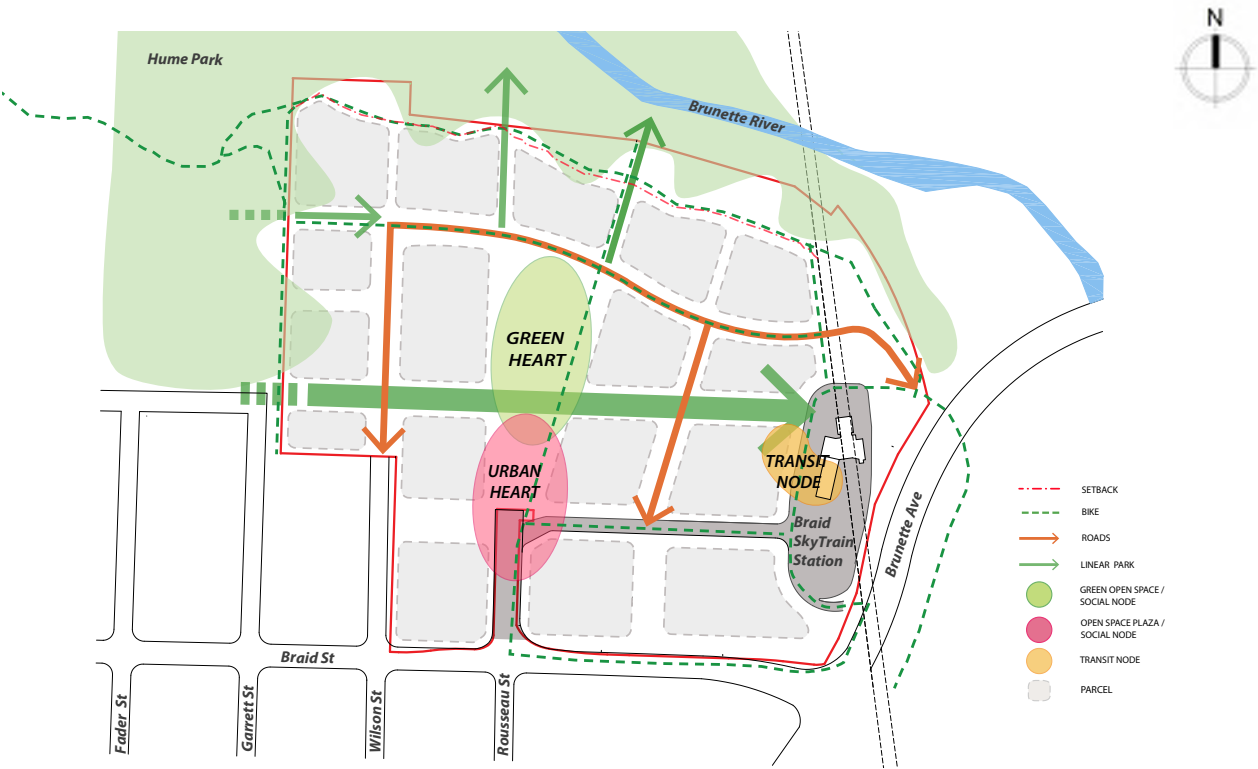
Given the growing housing challenges in New Westminster and in the region, the City’s updated OCP aims to address these issues in accordance with the Regional Growth Strategy (RGS). To ensure more diverse housing options and improved housing affordability, the updated OCP aims to make more efficient utility of land uses; and provide more affordable housing options for New Westminster residents. To these goals the City OCP outlines the potential for development of key sites along strategic corridors.

Sapperton Green’s Relationship to the OCP

Sapperton Green received an OCP Amendment in 2015, designating the property for a transit-oriented mixed-use community. The revised OCP includes the designation of Sapperton Green as Sapperton Green Transit-Oriented Mixed-Use Community (SGTMC).

The vision for Sapperton Green supports the OCP’s goals in the following ways:

- Utilizes advantage of existing transportation infrastructure through a compact, transit-oriented development.
- Meets the community’s housing needs through a diverse range of housing options including ownership opportunities, market rental and affordable housing.
- Balances the City’s growth through a mixed-use project that includes residential, office space, retail and community facilities.
- Protects and enhances environmentally sensitive areas through improvements to the Brunette River Edge.
- Creates a complete community by providing substantial park space, public plazas, bike and pedestrian infrastructure; and through contributions towards a community centre facility and childcare.



Land Use Context

The existing land uses in the City of New Westminster include industrial, commercial districts, and institutional plots flanked by large areas of single-family housing, however, with the new zoning amendments an effort to strategically locate more intense land uses is a key priority.

The revised OCP allows for new housing forms, including ground-oriented housing that grants additional density in single-family neighbourhoods and infill townhouses and rowhouses.

The OCP envisions the following land uses around Sapperton Green:

- Brunette River to the north
- Industrial to the east
- Residential mix-use, institutional, mixed-employment and infill townhouse to the south
- Infill townhouse and Hume Park to the west

Currently these areas are surrounded by single-family neighbourhoods and industrial activity, but are now zoned to include a diversity of mixed-use low and high-rise residential, residential infill, and ground-oriented infill housing.

OFFICIAL COMMUNITY PLAN AMENDMENT PROCESS



13.1 Open House at New Westminster

Neighbourhood Plan Process

The Sapperton Green Neighbourhood Plan Process started in 2011 with the initiation of the Official Community Plan Amendment. Through a highly collaborative process with the community and City staff, a Neighbourhood Plan was created that would provide the basis for the OCP Amendment.

The following public engagement methods were employed between 2011 and 2015:

- One Community Workshop;
- Four Community Advisory Group Meetings;
- Six Public Open Houses;
- Stakeholder Meetings;
- A project website with up to date project information; and
- Regular reports to City staff related to the engagement process and public feedback.

Official Community Plan Amendment for Sapperton Green

Approved by City of New Westminster Council in December 2015, the OCP Amendment for Sapperton Green changed the land use designation to create a new Development Permit Area and established floor areas for the following uses:

Land Use	Minimum	Maximum
Office	750,000 sf	1,500,000 sf
Commercial Retail	100,000 - 150,000 sf	

The Official Community Plan designation for the site is SGTMC, Sapperton Green Transit-Oriented Mixed-Use Community and is defined as follows:

This area will include a mix of medium to high density residential, office, retail, open space, and public and other community serving facilities in a transit supportive, complete community. The area will support office uses, residential uses (equating to approximately 3,700 dwelling units and 7,500 residents) and community supportive retail commercial uses). Public and/or private community serving facilities will be provided as appropriate.

Floor space for non-profit community serving facilities will be excluded from the maximum floor space allowable. A minimum 15 % of the site will be publicly accessible open space, including plazas, squares, parks, playgrounds and other open areas that are accessible to the public. Emphasis will be placed on active transportation linkages. Building heights will range from three storeys to a maximum of 35 storeys. Development of the site will require a comprehensive Master Plan including Design Guidelines to be created for the entire site prior to any rezoning.

The proposed Rezoning largely complies with the 2015 OCP Amendment, however, a further OCP Amendment will be required to realize the Master Plan and Rezoning which now delivers affordable housing. Design Guidelines developed through the Master Plan process will be adopted through the rezoning.

Relationship to the Master Plan

The Master Plan for Sapperton Green uses as its basis the vision, policy direction, and urban design principles established as part of the OCP Amendment process.

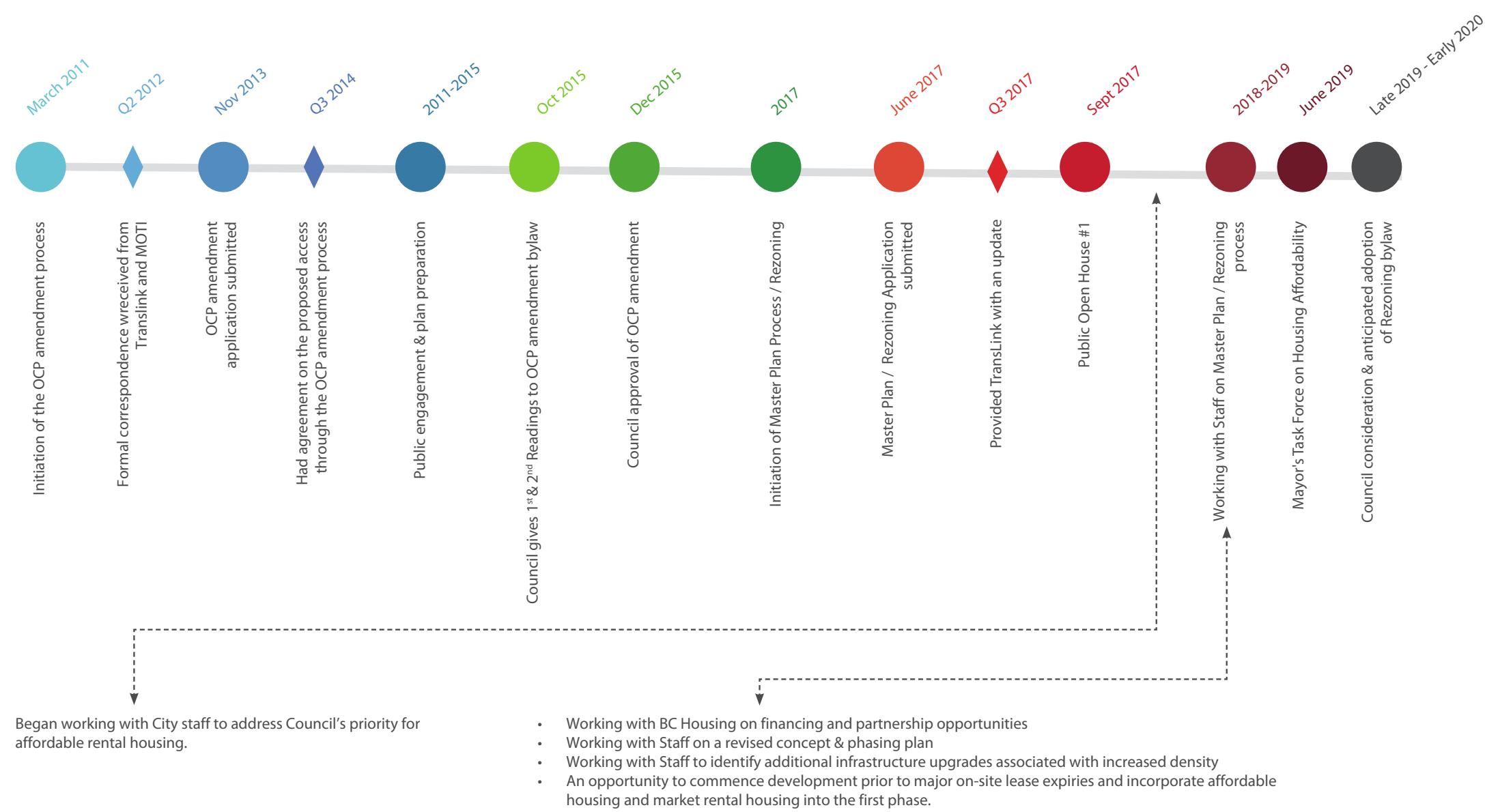
OFFICIAL COMMUNITY PLAN AMENDMENT PROCESS

OCP AMENDMENT, MASTER PLAN AND REZONING FOR SAPPERTON GREEN

In late-2017, the project team began working with the City of New Westminster to address Council’s priority for affordable housing, including the dedication of 7.5% of the original residential floor area proposed at Sapperton Green as affordable housing. In consultation with Coriolis Consulting to understand that financial impact, it was concluded that an approximate one million square feet of residential development (inclusive of the affordable housing) would be required to accommodate the affordable housing component. In June 2019, QuadReal entered into a partnership with BC Housing to deliver the approximately 255,000 square feet of affordable rental housing with the initial 85,000 square feet delivered in Phase 1.

There remains a commitment to deliver the project components that were determined by the original OCP Amendment (approved in 2015) including condominiums and market residential, office and retail spaces, parks and open space as well as contributions towards a community centre facility and childcare.

A text Amendment to the OCP’s Sapperton Green Transit-Oriented Mixed-Use Community land-use designation is required to reflect the additional height and density required to deliver on the affordable housing that forms part of this master plan.





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Master Plan

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2020

Introduction

MASTER PLAN





EXISTING CONTEXT
SITE PHOTOGRAPHS



18.1 From the South

EXISTING CONTEXT

ADJACENT LAND USES



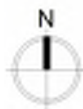
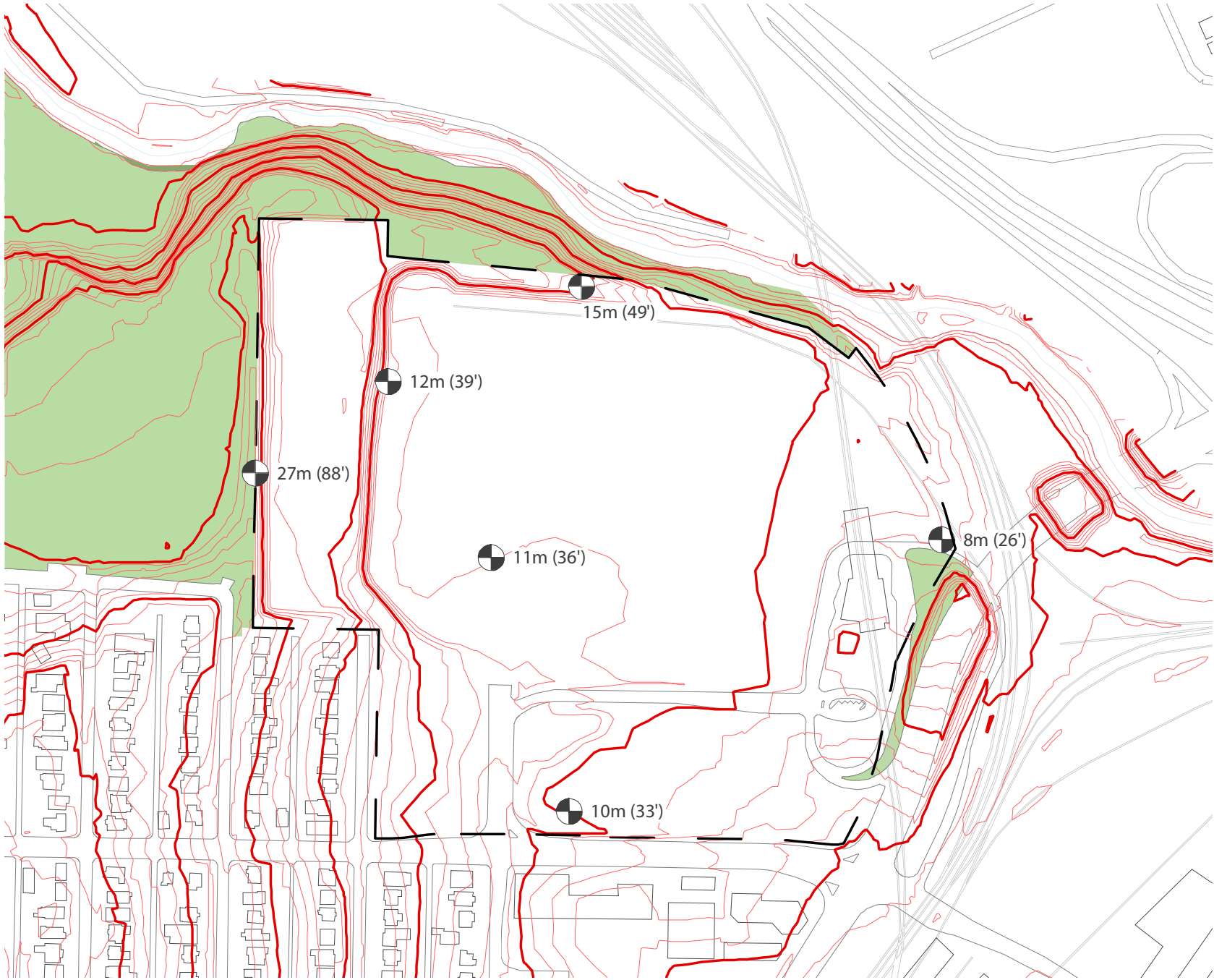
19.1 Adjacent Land-use Within 800m Walking Radius

EXISTING CONTEXT

SITE - TOPOGRAPHY

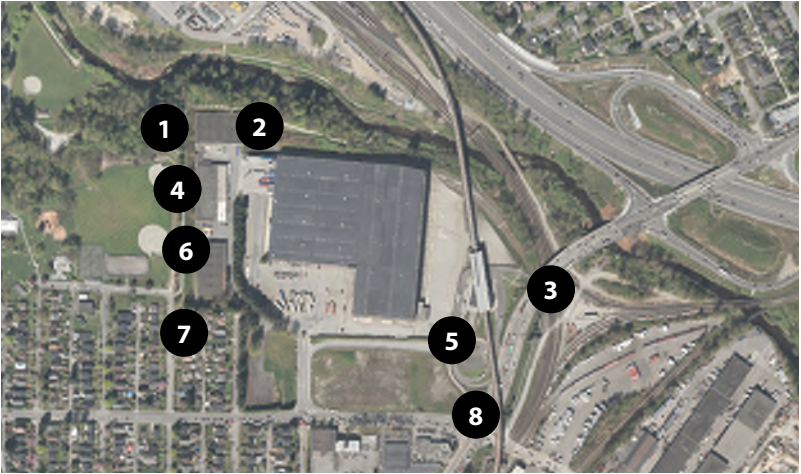
There is a 19m drop in height from west to east across the site and a 5m drop from north to south. On the north, there is an escarpment near the site boundary steeply sloping down to the Brunette River. On the west, the site boundary sits on the top of an escarpment with a 15m height difference from the interior of the site. The Central Valley Greenway is on the eastward berm of Hume Park, next to the site.

The highest point is on the northwest corner beside Hume Park. The lowest point is the southeast corner beside the junction of Braid Road and Brunette Avenue. As the existing land use of the site is for large warehouses, the existing site was extensively terraformed to two major platforms at heights of 11m and 12m.



EXISTING CONTEXT

HUME PARK AND BRUNETTE CREEK - IMAGES



Sapperton
Green

Master Plan

April
2020

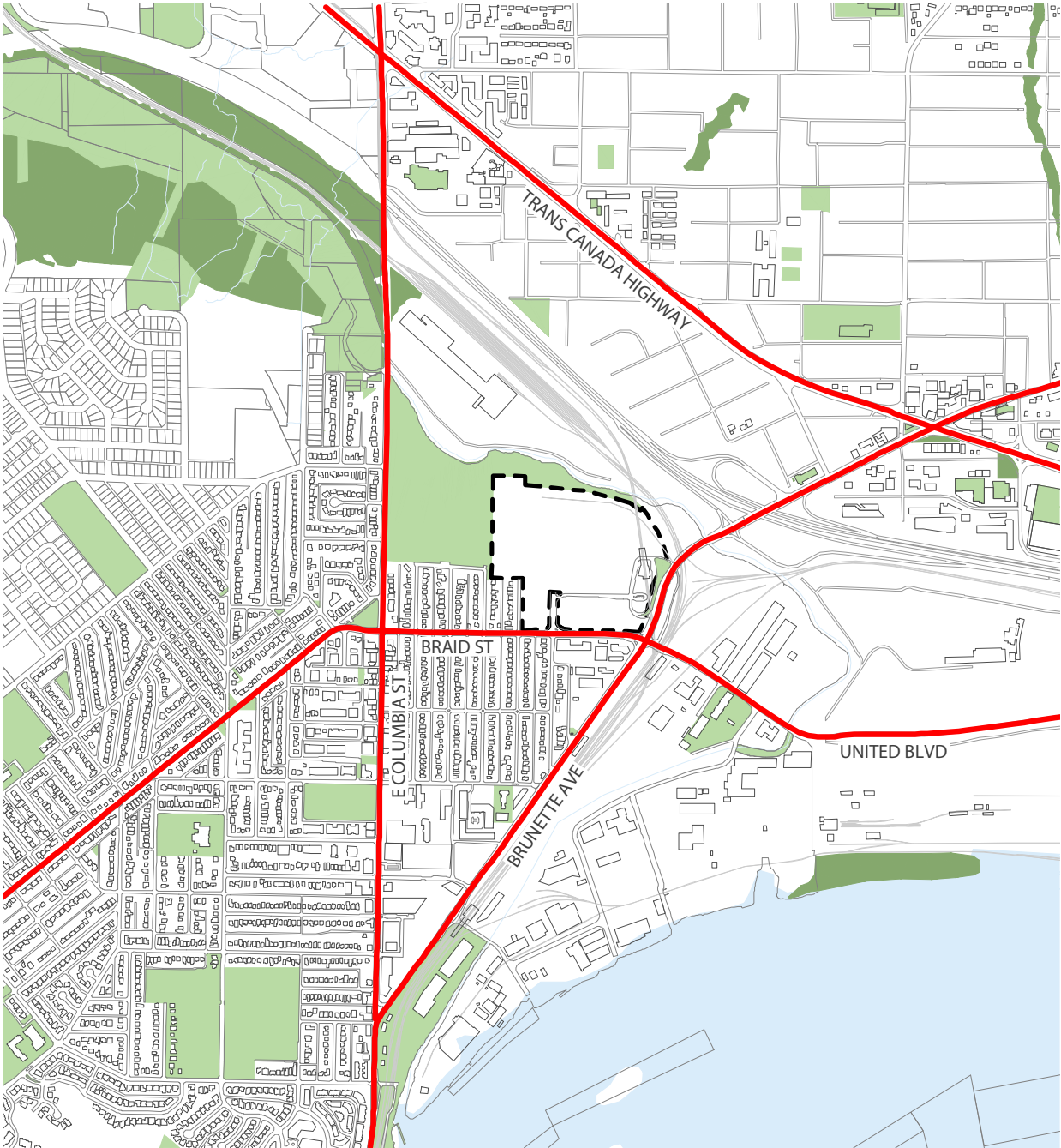
Master Plan

EXISTING CONTEXT
HUME PARK AND BRUNETTE CREEK - IMAGES



EXISTING CONTEXT

TRANSIT NETWORK



Existing Goods Network

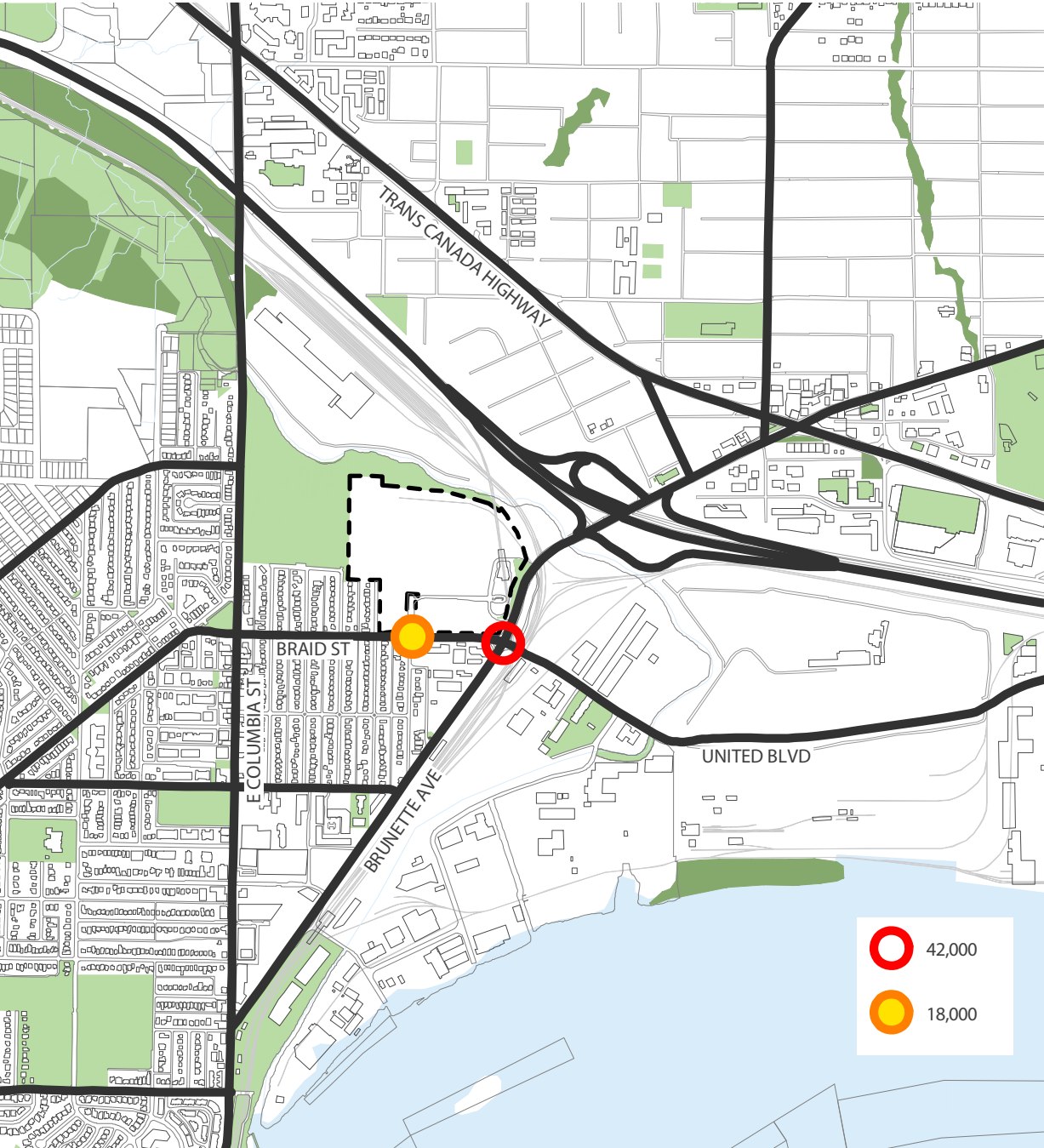


Existing Transit Network - Bus

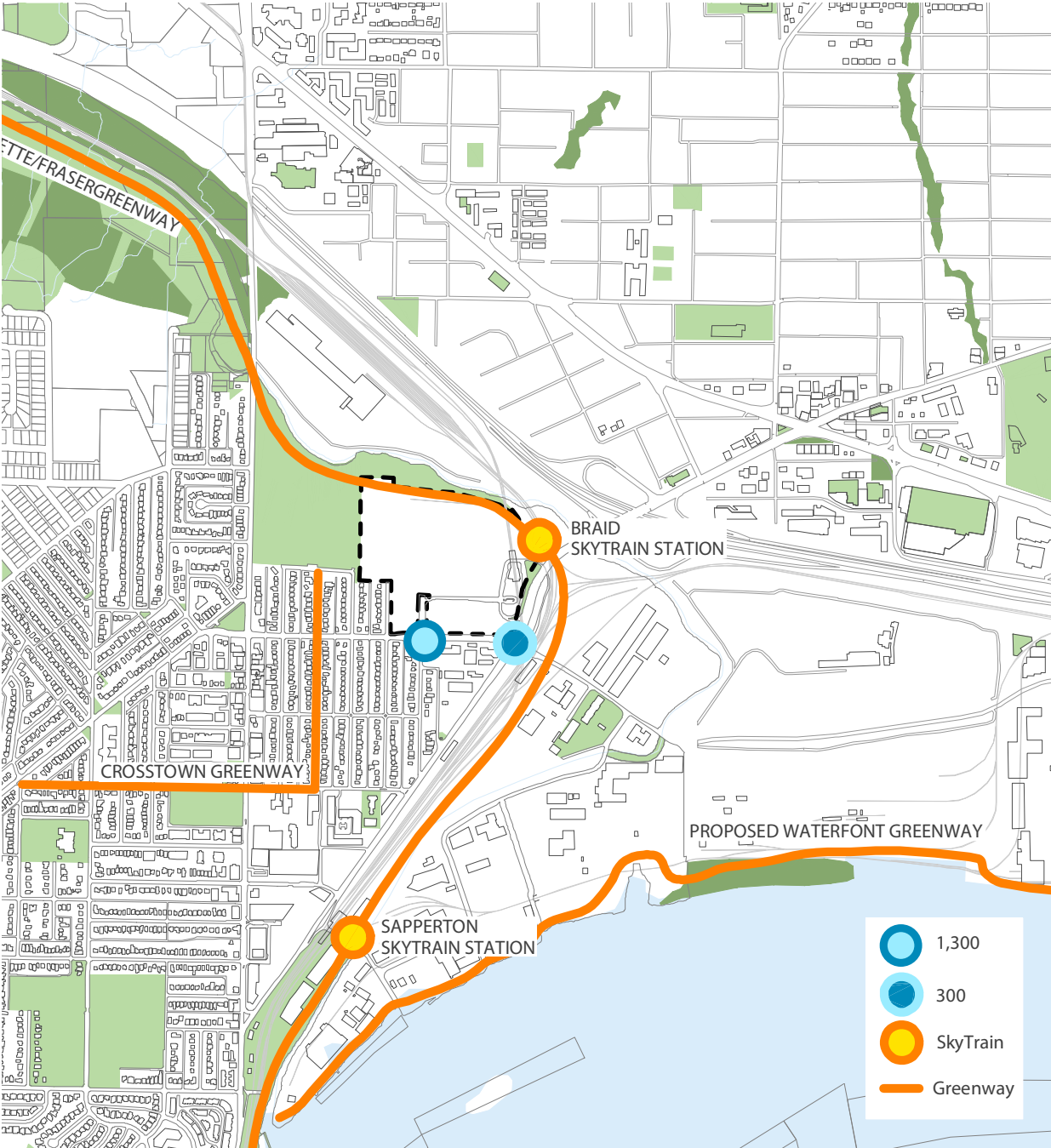


EXISTING CONTEXT

PASSENGER VEHICLE/ PEDESTRIAN GREENWAY NETWORK



Passenger Vehicle Network
Average Daily Passenger Vehicle Counts at Intersections



Pedestrian and Greenway Network
Average Daily Pedestrian Counts + Proposed and Existing Greenways



URBAN DESIGN ANALYSIS

EXISTING CONTEXT AND INFLUENCES

The site, by its location and large area, sits in a highly diverse context. This allows the master plan to transition and integrate diverse influences to produce a unique mix of character.



OVERALL DESIGN ANALYSIS

OVERALL CONCEPT

The overall concept plan reflects the vision of Sapperton Green as a sustainable, mixed use, transit-oriented neighbourhood.

The planning principles of Sapperton Green are the guiding reference for the development of the overall concept plan. The key urban design considerations are summarized below:

- Connect to the site context, Braid Station, Hume Park, Brunette River and Central Valley Greenway through proposed green finger networks.
- Enhance urban livability by promoting the permeable pedestrian and bicycle networks and minimizing vehicular circulation.
- Create social nodes at the station and at the community gateway entry.
- Encourage a strong sense of place and community by creating a vibrant Neighbourhood Heart.
- Emphasize the character of Sapperton Green and provide a social core to play and gather.
- Respond to feedback collected through public engagement.



26.1 OCP Concept Plan



MASTER PLAN PRINCIPLES

VISION, GOALS AND PRINCIPLES

The vision

Sapperton Green is envisioned as a vibrant urban neighbourhood that integrates a complementary mix of residential, retail, office and community uses to create a compact, complete neighbourhood.

This transit-oriented master planned community will celebrate the history of the area and the diversity of the community. Supported by sustainable development objectives it will reunite the larger community with the Brunette River and surrounding green way.

Design Goals

The Master Plan was guided by the following goals which have been adapted from the original set of goals drafted during the Neighbourhood Planning phase that informed the Official Community Plan Amendment:

Unique Identity: Create a unique sense of place that celebrates the site’s gateway location into New Westminster and the adjacent uses of Hume Park, the Brunette River and the Sapperton residential neighbourhood.

Connectivity: Ensure the site is connected to the neighbourhood and greater community. Create obvious physical connections within the site to landmarks, special places, work centres and amenities. Capitalize on the adjacent rapid transit network connection to the region.

Diversity: Create a dynamic mix of uses to support all-day activity, safety and a full sense of community. Provide for a range of types of homes, employment options, services and amenities that complement surrounding land uses and are accessible to all age groups and abilities.

Legacy: Recognize and celebrate the diverse history of the area and the larger Sapperton Community.

Design and Innovation: Develop an innovative, sustainable and timeless neighbourhood with urban design language that is readily understandable. Provide a design that is efficient, functional and responds to the needs of residents, employees and visitors while remaining flexible to respond to future trends and needs.

Sustainability: Ensure the project is environmentally, socially and economically sustainable and contributes to the overall vibrancy of the larger community.

Respectful Transitions: Ensure the project respects and enhances the existing surroundings, specifically Hume Park, Brunette River and surrounding green way, and residential areas.

Planning principles

The Master Plan was guided by the following planning principles which were adapted from the original principles developed to support the vision and goals:



27.1 Public Art Precedent Case

Land Use Principles

Urban Design: Ensure high quality design of buildings and attention to streetscape details.

Transit Orientation: Promote a vibrant transit-oriented development that integrates a mix of residential, office and retail and service uses.

Neighbourhood Centre: Emphasize a neighbourhood centre that includes retail and services, community amenities, and open spaces.

Sense of Entry: Include elements that will convey a sense of arrival and the gateway to New Westminster.

Response to Context: Respond to the surrounding uses while meeting regional and local goals for higher density development that takes advantage of transit infrastructure.

Parks and Green Space Principles

Livability: Develop landscape strategies, development of open space and streetscape designs to complement built forms and enhance urban livability.

Green Links: Enhance the relationship between Hume Park and Brunette River and the site by providing park-like incursions of greenspace into the site and attractive connections and routes between Hume Park and Brunette River and the development site.

Permeability: Create open space and greenways to promote permeability through the new neighbourhood and connectivity to adjacent residential and commercial areas.

MASTER PLAN PRINCIPLES

VISION, GOALS AND PRINCIPLES

Active Design: Develop streetscape designs that encourage pedestrian movement and, interaction, while defining a sense of place that complements the urban fabric.

Social: Create a range of places to gather, play, places with vibrancy.

Green Coverage: Enhance the urban forest, encourage green coverage, natural habitat and biodiverse planting.

Sustainability: Retain mature trees, where feasible and select trees that maximize sustainable benefits to the community over an extended period of time. Incorporate planting and landscape strategies that are drought tolerant.

Transportation and Connectivity Principles

Transit: Capitalize on the superior transit location and infrastructure at Braid Station and integrate the station into the overall neighbourhood design.

Transportation Corridors: Mitigate the impacts of Braid Street, Brunette Avenue, and the SkyTrain and Rail on the community.

Road Design: Minimize the creation of new roadways and emphasize alternative forms of transportation.

Pedestrian / Cyclists: Provide safe, convenient and attractive pedestrian and cycle routes throughout the site and specifically to Braid Station.

Connectivity: Improve connections to and from the site including Hume Park, the Brunette River and the larger Sapperton community.

Economic Principles

Efficiency: Make efficient use of the land and infrastructure by increasing density, mix of uses on site, while ensuring that the redevelopment is sensitive to adjacent uses.

Employment: Promote employment uses on site by providing flexible floor plate office buildings that will appeal to a range of tenants.

Infrastructure: Optimize the use of existing public infrastructure, including roadways, storm drainage, sanitary sewer, water and other services where possible.

Innovation: Encourage innovative high-quality urban design and durable materials that fits the existing and future built form, enhances the streetscapes and refines the open space network.

Adaptability: Ensure that the site can renew and adapt itself effectively to new social and economic conditions, programs, policies and technologies.

Social Principles

Social and Cultural: Ensure the adequate provision of facilities and amenities for the social needs of residents and employees who will live and work at the new development with specific consideration to childcare, safety and crime prevention.

Diversity: Provide for a range of housing options including building types and settings, tenure including affordable housing, and unit types to address diverse needs.

Safety and Security: Design for safety and security. Ensure that CPTED (Crime Prevention Through Environmental Design) principles are included in the planning framework including lighting, traffic calming, signage and housing orientation.

Community: Encourage a strong sense of place and community.

Environmental Principles

Brunette River: Enhance the Brunette River edge through habitat restoration and other initiatives as part of a regionally significant, environmentally sensitive watercourse.

Water Management: Design with special attention to stormwater management, water collection, distribution and circulation within the development site.

Diversity: Promote ecological diversity of the built open space.



28.1 Park

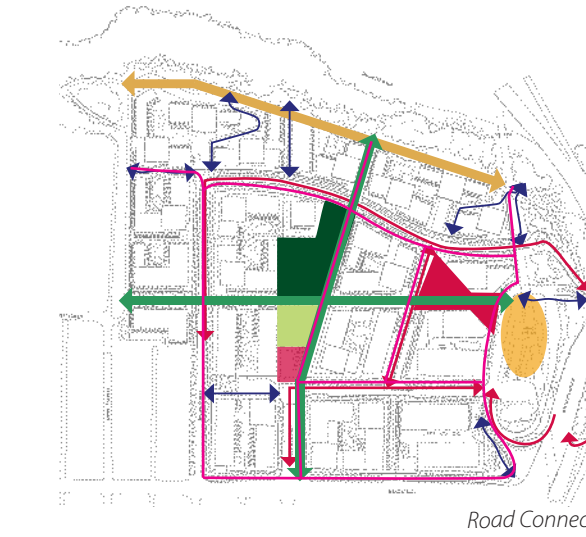
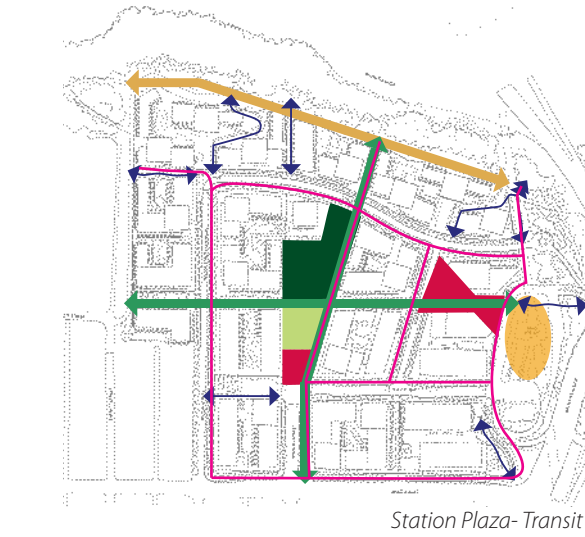
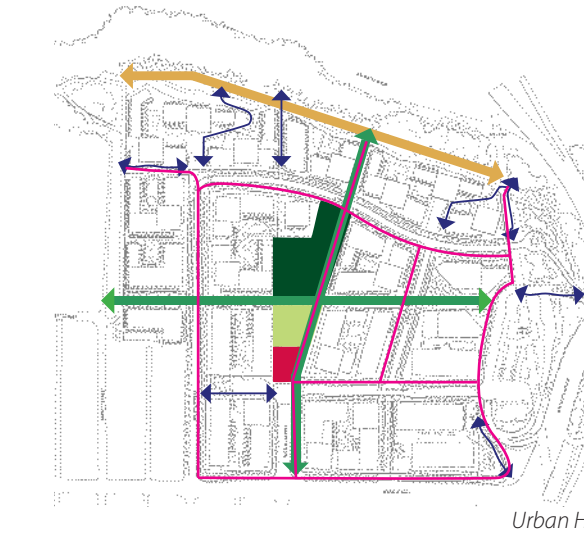
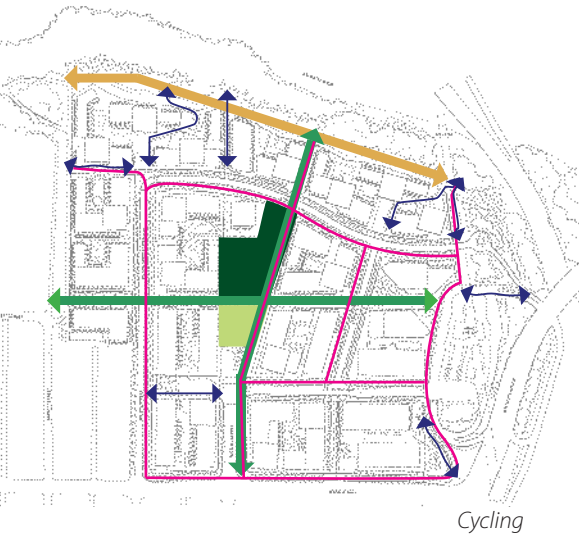
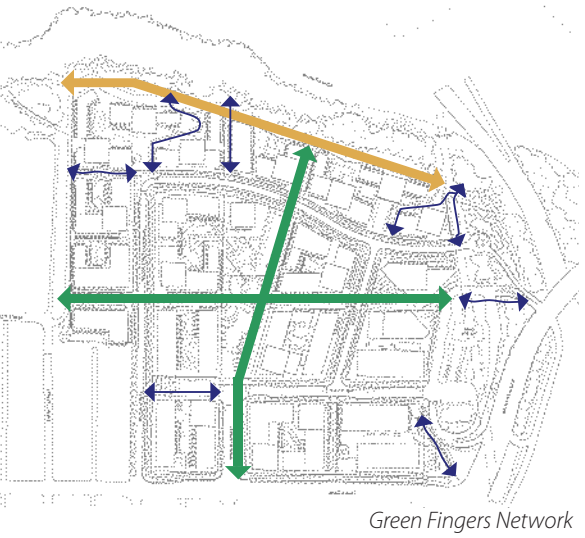
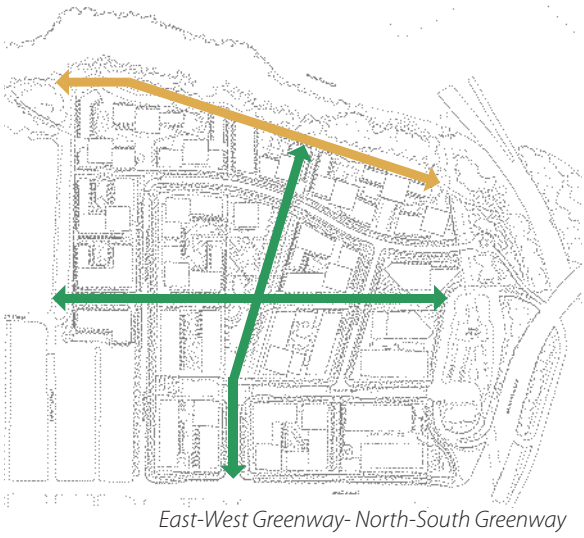
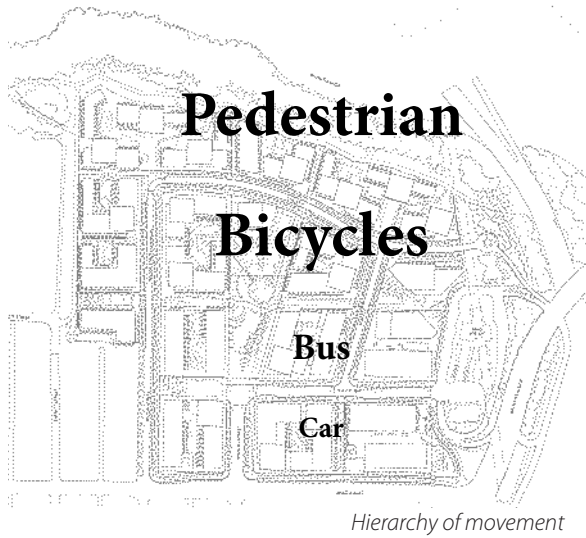
MASTER PLAN PRINCIPLES

CONCEPTUAL SITE PLAN

Connectivity Hierarchy

Sapperton Green has embraced a hierarchy of movement that prioritizing walking, cycling, and transit opportunities. The hierarchy of paths and greenways connect to existing neighbourhood sidewalks and walkways to ensure that Sapperton Green is well integrated into the surrounding Sapperton neighbourhood.

- LEGEND
- East-West - North-South Greenway
- Brunette Fraser Greenway
- Green Fingers
- Cycling Network
- Road Network
- Community Park
- Community Green
- Urban Heart and Transit Plaza
- Braid Station Transit Node



MASTER PLAN PRINCIPLES

OPEN SPACE NETWORK

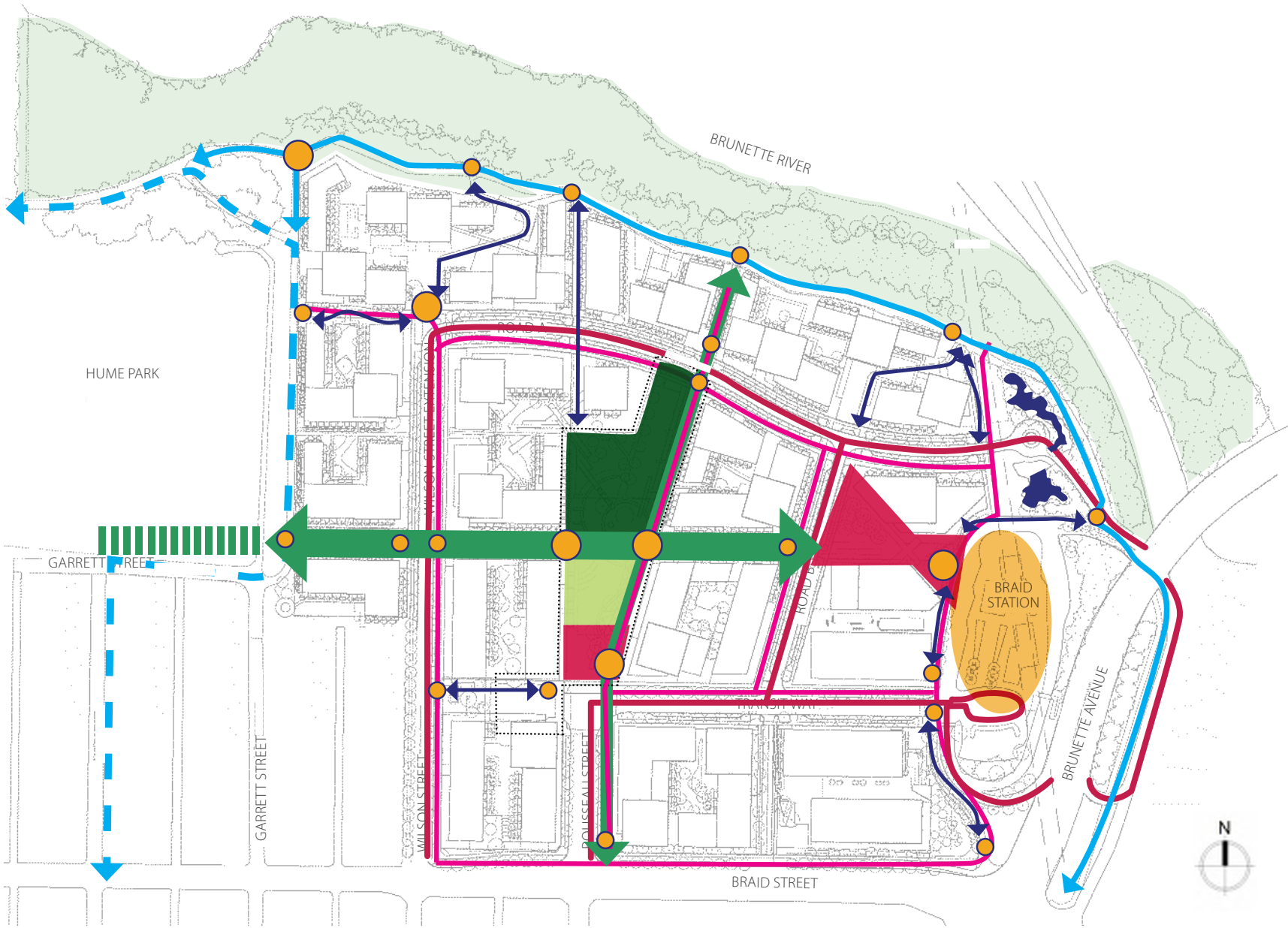
Intent

The character, shapes and forms of the conceptual site plan are inspired by the three Sapperton Green precincts. Together they create an adaptable and transformative landscape design that will celebrate and support Sapperton Green’s connection to Hume Park, the riparian-forested Brunette River ravine edge, and the urban, commercial/Braid Street and Braid SkyTrain Station. In particular, the integration and expression of urban landscape with natural systems will be used as a fundamental typology for the Sapperton Green neighbourhood. This will be expressed in the form of urban plazas, green open space and storm water features that act as unifying elements celebrating the dynamic relationship of this urban neighbourhood and its proximity to the natural Brunette River. These key features of Sapperton Green will be the basis for development of the high quality, green neighbourhood envisioned for the 21st century.

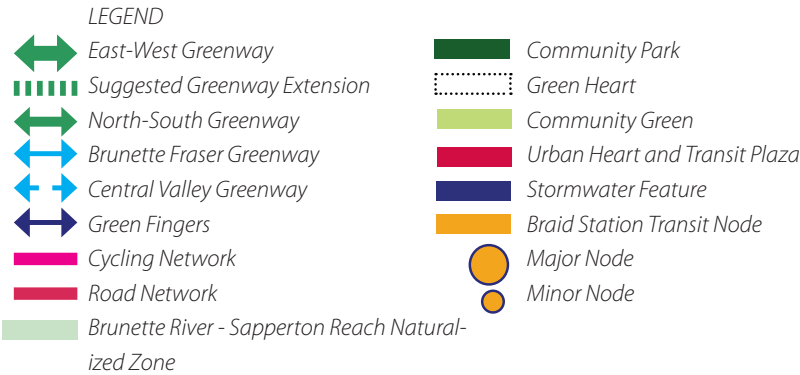
Sapperton Green will provide opportunities for public enjoyment, interaction, and education through social spaces, activity nodes, wayfinding and informational signage, as well as opportunities that blend urban ecology and public art. Native and adaptive planting will provide year-round interest, forage, and cover for the birds, insects, and wildlife forming the basis of the urban forest and ecological neighbourhood within Sapperton. Water will be celebrated as a sustainable and playful feature in the form of rain gardens and ecological storm water management ponds. The emphasis when expressing water in the landscape will be placed on promoting ecological diversity and integrative storm water management.

Open Space

The Sapperton Green public realm and open space network is envisioned as an interconnected set of pedestrian oriented spaces that complement the surrounding urban fabric, and provide a year



round live, work, and play environment. Greenways that ensure connections and permeability along with parks and plazas will play a key role in bringing the local and extended community together, enhancing the social environment, promoting storm water management, connectivity of habitat, and natural systems.



MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS



Hume Park Precinct

The Hume Park Precinct responds to the controlled and open park landscape expression of the adjacent residential neighbourhood to the south, Hume Park to the west and the natural Brunette River edge to the north. The landscape open space character in the public and private realm is generally comprised of a higher ratio of landscape versus hardscape. The general feel of the Hume Park precinct is a balanced natural and urban landscape. The green heart at the centre of Sapperton Green extends the character to interface with the urban precincts.

Hume Park Precinct is a key part of the social and natural network. It is comprised of open lawn areas, linear rain gardens and public gathering spaces, bordered by a careful mix of native and adaptive non-native planting. Scale trees are used to create the overall precinct structure.

The Hume Park Precinct embraces the ecological expression of storm water through the use of rain gardens. This responds to the principle of respecting the Brunette River watershed. The rain gardens incorporated into park edges, street corners, and curb bumps epitomize the character, as a balance of natural and urban aesthetic and function.



Braid Street Precinct

The Braid Precinct character reflects the urbanity of this part of the community. The mix of office, commercial, residential, and proposed new community centre provide intensity that will energize the southern portion of the Sapperton Green neighbourhood. Urban, geometric forms and built landscape elements define the character of this area. The built edges are permeable and encourage movement and active patio spaces, outdoor dining, and spill out from retailers. The urban plaza at Rousseau and Transit Way will form the urban heart of the neighbourhood and provide opportunities for public gathering, neighbourhood celebrations and a 'front door' expression for the proposed community centre.

The character of the landscape is predominantly hard with strong paving patterns and a well defined family of hard landscape elements contributing to the overall precinct character. Soft landscape is used to define edges and is expressed in two layers: trees and low shrub understory to ensure a softening of the urban expression and a strong overhead canopy.



Station Precinct

The Station Precinct responds to the Braid Street urban transit node. It is a vibrant urban area set within a retail/commercial/ office and residential zone of Sapperton Green. Its main public gathering space is the Station Plaza - city scale urban space that is the commercial/ retail hub of the neighbourhood. The plaza is a high energy, dynamic public space with modern expression and design that encourages gathering and flexible use.

The form and geometry of the buildings surrounding the Station Plaza have been shaped to respond to pedestrian movement from the neighbourhood to Braid Station. The shape, form, and exposure create neighbourhood scale, south facing gathering spaces. The result is two urban rooms that combine to create a gateway/ landmark locale that is easily recognizable and unique in character. The west plaza collects and reflects into Sapperton Green. The east plaza opens up to the Braid SkyTrain Station providing direct connection to the station bus platform, access to the SkyTrain Station and a strong visual and physical connection to the Brunette Fraser Greenway beyond.

MASTER PLAN PRINCIPLES

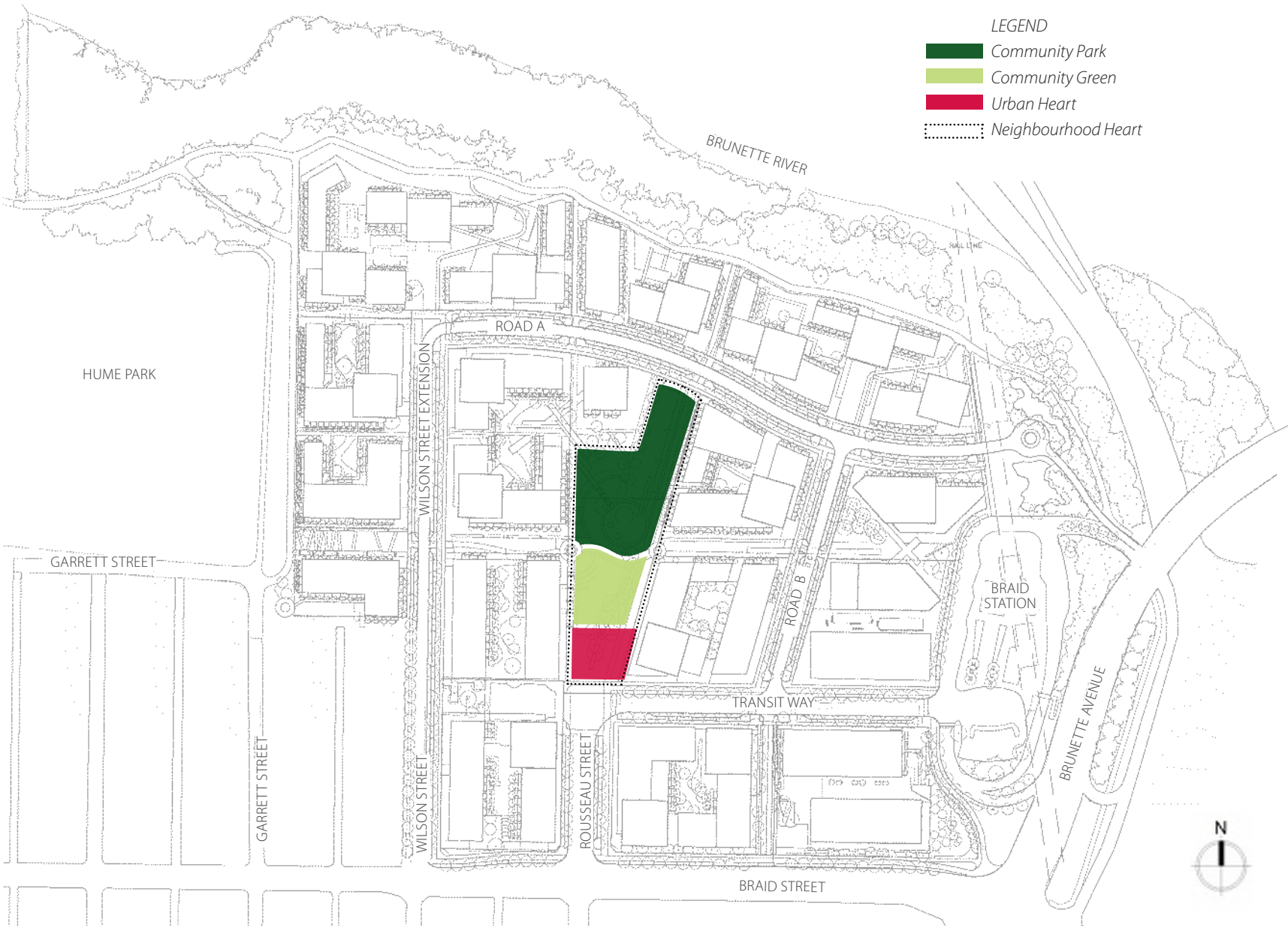
MAJOR CHARACTER AREAS

Neighbourhood Heart

The Neighbourhood Heart at Sapperton Green is located where the Hume Park Precinct, Station Precinct and Braid Street Precinct intersect. Its central location at the north end of Rousseau Street provides a highly accessible and visible presence in the Sapperton Green neighbourhood. The intersection of two major neighbourhood connectors, the East-West Greenway and the North-South Greenway reinforces this central location. Its relationship with the Greenways and prominent location make this an important place as the social and community heart of the Sapperton Green neighbourhood.

The Neighbourhood Heart is comprised of two very distinct landscapes: The Green Heart which includes the Community Park and the Community Green and The Urban Heart, the active plaza and gathering place. These two neighbourhood character areas will bring a vibrant and coherent sense place that is unique to Sapper-ton and is open to all.

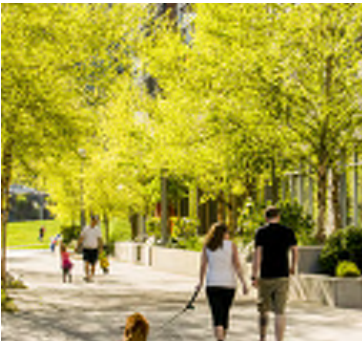
The plaza/ park/ open space design of the Neighbourhood Heart contributes to the permeability of the neighbourhood and reinforces the visual and physical connections through the site.



33.1 Open Lawn



33.2 Social Seating



33.3 Tree Canopy



33.4 Moveable Seating

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

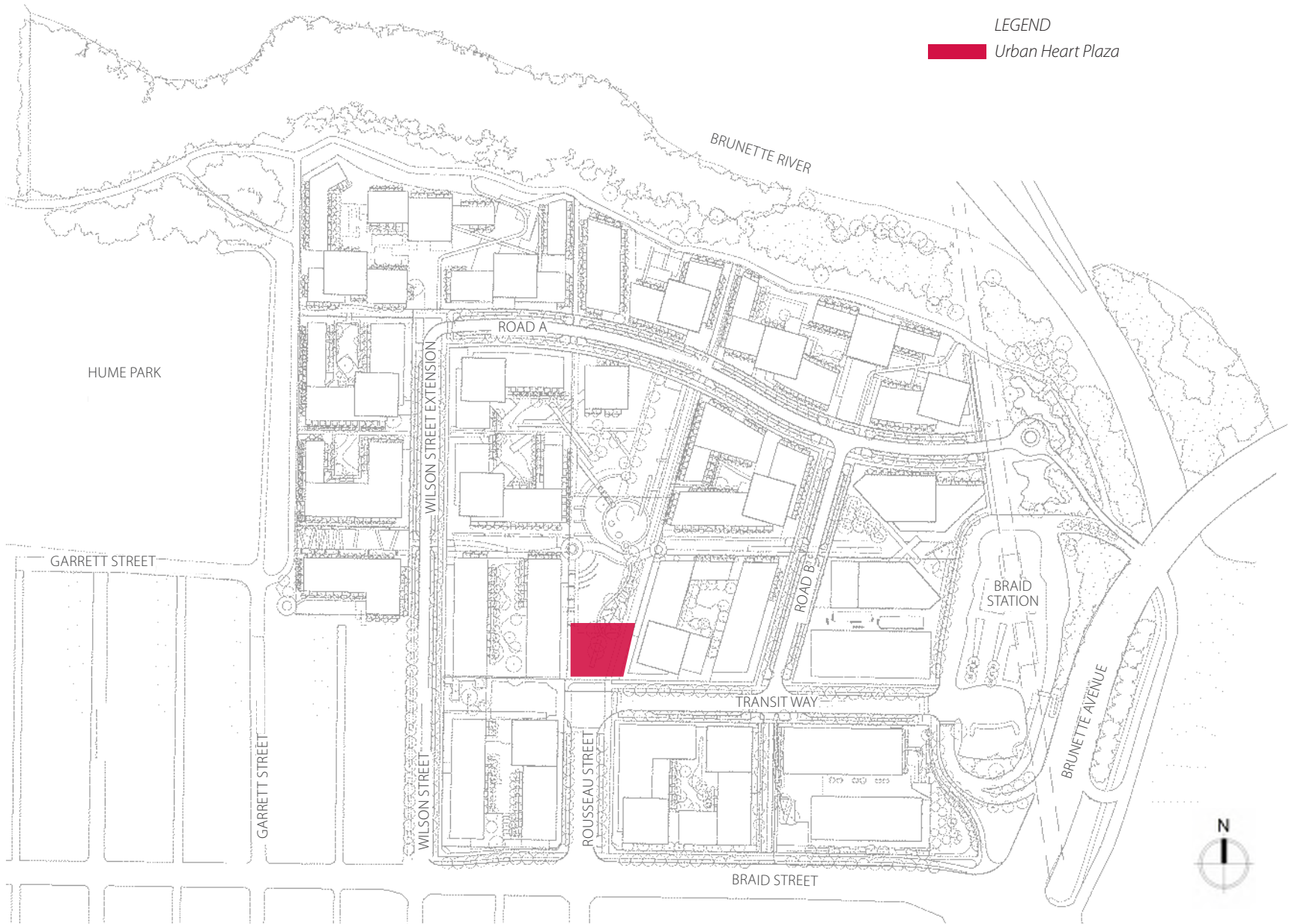
Urban Heart

This Urban Heart is a dynamic, multi-use, urban, outdoor space. It is a place where Sapperton Green can express itself, come together as a neighbourhood and share its festivities and celebrations with the rest of New Westminster.

The Urban Heart is a hard landscape plaza that is animated on a daily basis by active retail edges and spill out from the new community centre. It is also a place that responds to natural systems by incorporating an urban rain garden on the east side. This ecological element responds to one of Sapperton Green’s overriding themes based on environmental stewardship. It also acts as a buffer between the busy plaza space and the retail edge.

The plaza is a flexible space that incorporates elements such as tables, chairs, benches, and elements that can either be moved, repurposed or turned off as need be to allow for large gatherings. Feature lighting and overhead structures reinforce the energy defining the spaces and provide scale and local character.

The diversity of the spatial design of the Urban Heart will also ensure opportunities for quiet places to spend the evening with family, or sit and enjoy a weekend coffee break with friends.



34.1 Flexible Plaza for Event



34.2 Moveable Seating



34.3 Character Element



34.4 Lighting

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

Green Heart

The Green Heart is comprised of the Community Green to the south, and the Community Park to the north. This open space is the ‘everyday’ public park for the Sapperton Green community. As a public open space it is fully accessible to everyone.

The Green Heart is accessed by the East-West Greenway and the North-South Greenway. It is flanked on the east and west sides by ground based residential to the north and retail/ community space at the south end.

The character of the Green Heart responds to the proximity of Hume Park, the Brunette River edge, and its location in the centre of this new vibrant community. The Green Heart brings together the natural character of these two adjacent open spaces with an urban overlay that acknowledges and encourages the residential and commercial edges to animate the park. The design and spatial relationships respond to the topography by creating two distinct green spaces; the community green and the community park.



- LEGEND
- Green Heart
 - Community Park
 - Community Green



35.1 Open Lawn



35.2 Node Element



35.3 Greenway



35.4 Lawn Topography

MASTER PLAN PRINCIPLES

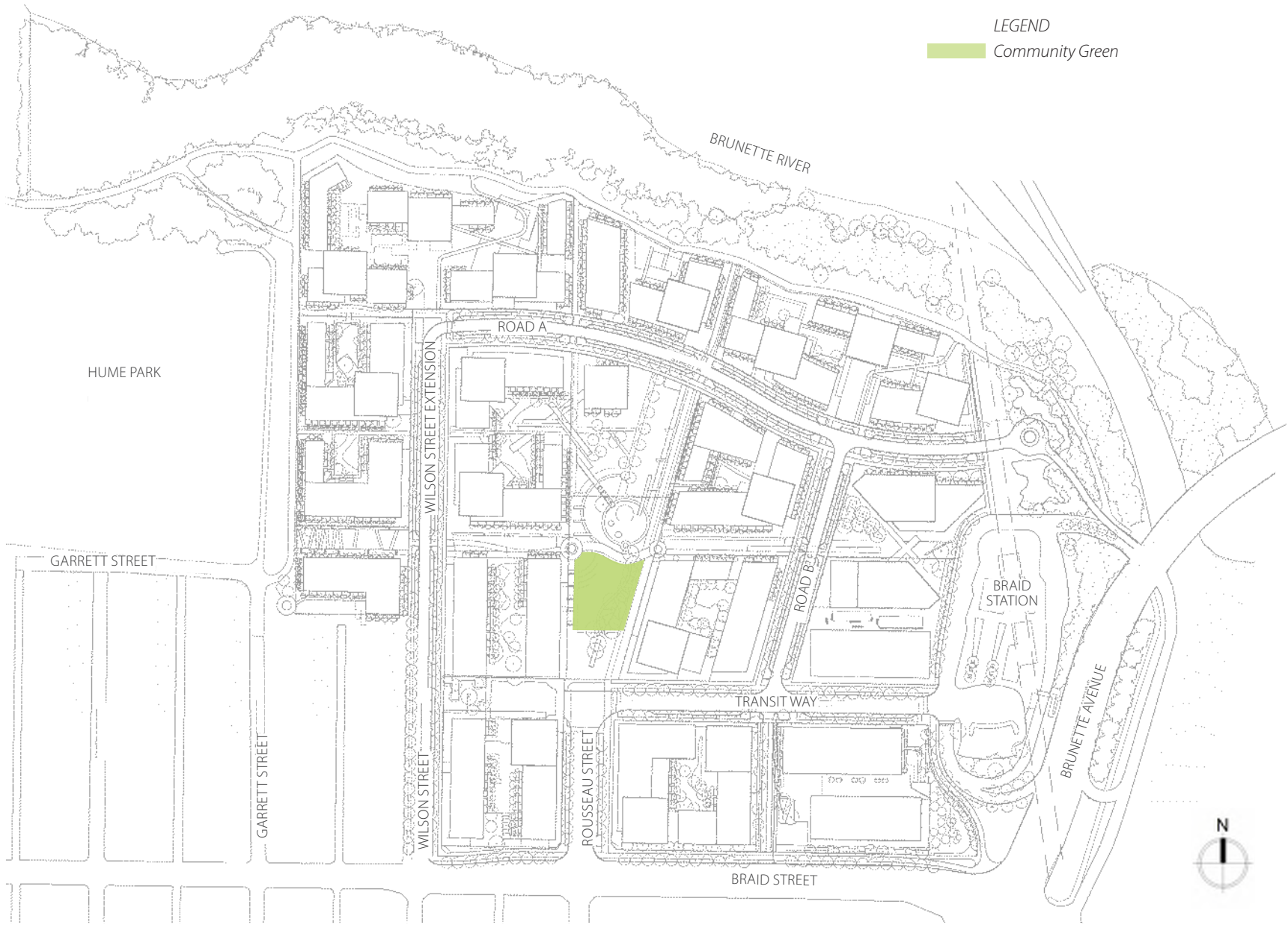
MAJOR CHARACTER AREAS

Community Green

The Urban Heart gives way to the Community Green, which transitions from the hard urban landscape to a more park-like, soft landscape character. The Community Green is intended to support the Urban Heart Plaza by providing a flat, all season lawn area that will allow opportunities for larger festivals and gatherings that otherwise could not be accommodated on the Urban Heart Plaza. Its character is similar to the festival lawn at Westminster Pier Park. This green space takes advantage of the four metre grade change at its northwest corner and incorporates a stepped lawn/ tree planted, amphitheatre opportunity. This southeast facing feature supports active uses of the adjacent lawn area while creating a passive grade transition, seating/ lounging area that overlooks the Urban Heart.

A rain garden on the east edge adjacent to the East-West Greenway creates separation from the active North-South multi-use pathway. The rain gardens reinforces the transition to soft landscape, provides biodiversity, and enriches the character of the park.

The East-West Greenway defines the north edge of the Community Green. This greenway creates a connection for pedestrians from Hume Park, Braid Station and residential areas of Sapperton to access the Community Green. It also creates a passive transition between the Community Green and the more active play areas of the Community Park to the north.



36.1 Amphitheater Seating



36.2 Pathway



36.3 Flexible Open Lawn



36.4 Pathway

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

Community Park

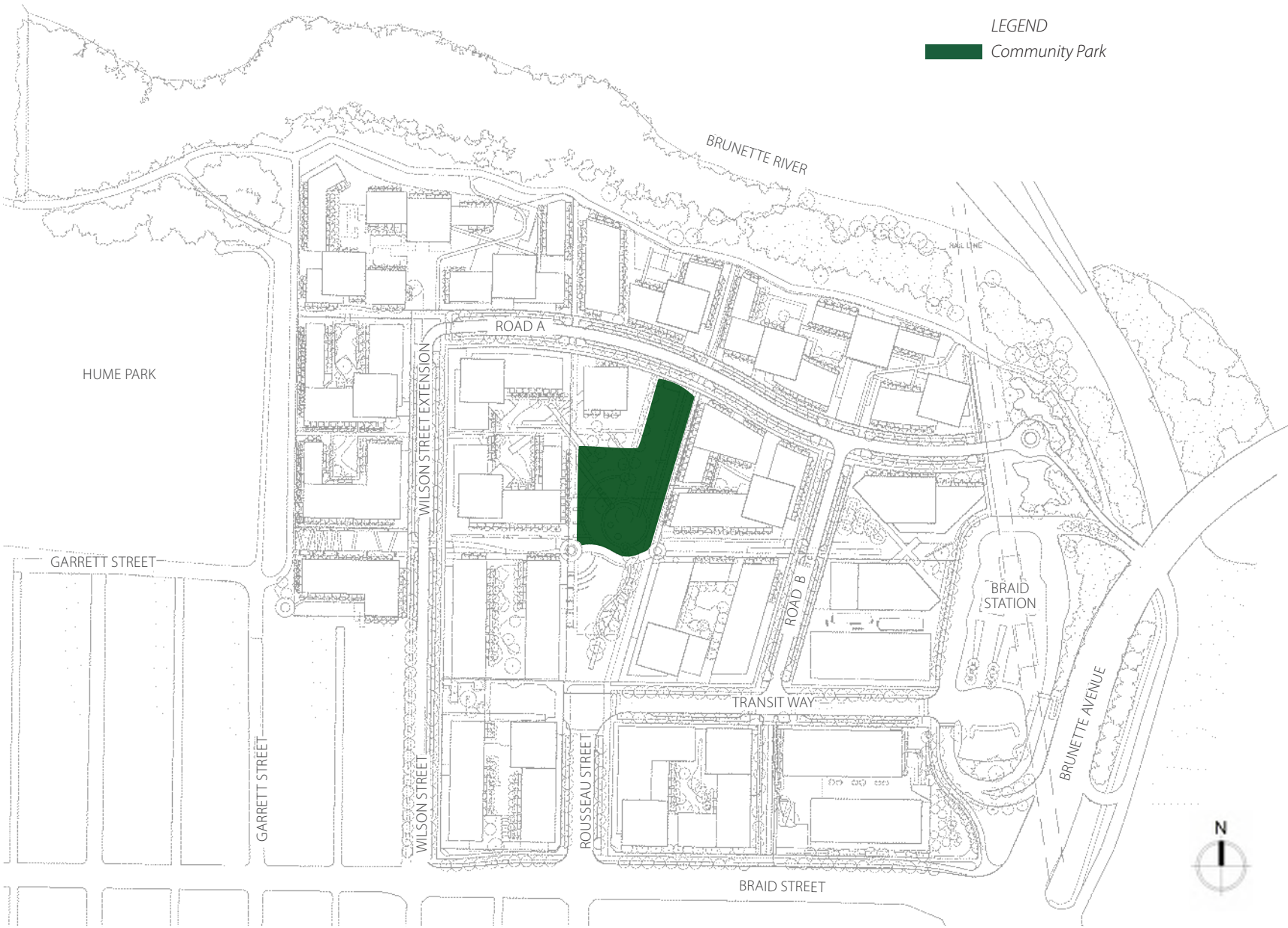
The Community Park lies north of the Green Heart. This open space will be attractive to young and old alike, incorporating a large adventure play area and large open lawn. Pockets of more intimate landscape expressions along the adjacent greenway paths will provide opportunities for seating.

The Community Park will take advantage of the activity created by the residential living units flanking its east and west edges. The ground based entries and patios facing the park will provide animation and ‘eyes on the park’ CPTED based safety and security.

The urban rain garden will continue to provide a biodiverse, rich, landscape buffer from the active park uses to the North-South Greenway.

In addition to the habitat of the rain gardens, the Community Park will address the need to provide habitat for birds and pollinators with a broad selection of planting areas. These will be strategically located to shape spaces and create separation from adjacent residential areas.

The northern end of the Community Park provides opportunities for visual and physical connections to the Brunette Fraser Greenway. This connection reinforces the permeable nature of Sapperton Green and allows for cyclists and pedestrians to move freely through the entire length of this new community.



LEGEND
Community Park



37.1 Playground



37.2 Rainwater Amenity



37.3 Greenway



37.4 Planting

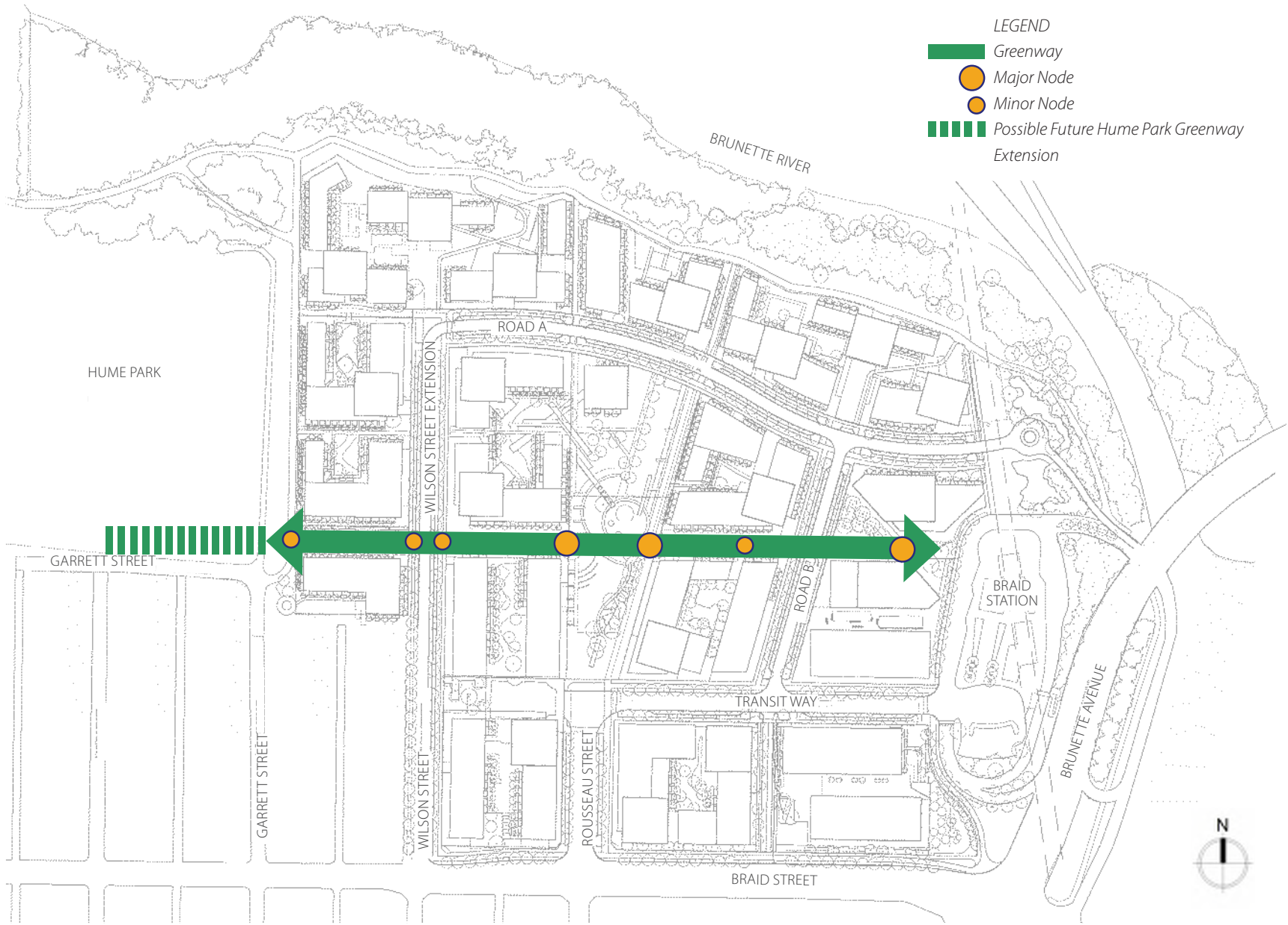
MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

East-West Greenway

The East-West Greenway is a pedestrian only, primary neighbourhood connector to Braid Station. It extends from Hume Park at the west to its eastern terminus at Braid Station. The character of the greenway is park-like, lush, green, and strikes a balance between urban and natural as befits its mid-point location in the neighbourhood. This open space incorporates a dual path system to allow for direct access from the adjacent residential units. This will ensure active edges, and eyes on the greenway providing safety, security and neighbourhood intervention. The south walkway will be expressed as a 3.0m wide dominant path incorporating feature seating and other character elements such as feature lighting and public art opportunities along its length. Although the existing topography in Sapperton Green is shaped by the steep grade change along the Hume Park edge, grade changes along the East-West Greenway will not exceed 1:20 slopes. Creative solutions and sloping walkways will provide fully accessible circulation. Zigzag paths incorporating planted areas and shade trees will ensure a park like character grade transition.

Node points at important intersections of the East-West Greenway will be incorporated to identify the greenway, recognize the intersection of the greenway with other paths and roads ,and create opportunities to reinforce the sense of place and character of Sapperton Green. These locations include the interface with the Central Valley Greenway at Hume Park, street crossings and entry points to the Community Green. Character elements including way finding signage, benches, lighting and paving will link these nodes to the overall open space expression of Sapperton Green.



38.1 Planted Edge



38.2 Greenway



38.3 Planting



38.4 Seating

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

North-South Greenway

The North-South Greenway runs the length of Sapperton Green, ensuring important continuity and connectivity through the Sapperton Green neighbourhood.

The North-South Greenway is a hard surface multi-use pathway that will combine bike and pedestrian movement. This will create an active corridor that contributes to the overall permeability of the neighbourhood. Adjacent residential entries connect directly to this path system to create energy and reinforce the community feel.

Located on the east side of Rousseau Street it crosses Transit Way and makes its way through the Neighbourhood Heart. The North-South Greenway continues north over Road A and, as a public greenway, allows pedestrians and cyclists to pass through the private development parcel. It makes a connection with the Brunette Fraser Greenway at a well-developed node point.

A rain garden on the west side of the greenway ensures storm water from the greenway surface is managed and expressed in a way that is clearly visible, thereby reinforcing one of the neighbourhood green initiatives. The rain garden also provides an important transition to the adjacent Neighbourhood Heart.

Node points along the North-South Greenway will provide opportunities for wayfinding, or to stop or pause. These well defined mini plaza spaces create places for neighbourhood interaction and helps to reinforce the identity of Sapperton Green and build a strong sense of community.



39.1 Multi-Use Pathway



39.2 Multi-Use Pathway



39.3 Rainwater Amenity



39.4 Multi-Use Pathway

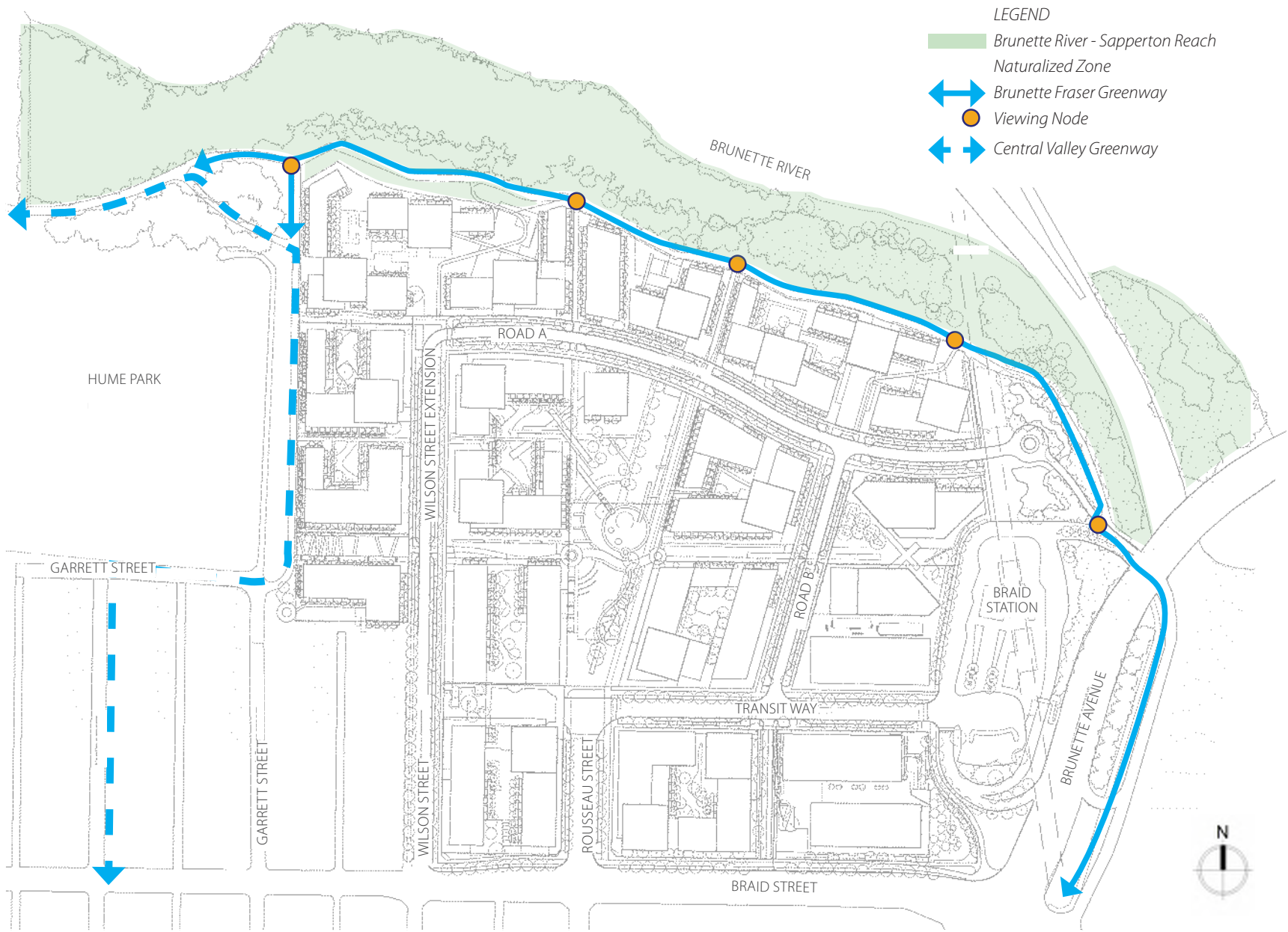
MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

Brunette Fraser Edge

The northern edge of Sapperton Green borders the Brunette River, which is an important fish bearing waterway in the lower mainland. The river edge has dramatic, unique topography of forested, steep, ravine embankment at the west end of Sapperton Green and a more gentle slope transition at the east. This edge of the neighbourhood is also part of the Brunette Fraser Greenway. This 4.0m wide multi-use path connects to the Central Valley Greenway to the west and the greenway at the Braid/Brunette Intersection to the east.

Overall design concept will follow the guidelines laid out in the Sapperton Reach portion of the Brunette River Master Plan. As a result, the character of the river's edge and its landscape expression will be informal, respond to the unique plant palette of the native forest and take on organic shapes and forms in keeping with this nature-based area. The design of the upland portion of the river edge includes an improvement and realignment of the Brunette Fraser Greenway. The greenway path location will be moved out of the protected riparian zone. The associated landscape will explore opportunities for a variety of spaces accommodating informal passive activities that enhance the safety and use of this area. The central idea will be to create a park-like expression along the length of the Greenway that reflects the natural character of this area. Interpretive breaks along the Brunette Fraser Greenway that focus on the ecological and natural systems, flora and fauna will enhance the public awareness of the Brunette River and its riparian edge.



40.1 Seating



40.2 Residential Edge



40.3 Forest Canopy



40.4 Multi-Use Pathway

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

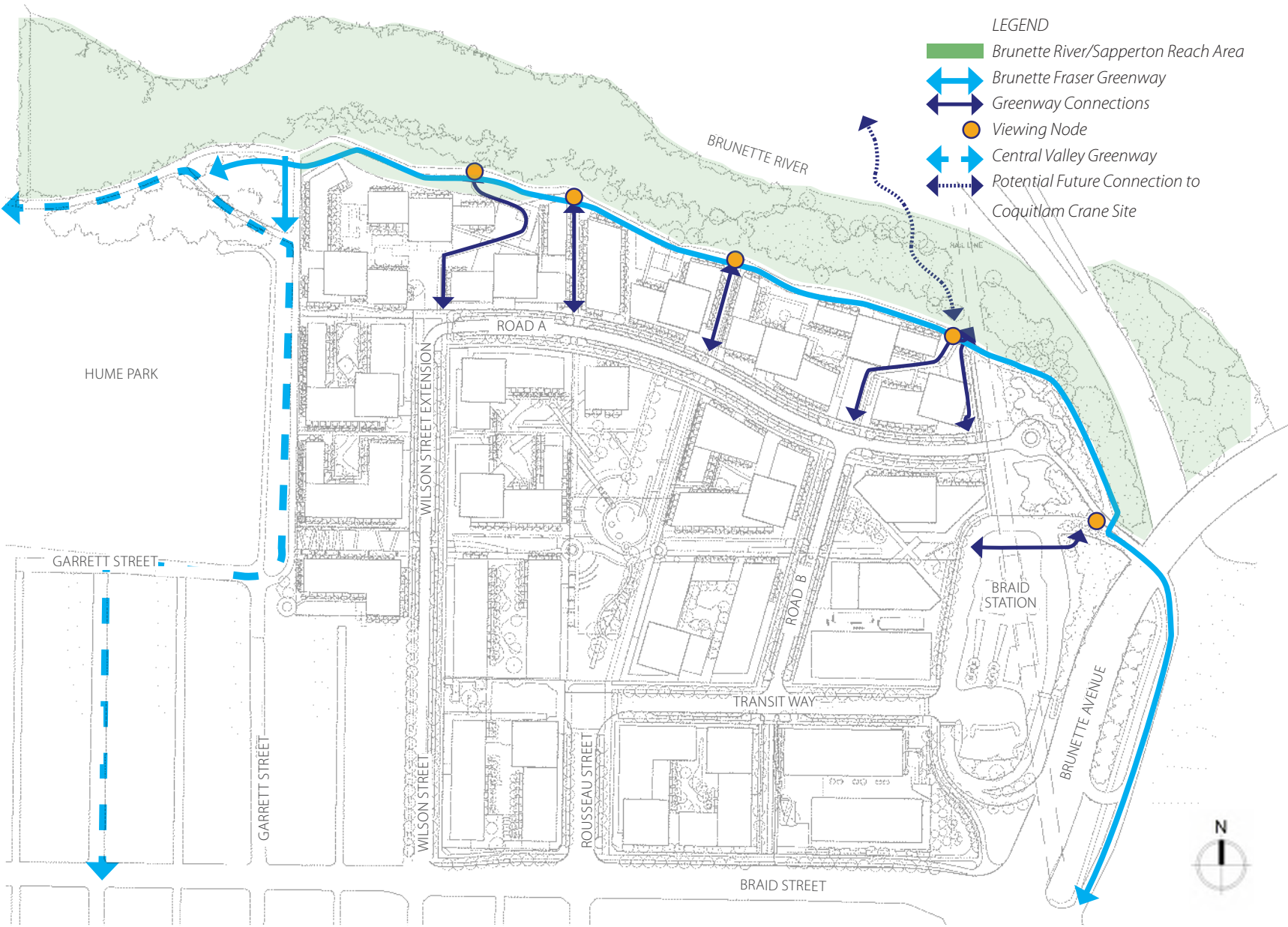
Brunette Fraser Greenway

The Brunette Fraser Greenway runs along the northern boundary of Sapperton Green connecting to the Central Valley Greenway at Hume Park and the future extension of this greenway at Braid Street, east of Brunette Avenue. In its current configuration it meanders along the top of bank in and out of the Brunette River riparian setback.

The development of Sapperton Green will see the Brunette Fraser Greenway relocated and reconfigured to ensure it sits outside this setback protecting the sensitive river edge and natural riverbank. The reconfiguration of the path will include hard surface paving to a 4.0m width to allow for multi-use capability and, where possible, improved slope conditions and accessibility. The alignment of the greenway multi-use path will take advantage of natural clearings, locations of existing shade trees and topography to create opportunities for passive recreation in meadow like settings, views to the Brunette River and ecological and natural systems interpretative signage.

Sensitive replanting will be carried out along the length of the greenway to improve its character and encourage biodiversity.

A number of fully accessible, public connections from the south through the private development parcels will reinforce the principle of neighbourhood permeability. Where possible these connection points will provide visual access to the Brunette Fraser Greenway from the Road A and Braid Station.



41.1 Multi-Use Pathway



41.2 Multi-Use Pathway



41.3 Residential Edge



41.4 Rainwater Amenity

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

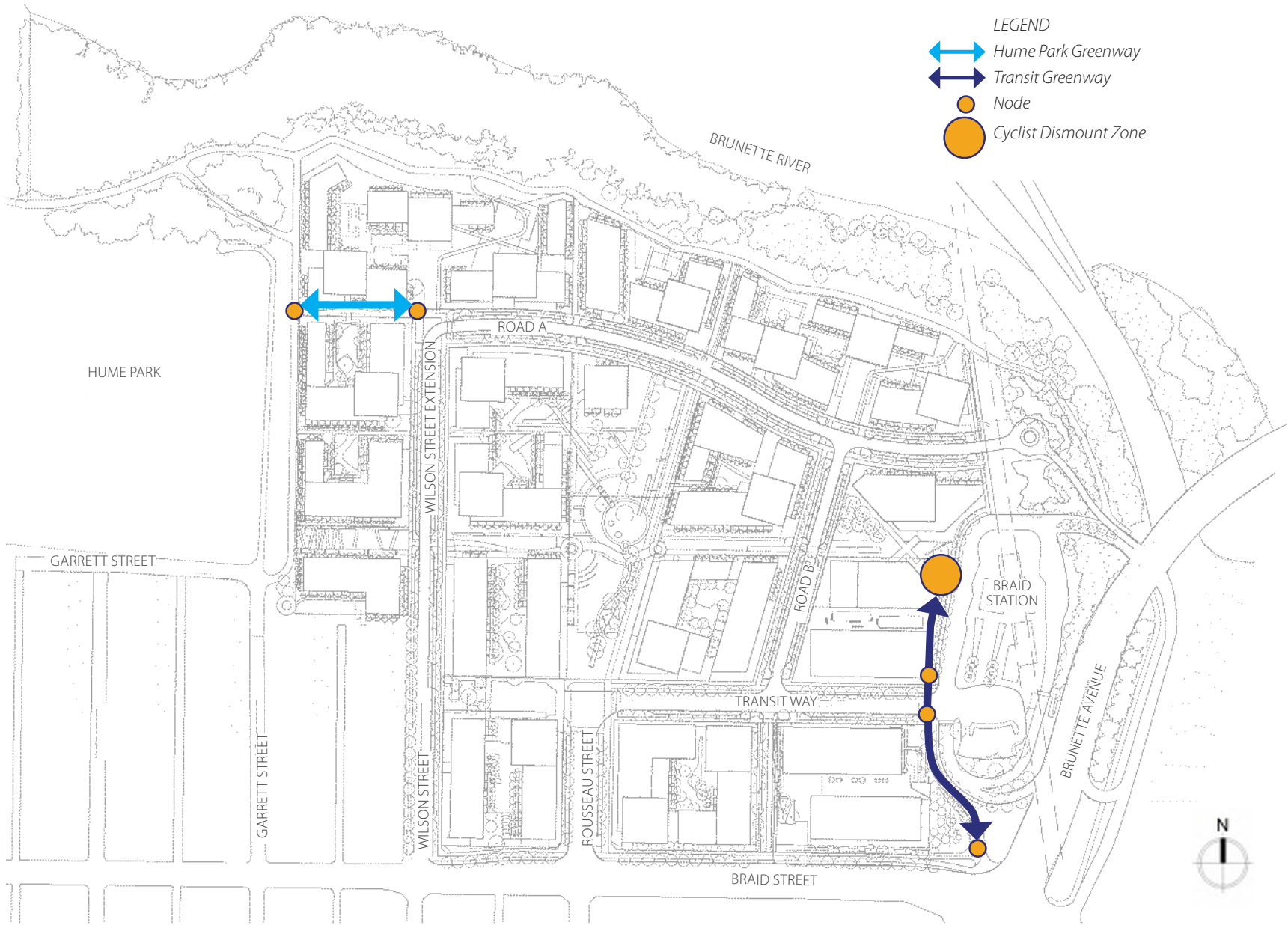
Hume Park Greenway

The Hume Park Greenway, in the northwest corner of Sapperton Green, provides the commuter cyclists a second, fully accessible, direct connection between Hume Park and the Central Valley Greenway. This multi-use pathway ensures that commuter cyclists have a direct route via the greenway Road A from the Central Valley Greenway to Braid Station. The greenway design also incorporates access points to adjacent, private, ground-entry units. This reinforces the Sapperton Green CPTED principle of eyes on public spaces and adds a layer of activity and energy to the built edge.

Transit Greenway

The Transit Greenway contributes to the permeability and identity of Sapperton Green. Located in the southeast corner of the neighbourhood its landscape expression and character create a sense of entry to Sapperton Green and reinforce the importance of pedestrian and bike use within the community.

The Transit Greenway also gives cyclists and pedestrians direct access from Braid Street to the Transit Plaza and Braid Station platform via a multi-use pathway located on the west side of the bus loop. The multi-use path (MUP) ends at Station Plaza where a dismount zone encourages cyclists to join the activities in the adjacent plaza space or safely cross the bus loop drive to access Braid Station. The MUP is separated from the bus loop by a rain garden/ street tree planting to minimize conflicts with pedestrians and cyclists who may consider crossing the bus bay rather than at the designated crossing area.



42.1 Residential Edge



42.2 Residential Edge



42.3 Multi-Use Path



42.4 Rainwater Boulevard

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

Stormwater Wetland

Storm water management at Sapperton Green is an important component to the ecological and environmental story of this neighbourhood. This rich landscape expression is an ideal opportunity for this new neighbourhood to illustrate a comprehensive approach to managing stormwater.

The Stormwater Wetland is located at one of the lowest points of the site in the northeast corner just east of the sky train guideway and within visual access to the Transit Plaza and Braid Station platform. It is designed to collect and detain site storm water releasing it slowly after peak storm events.

The landscape design, character and expression will respond to the aquatic habitat and riparian edge condition and continue the green space character that has been developed along the Sapperton Reach portion of the Brunette River. More importantly this landscape expression will create rich, biodiverse planting, attract songbirds, and provide habitat for pollinating insects at a previously industrial location with very low productivity.

The proximity to neighbourhood and regional destinations will ensure that the interpretive lookouts and signage convey the story of the where the rain goes when it hits the ground and why we should be concerned about this often-unnoticed weather event.



43.1 Path Over Wetland



43.2 Habitat



43.3 Rainwater Management



43.4 Stormwater Wetland

MASTER PLAN PRINCIPLES

MAJOR CHARACTER AREAS

Station Plaza

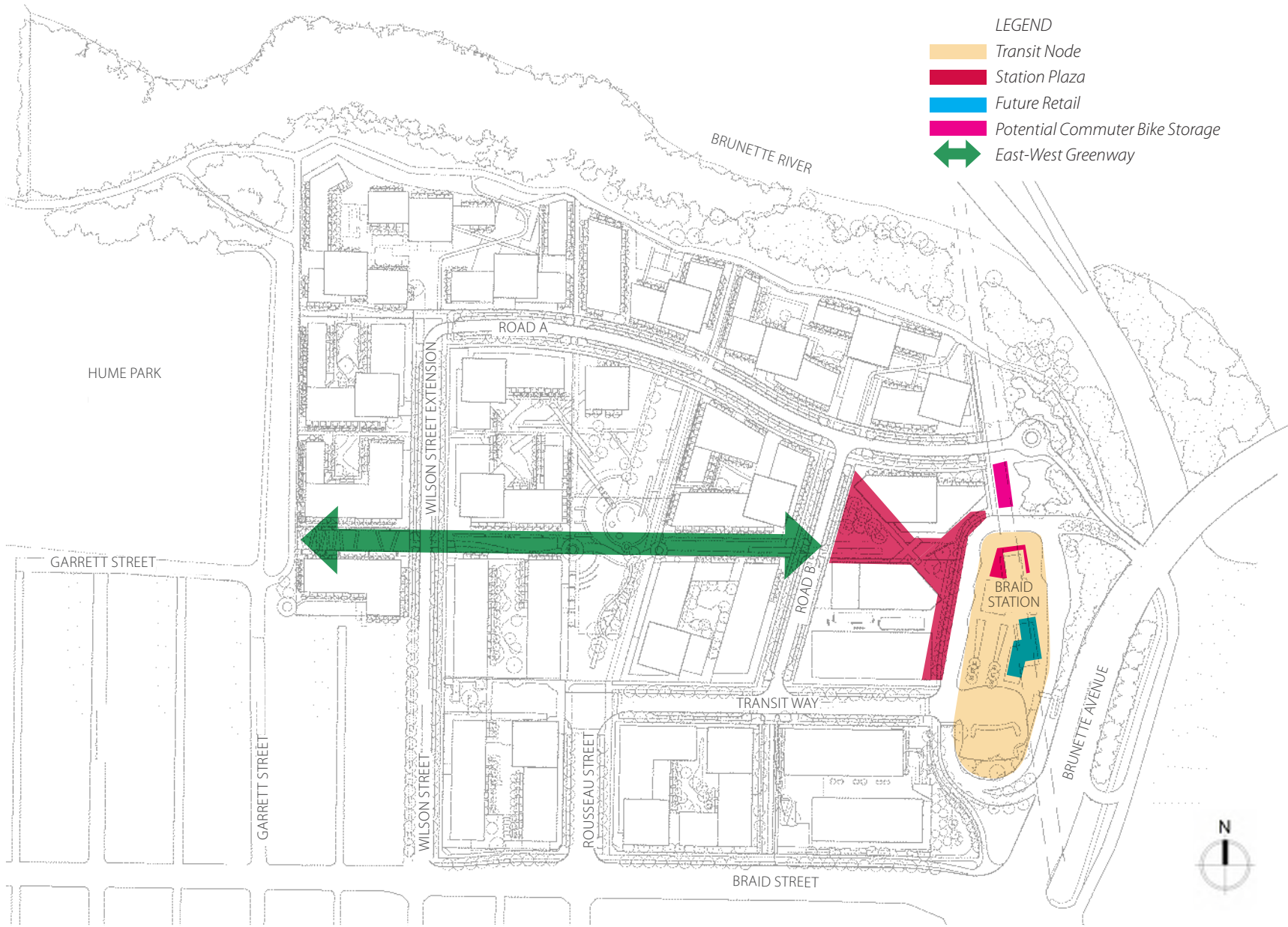
The Station Plaza melds the themes of transportation and the manufacturing heritage of the site to create a distinct, recognizable character for the Sapperton Green neighbourhood. The adjacent buildings built form opens up to create two plaza spaces: a south-west facing space and a forecourt plaza adjacent to Braid Station.

These two plaza spaces are the commercial hub of Sapperton Green and the terminus of the East-West Greenway. As such, they are vibrant, urban spaces that will incorporate large canopy shade trees, special paving, feature seating and gathering areas to create a sense of human scale and soften the urban feel. The organization of the plazas is such that spill-out space adjacent to the building frontages will encourage outdoor use by retail and commercial tenants. This will lend a vibrant energy to the plazas, thereby creating a strong sense of place and community.

The west portion of the Station Plaza has been configured to allow for local gatherings that might include lunch time concerts, food truck days or impromptu busking.

Transit Node

Adjacent to the Station Plaza is Braid Station Transit Node. This is an important stop on the Millennium Line SkyTrain route providing access to Metro Vancouver. The transit node is accessible to the Sapperton Green neighbourhood via both bi-directional bike routes, pedestrian sidewalks and the various greenway connections.



44.1 Festive Decorations



44.2 Caternary Lighting



44.2 Moveable Seating



44.4 Open Event Plaza

MASTER PLAN PRINCIPLES

SITE PERSPECTIVES

MCM

Musson
Cattell
Mackey
Partnership

QuadReal

PWL

Sapperton
Green

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Master Plan

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45.1 Aerial Perspective from South West

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page 110.

MASTER PLAN PRINCIPLES

SITE PERSPECTIVES

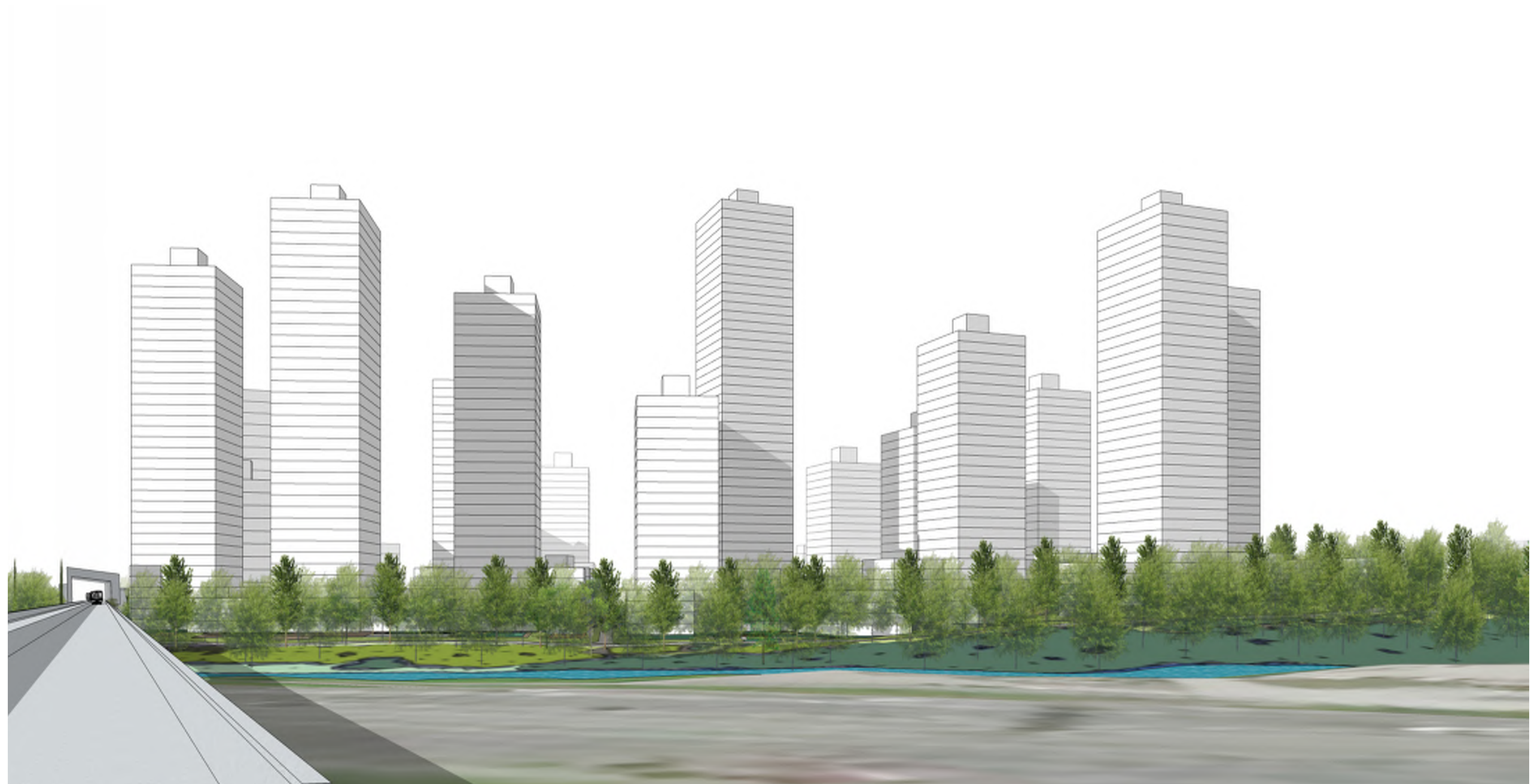
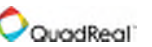


MASTER PLAN PRINCIPLES

SITE PERSPECTIVES

M C M

Musson
Cattell
Mackey
Partnership



47.1 Aerial Perspective from SkyTrain, viewing from northeast

Sapperton
Green

Master Plan

April
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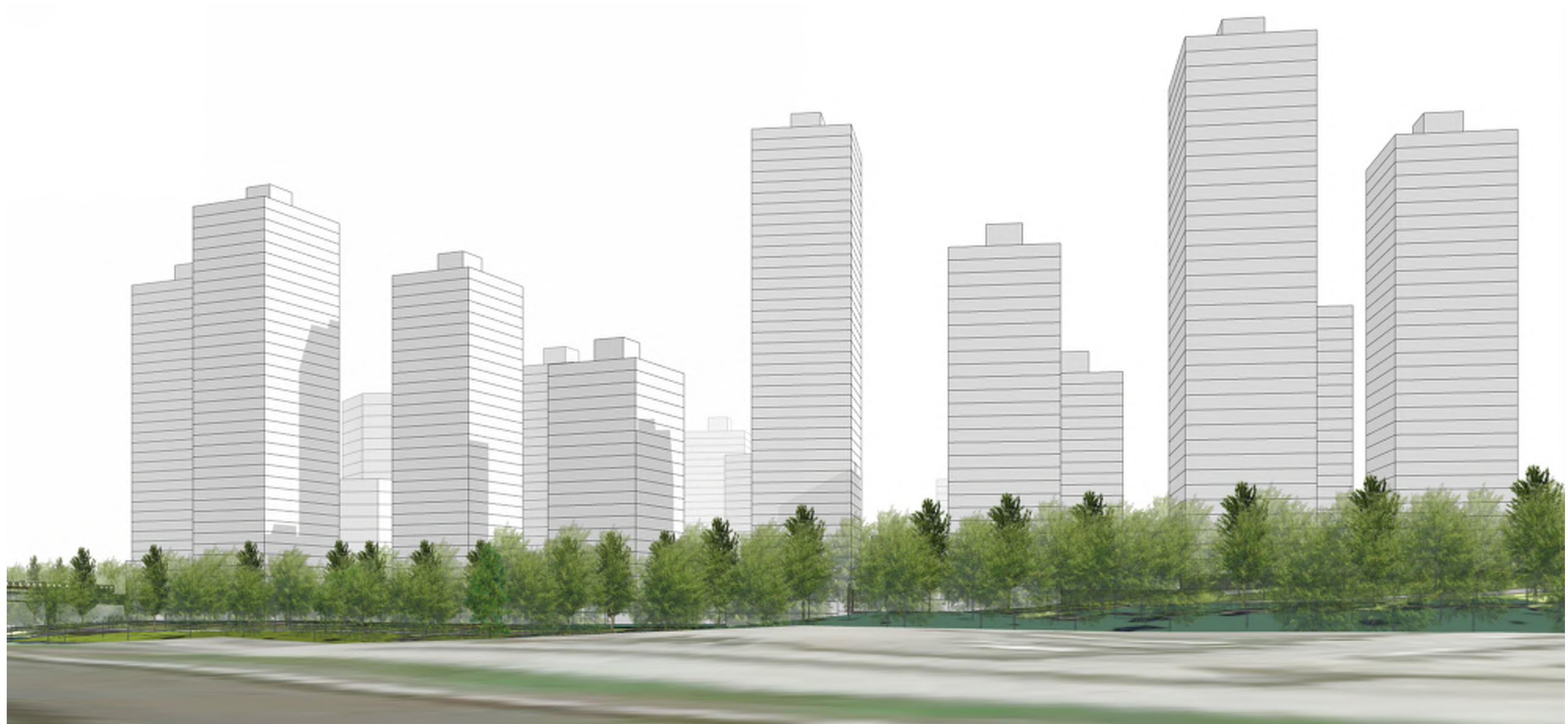
Master Plan

47

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page 110.

MASTER PLAN PRINCIPLES

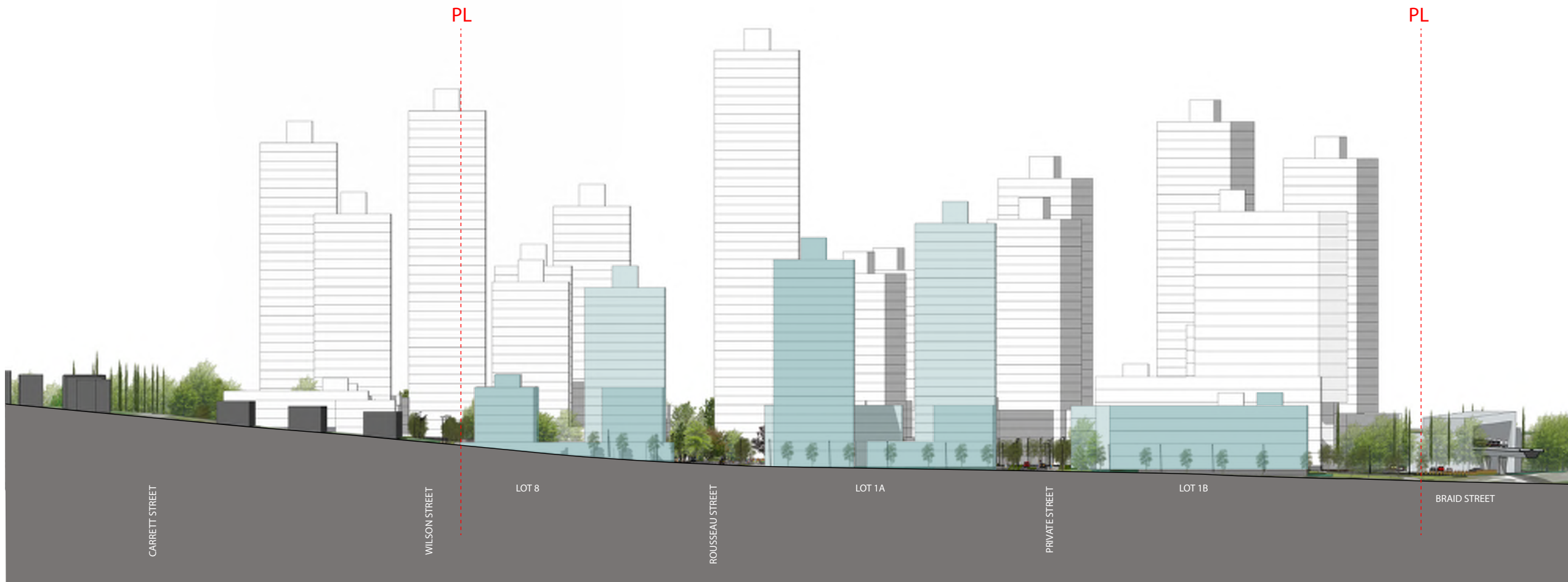
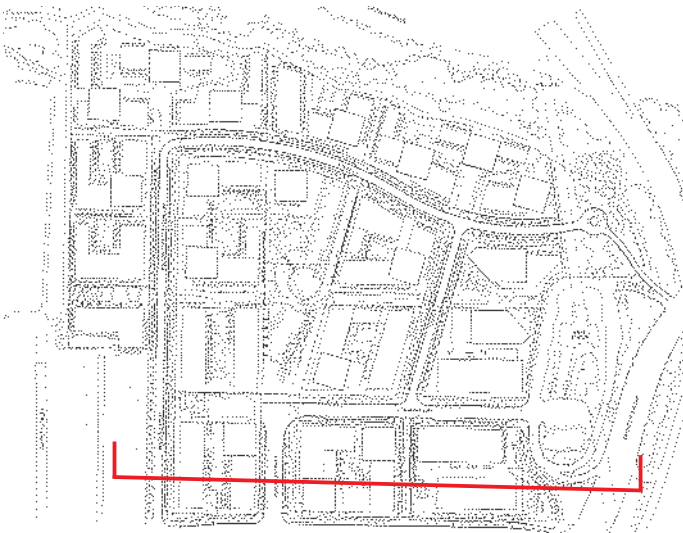
SITE PERSPECTIVES



48.1 Aerial Perspective from Highway #1, viewing from northwest

MASTER PLAN PRINCIPLES

SITE SECTIONS

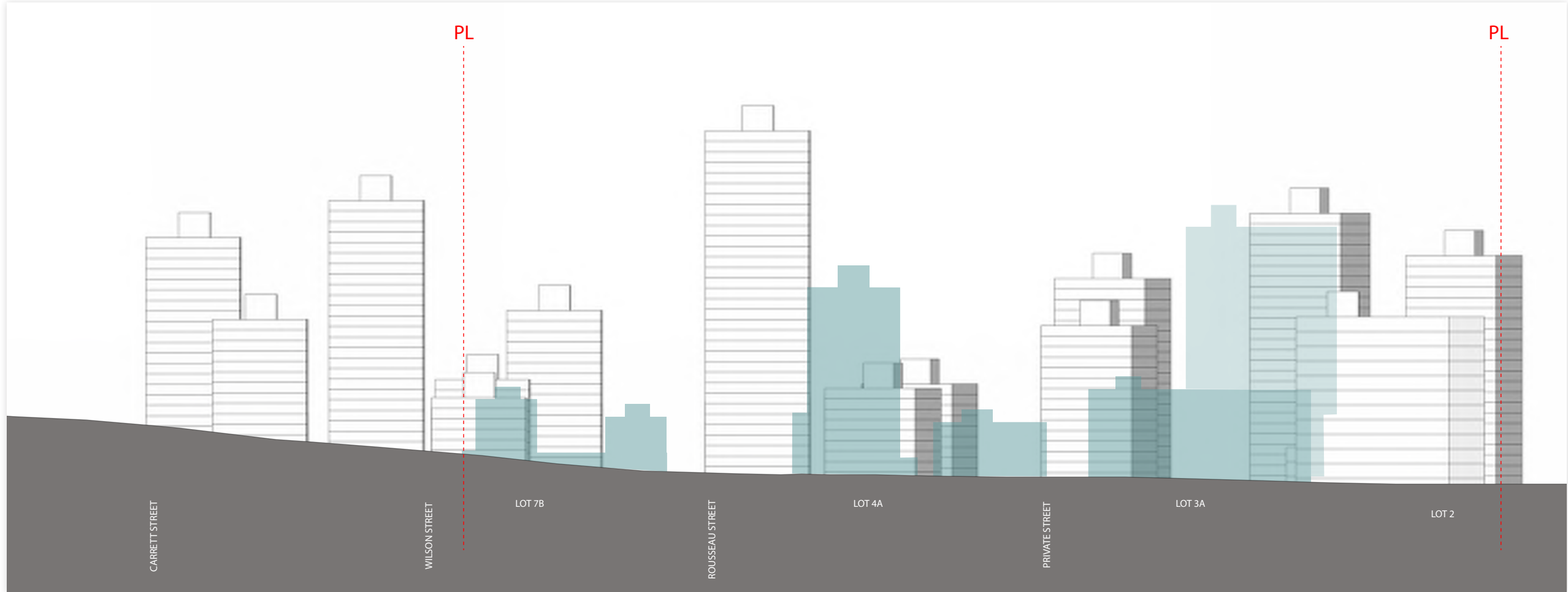
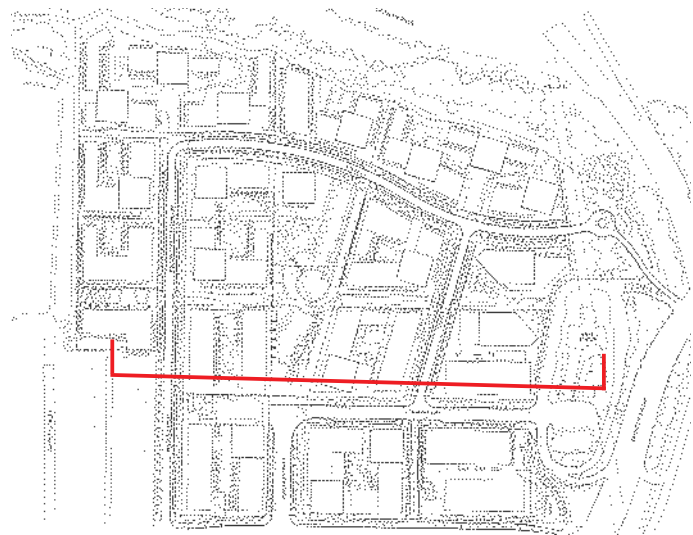


49.1 West-East Site Section along Braid Street

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

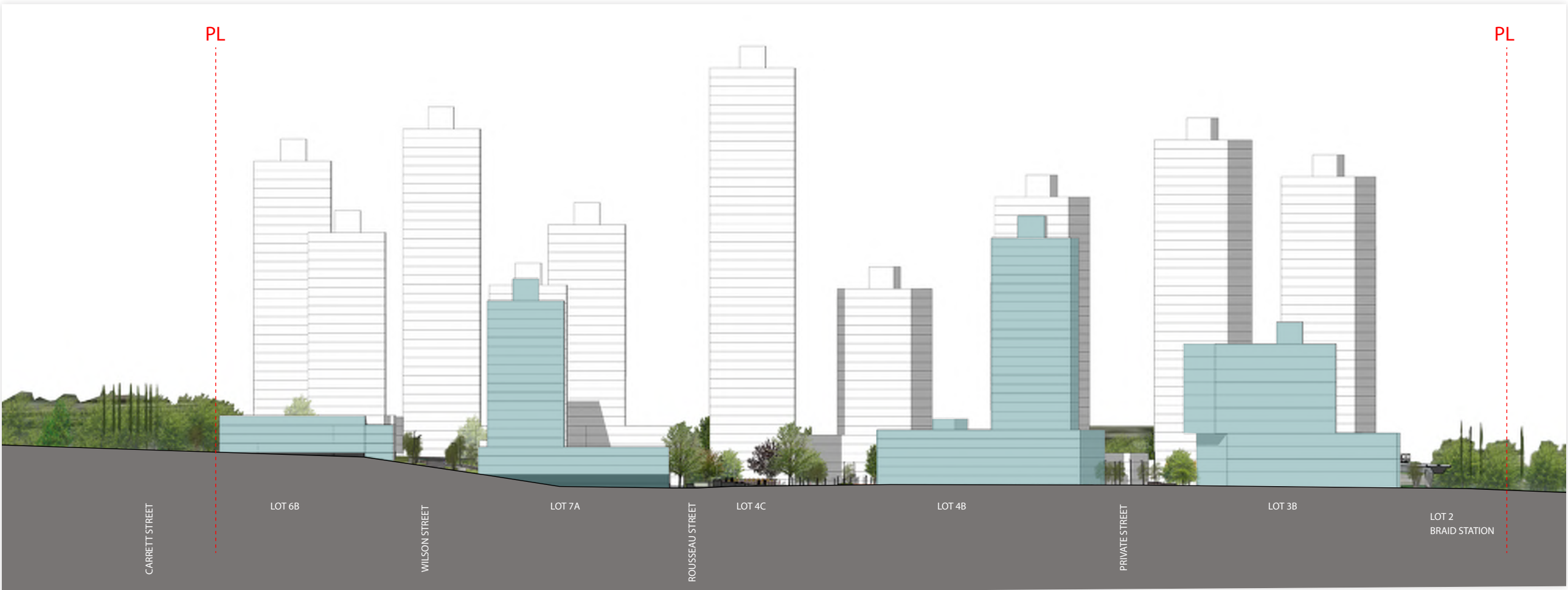
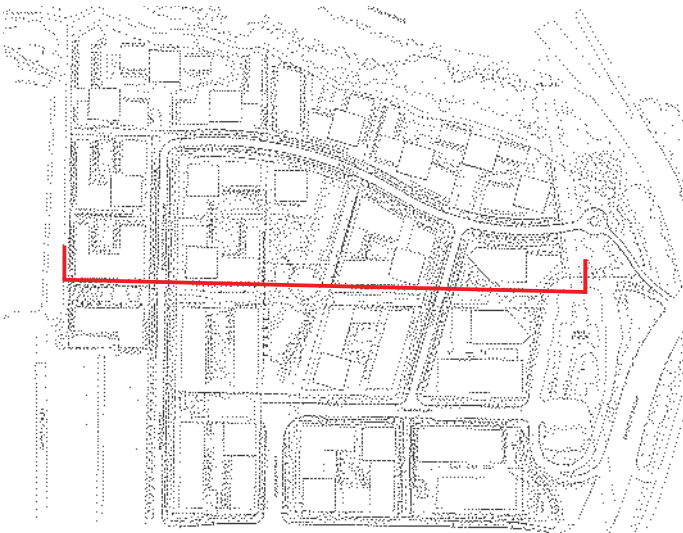


50.1 West-East Site Section along Transit Way

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

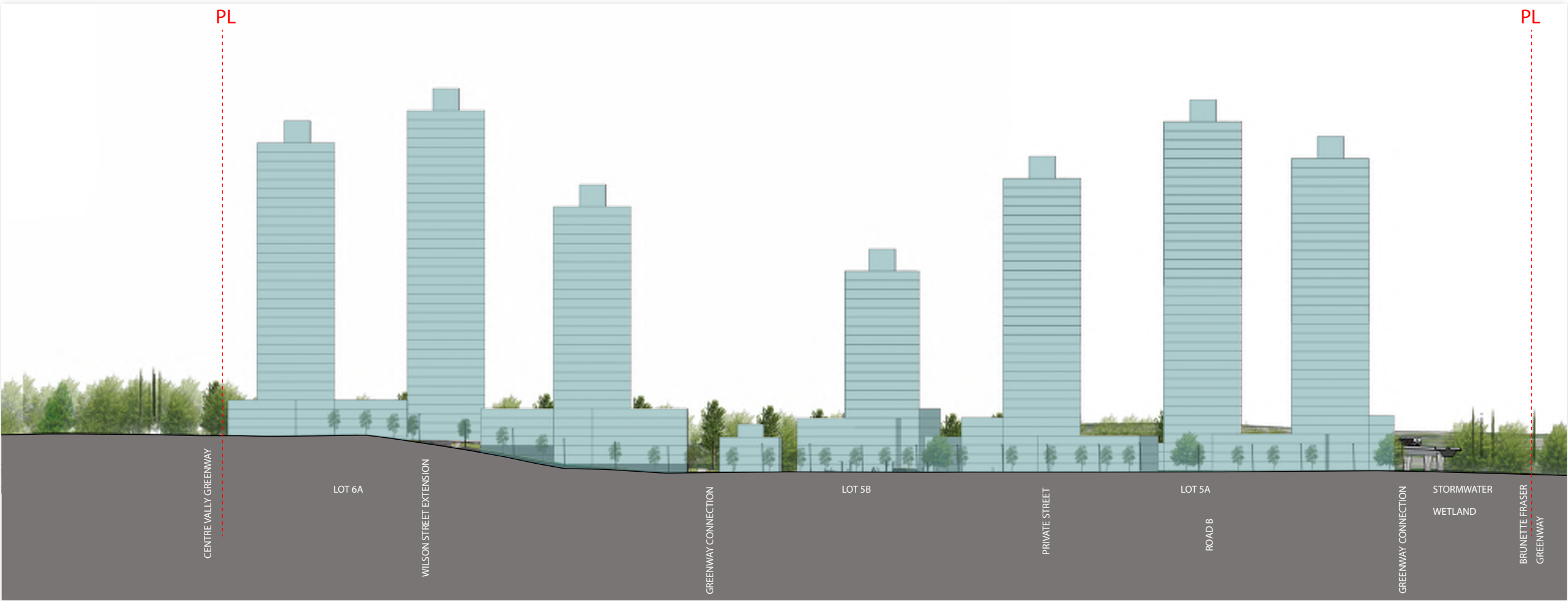
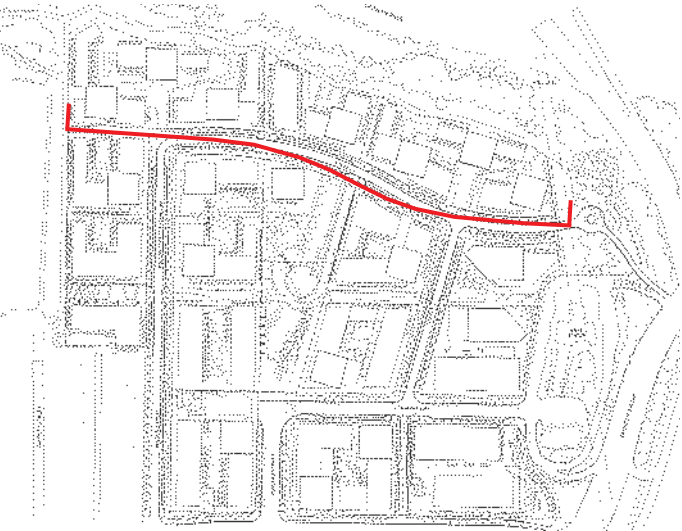


51.1 West-East Site Section along East-West Greenway

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

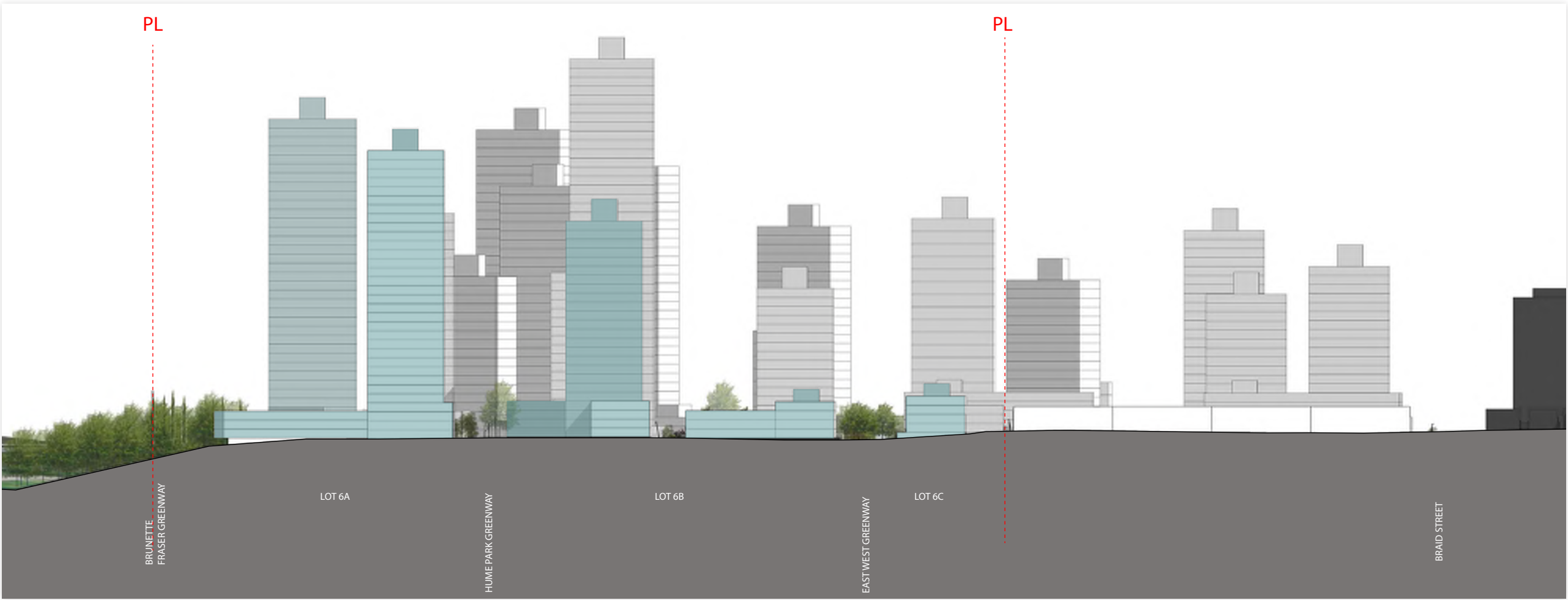
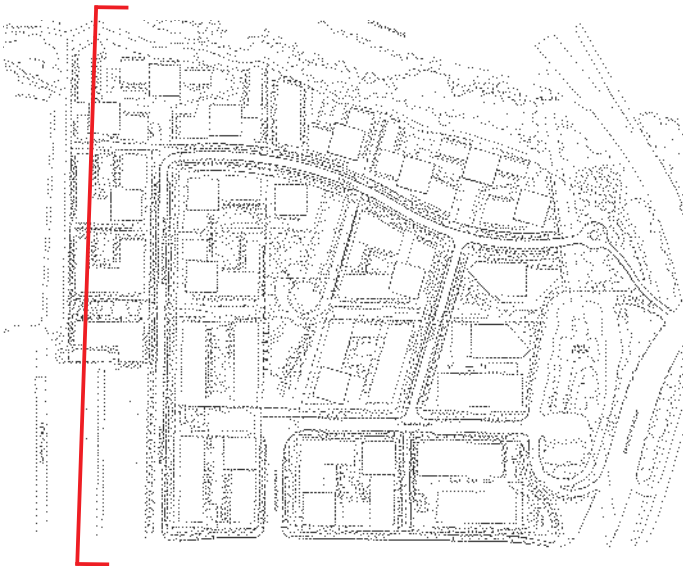


52.1 West-East Site Section along Road A

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

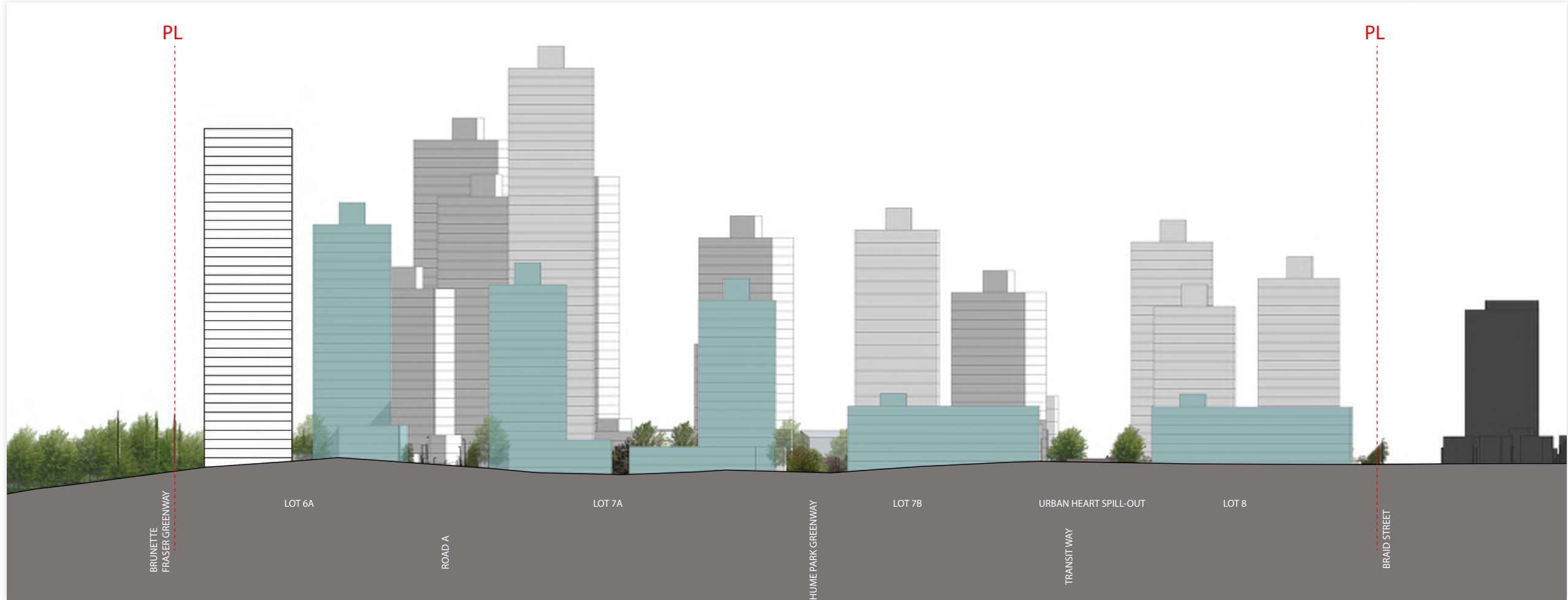
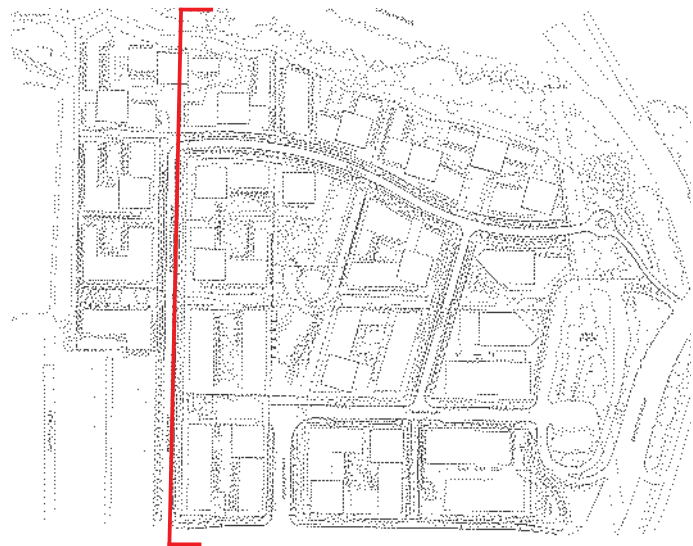


53.1 North-South Site Section along Central Valley Greenway

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

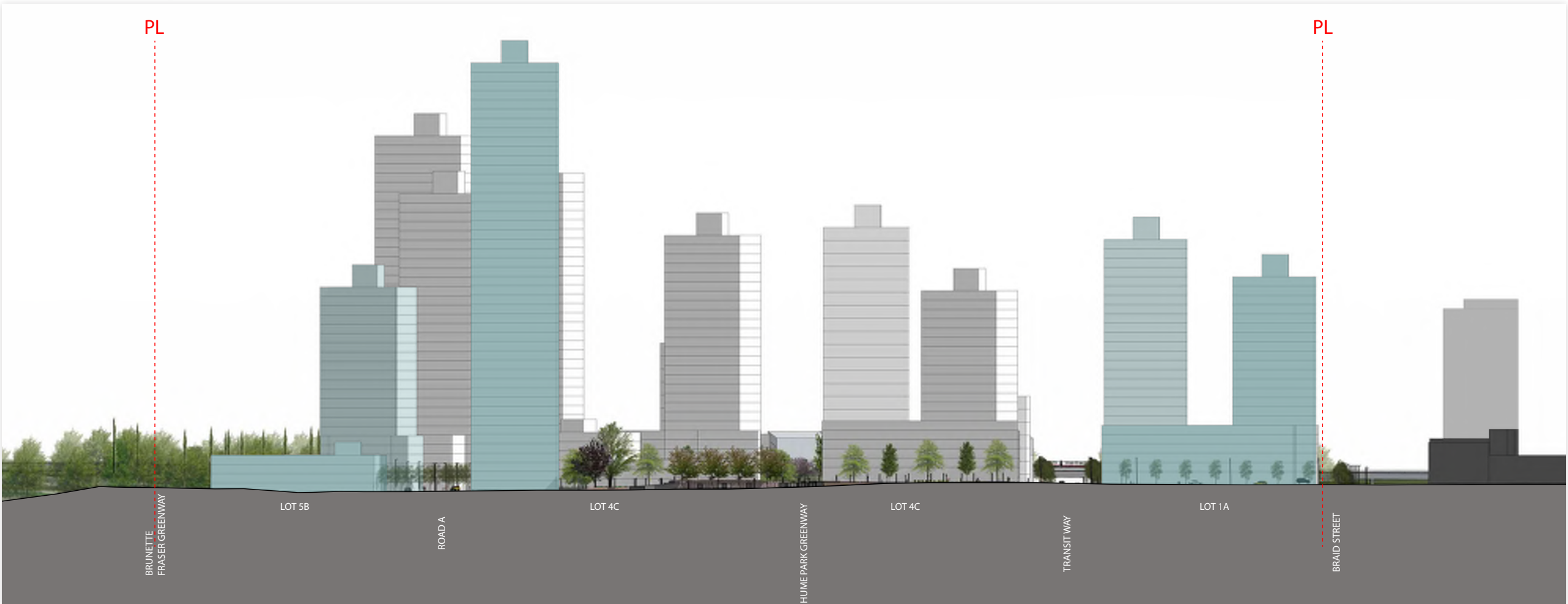
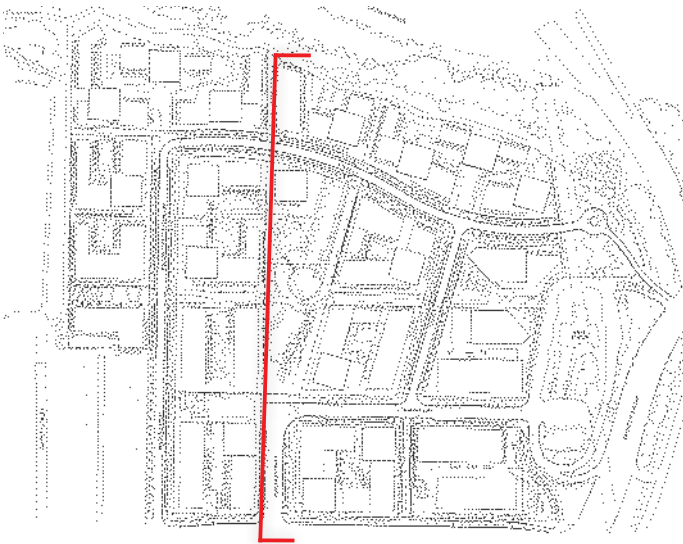


54.1 North-South Site Section along Wilson Street

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

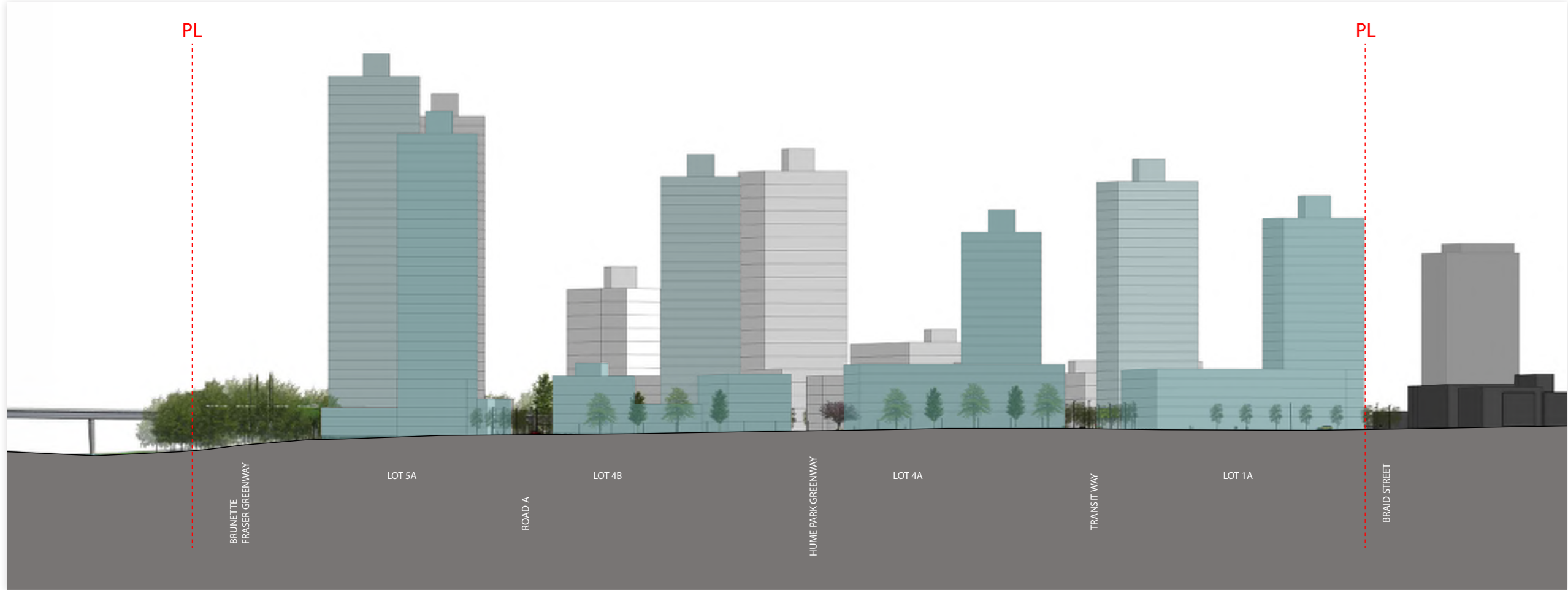
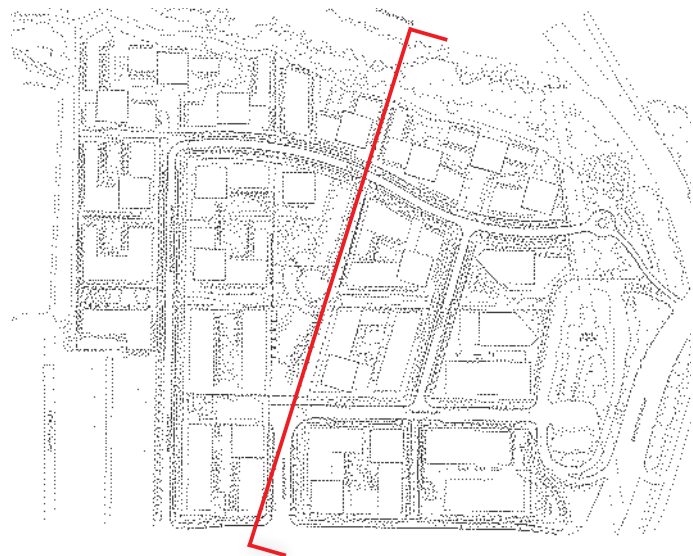


55.1 North-South Site Section along Rousseau Street

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

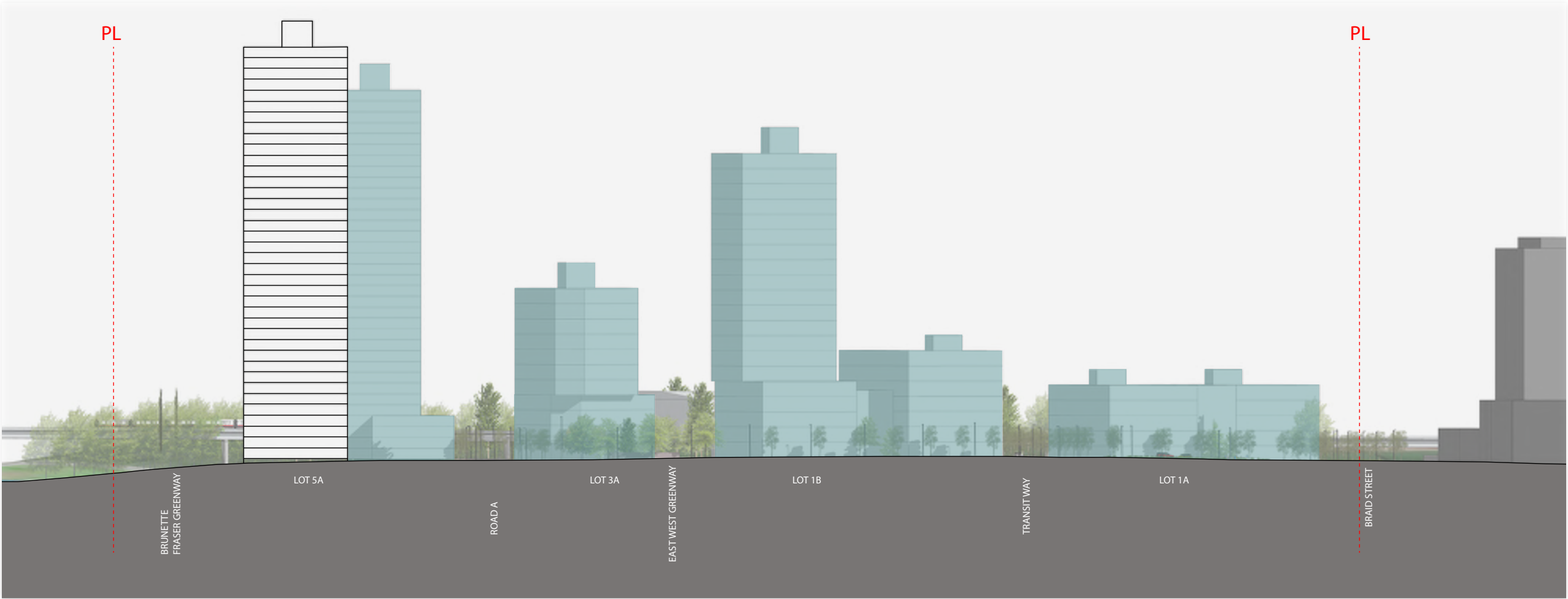
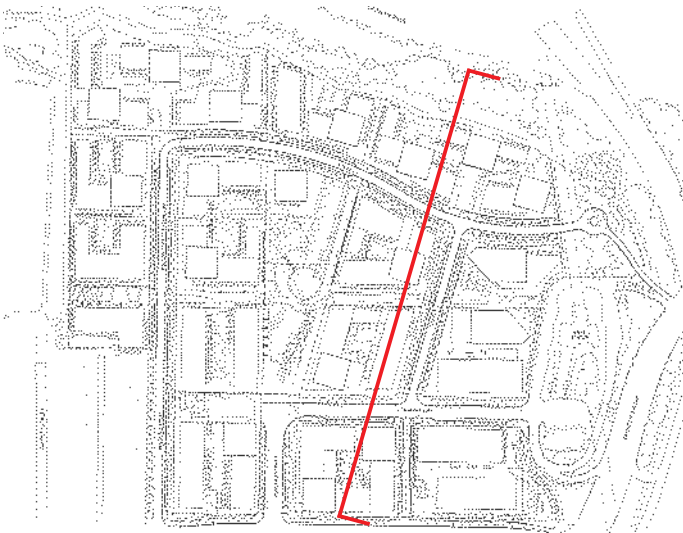


56.1 North-South Site Section along North-South Greenway

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

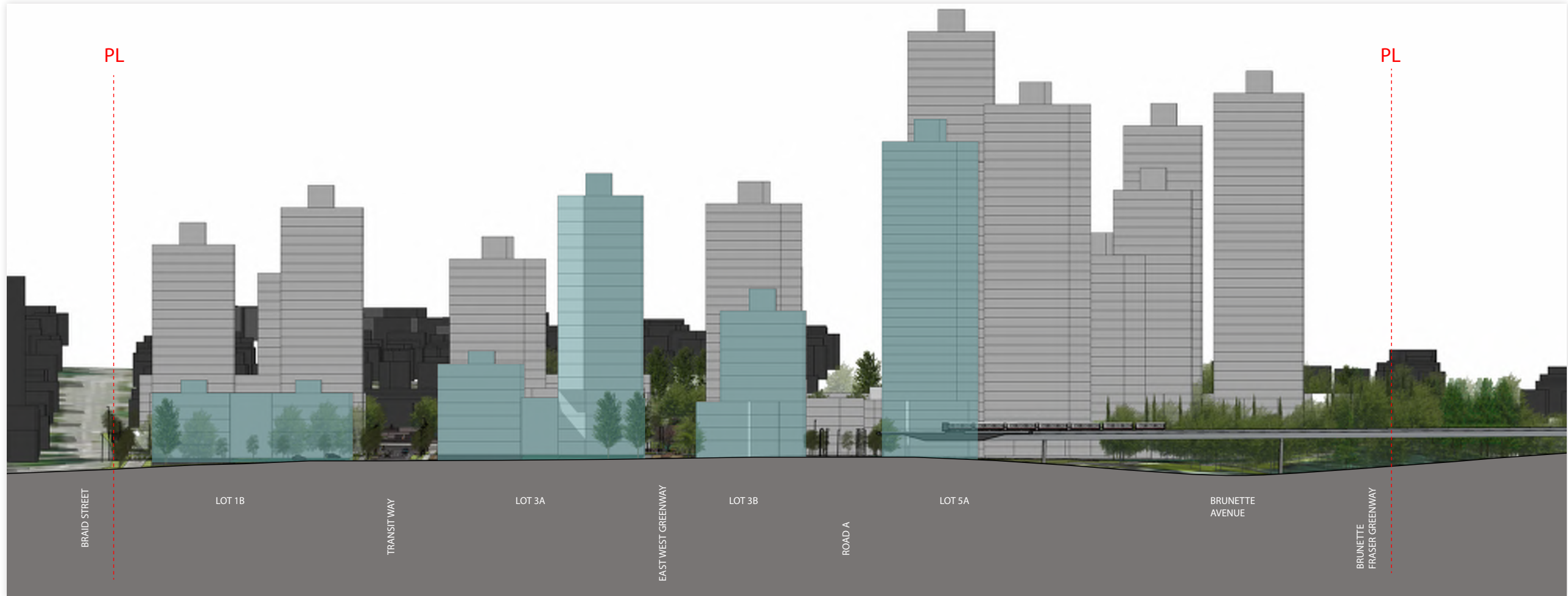
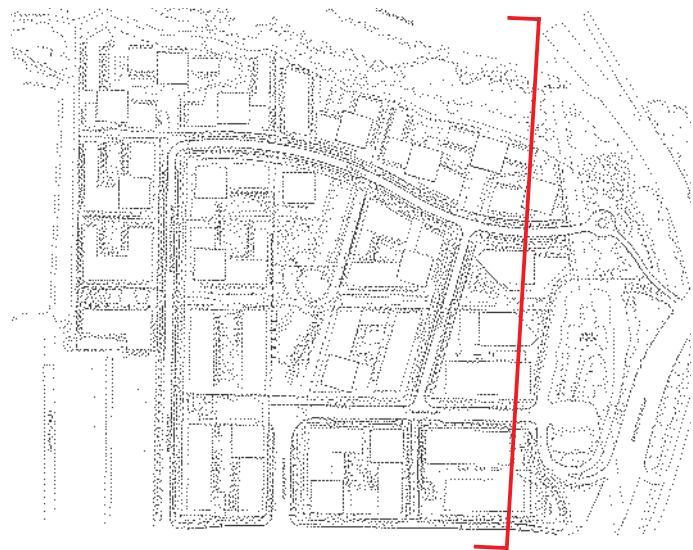


57.1 North-South Site Section along Road B

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

MASTER PLAN PRINCIPLES

SITE SECTIONS

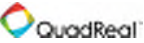


58.1 South-North Site Section along Braid Station

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.



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MASTER PLAN PRINCIPLES

DEVELOPMENT STATISTICS

GENERAL

Gross Site Area	1,672,910	sf		
Roads ¹	228,075	sf	13.6%	
Other ROW ²	119,820	sf	7.2%	
Open space	145,865	sf	8.7%	Dedication ³
Open Space	51,710	sf	3.1%	Central Park
Open space	105,830	sf	6.3%	ROW
Net Site Area	1,073,320	sf		
FSR ⁴	4.78			

Notes
* Station Area incl. Platform Approx.
** Total SF/Gross Site Area
*** Not including Community Facilities, Non-market Housing

- 1 Transit Way + A+B+C
2 Station Area + Braid Deductions
3 Dark green on map (includes existing ROW)
4 Total SF, Excluding Community Space/Net Site Area
5 25% Residential to be Rental

PROPOSED FSR

Phasing / Lot	Lot Area (sf)	Floor Area (sf)							FSR	Number of Residential Units			
		Residential			Commercial		Other	Total		Residential			Total
		Tower	Mid-rise	Townhouse	Office	Retail	Community			Tower	Mid-rise	Townhouse	
<u>Phase 1</u>													
Lot 1A	74,170	297,000	175,965	-	-	20,965	-	493,930	6.66	345	199	-	544
Lot 1B	88,430	-	-	-	189,948	-	-	189,948	2.15	-	-	-	-
Lot 2	112,995	-	-	-	-	8,492	27,066	35,558	0.31	-	-	-	-
Lot 8	77,075	73,557	173,891	-	-	20,000	-	267,448	3.47	85	197	-	282
<u>Phase 2</u>													
Lot 3A	63,120	-	-	-	322,325	34,995	-	357,320	5.66	-	-	-	-
Lot 3B	44,105	-	-	-	143,520	12,945	-	156,465	3.55	-	-	-	-
Lot 4A	63,070	98,784	177,781	7,626	-	14,575	-	298,766	4.74	115	201	6	322
Lot 4B	66,065	148,176	181,470	7,086	-	-	-	336,732	5.10	172	206	6	383
Lot 4C	56,340	324,576	-	-	-	-	-	324,576	5.76	377	-	-	377
Lot 5A	107,435	627,984	157,854	24,915	-	-	-	810,753	7.55	728	179	20	927
Lot 5B	59,590	112,896	127,694	-	-	-	-	240,590	4.04	131	145	-	276
<u>Phase 3</u>													
Lot 6A	135,645	557,424	188,702	38,943	-	-	-	785,069	5.79	647	214	31	892
Lot 6B	87,743	134,064	151,628	22,014	-	-	-	307,706	3.51	156	172	18	345
Lot 6C	37,201	-	59,400	-	-	-	-	59,400	1.60	-	67	-	67
Lot 7A	93,463	225,792	152,600	9,180	-	-	-	387,572	4.15	262	173	7	442
Lot 7B	57,712	-	148,500	-	-	14,390	35,000	197,890	3.43	-	168	-	168
Total	1,224,159	2,600,253	1,695,485	109,764	655,793	126,362	62,066	5,187,657	3.10	3,016	1,922	88	5,026
		4,405,502											

826

2,285

1,914

MASTER PLAN PRINCIPLES

DEVELOPMENT STATISTICS



ASSUMPTIONS

Average size	sf / Unit	Efficiency	Note
Condo (Highrise/Tower)	750	87%	can likely achieve less efficiency than 100% if located on podium
Condo (Midrise)	750	85%	
Townhouse	1250	100%	

- Road Dedication ¹
- Station Area + Braid Deductions ²
- Open Space (Dedication includes existing ROW) ³
- Open Space Central Park
- Open Space (ROW)
- Site Property Line

MASTER PLAN PRINCIPLES

SUN/ SHADE IMPACTS

Spring Equinox (UTC-7)



10:00 AM



12:00 PM



2:00 PM

Summer Solstice (UTC-7)



10:00 AM



12:00 PM



2:00 PM

Winter Solstice (UTC-8)



10:00 AM



12:00 PM



2:00 PM



TRANSPORTATION PRINCIPLES

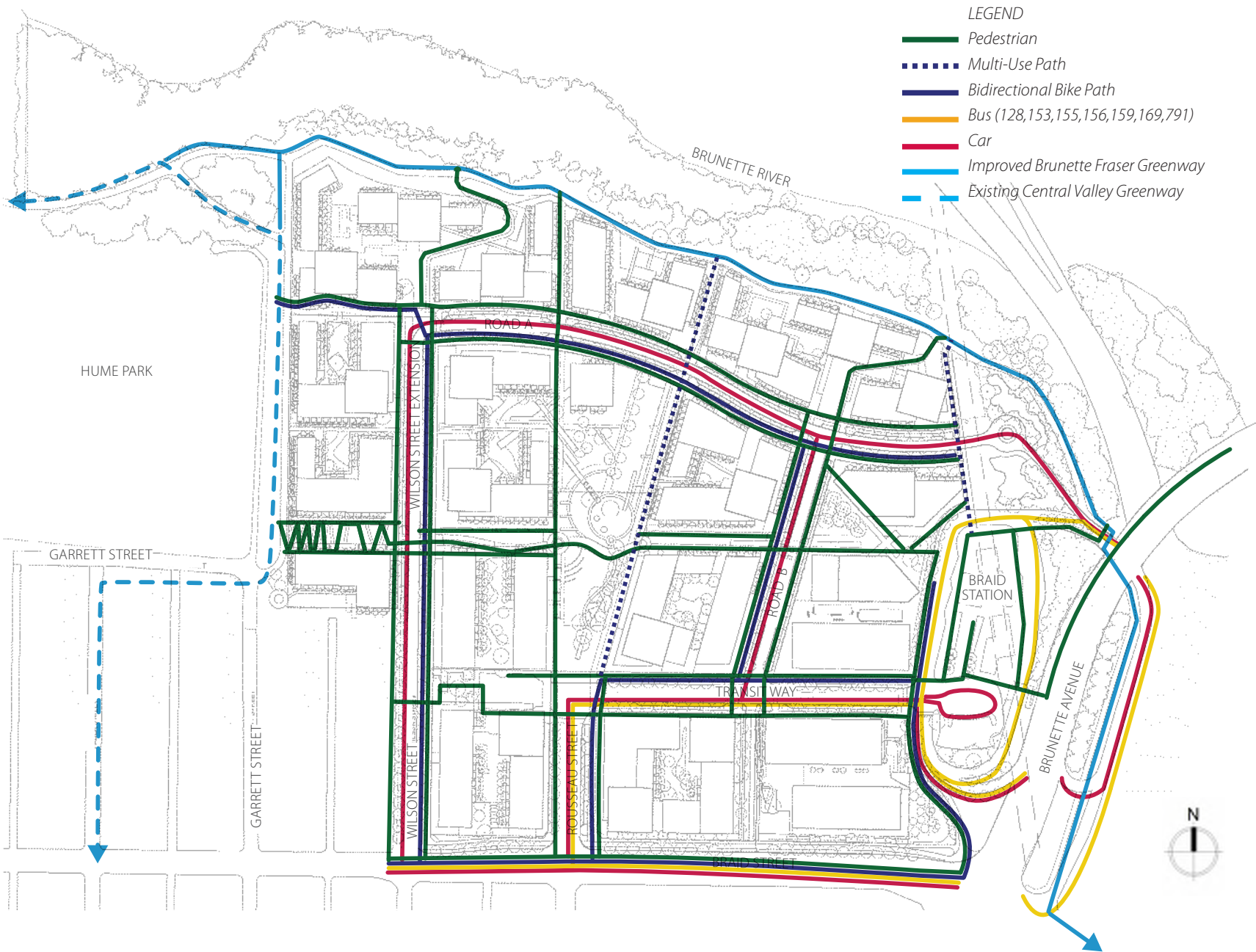
CIRCULATION

Introduction

Sapperton Green will be a vibrant and active addition to the surrounding existing Sapperton community. It will provide opportunities for residents and visitors to access new park spaces, retail, office, commercial and residential homes. It will also provide an opportunity for stronger, friendlier connections to existing services including Braid Station and existing open spaces such as Hume Park, Central Valley Greenway and Brunette Fraser Greenway.

In order to achieve these goals, the transportation network for Sapperton Green responds to a number of the overriding principles that include permeability, green corridors, pedestrian and bicycle linkages and walkable neighbourhood.

The priority for Sapperton Green movement is pedestrian and cyclist first, then car, transit and automobile. This priority capitalizes on a simple idea that in order to ensure that this new community is shamelessly integrated with the existing Sapperton neighbourhood a fine-grain network of paths, sidewalks, greenways, bi-directional bikeways and roads would need to mesh with the existing transportation network. This will ensure a permeable, open and friendly Sapperton Green that is truly part of the existing surrounding Sapperton community.



63.1 Separated Bike Lane



63.2 Pedestrian/Parking



63.3 Bike



63.4 Multi-use Pathway

TRANSPORTATION PRINCIPLES

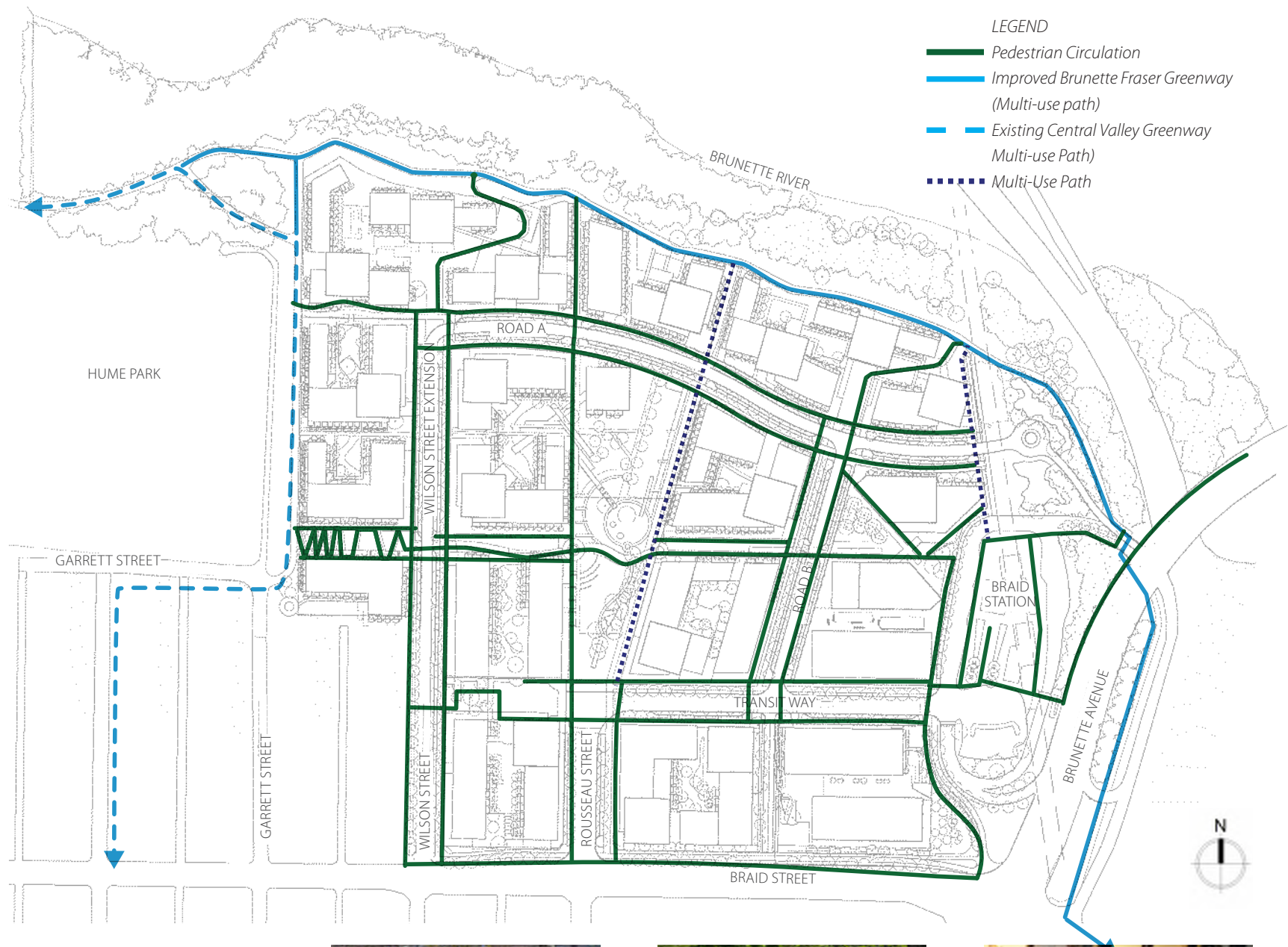
CIRCULATION

Pedestrian Circulation

Sapperton Green pedestrian circulation is strongly influenced by a number of factors:

- Adjacency to Hume Park and Braid Station,
- Density of population to the west and east,
- The Central Valley Greenway, and
- The Burnette Fraser edge / trail system

In response to this, a hierarchy of pedestrian greenways and paths developed. The East-West Greenway and North-South Greenways create the main structure for pedestrian movement. They recognize the importance of direct connections from the west to Braid Station via Hume Park, and from the south to the Brunette Fraser Greenway. Further breaking down this structure, a finer grain/ green finger network of pedestrian paths are the sidewalks on either side of the internal streets and public pathway connections through private parcels on the north and west edges. These green fingers ensure that the adjacent Brunette Fraser Greenway and Central Valley Greenway are well connected to the Sapperton Green neighbourhood reinforcing the public attitude and inclusive nature of this new community.



64.1 Multi Use Path



64.2 Pedestrian Walkway



64.3 Multi Use Path



64.4 Pedestrian Retail Interface

TRANSPORTATION PRINCIPLES

CIRCULATION

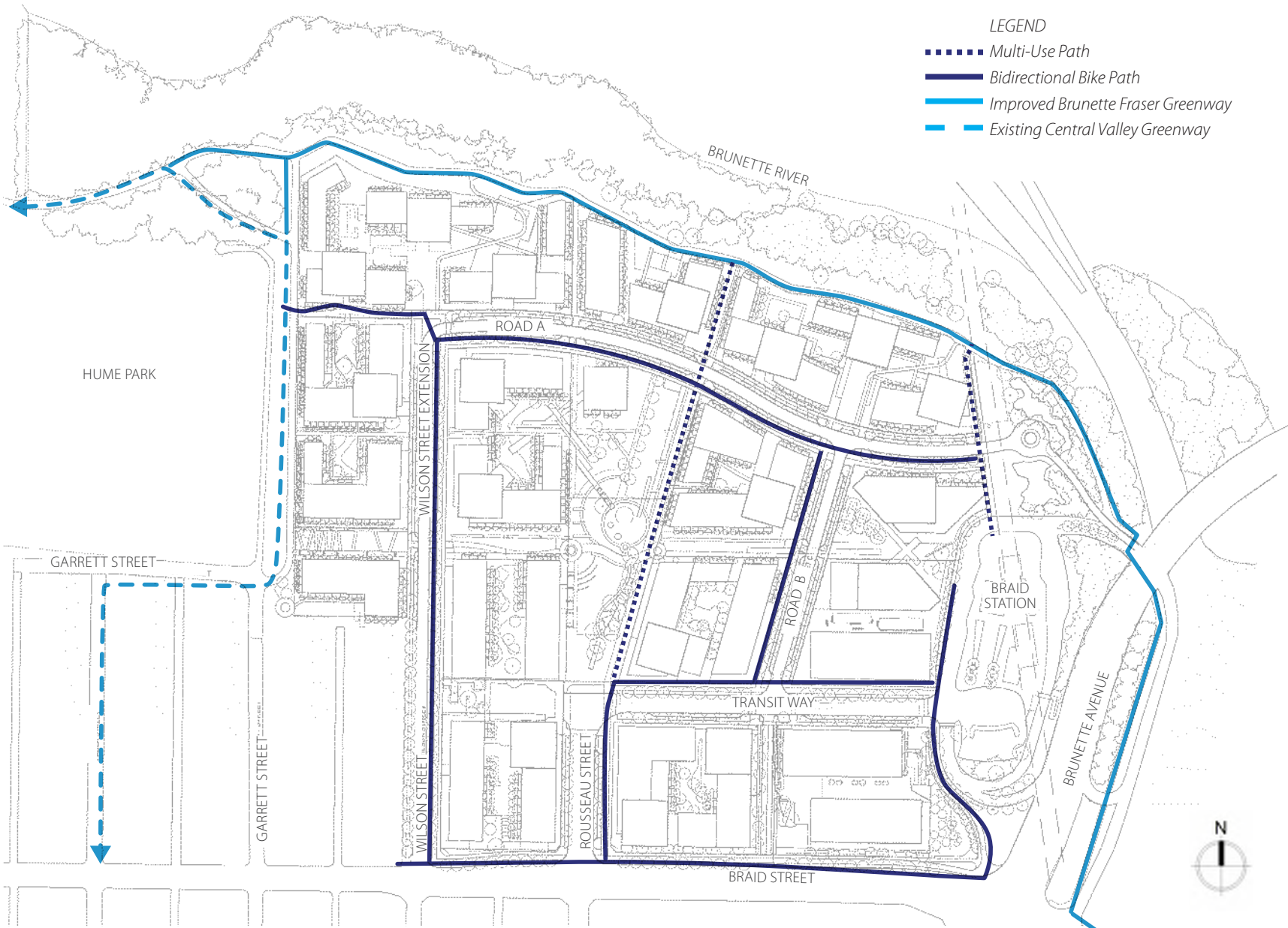
Bicycle Circulation

Bicycle circulation at Sapperton Green and bicycle connections to adjacent city and regional bike trail systems follow the same principles as pedestrian circulation, namely to create a fine-grained network that enhances permeability and movement. This network includes the North-South Greenway, Hume Park Greenway connection to bike lanes on Road A, improved Brunette Fraser Greenway with multi-use path, and additional bicycle connection from the southeast to the Transit node.

The bicycle circulation plan recognizes the commuter cyclist and their desire to move quickly from point A to point B. At Sapperton Green this has been interpreted as direct connection from the Central Valley Greenway and Brunette Fraser Greenway to Braid Station. The addition of the Hume Park Greenway connection to bike lanes on Road A and improvements to the Brunette Fraser Greenway including a 4.0m wide paved multi-use pathway accomplish this goal. Potential for end of trip facilities at Braid Station will be proposed as part of this plan.

Recreational cyclists who prefer to slowly enjoy this new neighbourhood and its parks and retail offerings are accommodated on the network of bidirectional, off street bike paths with multi-use pathways at the Brunette Fraser Greenway.

Bike racks at key gathering places, activity areas and nodes will encourage cyclists to explore Sapperton Green and make use of amenities, retail and commercial opportunities.



65.1 Multi Use Path



65.2 Separated Bicycle and Pedestrian Paths



65.3 Intersection



65.4 Pedestrian Crossing of Bicycle Lane

TRANSPORTATION PRINCIPLES

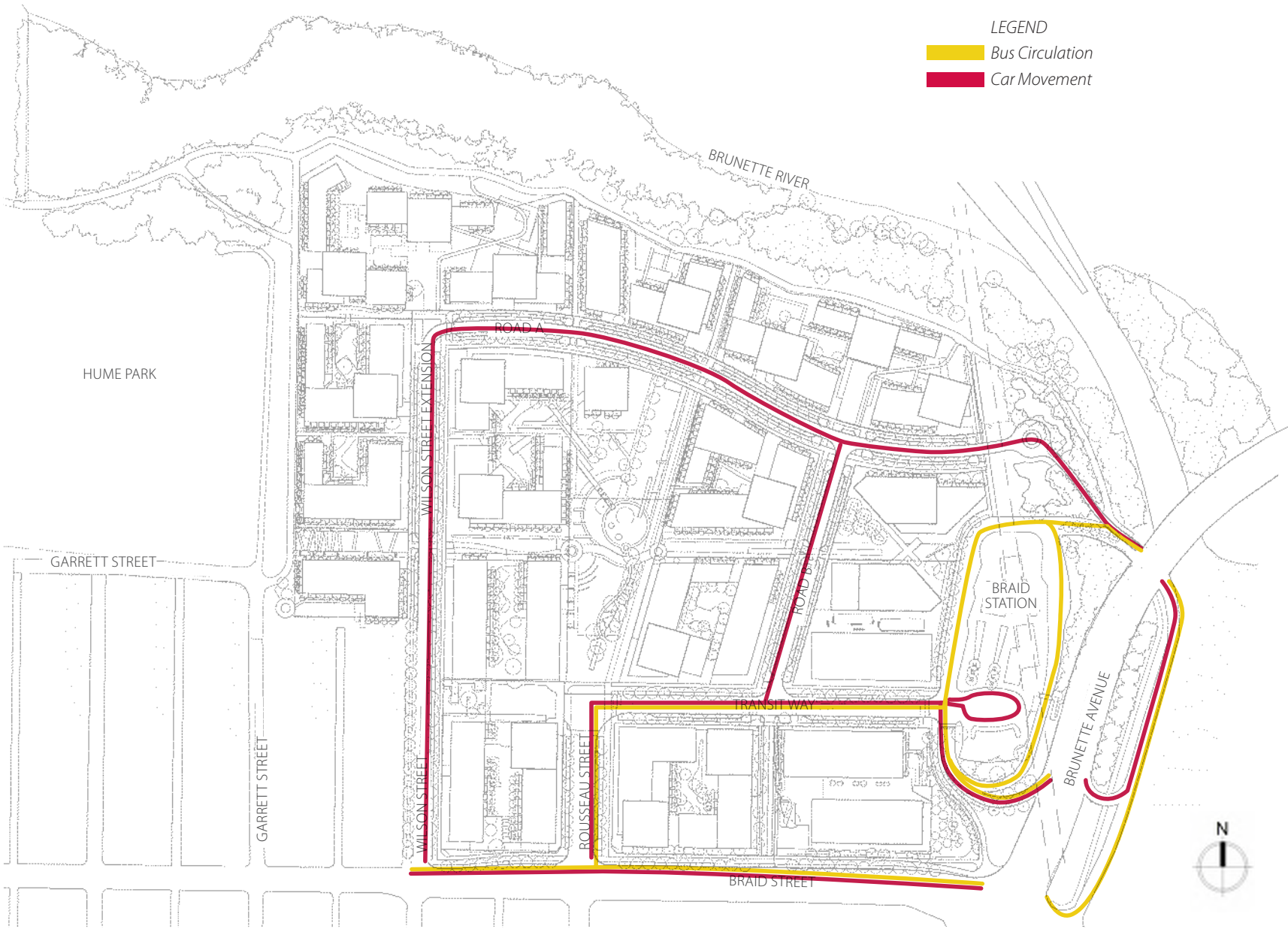
CIRCULATION

Street Network

The Sapperton Green street network has been developed to offer clear, efficient vehicle connections to and from the Sapperton Green neighbourhood and connecting to the surrounding urban street grid and highway network. The internal street layout is efficient, minimizes the length of new internal streets while maximizing the building frontage onto the road network. Maximizing building frontage encourages greater connection to residents through ground-based residential entries as well as retail commercial frontages. The result is a neighbourhood where people are visible and the sidewalks/ streets are animated.

Some new neighbourhood streets will incorporate parallel parking on both sides of the street for convenience and to slow the speed of neighbourhood traffic. Some street corners will be articulated with corner bulges that will be animated by rain gardens. Streets will be complete with boulevards, street tree planting and sidewalks to ensure a sense of human scale and neighbourhood feel.

The planning of the Sapperton Green street network has involved breaking down old conventions related to the Braid SkyTrain Station and bus exchange. Where feasible, vehicles and buses will share access with what was previously dedicated bus access to the bus exchange. This not only improves permeability and accessibility to Sapperton Green but allows for a number of new entry and exit points that will ease traffic congestion due to the additional site traffic from Sapperton Green .



66.1 Transit Way



66.2 Wilson Street



66.3 Rousseau



66.4 Road B

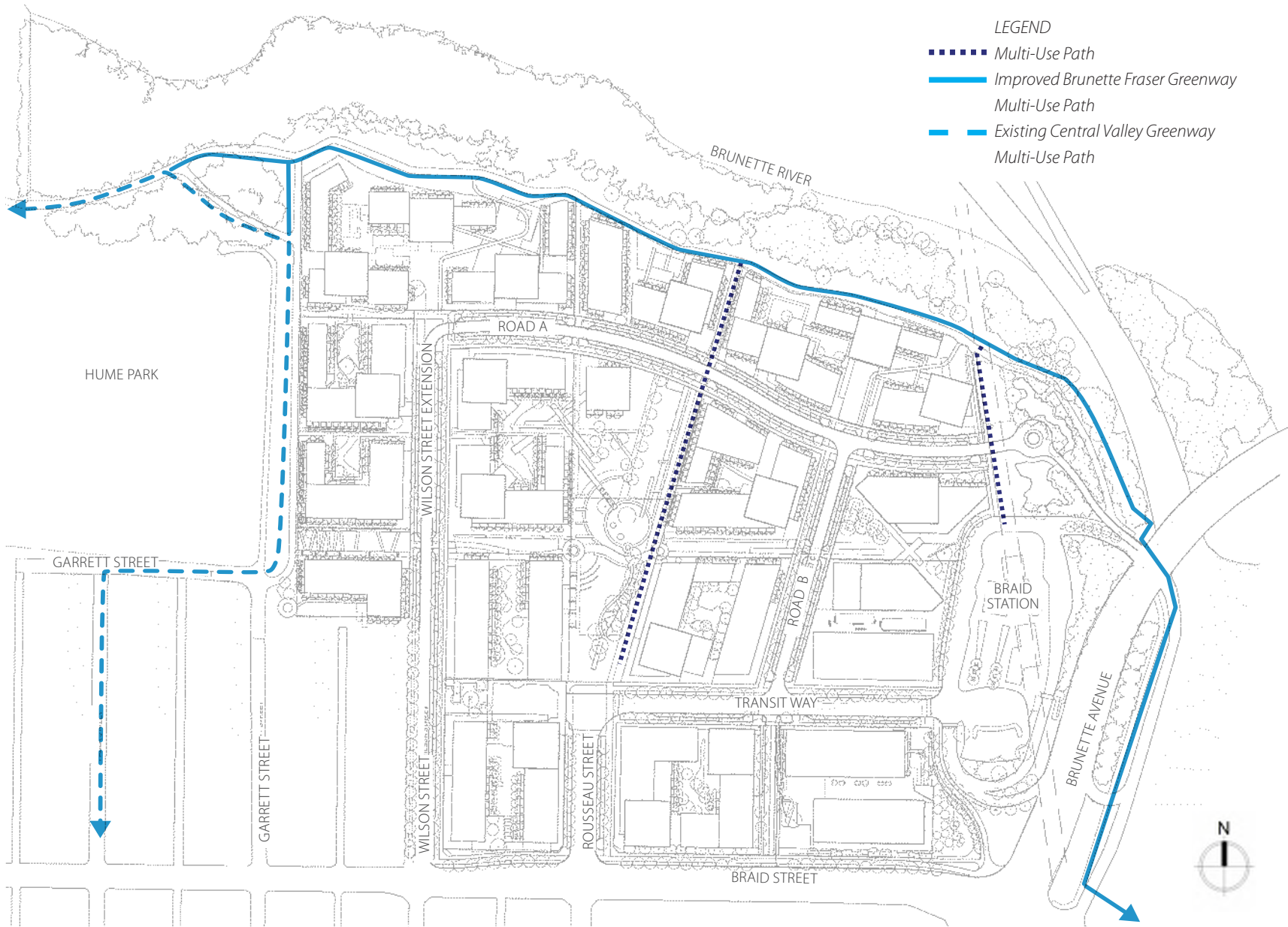
TRANSPORTATION PRINCIPLES

CIRCULATION

Multi-Use Routes

The multi-use pathway (MUP) network at Sapperton Green is an important movement system and socializing network. Mixing cyclists and pedestrians encourages positive interaction and a strong sense of community.

MUPs adjacent to streets and park spaces create energy and activity along their length and ensure opportunities for connections to regional MUP including the Brunette Fraser Greenway and the Central Valley Greenway. As with pedestrian and bicycle circulation this ensures openness and permeability of the entire neighbourhood of Sapperton.



67.1 Multi-Use Path



67.2 Multi-Use Path



67.3 Multi-Use Path



67.4 Multi-Use Path

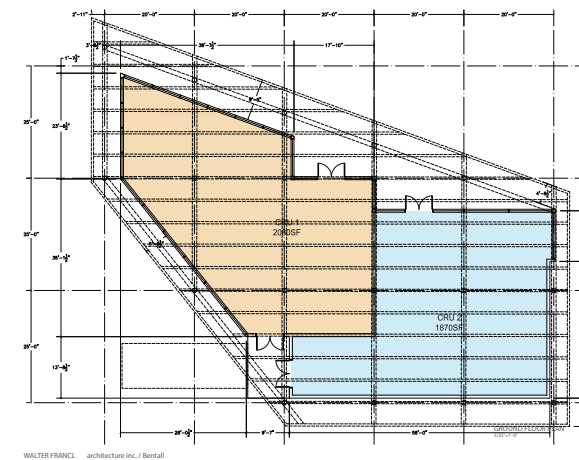
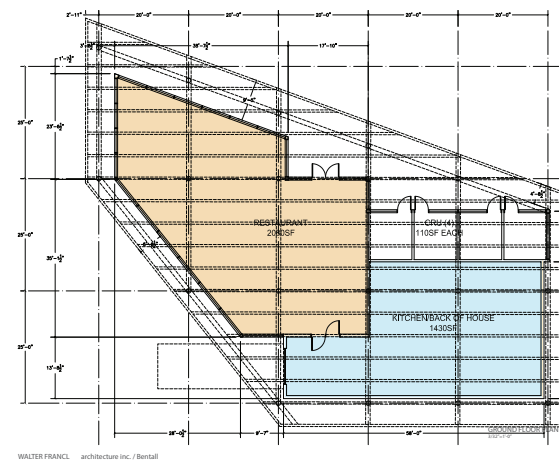
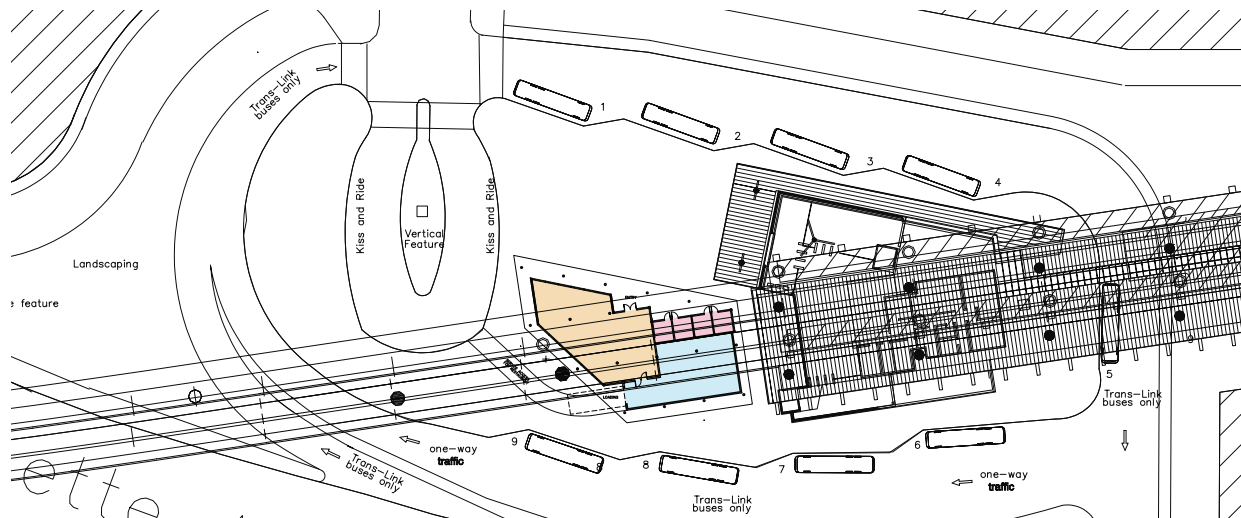
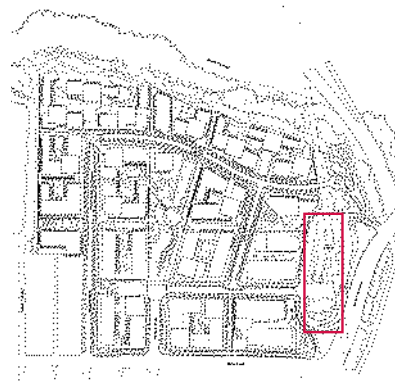
TRANSPORTATION PRINCIPLES

TRANSIT STATION IMPROVEMENTS

Braid Station

SkyTrain stations in the lower mainland have become important community hubs. They provide transportation links and ridership numbers that support transit oriented developments including housing, commercial and retail opportunities.

The Sapperton Green Master Plan recognizes the proposed commercial building on the southeast side of the existing SkyTrain entry plaza. This building will become part of the Station Precinct, its function will be sympathetic to the commercial retail development planned for the adjacent Sapperton Green Station Plaza.



TRANSPORTATION PRINCIPLES

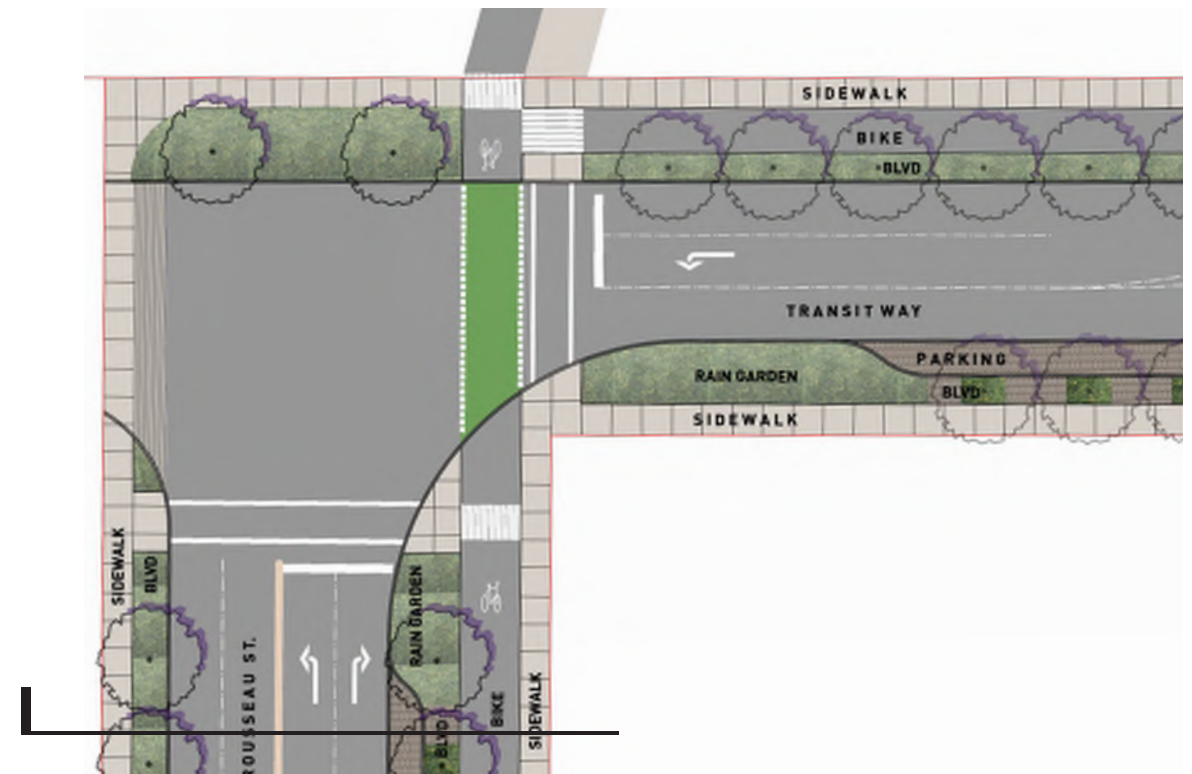
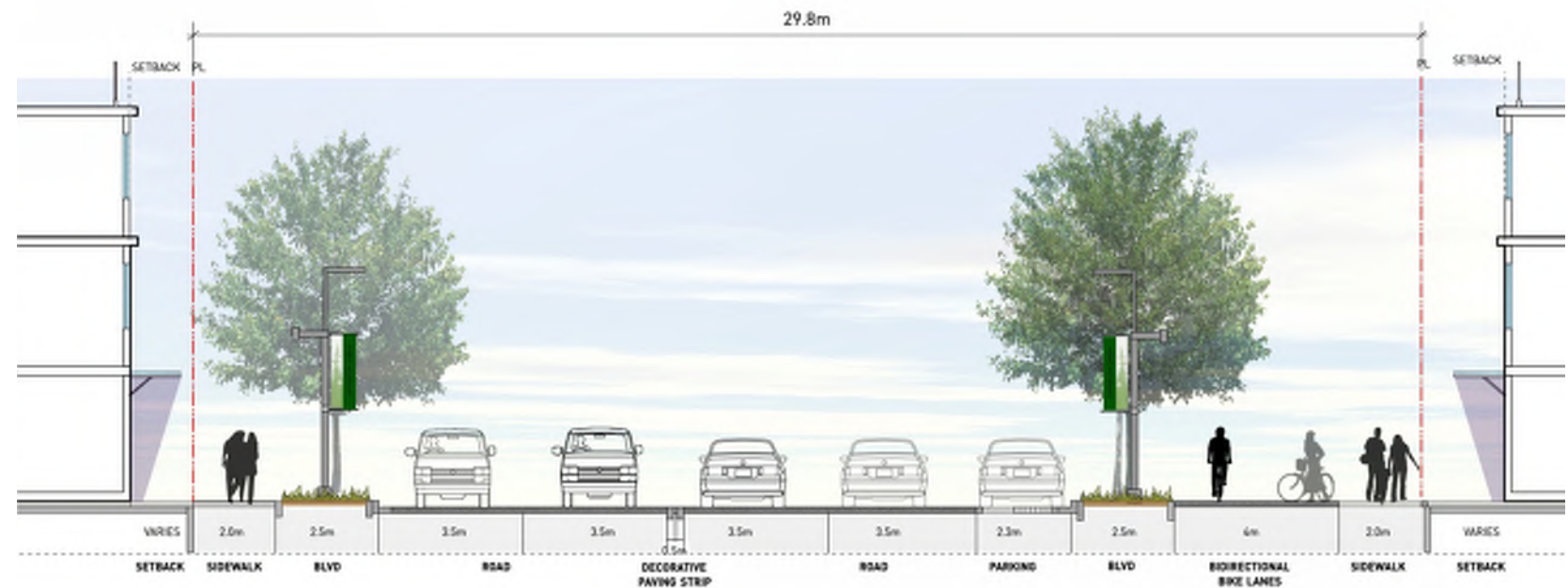
STREETS

Road Section - Rousseau

Rousseau is the primary gateway to Sapperton Green. It is on axis with the Neighbourhood Heart and, as such, presents an opportunity for a visual and physical connection, as well as an introduction to the character of this new neighbourhood. It accommodates a separated bi-directional cycling and pedestrian path on its east edge that continues north through the Neighbourhood Heart to the Brunette Fraser Greenway at the north edge. Rousseau street is an important connector that contributes to the permeability of this new community.

The intersection of Rousseau Street and Transit Way creates opportunities for vehicles, pedestrians and cyclists to slow down and become aware of the adjacent Neighbourhood Heart. The cross-walk treatment favours cyclists and pedestrians and reinforces the sense of publicness of the street, arrival to the neighbourhood and connection to the adjacent public plaza space.

The east and west sides of Rousseau Street incorporate additional setbacks to allow for retail patios/ entrances and reduce the potential for conflict with the sidewalk. Large, robust street tree planting will play a key role in mitigating the scale of this street, reducing the impact of bus and vehicle traffic, and creating a more comfortable atmosphere for pedestrians and cyclists. Where there is no street parking on the west side of Rousseau, a continuous planted boulevard will be provided. On the east side of Rousseau, paving areas will cross the boulevard planting to connect parking to the sidewalk. Planting within the boulevard area will help to soften the street edge and reinforce the character of Sapperton Green as a 'green' neighbourhood. The boulevard could be used to manage storm water in the form of a rain garden.



TRANSPORTATION PRINCIPLES

STREETS

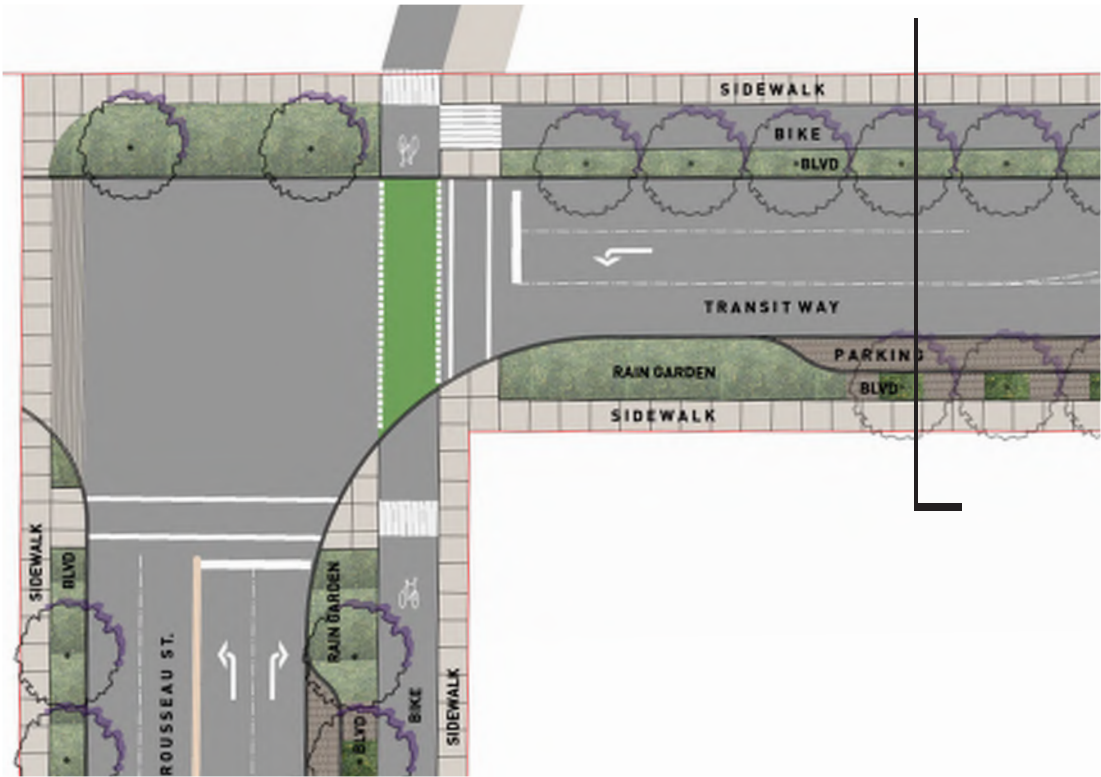
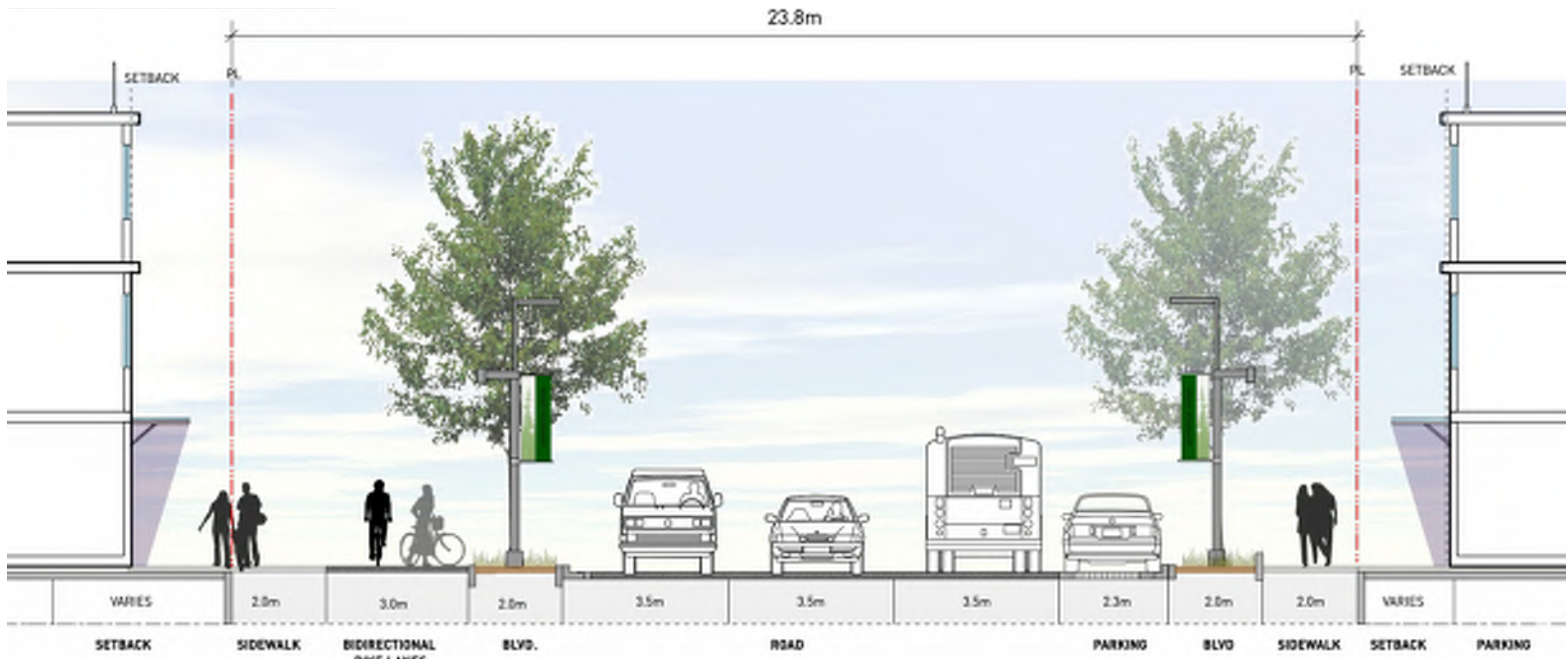
Road Section - Transit Way

Transit Way is primarily fronted by retail, commercial or office use. The north side of Transit Way accommodates a sidewalk and bidirectional bike lane with a planted boulevard to separate it from the street. On the south side of the street, the parking lane, boulevard and sidewalk make up the public realm. On both sides of Transit Way, additional setbacks allow for retail patios and entrances. The variety of ground plane materials reinforce the urban, working nature of this area. As with Rousseau Street, large, robust street tree planting will play a key role in the mitigating the scale of this street. Planting within the boulevard area will help to soften the street edge and respond to the highly active pedestrian and bicycle movement.

Storm water management in the form of rain gardens are located in the boulevard bump outs that separate groups of park cars and define the crossings and street corners.

Boulevard Planting - Rain Garden

A portion of Transit Way west of Rousseau is a driveway/plaza. This includes: access to underground parking in north/south buildings; paving treatment mimics urban heart creating potential for extending plaza; pedestrian access west to Wilson Street via stairs.



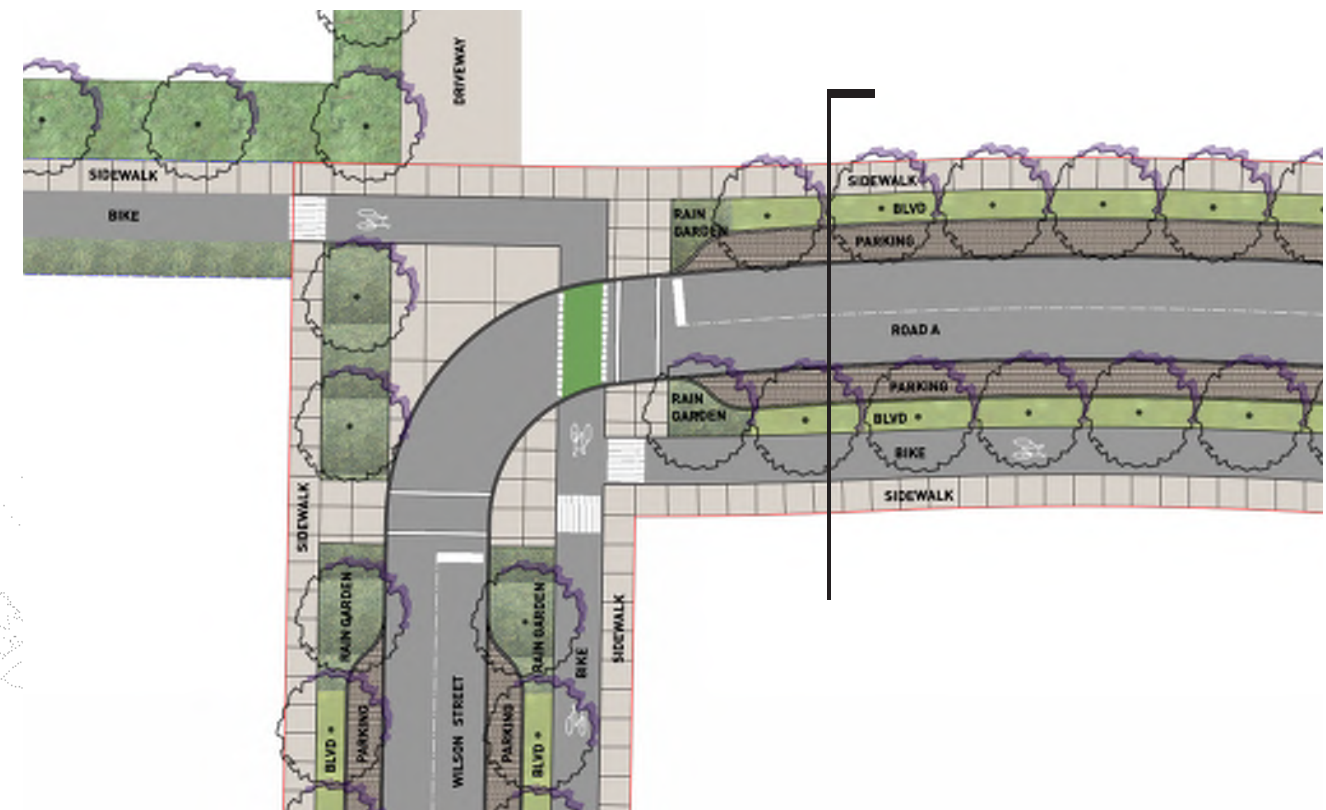
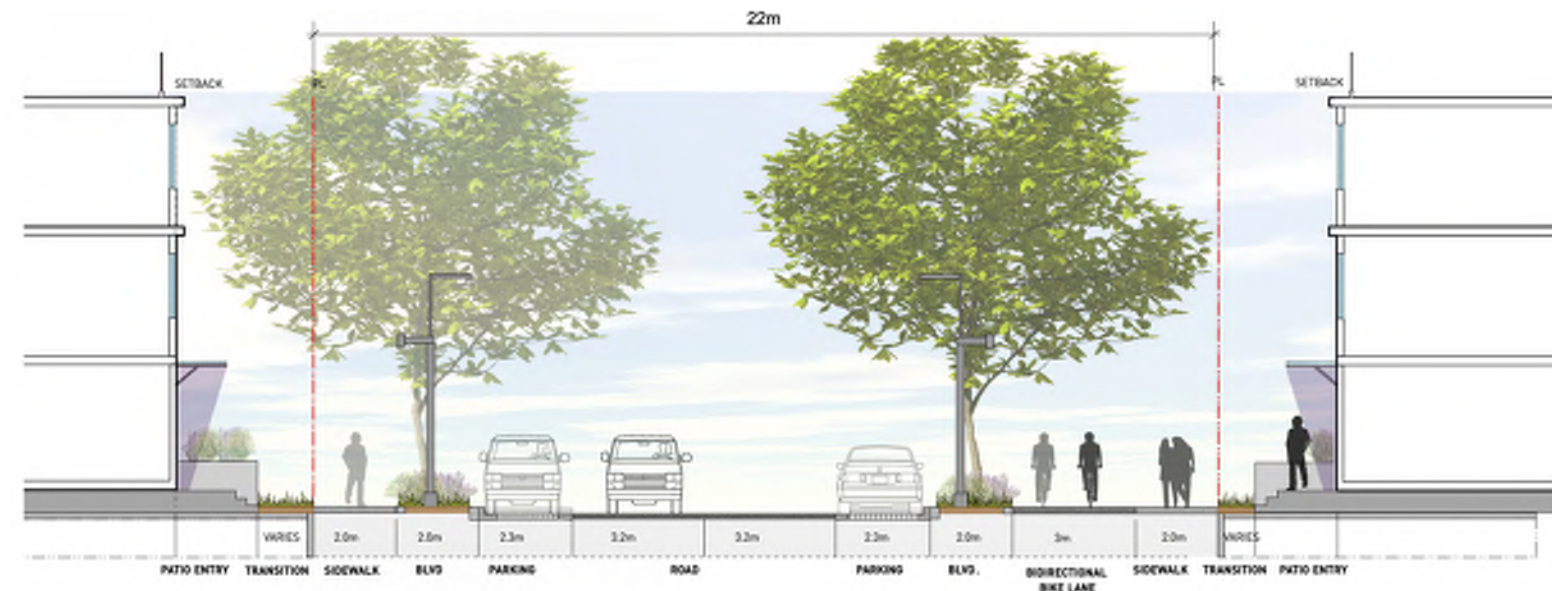
TRANSPORTATION PRINCIPLES

STREETS

Road Section - Road A

Road A runs primarily through a residential precinct. As such, pedestrians and cyclists are prioritised in a bidirectional bike lane and pedestrian sidewalks. Mid-block curb extensions at pedestrian crossing points and corner curb extensions place emphasis on pedestrian movement. These incursions into the street network provide opportunities for seating and additional landscape space that softens the impact of the road, creates locations for casual neighbourly interaction, and add to the sense of community. Ideally the road surface material at the pedestrian crossing points will change to signal that the priority at this location is the pedestrian. Where Road A intersects with Road B at the northwest corner of the Station Plaza, the intersection surface material would place emphasis on this important pedestrian node and movement from Road A to the Station Plaza and Braid Skytrain Station beyond. Cyclists continue on along Road A eastward, and either intersect with a bikeway connection to Braid Station or carry on to the Brunette Fraser Greenway to the east.

Stormwater management is actively expressed in the form of rain gardens at the mid-block and corner curb extensions. The remaining boulevard strip will be lawn or similar permeable material that allows movement from parked cars to the adjacent sidewalk. The boulevard is planted with large canopy trees that create shade, reinforce the separation between pedestrians and vehicles, create a human scale at the street edge, and provide opportunities for enhanced urban ecology.



TRANSPORTATION PRINCIPLES

STREETS

Road Section - Road B

Road B is associated with the retail/commercial/ office areas of the Station Precinct and Braid Precinct and as such has an urban character. This road section incorporates parallel parking on both sides of the street. Sidewalks are generous in width and may expand to allow for an adjacent ‘retail interactive zone’. Bicycle movement is incorporated on an off-street bidirectional bike lane. Where Road B crosses the East-West Greenway, emphasis should be given to the pedestrian greenway allowing the greenway material to continue, uninterrupted, across the street. In a similar fashion, where Road B intersects with Station Plaza the materiality and expression of the plaza ideally carries out to the curb edge. In a sense, the plaza and the Road B sidewalk become one.

To balance the impact of the road and sidewalk treatment and provide some sense of ‘green’ the adjacent boulevards should incorporate some ground level planting and street trees (inside and curb side arrangement where possible) while ensuring hard surfaced paving access to on street parking.

Stormwater is expressed in the form of rain gardens located primary at the corner curb extensions at street intersections.



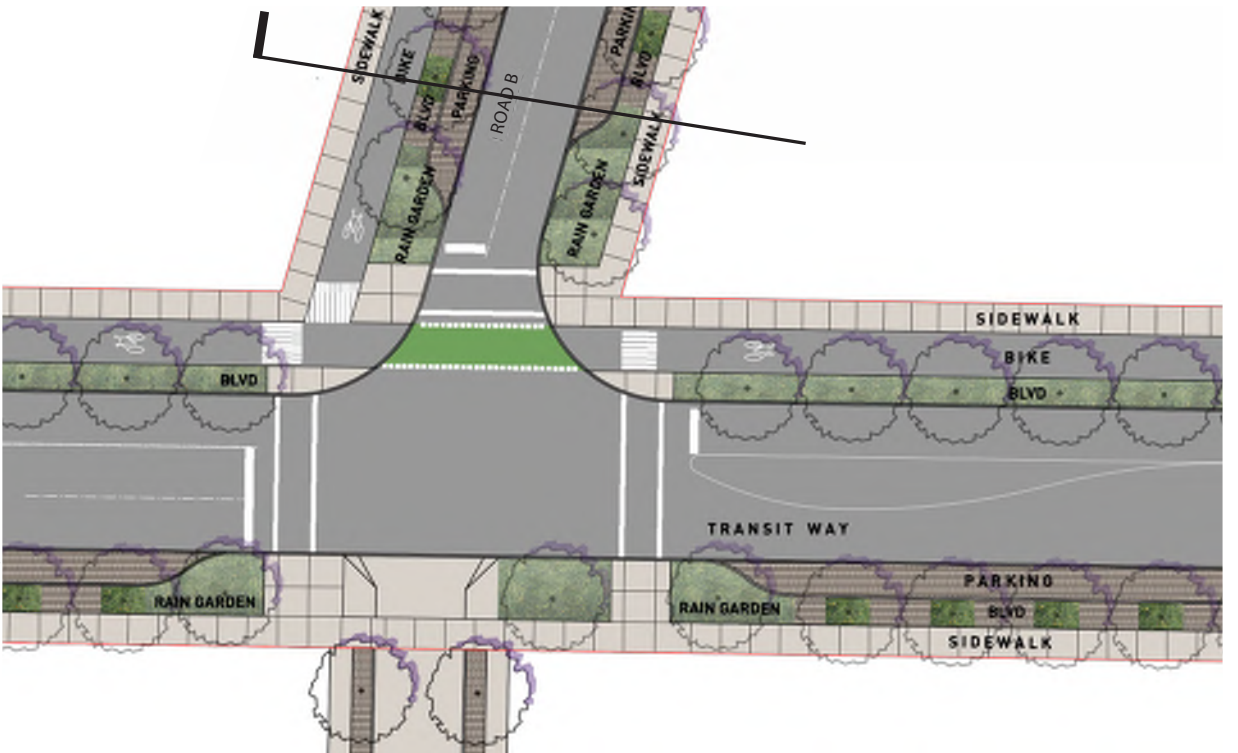
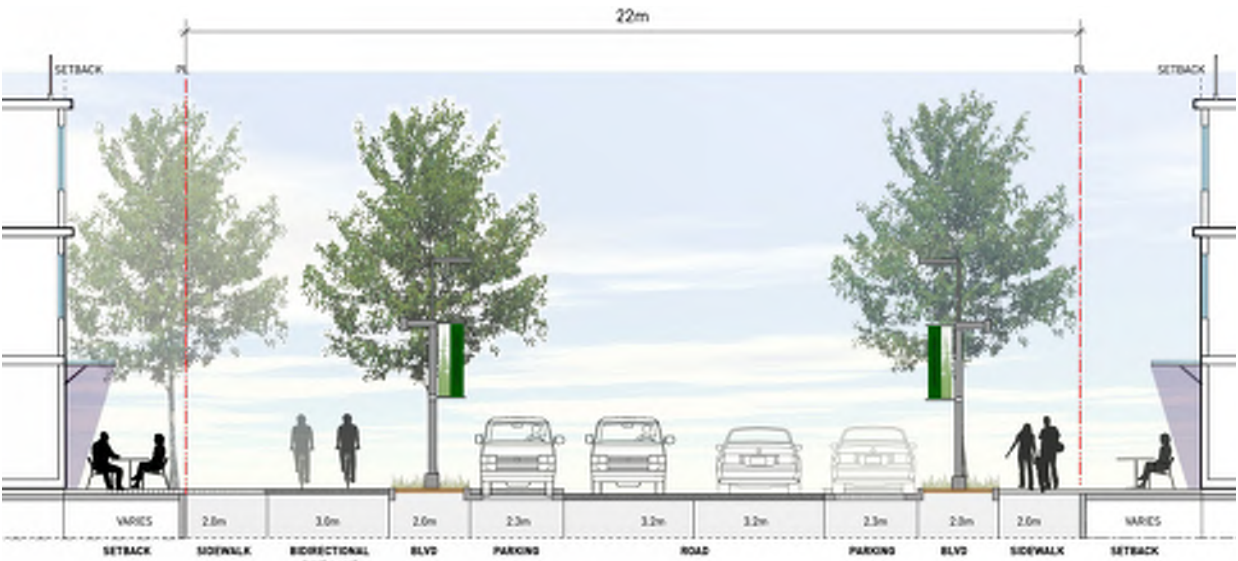
72.1 Retail Edge



72.2 Planted Boulevard



72.3 Rain Garden



TRANSPORTATION PRINCIPLES

STREETS

Road Section

Wilson Street Extension

Wilson Street is within the Hume Park Precinct residential zone of Sapperton Green. Parallel parking is located on both sides of the street; bicycle traffic is incorporated on an off street bidirectional bikeway. The boulevard treatment should reflect the residential nature of this area of Sapperton Green and combine planted areas with the grass boulevard. Care should be taken to recognize the need to ensure easy access from parked car to adjacent sidewalk. The overall scale of the street is similar to that of existing Wilson Street. The transition from the Wilson Street Extension to the existing Wilson Street will be seamless and encourage permeability of the Sapperton Green Neighbourhood.

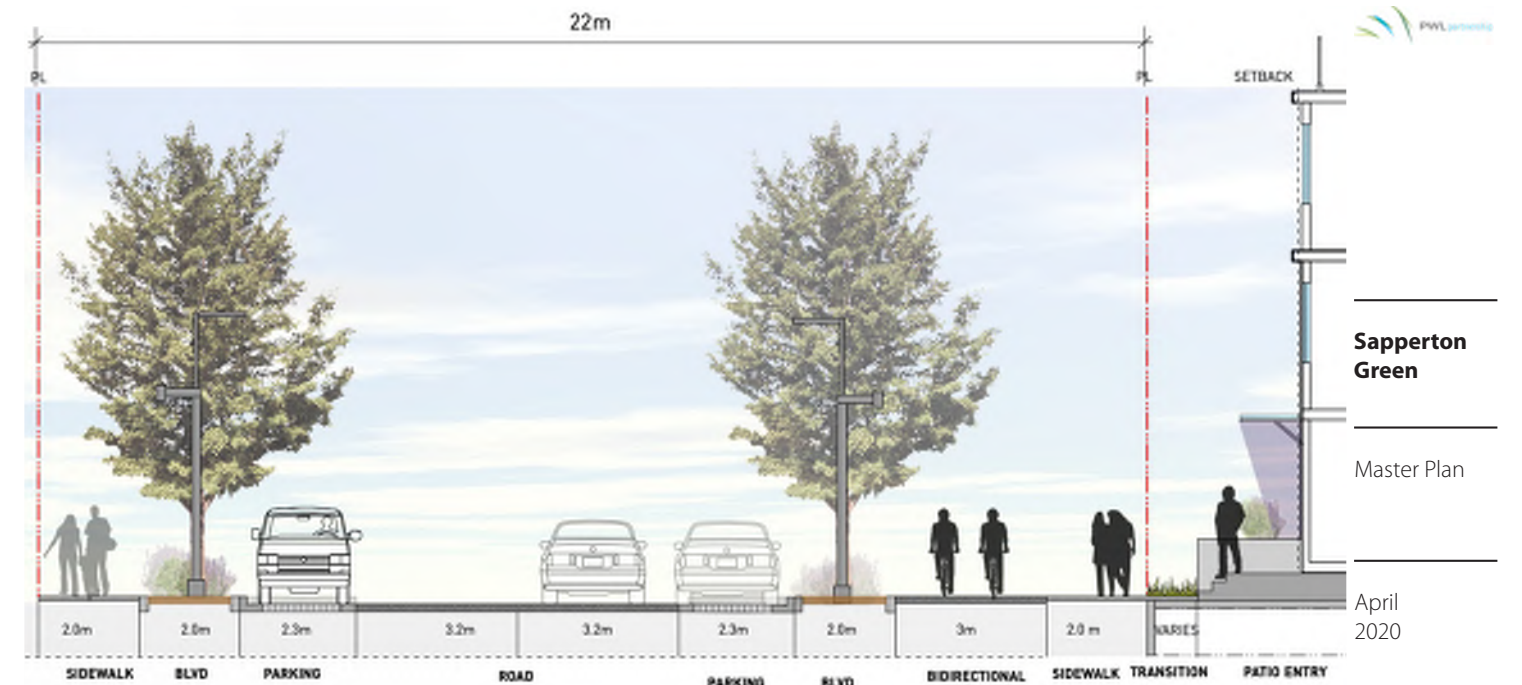
Stormwater management is visible in the form of rain gardens that are located in the mid block curb extensions that separate groups of park cars and define the crossings and street corners.



73.1 Rainwater Management



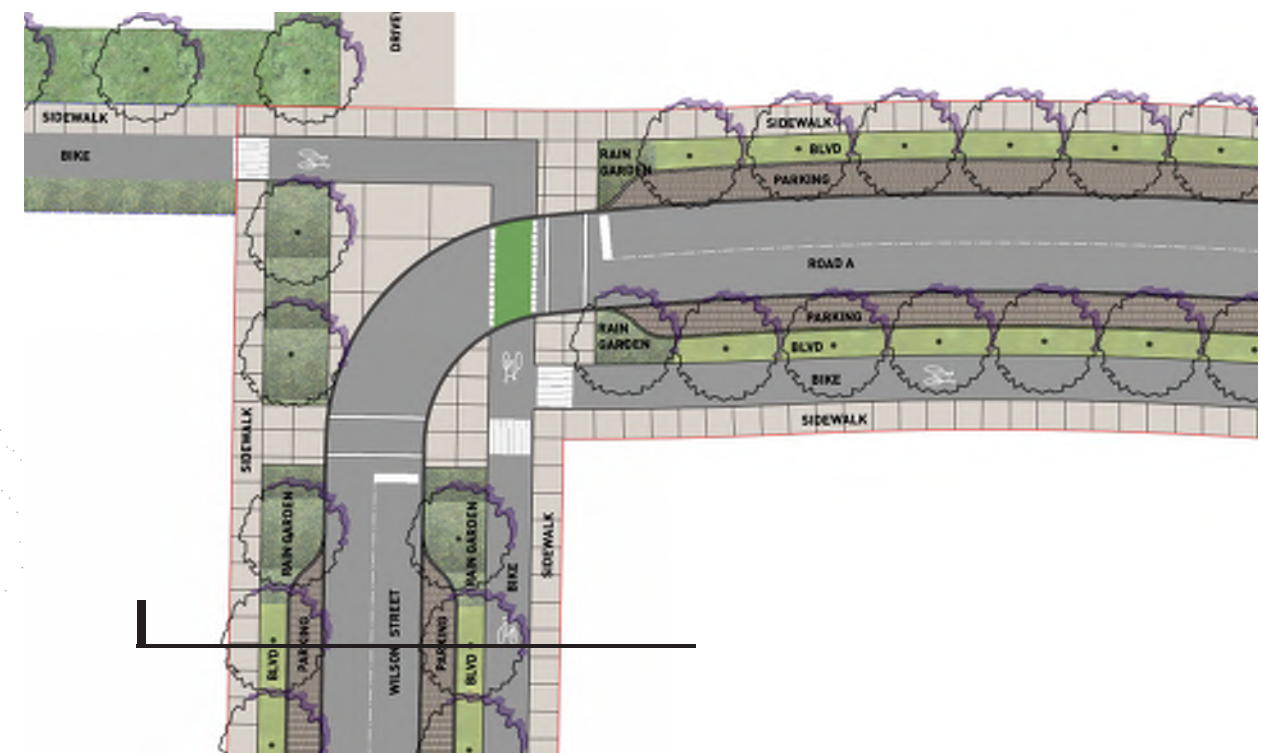
73.2 Residential Edge



Sapperton
Green

Master Plan

April
2020



Master Plan

73

TRANSPORTATION PRINCIPLES

STREETS

Road Section - Braid Street

Braid Street is a key city, and regional street (forming part of Trans-Link's Major Roads Network) running along the southern edge of Sapperton Green. Braid Street north edge will include a bi-directional bicycle path and pedestrian sidewalk.

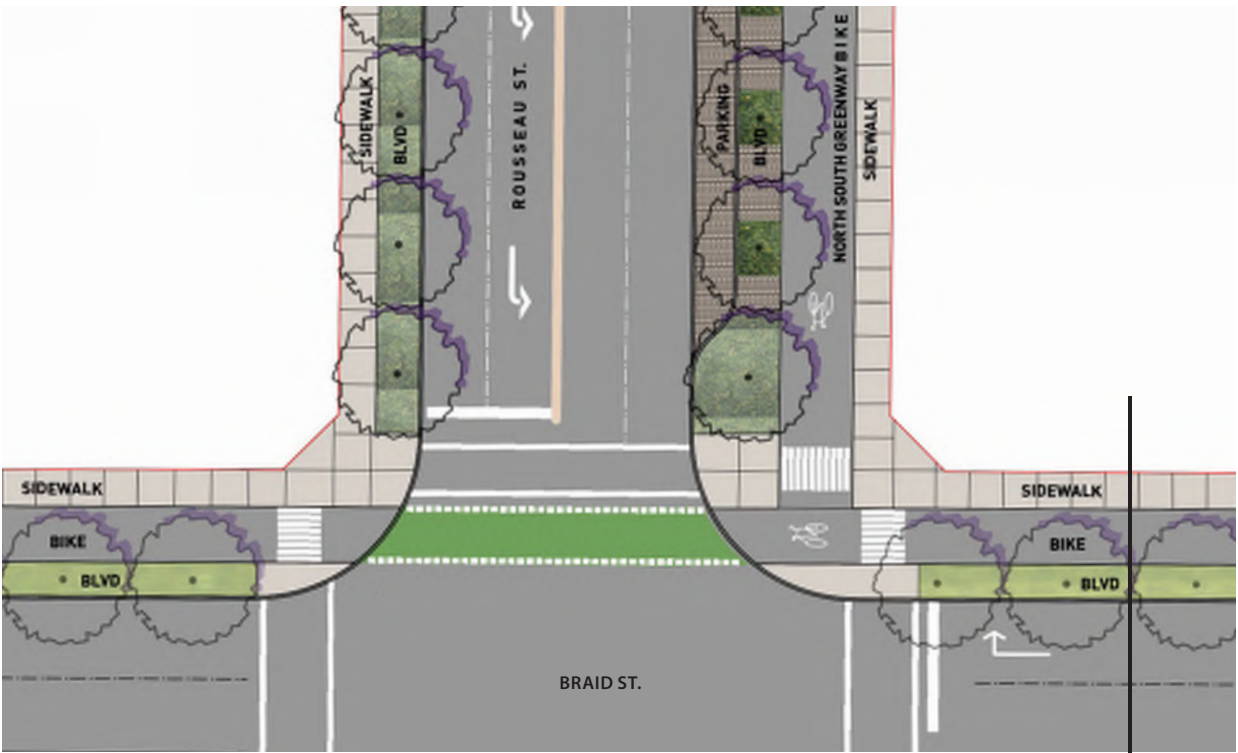
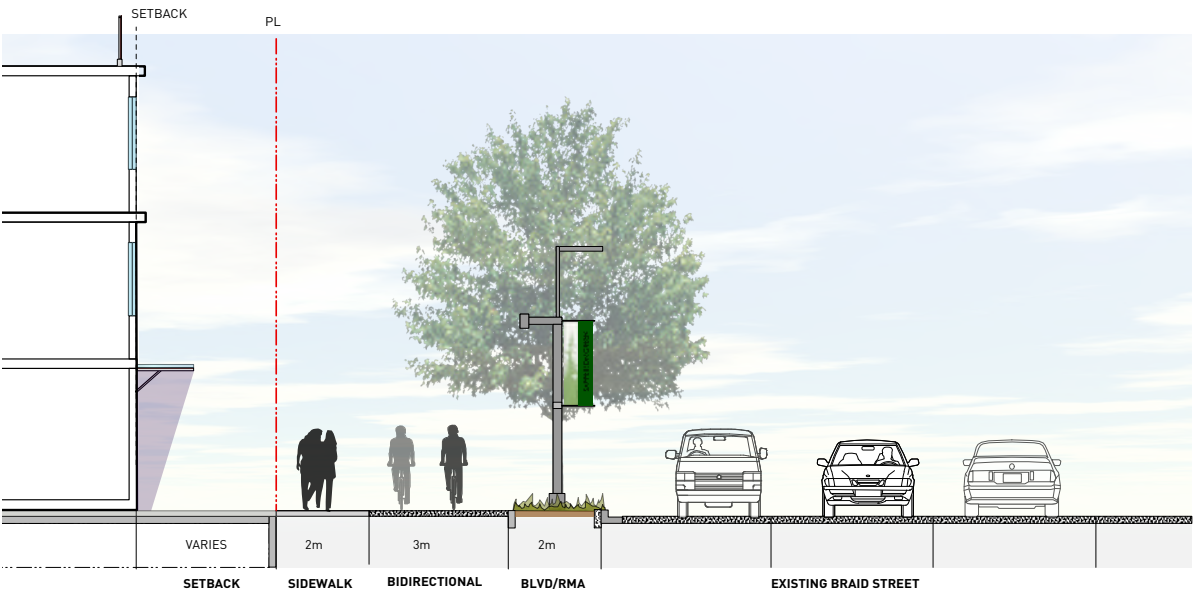
Stormwater management is actively expressed in rain gardens within a landscape boulevard strip. The boulevard is planted with large canopy trees that create shade, reinforce the separation between pedestrians and vehicles, create a human scale at the street edge, and provide opportunities for enhanced urban ecology.



74.1 Planting



74.2 Bidirectional Bike Lane



TRANSPORTATION PRINCIPLES

TRANSIT LOOP

Braid Station Bus Exchange

Braid Station Bus Exchange is an integral part of the regional transportation system. It is an important hub for bus traffic, ensuring efficient movement of people to and from the SkyTrain Station. As such, Sapperton Green's pedestrian, cyclist and vehicle movement system has been designed to fit around the bus exchange.

Road A will become one-way where it ties into the northeast bus exit road, thereby allowing vehicles to exit Sapperton Green onto Brunette Avenue. Similarly, vehicles approaching Sapperton Green from the north on Brunette will be allowed to enter the site via the bus lane and make a left turn onto Transit Way and onto the neighbourhood street network. The intersection with Transit Way will have bus-signal priority to manage bus timing and minimize delays to the transit network.

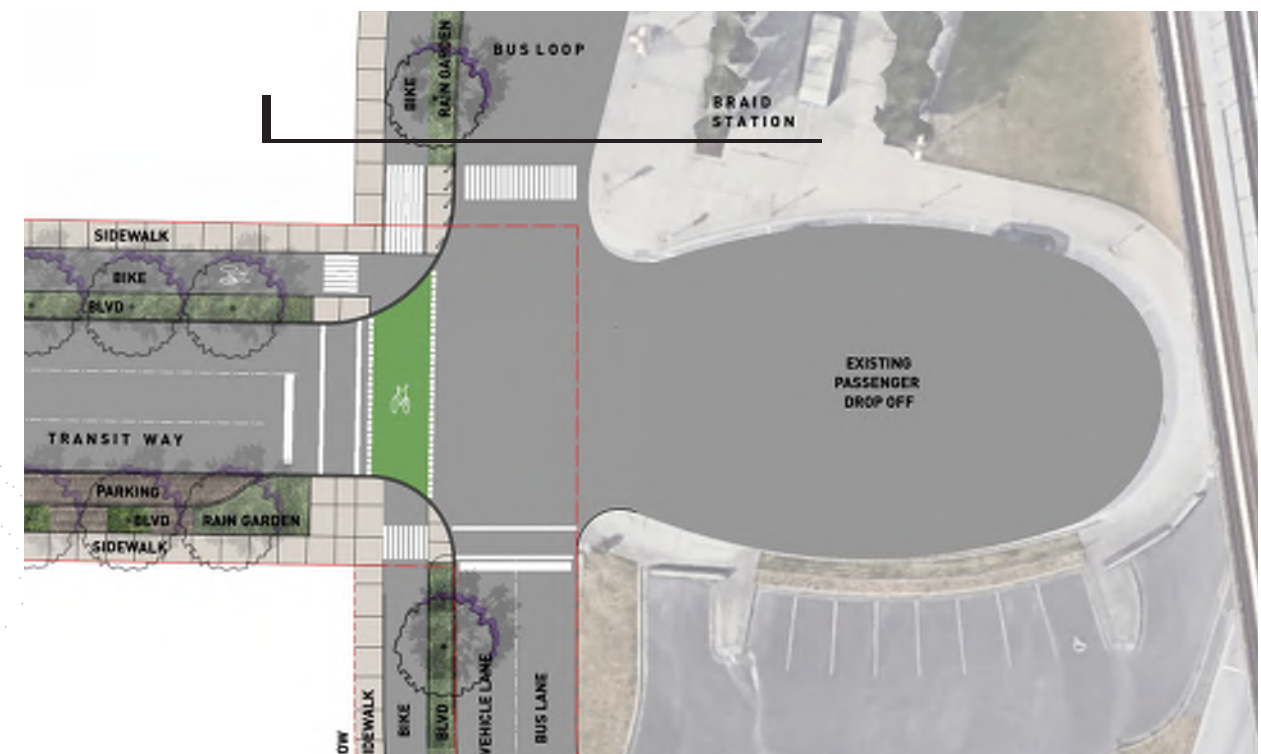
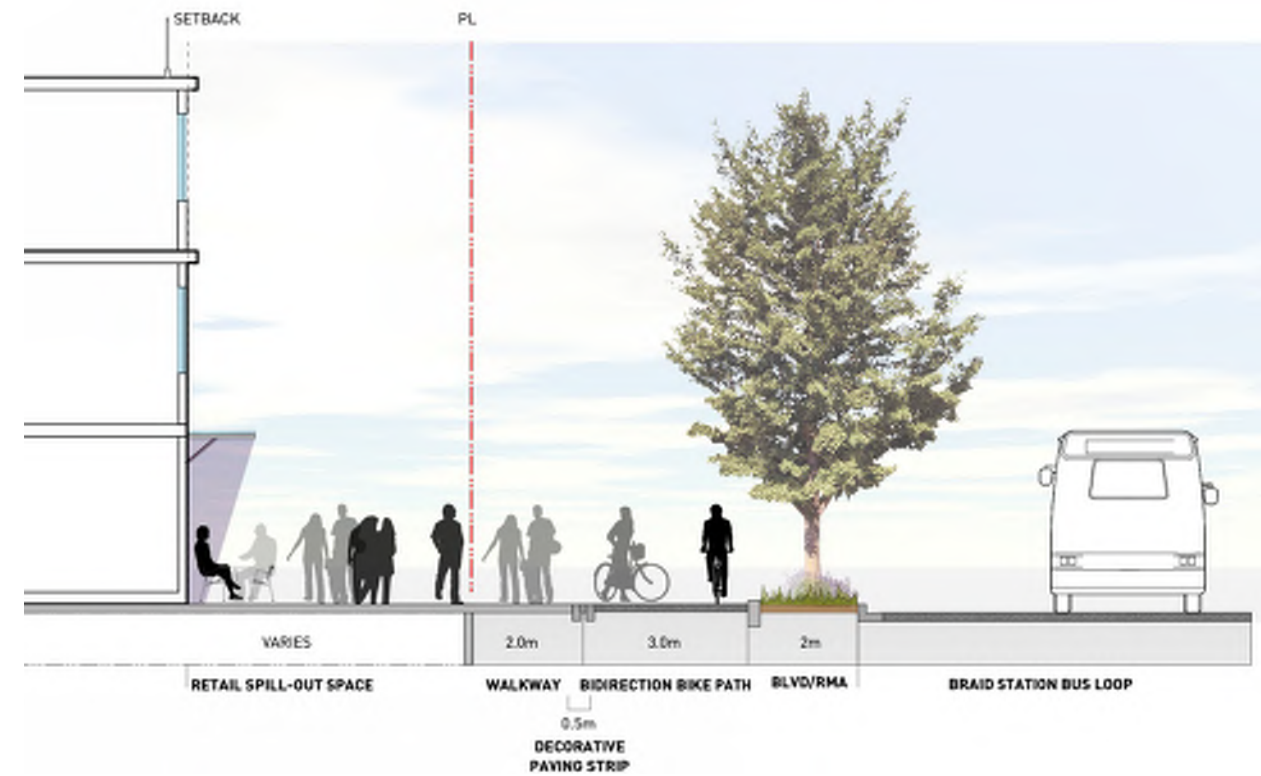
The west edge of the bus loop will become a vibrant, commercial, retail place that is animated by outdoor patios, the multi-use pathway, and pedestrian activity. To ensure that pedestrian movement does not occur in an east-west direction across the bus bays, a rain garden will be placed along the curb edge. This passive barrier will soften the overall look and feel of the bus loop, provide ecological planting, and infuse a sense of the Sapperton Green neighbourhood into this urban location.



75.1 Retail Edge



75.2 Rainwater Management



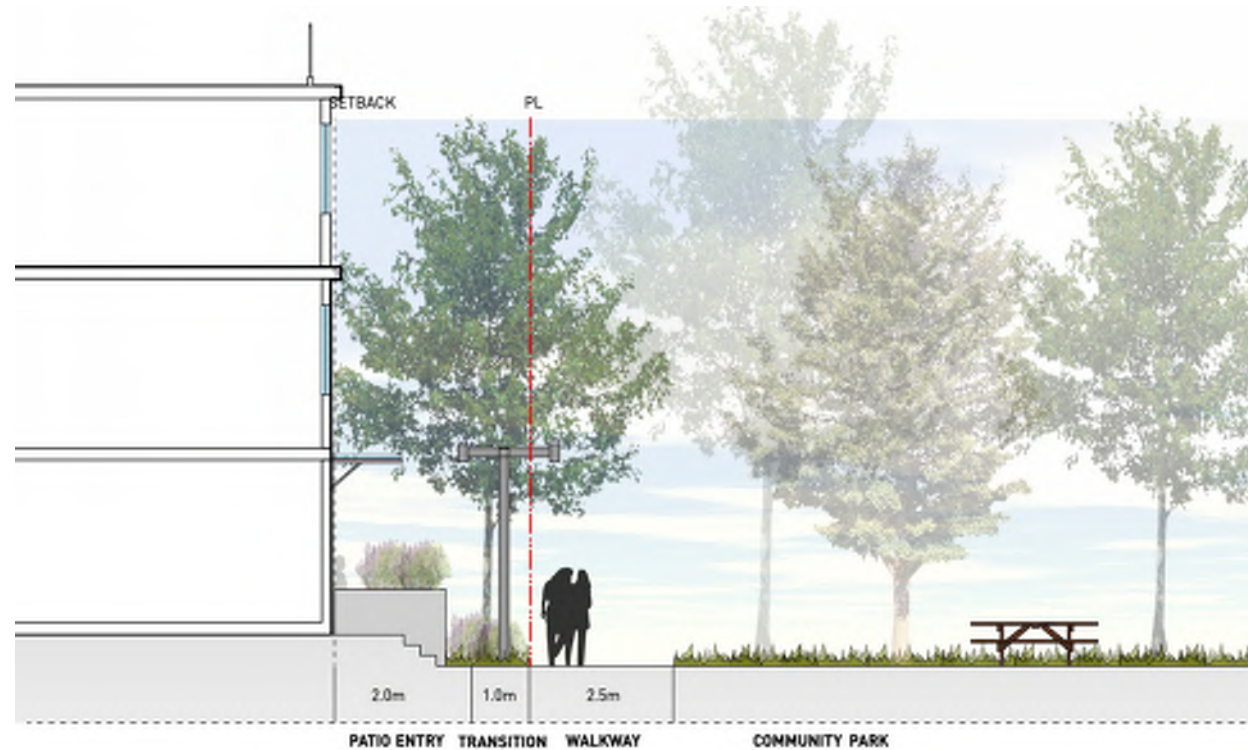
TRANSPORTATION PRINCIPLES

PEDESTRIAN AND CYCLE ROUTES

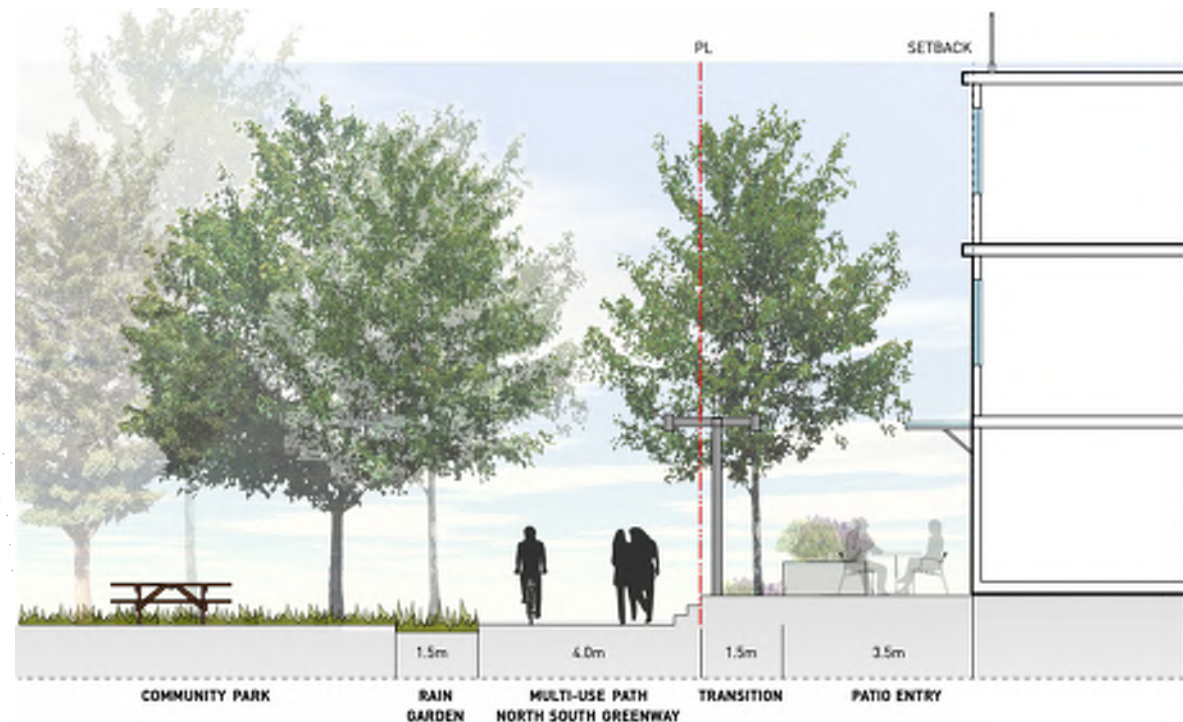
Community Park

The Sapperton Green neighbourhood pedestrian and bicycle transportation network is an important component to the success of the Community Park. It will be responsible for encouraging people to come to Sapperton Green and engage in activity throughout the entire park.

At a macro scale, the park circulation system consists of a portion of the East- West Greenway the entire length of the North-South Greenway and a North-South pedestrian path on the West side of Community park. These are the pedestrian and cyclist highways for Sapperton Green and ensure that there is a strong, welcoming permeability with relation to the surrounding neighbourhood an adjacent Hume Park.



Park West



Park East Including North-South Greenway

TRANSPORTATION PRINCIPLES

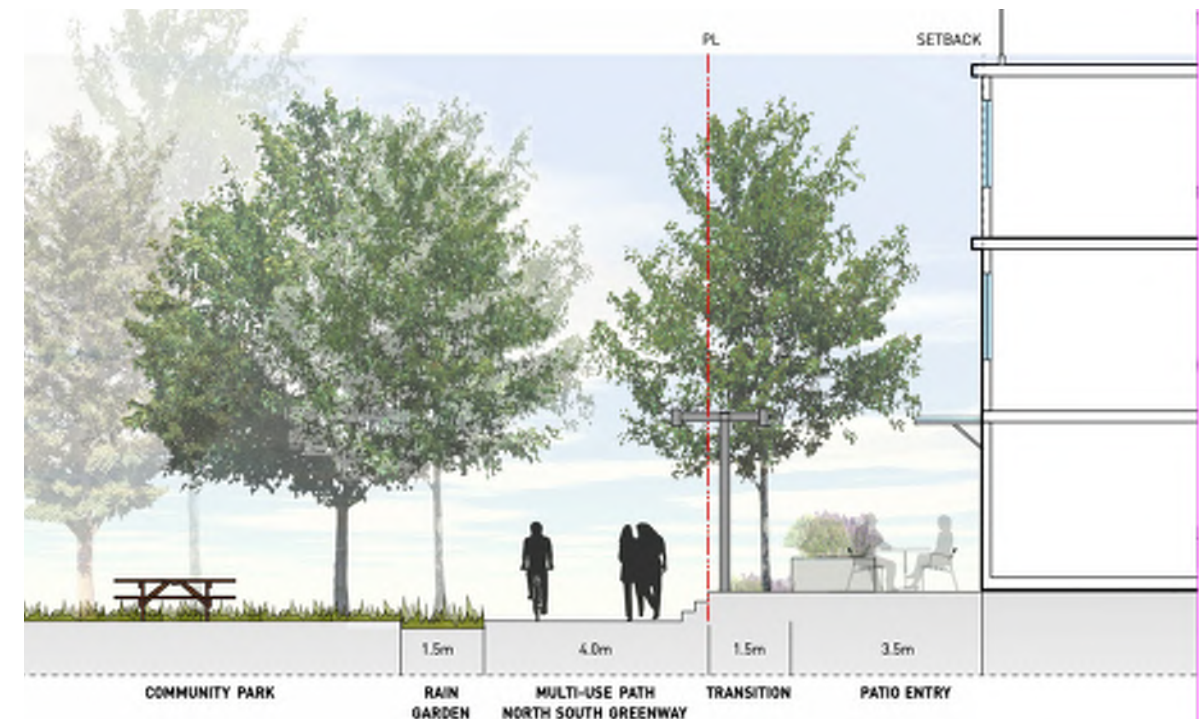
PEDESTRIAN AND CYCLE ROUTES

North-South Greenway

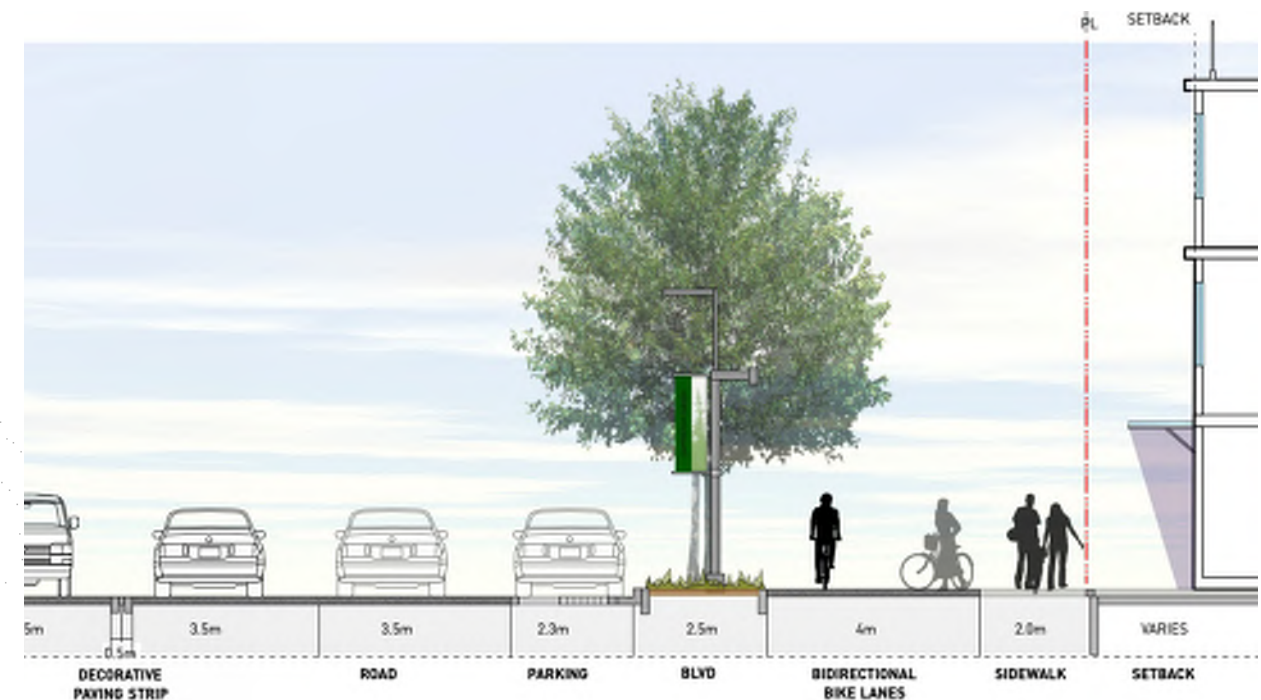
The North-South Greenway is a 4.0m wide multi-use pathway that combines bicycles and pedestrian movement. It runs along the east side of the Community Park and Community Green before it transitions into a bi-directional bicycle way and separate pedestrian sidewalk south of Transit Way on Rousseau.

The North-South Greenway not only accommodates movement through the park but encourages a strong interaction between the park users and the adjacent private ground based, residential patios and entries.

Rain gardens along the west edge of the North-South Greenway create a buffer zone between the active path and the adjacent park use. This will reduce the conflict with park activities and the movement of cyclists as well as provide a significant ecological expression.



Park East Including North-South Greenway



Rousseau Street Including North-South Greenway



TRANSPORTATION PRINCIPLES

PEDESTRIAN AND CYCLE ROUTES

East-West Greenway

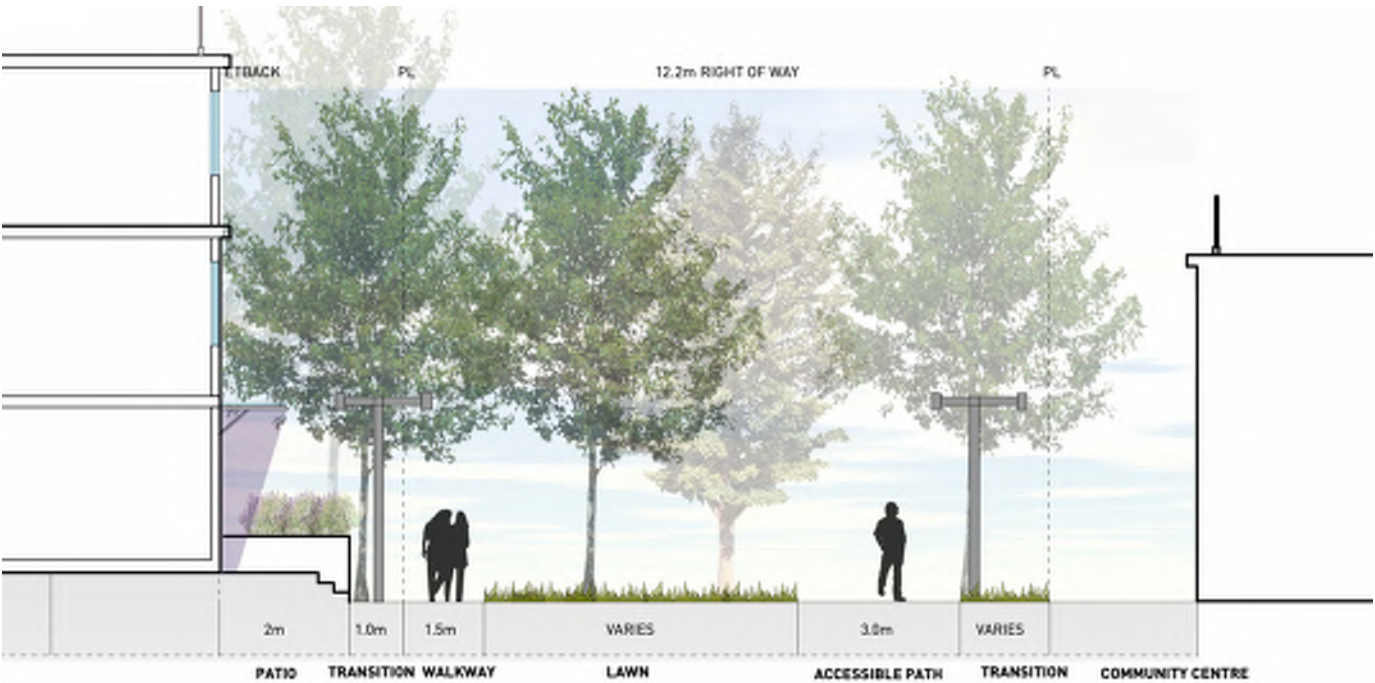
The East-West Greenway is the most prominent pedestrian route within Sapperton Green. It is part of the overall Sapperton Green movement system, but more importantly it is a community organizing element.

The Greenway forms a strong, linear connection from the west to the east through the Sapperton Green neighbourhood. In doing so, it connects Hume Park and the rest of Sapperton with the Braid Street SkyTrain Station. More importantly, it allows people to move via an open space through Sapperton Green, making connections with parks, a community centre, urban plazas and other fine-grain pedestrian and street networks.

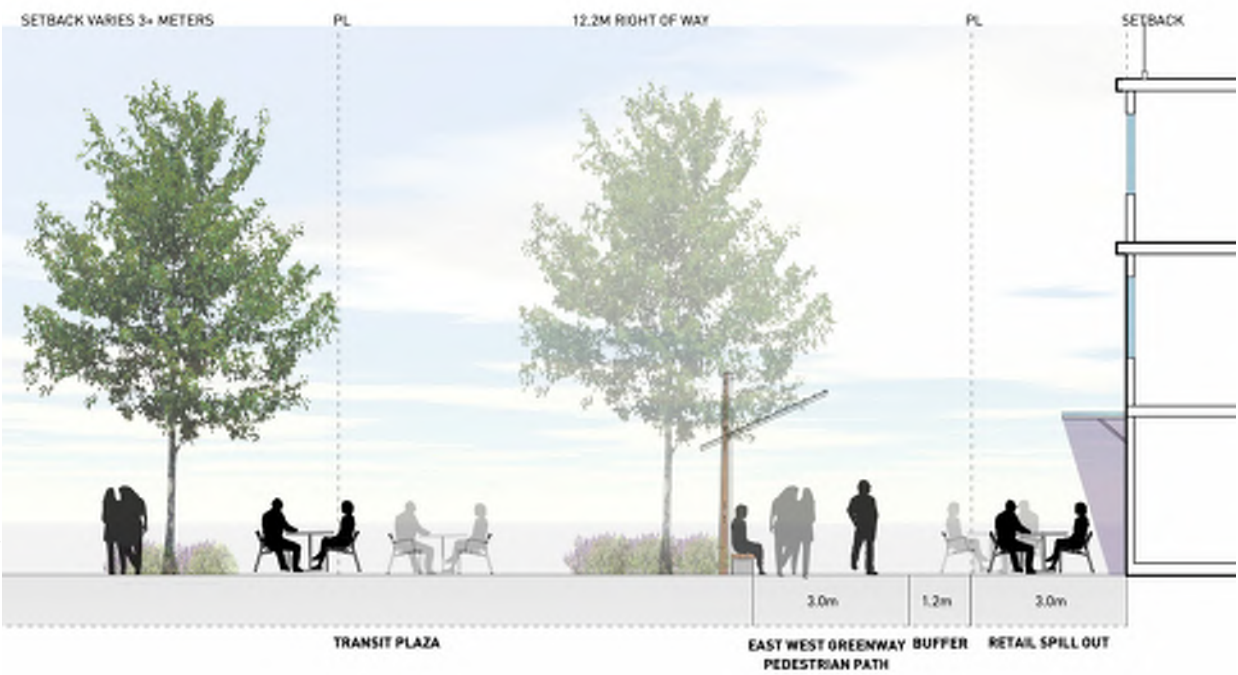
The East-West Greenway is typically bordered on both sides by ground based residential flats. The entries and patios for these units will interface directly with the East-West Greenway paths. In doing so, it will add to the animation of the Greenway paths and create a vibrant, active edge.

For most of the Greenway length there will be a path on either side of the Greenway. This simple hierarchy adds interest and creates differentiated spaces. The 3.0 metres wide, south path will encourages one to stop and linger. While the 1.5 metres, north path encourages movement with purpose.

When the Greenway interfaces with the Station Plaza, it remains in its 3.0 metre wide expression ensuring positive movement to Braid Station.



East-West Greenway



East-West Greenway at Transit Plaza

TRANSPORTATION PRINCIPLES

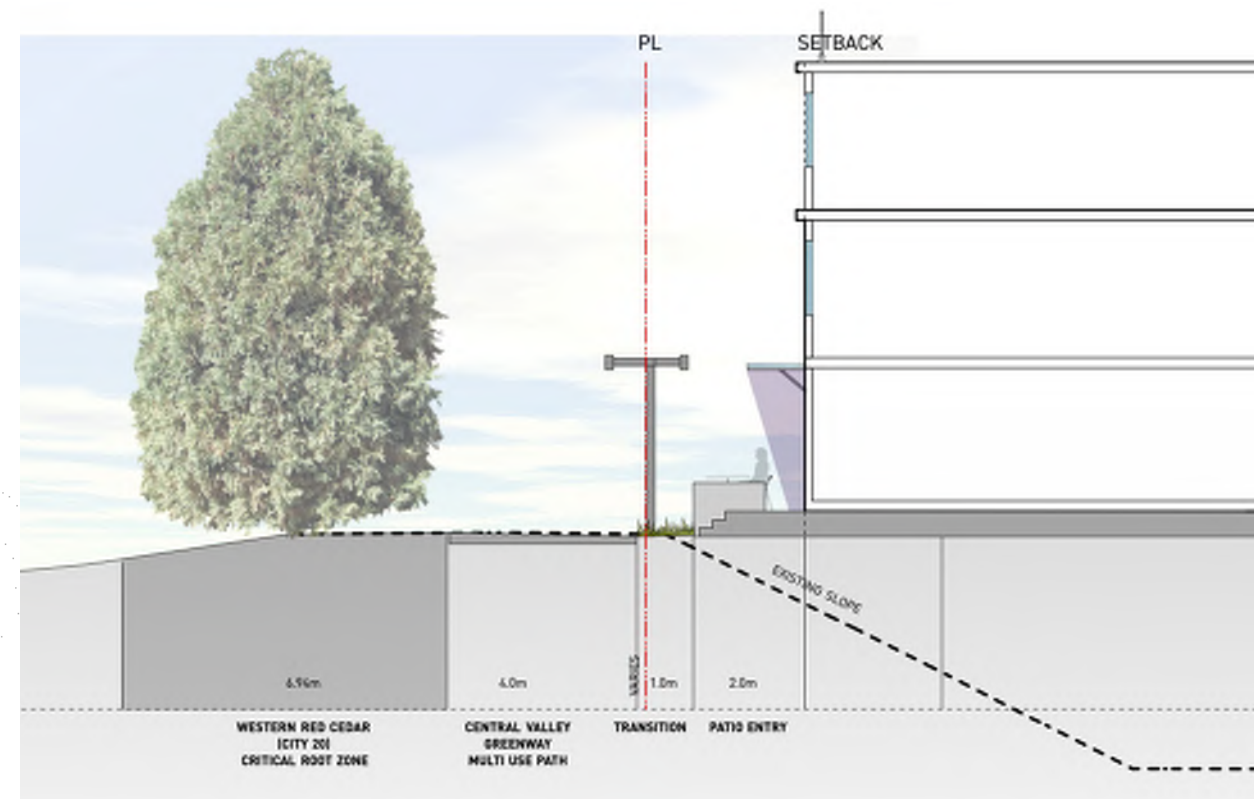
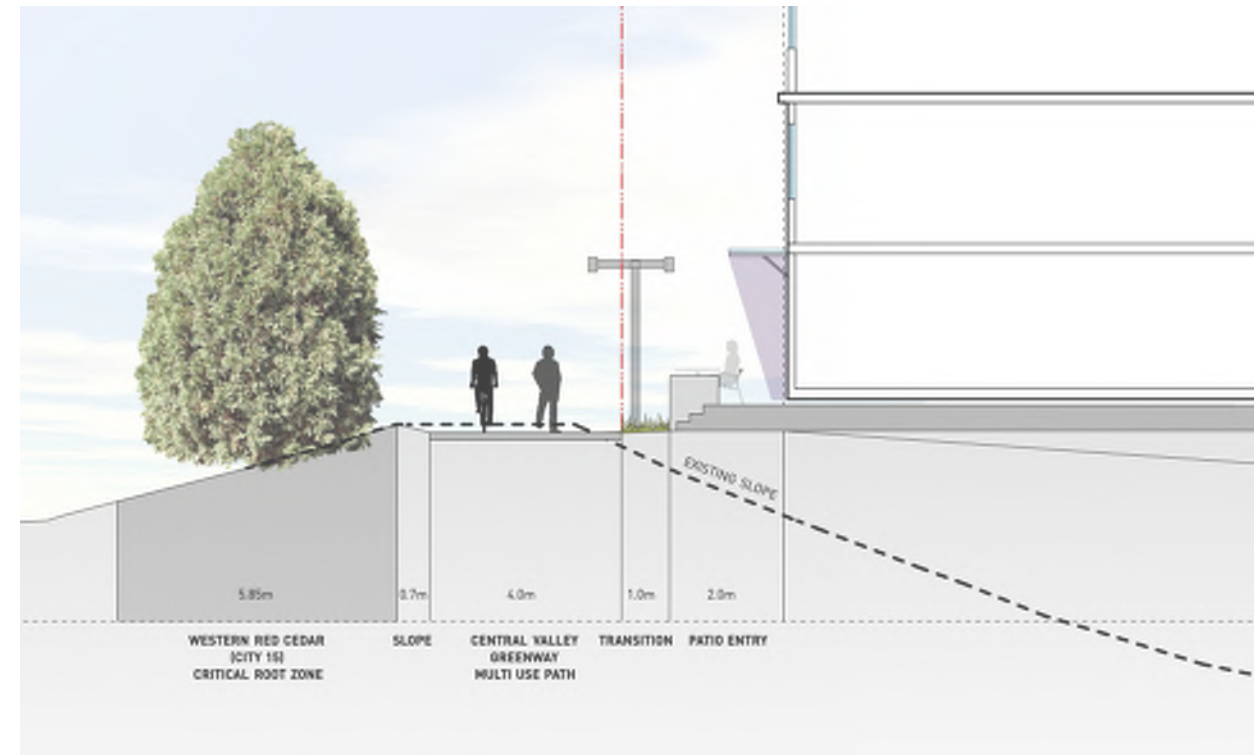
PEDESTRIAN AND CYCLE ROUTES

Hume Park Edge / Central Valley Greenway

The Central Valley Greenway runs along the west side of Sapperton Green directly adjacent to Hume Park. This is a regional multi-use pathway that encourages residents to move by bicycle or by foot throughout New Westminster and the Lower Mainland.

Sapperton Green townhomes and ground based flats will border the eastern edge, and as such, will make direct connections from these individual units onto the Central Valley Greenway. To do this safely, a 1.0 metre buffer between the edge of the Central Valley Greenway and the resident access path has been established.

There are two, public, Sapperton Green connection points along the Hume Park edge. The East West Greenway and the Hume Park Greenway at Road A. Node points at these locations will provide opportunities for wayfinding, character and identity of Sapperton Green, seating, and an opportunity to pause.



TRANSPORTATION PRINCIPLES

PEDESTRIAN AND CYCLE ROUTES

Hume Park Edge / Valley Greenway



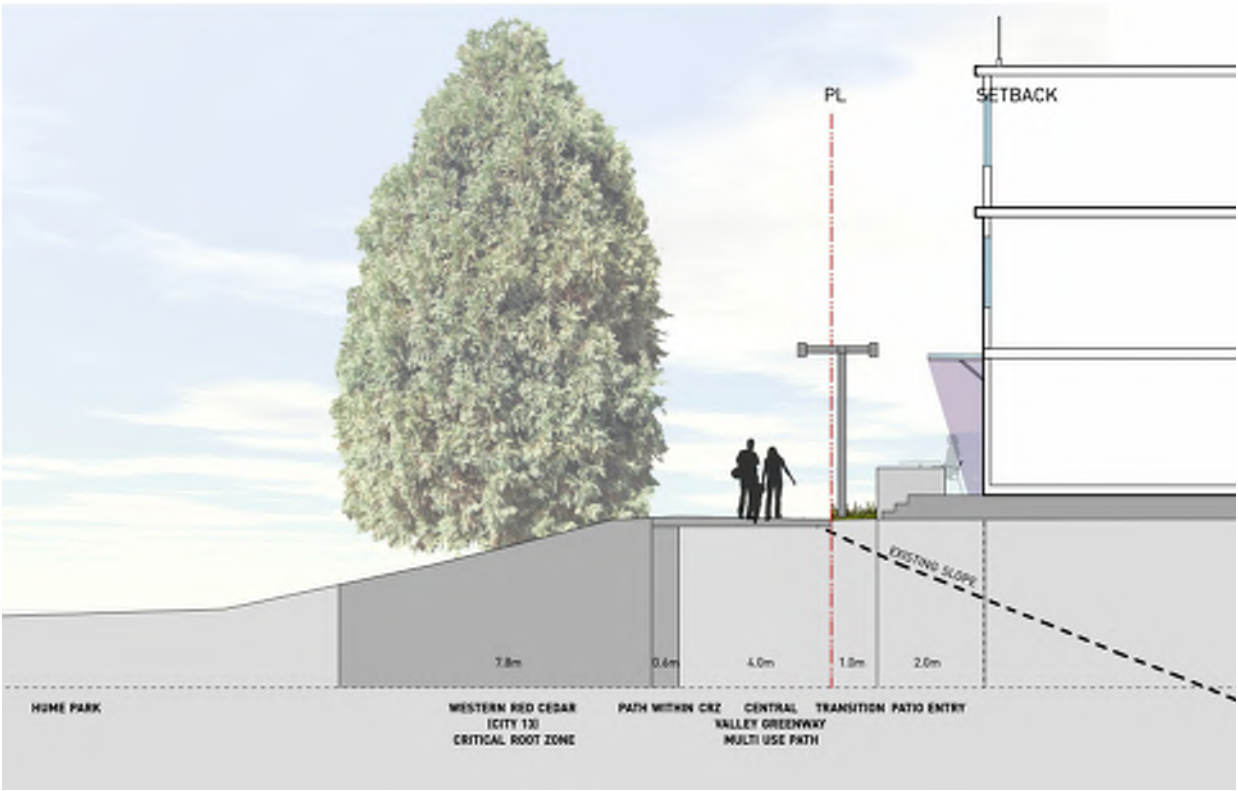
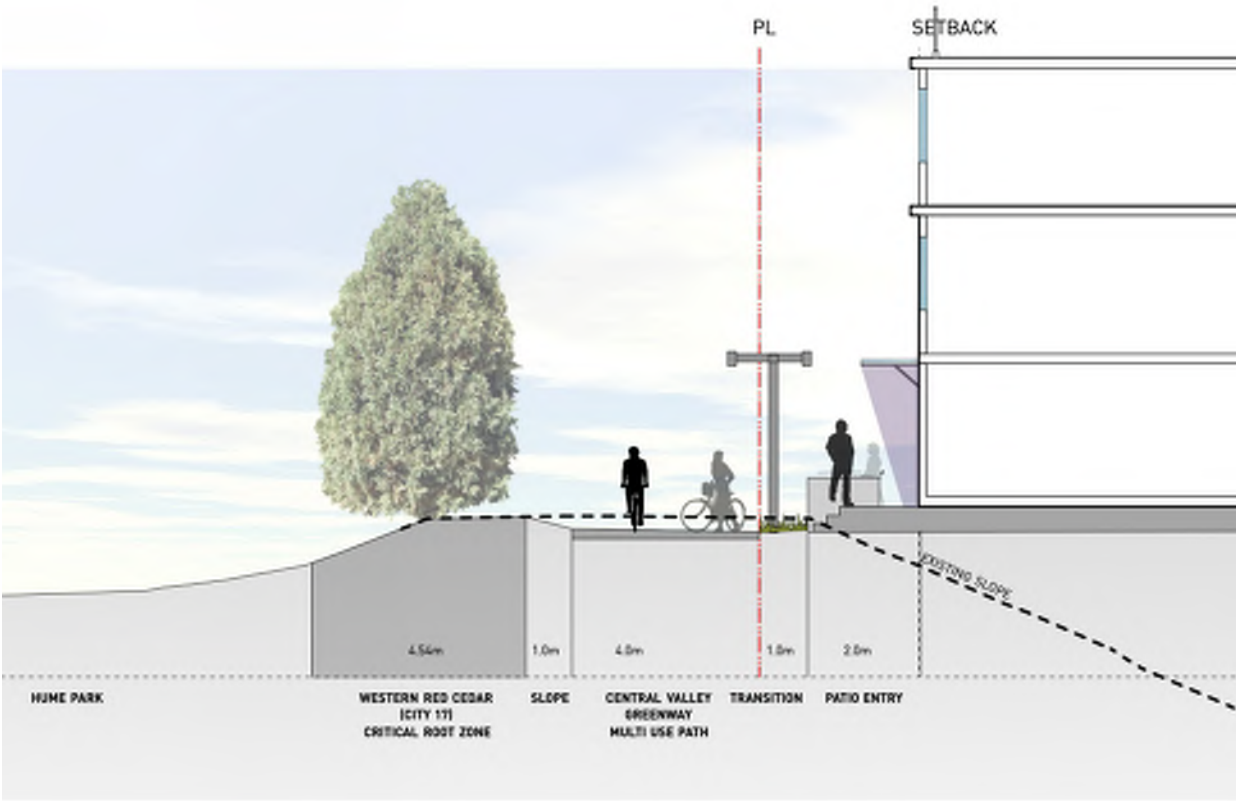
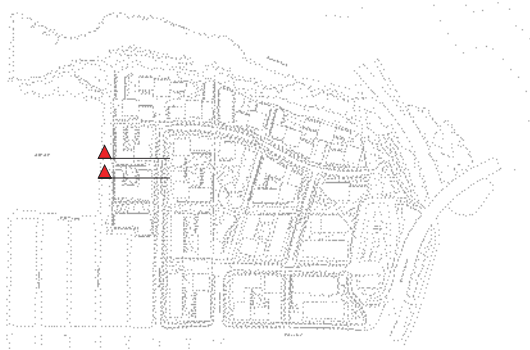
80.1 Existing Greenway-Looking North



80.2 Existing Greenway-Looking South



80.3 Existing Greenway-Looking South



TRANSPORTATION REVIEW

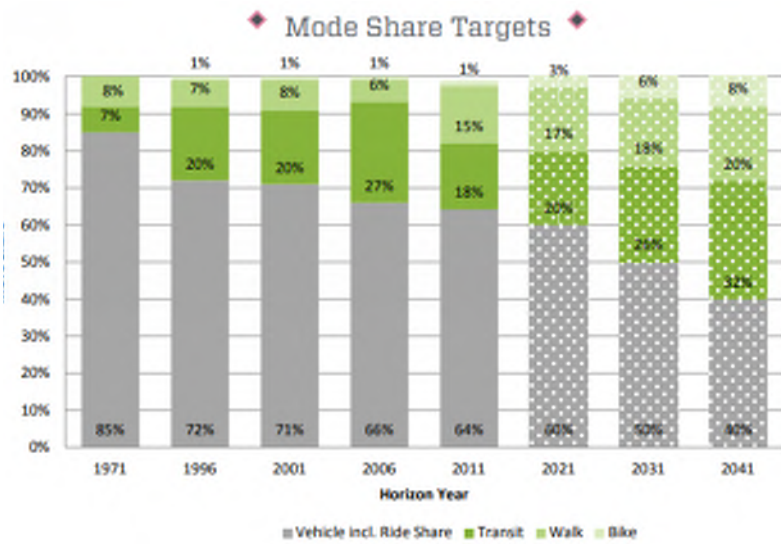
Introduction

Transportation considerations for the Master Plan follow best practice in Transit-Oriented Development (TOD), and reflect the design priority of accommodating the needs of pedestrians, cyclists and transit users before consideration is given to motorized forms of transportation.

Much of the early planning work has focused on highlighting design principles and it is important now to focus the specific design approaches moving forward.

Mode Share Targets

The City of New Westminster outlined mode share targets for 2041 in its Master Transportation Plan. Figure 1 highlights the City’s ambitious goals for increasing walking, cycling, and transit mode share from a combined total of just under 40% today to around 60% (32% transit, 20% walking, and 8% cycling) by 2041. These targets are being considered for the future person trip, and vehicle trip analysis for Sapperton Green.



81.1 CNW Master Transportation Plan Mode Share Targets

Pedestrians

Walking is the most basic form of transportation and is widely considered the top transportation priority for municipalities as a result. It is an everyday activity whether part of a single-purpose journey or linked with transit or driving. People are typically willing to walk up to 15-minutes for certain activities such as commuting for work, school, or for shopping or recreation. The average typical walking distance for such trips is 400 to 800 meters (5 to 10 minute walk).

The planned mix of uses will contribute to enlivening the new streets at different times of day and assisting with the personal safety and comfort of walking through the neighbourhood. This will be supported with the planned public realm and street design accommodating all user groups on each street type.

Commercial uses will provide local amenities in walking distance and avoid the need for people to drive to other locations.

Pedestrian movements will be prioritized through Sapperton Green’s street and walkway permeability. These would connect out to the surrounding neighbourhoods to create a more unified urban grid system and one that minimizes walking distances to community amenities, commercial uses, or transit activities.

Bicycles

The master plan will embrace the convergence of the Central Valley, Crosstown, and Brunette Fraser Greenway at Braid SkyTrain Station, and provide separated and direct facilities on all streets within Sapperton Green, supporting users of all ages and abilities.

Access and design follow best practice to complete the cycling accessibility of the location with the convergence of the three greenways and surrounding City grid connections.

Transit

The catalyst for the Master Plan development has been the proximity to the Braid SkyTrain Station and Bus Exchange and the opportunities it presents to develop a high density mixed-use community that is transit-oriented in nature. Residents, visitors, and employees alike will have the ability to travel to / from Sapperton Green by rapid transit helping significantly reduce dependence on automobiles.

Bus routing to the exchange will be maintained as part of the site planning along with bus stop locations and layover spaces. Frequent Transit Network (FTN) bus routes currently travel to/from the exchange via Rousseau-Transit Way (Routes 128, and 155), as well as via Brunette Avenue (Routes 153, 156, 159, 169, and 791. Route 555 travels past the site along Highway 1 between Langley and Lougheed Station.

More generally the Master Plan will benefit from the planned expansion of the rapid transit network. Planning for the extension of the Millennium Line from VCC-Clark to UBC is currently underway by the City of Vancouver and TransLink (along with the Province and other stakeholder groups). Further, potential future rapid transit expansions would connect with Guilford and Newtown Areas in Surrey, and to Langley.

Vehicle Traffic

Bunt & Associates completed a Transportation Assessment study in 2014 in support of the Official Community Plan Amendment for the Master Plan. Bunt is now moving forward to complete a Transportation Impact Assessment in support of the rezoning which will review the findings and build upon the analysis conducted in the 2014 study. The study will be conducted in coordination with the City of New Westminster, TransLink, and the Ministry of Transportation and Infrastructure to ensure the concerns of these key stakeholders are addressed.

TRANSPORTATION REVIEW

Significant dynamics are occurring in the City of New Westminster and more generally in Metro Vancouver, where much of the population growth’s transportation movements are being absorbed by increasing levels of walking, cycling, and transit.

New Westminster’s Envision 2032 recommended framework includes, “future growth is focused primarily into transit-oriented nodes and corridors that respect existing neighbourhood character and can be developed into complete, compact areas that are walkable and have good access to frequent transit services.”

New and recently completed transportation infrastructure projects in the Metro Vancouver area are projected to increase choice for transit riders and drivers alike, along with accommodating future population growth such as the Evergreen Line, Highway 1 Upgrades, South Fraser Perimeter Road, Pattullo Bridge replacement, Massey Tunnel replacement, Surrey-Langley Rapid Transit, and Broadway Subway.

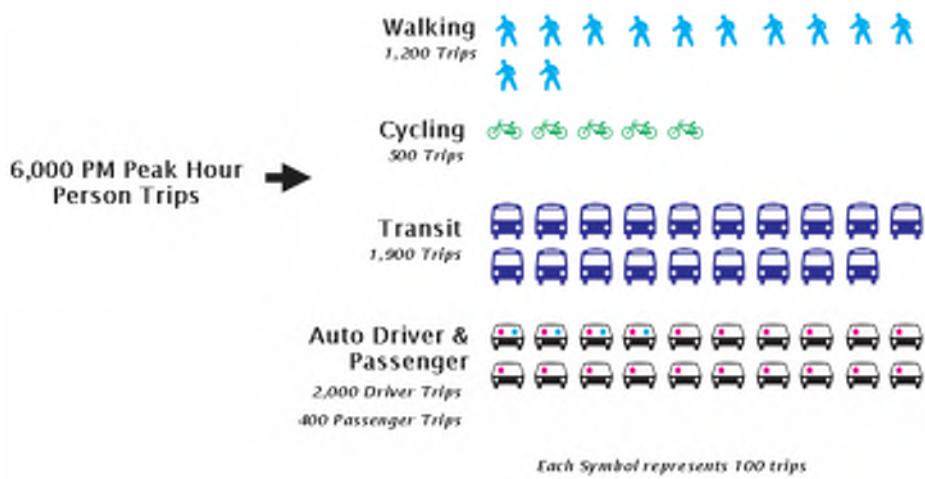
Vehicle access is currently at Rousseau Street where a traffic light controls movements with Braid Street; however, operational challenges exist at the traffic light with Braid Street and Brunette Avenue, particularly in the afternoon weekday peak period with resultant significant queuing and one of the key drivers to have a more direct connection to Brunette Avenue for access to Highway 1. Highway 1’s interchange at Brunette Avenue was upgraded by the Ministry of Transportation and Infrastructure (2010) where a new traffic light was introduced at the off-ramp to accommodate realignment changes. The Ministry is now contemplating other options to further improve regional traffic patterns in this area with a fully reconfigured interchange and connections between Coquitlam and New Westminster.

Office, retail and residential land uses were used for the transportation analysis purposes. A 20-year build-out is projected to equate to absorption levels of around 250 residential units and 35,000 to 40,000 square feet of office per year. This ‘slow burn’ will allow monitoring over time to understand the transportation influences internally and externally.

At the outset, the local community advised the need for a direct connection to Brunette Avenue to serve Sapperton Green and minimize new vehicle demands on the local street network. To achieve this goal Ministry of Transportation and Infrastructure (Motif) along with TransLink and the City of New Westminster formed a working group to develop a new access to Brunette Avenue, and which was achieved through an agreement with TransLink in 2014.

Compact mixed-use development patterns typically generate lower vehicle demands when compared to comparable sized but more spatially-separated land use patterns. This is supported by research work in North America and data collected in the Metro Vancouver area. Transportation projections for the Sapperton Green are expected to follow this trend given its proximity to Braid SkyTrain Station and bus routes along with the low rates for parking and supporting TDM measures.

Taking into consideration the accessibility of the site, and based on the City’s mode share targets, Sapperton Green will generate 40% of it’s person trips by private vehicle, which represents approximately 2,400 two-way person trips for drivers, passengers, and ride sharing in the afternoon peak-hour out of a total of 6,000 person trips (Image 82.1). These new movements would be balanced between the residential and office uses, while the retail / commercial could account for less than one-fifth of the new trips.



82.1 Sapperton Green Mode Share Estimates

Around 50% of the new development movements are expected to enter or leave in the direction of Highway 1 / Lougheed Highway, and this emphasizes the importance of the shared connections between Brunette Avenue and the site.

VISSIM, a micro simulation program, was used to assess the behavior of individual drivers, traffic signal operations, grades, and travel lane restrictions; and is a bottom-up approach to network modeling in contrast to the traditional Highway Capacity Manual (HCM) intersection delay calculations (applied using Synchro analysis software). As part of the Transportation Impact Assessment to be completed, the VISSIM model will be updated to reflect the changes since the OCP with the goal to review the following operational features of the road network:

- Assess viability of using of the existing bus only connections to the Braid SkyTrain Station including measures to separate buses, vehicles, and cyclists at certain points.

- Identify traffic control and laning mitigation measures required for the external road network under future traffic conditions with and without the proposed Master Plan.
- Identify the traffic control and laning required for the internal road network.
- Review opportunities to improve signal coordination with railway operations (if railway connection remains after the interchange upgrade) so that when trains pass the intersection can continue to operate efficiently.
- Assess traffic signal cycle-length and coordination for external signals to minimize delays, especially for trucks and buses.

Vehicle Circulation

A critical component of the master plan includes transportation analysis and ensuring connections to the surrounding community but with limited impact on the neighbourhoods. The Master Plan illustrates the continuation of neighbourhood streets to connect Sapperton Green to the existing community. This includes Wilson and Rousseau.

The desire to mitigate traffic impacts on the neighbourhoods meant finding an access solution that would allow traffic from Sapperton Green to access Brunette directly. In 2014, an agreement was reached with TransLink to share the existing bus on and off ramps at Brunette.

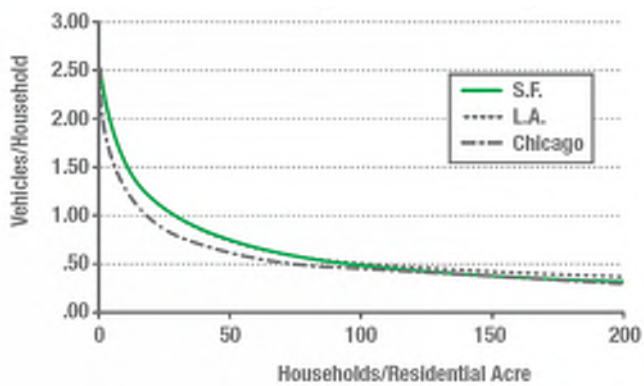
Different street types are planned to accommodate the expected demands and function. For example, commercial and transit streets will have a more generous travel lane width and parking would be located appropriately for the adjacent uses; residential streets will have a more compact cross section, reflective of the lower demands and to encourage slower speeds.

Parking

Parking provision is a key factor in shaping the travel behaviour for new residents and employees at Sapperton Green. It is also important in managing vehicle ownership for residents and encouraging active and sustainable modes of transportation. Sapperton Green is aiming to “right-size” its parking by providing enough parking to meet market demands where needed, while being careful to not oversupply parking. Part of this strategy is to work with the City in providing Transportation Demand Management (TDM) measures to help manage parking on-site, as well as reviewing parking needs in a staged fashion as the project builds out and reduce accordingly as demand continues to reduce over time.

The City of New Westminster is exploring the introduction of new parking bylaw rates for the Sapperton Community, including the Master Plan site, and which will be consistent with the travel dynamics of the area along with meeting the City’s targets to have 50% of all trips by walk, bike or transit by 2031.

Parking demand and auto ownership for residential areas can be measured in relation to two factors: (a) density, and (b) accessibility to transit. Covering the first, Holtclaw et al produced research that highlighted a strong relationship between residential density and auto ownership and this is presented graphically at Image 83.1.



83.1 Auto Ownership vs. Residential Density
Source: Holtclaw et al (2002)

At densities of over 20 households per acre, auto ownership drops to below 1 vehicle per unit, while at 40 households per acre it falls to 0.7 to 0.8 vehicles per unit. Sapperton Green will be around 90 to 100 units per acre which indicates vehicle ownership rates would be even lower than that. Changes in auto ownership are also consistent with the other aspects of higher density communities, i.e., high-frequency transit provision, walkable communities, local supporting amenities, etc.

One of the main advantages for mixed use developments is the opportunity to share parking. This is based on assessing the different peak demands for each use and applying an appropriate reduction based on the combined demands. The City of New Westminster has a provision for such an allowance in the downtown parking bylaw and a similar approach could be applied to Sapperton Green and specifically between the residential visitor, office and commercial uses.

Outlined below are the indicative parking ranges for each of the main land uses and these are consistent with the location along with the planned suite of Transportation Demand Management measures, outlined below.

- Residential – Strata: 0.8 – 1.0 spaces per unit (3,200 – 3,650 parking spaces)
- Residential – Rental: 0.4 – 0.5 spaces per unit (530 – 610 spaces)
- Residential – Visitor: 0.1 spaces per unit (510 spaces)
- Office: 1.8 to 2 spaces per 1,000 square feet (1,300 – 1,500 parking spaces)
- Commercial: 1.8 to 2 spaces per 1,000 square feet (260 – 300 parking spaces)
- Community Centre: 0.9 to 1 spaces per 1,000 square feet (30 – 35 parking spaces)

TRANSPORTATION REVIEW

Based on these figures, parking for the site could be in the range of 5,800 spaces to 6,600 spaces.

Level 2 electric vehicle charging will be provided at a 100% of the planned residential parking stalls and 10% of all commercial parking stalls.

Transportation Demand Management (TDM) Strategies

The City of New Westminster Study (2015) in the Sapperton Area highlighted that 52% of residents and 32% of employees either walked, cycled or used transit for trips. Overall the City target is 50% by the year 2031 and as can be seen the Sapperton area meets this already for residential while more effort would be required for employees. These will be important benchmarks in assessing the Master Plan performance in future years.

The Master Plan’s location adjacent to a SkyTrain Station will be a catalyst to sustainable transportation choices and this can be complemented by a Transportation Demand Management plan to maximize travel opportunities and minimize new vehicle demands. It is expected to include:

Car Share

- Provide combination of one-way (Evo) and two-way (Modo/Zip-Car) car share spaces at strategic locations across the site.
- Ensure car share spaces are publicly accessible.
- Focus car share spaces on-street, or at-grade where possible (avoid loss of GPS signal), or P1 level.
- Provide incentives for residents and employees (i.e. discounted memberships, or prepaid mileage).

Transit

- Focus on long-term strategies for lasting impact on travel behaviour.
- Provide enhanced real time transit scheduling information (i.e. electronic signage in residential/office building elevators and lobby’s, as well as restaurants).
- Provide enhanced transit facilities on site and adjacent to site (i.e. transit priority signal at Transitway/Brunette exit, and bus shelters and benches for adjacent stops).
- Provide educational information on benefits of transit and transit choices to employees and residents.

Cycling

- Provide bike parking above bylaw requirements.
- Conveniently locate Class 1 (secure) bike parking at grade wherever possible or on P1 level.
- Provide bike lockers for residents and employees (and at transit station).
- Provide end-of-trip facilities (i.e. bike repair equipment, bike wash station, electric bike charging for residents and employees, and lockers, showers, and changing facilities for employees).
- Enhanced cycling connections to/through site.
- Provide bike centre adjacent to transit station – repair, parking, lockers etc.
- Provide Class 1 electric outlets for electric bicycle charging in bike rooms.

Walking

- Provide enhanced pedestrian facilities to/through site (i.e. wide sidewalks, plaza areas, seating etc.).
- Provide way-finding signage for key destinations on-site and adjacent to site.

Electric Vehicles

- Provide 10% Level 2 (240v) electric vehicle charging for commercial parking.
- Provide conduit for electric charging to be wired later if needed for residential parking.
- Level 2 EV charging stations will be provided on 4 stall circuits for efficiency.

Ride-Sharing

- Provide ride sharing/carpooling spaces for employees.
- Promote ride-sharing/carpooling services for residents and employees.

Parking and Disincentives

- Pay parking for rental residential (market and affordable), and employment uses.
- Allow mechanism for unbundled parking for residential uses.
- Allow for flexibility in parking to change to alternate site uses (assess on phase by phase basis).

Transit Station Improvements

Although no direct changes are planned to the station layout (bus layover, station access, bus stops, etc.) the access from the immediate environs will be greatly improved for pedestrians and cyclists and more generally the station will be integrated with an appropriate scale and mix of land uses. One of the cornerstones of the Master Plan development has been to create a ‘sense of arrival’ at the Braid SkyTrain Station with streetscapes and land use forms that complement and support its prominence on the transportation network for train and bus riders.

Complementing this will be the planned new network of streets and pathways to improve permeability and accessibility to the sta-

TRANSPORTATION REVIEW

tion along with the opportunity to provide supporting commercial and amenity uses. This will contribute to animating the street space while servicing the needs of the community. QuadReal will work with TransLink to ensure the interface between the Master Plan and the SkyTrain Station concourse creates the best possible experience while optimizing the pedestrian desire lines to the station entrance.

Coordination will also occur with TransLink on the planning of the convergence of the three Greenway Routes (Central Valley Greenway, Cross Town Greenway and the Brunette Fraser Greenway) and specifically how they connect through the station concourse along with how the station’s bicycle storage facilities are accessed.

Given the Brunette Avenue access will be shared with general vehicle traffic, a bus-priority signal will be implemented at Transit Way to ensure timely arrival and movement of buses to and through the exchange.

Bicycle Parking & End-Of-Trip Facilities

Secure bicycle parking will be provided in all new buildings for residents and employees while visitor parking would be provided in accessible locations close to building frontages while there may be opportunities to group larger numbers of bicycle parking in public areas.

Access and location of secure bicycle parking will be an important component in the design planning for each building and where appropriate separate access arrangements away from the main vehicle ramp access can be explored.

Employees will have end-of-trip facilities such as showers and lockers, while opportunities will be explored to develop a central storage facility at the station to meet the needs of commuters and

other day-to-day users. Residents bicycle storage can either be in individual storage lockers or in communal areas and for the latter a repair stand and benches can be provided.

Passenger Loading

Provision of passenger loading on-street will contribute greatly to the functionality of the new community including for ride-hailing/ taxis, car share vehicles, passenger drop-off or small delivery vehicles. It will be important to have such spaces spread through the community and it will be important that this is managed well to ensure appropriate use.

Further, with the emergence of ride-hailing services into the Metro Vancouver market, and future implications with Autonomous Vehicles, passenger loading will become a critical part of the transportation system for the community.

Servicing

Vehicle truck servicing for the different land uses will be conducted off-street in designated areas. Opportunities will be explored on how the loading spaces can be shared in mixed use buildings to lower numbers, and where necessary, a Loading Management Plan can be implemented.

Commercial end users will be encouraged to use the smallest delivery vehicle possible and this will assist in minimizing the maneuvering footprint required at intersections, or within buildings, contributing the compact nature of the new urban form.



Musson
Cattell
Mackey
Partnership



Sapperton
Green

Master Plan

April
2020

Master Plan

SUSTAINABILITY

ENVISION NEW WESTMINSTER 2030 - THE FOUR SUSTAINABLE PILLARS

Creating a sustainable community is an overarching goal for Sapperton Green. The framework guiding the implementation of sustainability throughout New Westminster is Envision New Westminster 2032. It identifies four sustainability pillars: Community Livability and Social Equity, Environmental Leadership, Vibrant Economy, Arts and Culture. As a City policy document, the Sapperton Green Neighbourhood Plan is a tool for translating the intent of Envision 2032 into the development of the neighbourhood, across all four pillars:

Community Livability + Social Equity

Sapperton Green will be livable and sustain a good quality of life. It will provide opportunities for residents to live, work and play in a safe and supportive environment. It will foster a strong sense of community and belonging.

Access to civic resources and services are key to community livability and individual equity, including fostering healthy lifestyles and encouraging social interaction. This means taking full advantage of public transportation infrastructure and co-locating housing with jobs, parks and open space, recreation facilities, community services, and other amenities.



86.1 Greenways and open spaces for social and community connection

Extensive greenways and open spaces throughout the site will connect to and enhance neighbouring Hume Park. Many of the needs of the community will be able to be met within the Sapperton Green neighbourhood. This is particularly important as the development of this neighbourhood will bring an increase in Sapperton’s population of residents, employees and visitors.

Access to safe, adequate and affordable housing is also fundamental to the physical, economic and social well-being of individuals, families and communities. The Sapperton Green neighbourhood will provide a choice of housing, including a range of unit types and tenures, accessible and adaptable housing, and affordable housing options.

The urban design of the neighbourhoods in which we live also plays a central role in our overall quality of life. The design of architecture, streetscapes and public outdoor spaces in Sapperton Green will provide an attractive environment for people, take steps to minimize the negative impacts of urban living (such as noise, vibration, poor air quality), and create a neighbourhood that reflects the unique character of this part of New Westminster.

Environmental Leadership

Sapperton Green will play an important role in sustaining a healthy environment. The development will be focused around Brunette SkyTrain Station and will provide for the daily needs of residents and local employees within a highly walkable neighbourhood setting. People will be able to live, work and play within the same area and will have easy access via transit to other city and regional destinations.

As a transit-oriented, complete neighbourhood, Sapperton Green will help to achieve the City’s greenhouse gas emissions target by supporting low carbon-producing modes of mobility like walking, biking and transit. Buildings will be designed and constructed to reduce energy use.



86.2 Neighbourhood biodiversity supported by community initiatives



86.3 The Brunette River, located north of Sapperton Green

North of Sapperton Green is the Brunette River, located within Hume Park and paralleled by the Brunette-Fraser Greenway. The River is an important local and regional natural area that supports wildlife, including salmon spawning. The development of Sapperton Green will provide the opportunity to enhance the size and ecological integrity and function of this portion of the Brunette River corridor. The neighbourhood’s open space network will provide many opportunities for integrated stormwater management.

SUSTAINABILITY

ENVISION NEW WESTMINSTER 2030 - THE FOUR SUSTAINABLE PILLARS

Vibrant Economy

Sapperton Green will capitalize on the significant advantage of proximity to SkyTrain to create a fully mixed-use neighbourhood with large areas of office, retail, and other commercial uses that contribute to the economic sustainability of the whole city. Recreational, social services and other amenities will bolster the attractiveness of the neighbourhood for business. Through the Intelligent City Initiative, businesses and residents will access a high-speed fibre network and create a digitally inclusive area of innovation. As New Westminster’s economy continues to diversify and grow, Sapperton Green will provide a regionally central, well-connected and transit-oriented neighbourhood where employers and employees from many economic sectors want to be located.

Sapperton Green will also have a vibrant, safe and comfortable neighbourhood commercial centre with a wide variety of goods



87.4 A diverse and vibrant mixed-use neighbourhood

and services, well-supported by the local residents and employees. The diversity of office and commercial space will support a variety of business types, from international and national to small and local-family-owned companies. Businesses in Sapperton Green will be an integral part of the community, providing meaningful employment and contributing to neighbourhood social initiatives.



87.5 Public art



87.1 Recreational trails



87.2 Offices



87.3 Community social gathering

Arts, Culture, and Heritage

Sapperton Green will recognize the value that arts, culture and heritage bring to the community in terms of livability and creating a sense of place. Building on the multi-cultural community of the city as a whole, diverse cultures will create a vibrant mosaic in Sapperton Green, which will support opportunities for sharing different traditions and experiences.

The neighbourhood character will be interesting and diverse and will reflect the heritage and unique sense of place of the site and the Sapperton area in general. The arts will be expressed and integrated in Sapperton Green, through installations, multi-use community space, and vibrant businesses that support visible presence of artist and artisanal activity.

SUSTAINABILITY

GREEN BUILDING STRATEGY

Sapperton Green will be sustainably developed, incorporating environmental strategies at both the building and the neighbourhood scale. The master plan will be targeting Gold certification with the LEED for Neighborhood Development rating system.

The office and retail portions will target Platinum certification with the LEED for Core and Shell rating system thus providing future tenants with world-class, energy-efficient, leasable space. The rental housing is considering Passive House standards. The entire site is subject to the City of New Westminster Rezoning Policy, and will incorporate necessary strategies to meet and exceed the requirements.

The proposed development will follow the City’s sustainability vision, ENVISION 2032, thru the following performance:

- Buildings are designed with full life-cycle costs in mind, including capital costs, operating costs, rehabilitation costs and the costs of decommissioning the building at the end of its functional life.



88.1 Quality green space is one aspect of LEED ND sustainable neighbourhood strategy



88.2 Indoor-outdoor connections

- Buildings are designed to maximize livability for occupants and to minimize impacts, including noise, vibrations, traffic, emissions and visual and light intrusion.
- Buildings are designed to minimize environmental and man-made dangers and to provide occupants with safety and security.
- Attractive, usable open spaces with landscaping featuring low impact, native plants are included in all new development projects.
- Natural features and habitat, such as green roofs, are integrated to the extent possible into buildings, sites and the public realm.
- Buildings and sites are designed to be flexible in order to allow a number of different uses throughout the building’s life-cycle without the need for major upgrades.
- Buildings are energy efficient, minimize greenhouse gas emissions and incorporate innovative, low-impact energy sources.
- Buildings are constructed with durable, low impact materials that include a significant component of natural and renewable materials.

LEED Core + Shell, Equivalent

In order to further support the development’s commitment to ongoing energy and GHG savings, the commercial spaces will implement a performance-based commissioning program for the life of the buildings that is expected to improve energy efficiency by 23% (based on energy cost savings).



88.3 Sustainable materials

Other elements unique to the commercial space include the use of Life Cycle Impact assessments for both materials and systems selections, low VOC materials selection, and design that favours natural daylighting.

Site Use

Green Mobility

The project site is located in a transitioning urban environment, with optimum connectivity to pedestrian, bicycle and public transit options. Alternative transportation strategies will be utilized, such as:

- Close proximity to various transit corridors – SkyTrain, bus, and bike routes
- Car sharing systems with preferential parking and recharge stations for electric cars
- Secured bicycle parking and “end of trip facilities” for building occupants.



88.4 Connectivity for cyclists



88.5 Parking and recharge for electric cars

SUSTAINABILITY

GREEN BUILDING STRATEGY

Storm Water Management

There will be a permeable approach to hard landscape features, ensuring lower maximum discharge levels and to purify water runoff. Green planters will be utilized over the majority of the roofscape at podium and tower roof levels.

Green Roofs

Roof gardens at podium and roof levels of the buildings will be a lush green retreat designed for tenant use and enjoyment. They are also designed to be visual and environmental amenities to the surrounding neighbourhood. The planted zones will have a positive environmental effect due to their soft, cool, absorptive nature. Plants and soil slow down, absorb, and filter rainwater – reducing both the velocity and quantity of runoff that enters the piped drain system.

The planted areas aid in Sapperton Green’s environmental agenda through evapotranspiration and shading, and also replace more heat absorptive pavers that add to the urban heat island. Irrigation throughout the project is minimized by the use of adaptive and drought tolerant planting, as well as the use of drip irrigation wherever possible, water sensors, and PRS for spray heads (Built in pressure regulating stem) which saves water by maintaining optimum water pressure and cancelling misting from excessively high water pressure.

Building Envelope

Design of a high performance building envelope can result in a reduction in the heating and cooling loads of a building, contributing to the energy savings as part of meeting LEED targets. A high performance envelope can work in conjunction with mechanical systems to provide significant comfort improvements. The main south facing components of the project that would be subject to



89.1 Planted zones on green roofs have many benefits

the most solar heat gain are the office buildings along Braid St. The office will utilize triple glazing on the entire building- in addition to a strategy for solar heat gain mitigation on the south façade to minimize the impact of solar heat gain on the inhabitants.

Consideration is being given to a double skin façade system or energy efficient dynamic (electrochromic) glass on the office façade. Electrochromic glass can change its tint from clear to dark on demand, giving occupants and owners an unprecedented control over the amount of light and heat that enters a building. Additionally, because they also control glare, windows that use electrochromic glass do not need blinds, shades or window treatments, thus providing unobstructed views to the occupants. In a double skin façade system the building envelope is able to dynamically respond to ambient conditions, incorporating a range of integrated insulation, shading and ventilation devices. The air space between the layers of glass acts as insulation against temperature changes, wind and sound.

Heating and Cooling

As part of the integrated design process the following technologies are being integrated into the project:

- High Performance Building Envelope
- Rainwater harvesting
- Water efficient Landscaping
- Low consumption plumbing fixtures
- Exhaust air heat recovery
- Heat recovery and energy sharing between interior and exterior zones
- High efficiency mechanical equipment
- Reduced internal lighting loads below ASHRAE 90.1 2010 levels.

The heating, ventilation and air conditioning (HVAC) systems will be designed to provide comfort and indoor air quality for the building occupants. High performance energy efficient systems will be designed for the project that are fully hydronic and will be compatible with City of New Westminster’s DES connectivity guidelines. In addition to a high efficiency envelope, the building will further reduce energy consumption through the following HVAC measures currently under investigation.



89.2 Office façade treatment



89.3 Energy-efficient windows

SUSTAINABILITY

GREEN BUILDING STRATEGY

The retail is proposed to be served by a four pipe fan coil system, the office component a closed loop hydronic system to provide radiant heating and cooling. A heat recovery ventilation system will capture the heat energy from the exhaust air to pre-heat the outdoor air when the outside air requires heat.

Due to the diverse uses within the master plan there is a great opportunity for energy sharing utilizing a heat recovery chiller and heat pumps to recover heat energy from rooms such as the electrical rooms, elevator machine rooms and interior commercial spaces that are constantly generating heat.

Each system will be reviewed for benefits and impacts to achieve project energy targets and required indoor air quality. Though the exact systems of the buildings are yet to be determined, all considerations for both the envelope, mechanical, and electrical systems will be selected so as to minimize energy use and, by extension, carbon emissions.

Lighting

Sustainable lighting strategies will be employed within the buildings so that a minimum level of energy case for the building will be 15% to 20% less than ASHRAE 90.1 including:

- LED fixtures
- LED signs

A high level of lighting controls will be applied, including:

- Occupancy sensors in low occupancy areas
- Daylight sensors in common areas
- Individual control of specific lighting elements

Elevators, Destination Dispatch

To improve efficiency and the need for additional elevators, a destination dispatch system will be applied to the office component. A destination dispatch system is an optimization technique used for multi-elevator installations, which groups passengers for the same destinations into the same elevators, thereby reducing waiting and travel times. In a traditional approach, all passengers wishing to ascend or descend enter the same lift and then request their destination. Ultimately, destination dispatch improves efficiency which reduces elevator travel and the energy required for such travel.

Plumbing

The plumbing system will include low flow fixtures throughout to reduce water consumption. A rain water harvesting system will supply the resources to flush toilets and urinals with future consideration and requirements to accommodate a possible on-site irrigation system. Flow sensors will also be utilized on common area faucets to ensure efficient use of water.



90.1 Sustainable LED lighting



90.2 Low flow fixtures



90.3 Adaptable floor plates

Flexible Planning

The nature of the floor plan in the commercial and office uses aims for highly adaptable and reusable floor plates.

The office plates will incorporate rationalized structural elements for a clear span, which increases the flexibility and adaptability of the floor plates and increases the probability of building adaptability and reuse in the future.

Low Emitting Materials

Low emitting materials will be mandated on this project, including:

- Low VOC paints, adhesives and sealants
- Low VOC carpets and composite wood

When in operation, the building will utilize green cleaning and service products.

SUSTAINABILITY

GREEN BUILDING STRATEGY

Public Realm + Urban Design

Policies for Public Realm and Urban Design correspond to a number of Parks & Green Space Principles, Environmental Principles and Social Principles. Consideration of a diverse public realm, parks and open space is a critical component of the Sapperton Green urban design and planning.

Along with a range of urban spaces the parks and greenways throughout the site will encourage connectivity and permeability to the surrounding neighbourhoods and ensure diversity within the new community.

The vibrant and active urban plazas in the Station and Braid precincts along with the passive and natural feel of the Hume Park precinct will reinforce the strong environmental vision, educational component and the visual expression of natural systems including storm water management.

Public Realm Policies

- Create an exciting pedestrian environment.
- Enhance the feel of a vibrant community and sense of place.
- Encourage connectivity in the public and private realm.
- Enhance the public realm network by creating a hierarchy of public and semi public spaces.

Parks and Open Space Policies

- Evoke a sense of place.
- Augment existing adjacent active and passive recreational amenities.
- Provide park-like incursions of green space from the adjacent neighbourhoods to encourage connectivity and permeability of park and open space.



91.1 Enhanced green spaces in the public realm

Environmental Policies

- Create compact, complete, and connected neighbourhoods that will, in turn, impact local climate change by reducing greenhouse gas emissions.
- Provide educational opportunities that build respect for wild-life, plant habitat, and natural systems.
- Implement sustainable design practices to reduce storm water flow in park, open space, and public realm areas.
- Enhance the network of parks and open space by including natural corridors to support and encourage connectivity and rehabilitation of habitat.

Transportation

Sapperton Green will have a mix of residential and employment uses, supported by new community-oriented commercial uses (retail, local services, cafes), to maximize the benefits and synergies with being located next to the SkyTrain Station and bus loop at Braid Street. Outlined below are the key policy principles:

- Provide an appropriate scale and context for the SkyTrain Station and bus loop to support its current and future demands.
- Provide commercial activities to create a more self-contained community with less reliance on auto use.
- Prioritize pedestrians, cyclists, and transit users ahead of private vehicle movements.
- Use lower parking levels over time consistent with the accessibility of the location.
- Complement the accessibility of the location with Transportation Demand Management measures to maximize opportunities for transportation choice and lower vehicle demands.

The following policies are supported by the Transportation Principles for the site which focus on linkages to and from Braid Station, the Braid and Brunette transportation corridor, pedestrian and bicycle linkages, and green and blueway connections.

Regional and City Transit-Oriented Policy

New Westminster, Metro Vancouver and TransLink’s policy objectives are all supportive of Transit Oriented Development (TOD). Metro Vancouver’s 2040 regional growth strategy targets two-thirds of growth in Urban Centres and other transit-accessible locations. It also advises, “compact transit-oriented development patterns help reduce greenhouse gas emissions and pollution, and support both the efficient use of land and an efficient transportation network.”

TransLink is also supportive where it advises:

“Transit-oriented is one of the key goals of most land use and transportation plans in Metro Vancouver...communities are not only more livable, sustainable, resilient and economically thriving, they also support higher levels of walking, cycling and transit and result in lower levels of automobile use and greenhouse gas emissions.”

SUSTAINABILITY

GREEN BUILDING STRATEGY

New Westminster’s Envision 2032 recommended framework includes, “future growth is focused primarily into transit-oriented nodes and corridors that respect existing neighbourhood character and can be developed into complete, compact areas that are walkable and have good access to frequent transit services.”

Pedestrian Policies

- Provide local amenities and activities within the master plan to support the day-to-day needs of the community.
- Develop a fine-grained street and walkway network that aligns with the surrounding neighbourhood networks along with the Braid Street, Brunette Avenue, and East Columbia Street corridors and which all feed through to the Braid Street SkyTrain Station and commercial activities.
- Ensure permeability for pedestrians is higher than other travel modes through the development of short street-blocks that are interwoven with a finer-grain of internal walkways.
- Develop a generous public realm on higher vehicle-volume streets and supportive of the comfort and safety of pedestrians, while on lower-volume streets consider opportunities for a shared street environment.
- Develop street-oriented retail uses to create a walking experience that is engaging and attractive for relaxing and strolling.
- Reduce crosswalk distances through the use of corner bulges or develop narrower street designs, all supportive of creating a walkable neighbourhood.

Cycling Policies

- Provide separated and direct connections for the Central Valley/ Crosstown, and Brunette Fraser Greenway to converge at the SkyTrain Station with a design supportive for users of all ages and abilities.



92.1 Separated and direct connections to surrounding greenways



92.2 Bike storage lockers near transit connections

- Look to develop interim arrangements for the greenways until new streets or connections are developed.
- Examine opportunities for way-finding at the meeting points of greenways and / or where there is change in alignment.
- Provide secure and convenient bicycle storage facilities for each land use, where for example employees should have end-of-trip facilities such as showers and lockers.
- Subject to TransLink’s approval, explore opportunities to develop a central bike storage facility at the station to meet the needs of commuters and other day-to-day users.

Transit Policies

- Create a ‘sense of arrival’ at the Braid Street SkyTrain Station with strong connections through the master plan to Braid Street, Brunette Avenue, and East Columbia Street along with to local neighbourhood streets.
- Ensure land uses surrounding the station provides eyes on the street’ through overlooking from buildings or generating activity levels at all times of the day.
- Work with TransLink to attempt to ensure that the development plan complements the station and does not compromise existing bus only connections.
- Ensure the street design, including the new connection planned to Brunette Avenue, does not interfere with TransLink’s existing requirements for buses.

SUSTAINABILITY

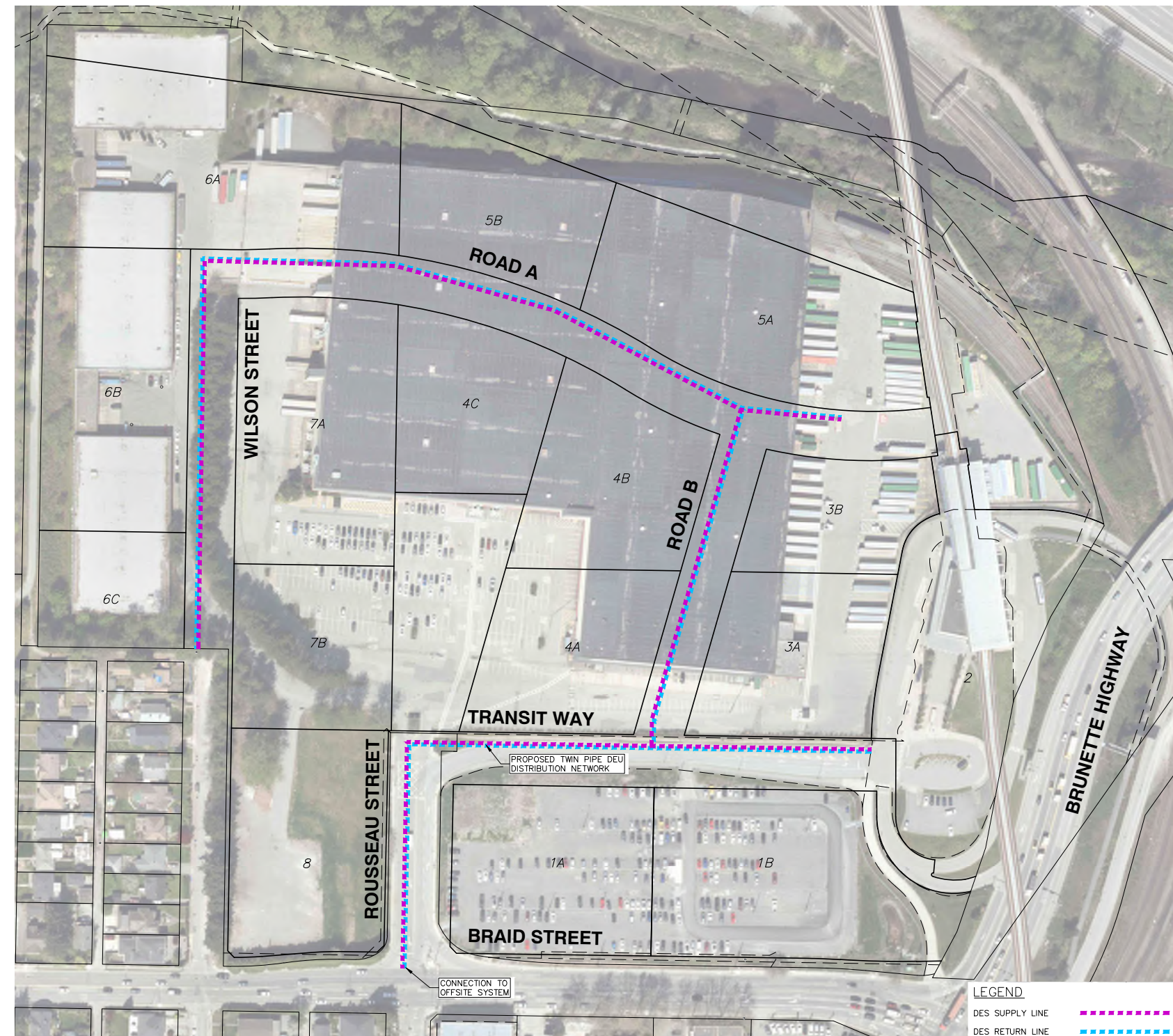
DISTRICT ENERGY

The City of New Westminster is developing a District Energy System (DES) in the City's Sapperton District to serve new residential and commercial development in proximity to Braid and Sapperton SkyTrain stations with a clean supply of renewable heating and cooling energy.

The City has established the Sapperton DES thermal utility and renewable energy service area. City staff are actively working to establish the energy center in the Brunette Industrial area. City staff have endorsed utilizing sewage heat recovery as the preferred renewable energy source for this system. Waste energy from the local Metro Vancouver trunk sewer line is expected to be used to transfer energy to a closed water loop. This water will be pumped through the distribution infrastructure to the individual building parcels. Water will be sent back to the energy center through the return line infrastructure for recirculation.

As part of the Sapperton Green Master Plan DES infrastructure will be installed within the new roadway network to permit distribution of energy from the City operated supply facility to the individual parcels. The figure shows the DES corridors established in the proposed roadways. The distribution system will consist of parallel supply and return pipes in addition to separate conduit for control wiring. Each individual parcel will be provided with a single supply and return service connection. Each parcel will have mechanical infrastructure located within the building footprint to transfer the energy from the City system to the buildings internal system.

The City plans to have an energy center for this system operational by the year 2022-2023 however there are currently no plans to install the required distribution piping infrastructure between the energy center and the boundary of the site. As a result until service is extended to the site boundary this system may remain unused. Alternatively if funding permits an interim system may be established onsite to service portions of the site that are developed.



93.1 Conceptual District Energy System (DES) servicing plan

SUSTAINABILITY

STORMWATER MANAGEMENT PRINCIPLES AND PLAN

The Sapperton Green study area is currently an industrial warehouse complex predominantly surrounded by impermeable paved asphalt. A portion of the site is an existing gravel parking lot. Historically the site has been serviced predominantly by the major arterial roads bounding the site including Braid Street and Brunette Avenue. The Sapperton Green Area Master Plan proposes the introduction of new, fully serviced connected streets and pedestrian networks linking the surrounding community to the existing park west of the site and the SkyTrain and Transit Hub east of the site.

The transformation of the Sapperton Green site introduces a significant addition to the servicing infrastructure with new storm, sanitary, water and district energy in each of the new roads. The existing impermeable expanses of pavement and large impermeable warehouse roof will be converted to a more sustainable, high-density mixed-use development with storm water management amenities integrated throughout. In addition, expansion and new

shallow underground utilities (hydro, telephone, cable, fibre optics and gas) will be required to service the site.

The redevelopment of impermeable areas provides the opportunity to incorporate rainwater management facilities into the new street network and within the greenway areas dividing the individual parcels. New building roof tops provide the ability to create residential amenity areas, urban gardens, and other “green” roof elements for storm water retention, absorption and evapotranspiration. Significant park amenities and greenway systems are also planned for the site with additional landscaping.



94.1 Examples of water features and storm water management raingarden planting areas

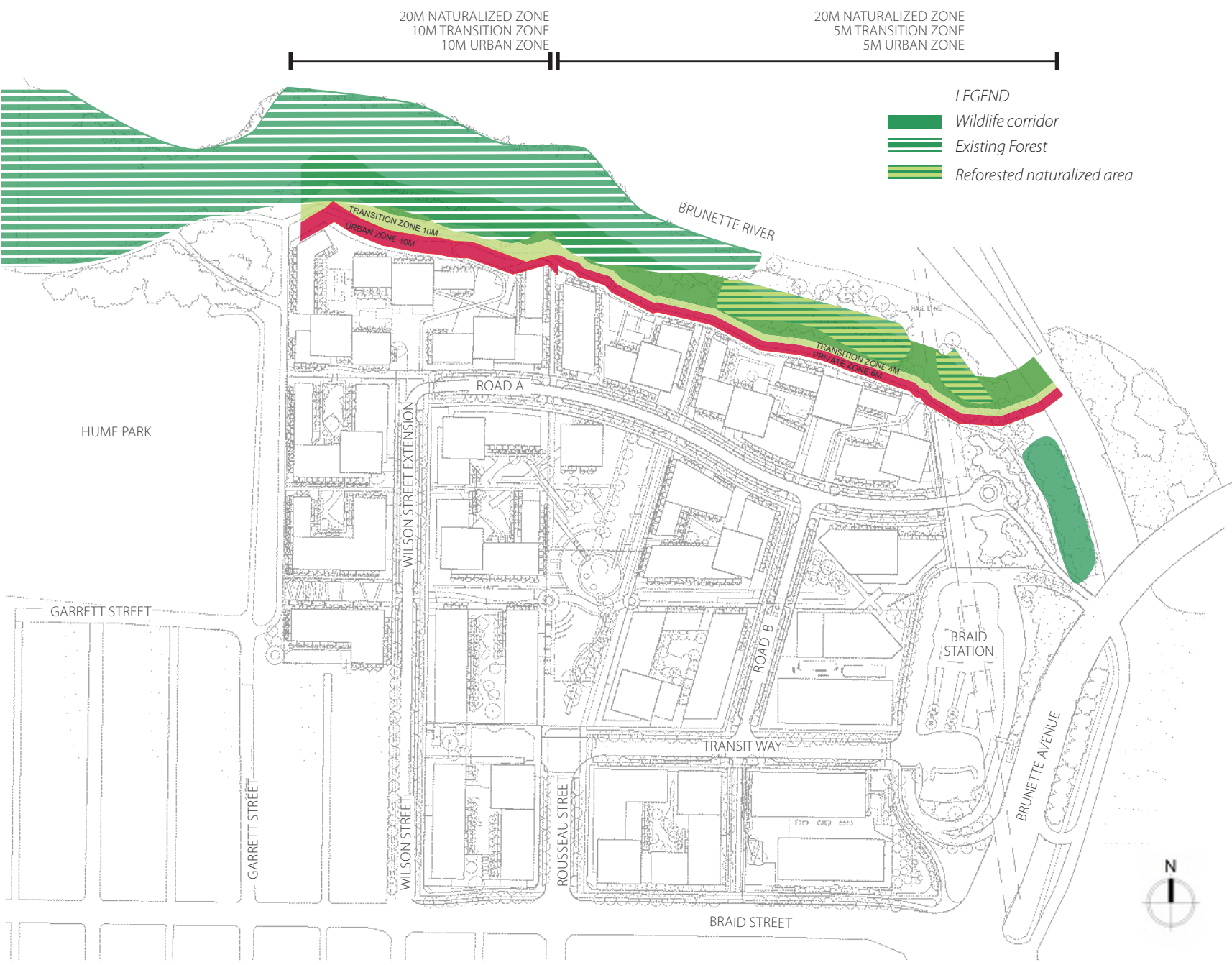
ENVIRONMENTAL

BRUNETTE RIVER RIPARIAN AREA ENHANCEMENT

Conceptual Plan of Park Improvements Along Brunette River

The Sapperton Green re-development will substantially increase the size and quality of the Brunette River riparian zone by creating a 20m wide Naturalized Zone from the top of bank. This will convert existing developed land within the property (i.e. warehouse building ing asphalt pavement and railway tracks) along the Sapperton Reach of the Brunette River to native riparian vegetation for fish and wildlife habitat. The Brunette River 25-year flood levels are well below the top of bank (4.4m at the upstream property boundary and 3.5m at the downstream end). The new edge of the Naturalized Zone will exceed 10m elevation, providing upland riparian migration corridors and habitat.

Creation of the Naturalized Zone will include removal of heavy infestation of invasive species such as knotweed and blackberry along the top of bank and upper slope, prior to planting native vegetation. Planting will include coniferous and deciduous trees, shrubs, and herbaceous native riparian species. To further improve wildlife habitat, large woody debris will be placed and vertical logs will be installed to compliment the existing wildlife trees present along the escarpment. These features are used by raptors and cavity species. Addition of the native vegetation in the Naturalized Zone will provide a wildlife corridor along the top of the escarpment that will extend along the entire Sapperton Reach section of the site, benefiting song birds, raptors, several species of wildlife, and pollinators such as bees. Installing bird and bat boxes at strategic locations will also provide additional benefits to wildlife



95.1 Bird Box



95.2 Bat Box



95.3 Course Woody Debris



95.4 Vertical Log

ENVIRONMENTAL

ECOLOGICAL INVENTORY

Ecological Inventory of Sapperton Green

The existing Sapperton Green property is developed for warehousing and distribution, and the Braid Street SkyTrain Station. Almost the entire site is paved with asphalt or covered by warehouses, except in the western section where a row of pine trees line a section of an interior street and mature trees exist along Wilson Street. A narrow band of deciduous saplings (i.e. big leaf maple and alder) and several species of shrubs and groundcover occur within the fenced western property line along the Central Valley Greenway. These tree areas provide limited habitat for birds and a few species of urbanized wildlife, but redevelopment will provide higher quality replacement value in general landscaping.

The main fish and wildlife habitat occurs along the Brunette River, which supports spawning Pacific salmon and provides complete life history, instream habitat for the endangered Nooksack dace. The river and adjacent riparian habitat provides critical connected habitat for fish and wildlife that utilize the corridor between Burnaby Lake and the Fraser River. The Sapperton Property is located along the top of the steep embankment and does not directly encroach on the existing riverine or riparian habitat. However, redevelopment of the site will result in habitat improvements along the top of the embankment within the 20m wide Naturalized Zone as well as edge planting within the transition, urbanized and private zones.



96.1 Band of saplings at west property line



96.2 Shrubs and groundcover along bikeway



96.3 Pine trees in the western section



96.4 Critical adjacent riparian habitat

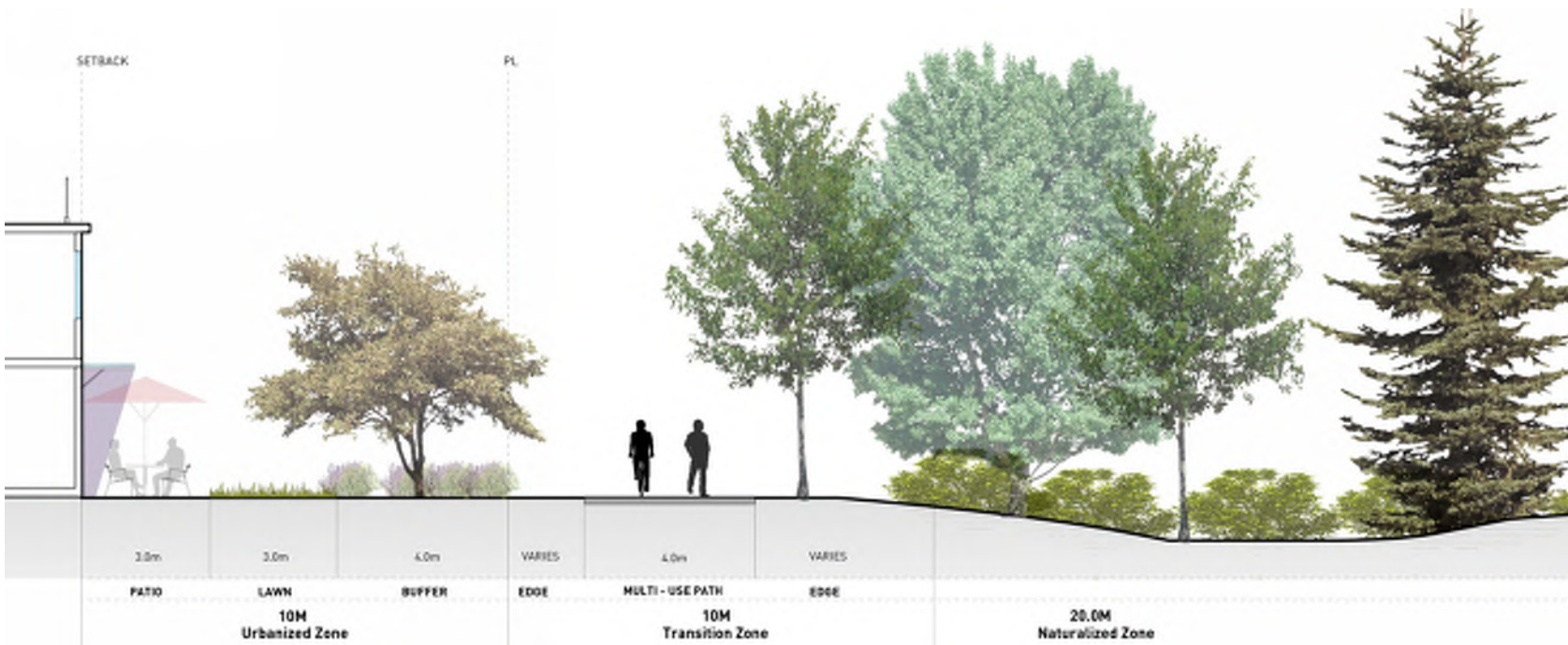
ENVIRONMENTAL

PARK IMPROVEMENTS

Conceptual Plan of Park Improvements along River

The redevelopment of the site will feature a 20m wide Naturalized Zone from top of bank with 100% planting of native trees and shrubs to expand the existing Brunette River riparian zone (see Brunette Greenway Sections A and B). Appropriate coniferous and deciduous species will be selected to provide habitat diversity and a wide range of ecological services including shade, flowers for pollinators, control and retention of surface runoff, bank stability, and habitat for resident and migratory wildlife. Existing wildlife trees and snags will be retained for cavity feeding and nesting birds, and invasive blackberry and knotweed will be removed and replaced with native planting.

To address geotechnical issues and bank stability, buildings will be setback 40m from the top of bank along the steep escarpment in the western section of the site (Brunette Greenway Section A) and 30m along the remainder of the property (Brunette Greenway Section B). Between the 40m building setback and the Naturalized Zone, a 10m wide Transition Zone will be established that will include a 4m wide paved multi-use path between edge vegetation planting consisting of 75% native species. A 10m wide urbanized zone, consisting of 3m wide patio adjacent the building, 3m wide lawn, and 4m wide buffer planted with 50% native species.



Brunette Greenway Section A

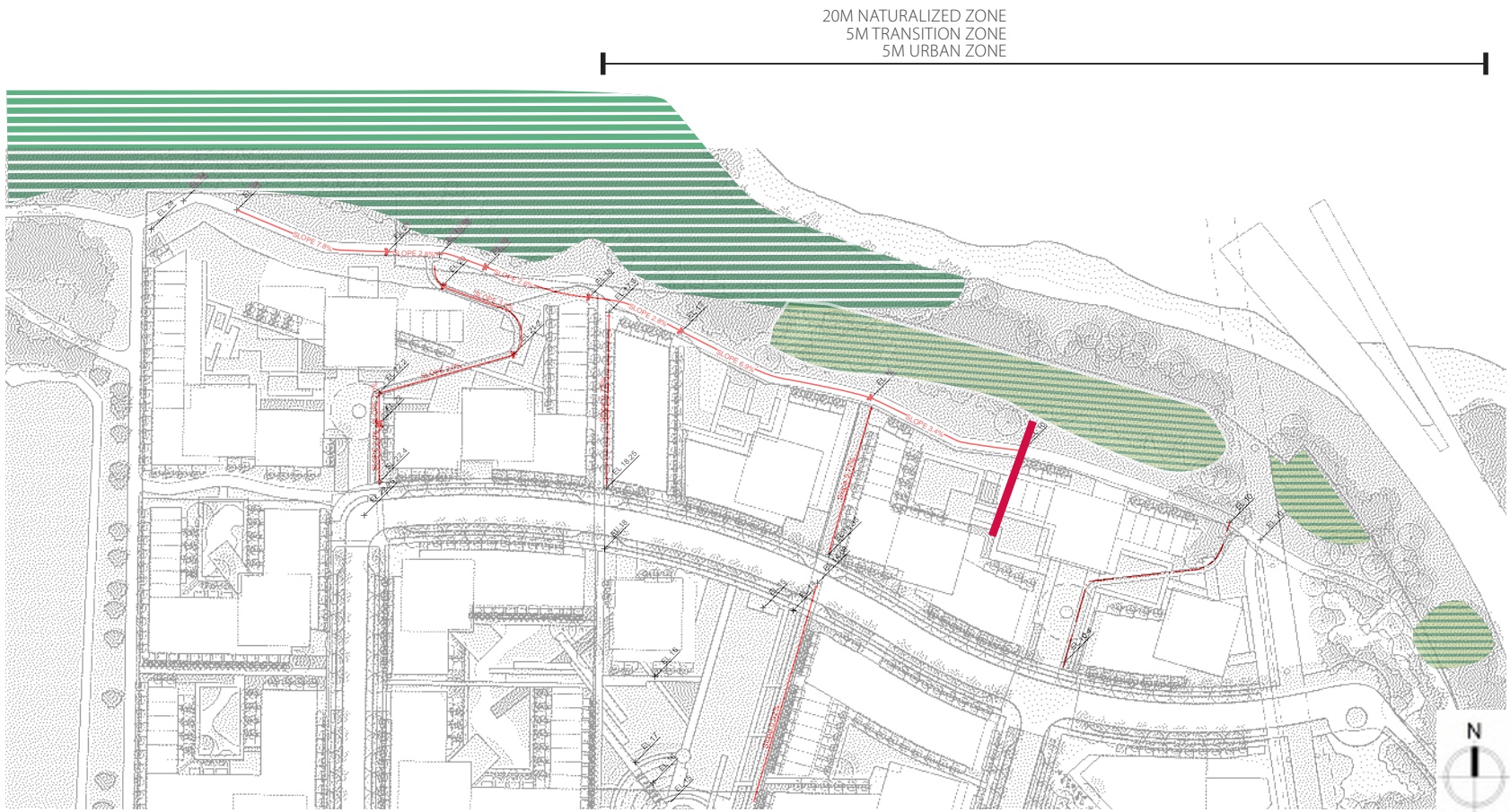
ENVIRONMENTAL

PARK IMPROVEMENTS

A 30m building setback from the top of bank includes a 5m urbanized zone adjacent to the residential buildings and a 5m transition zone. The 4m wide Brunette Fraser Greenway will fall within the Transition Zone.

Careful attention will be given to the development of a grading plan to ensure that there is minimal impact on the existing grades within the Naturalized Zone. The vegetation in the Urbanized Zone will feature native and non-native species that will provide flowers for pollinators, habitat for urbanized birds, attractive aesthetics, and some screening of the adjacent path.

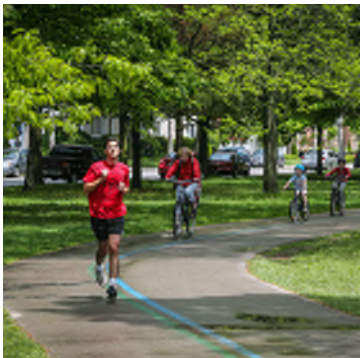
Habitat revitalization through the removal of invasive species and planting of appropriate native plants will help to re-establish the natural cover and habitat value of the Naturalized Zone.



98.1 Minimal impact to naturalized zone



98.2 Re-establish natural cover



98.3 Multi-use path as transition zone



Brunette Greenway Section B

ENVIRONMENTAL

PARK IMPROVEMENTS

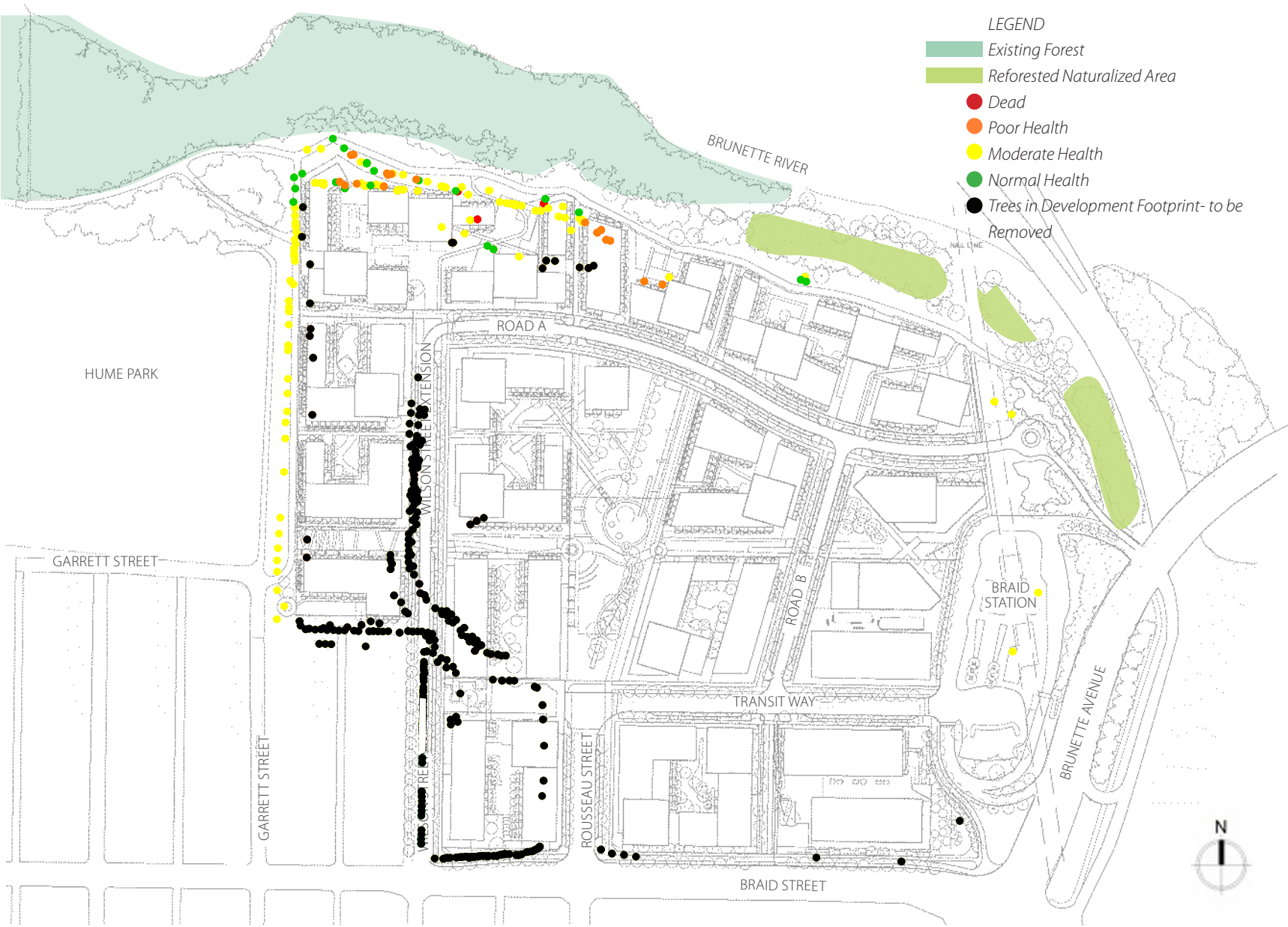
Sapperton Reach

Sapperton Reach extends along the entire length of the property, characterized by a steep embankment (>30%) along the south bank.

The Brunette River riparian vegetation falls within the Coastal Western Hemlock dry maritime biogeoclimatic zone, a low elevation coastal forest region with warm, relatively dry summers and moist, mild winters with little snowfall. The dominate trees are Douglas fir, western red cedar and western hemlock, although deciduous trees such as black cottonwood, red alder and bigleaf maple form the tree cover in riparian and disturbed areas. The riparian zone includes the frequently flooded vegetated land immediately adjacent the active, incised channel, the more infrequently flooded 25 year and 200 year flood-plains, and steep embankment located above the floodplain.

The vegetation communities range from the grass-herbaceous-shrub along the river and floodplain and coniferous-deciduous tree and non-woody understory vegetation up the steep slope. Heavy infestations of invasive knotweed and blackberry have replaced large areas of native shrubs. Fallen trees and dead standing trees provide habitat complexity, cover, and cavity habitat for small animals and nesting birds. The aquatic and continuous riparian habitat provides diverse habitat for a rich flora and fauna.

For the buildings setback 30m from top of bank, the 4m wide paved multi-use path will make up the Transition Zone, and a 3m wide patio and 3m wide planted edge will form the Urbanized Zone. The vegetation in the Urbanized Zone will feature native and non-native species that will provide flowers for pollinators, habitat for urban-ized birds, attractive aesthetics, and some screening of the adjacent path.



99.1 Existing trees along Sapperton Reach

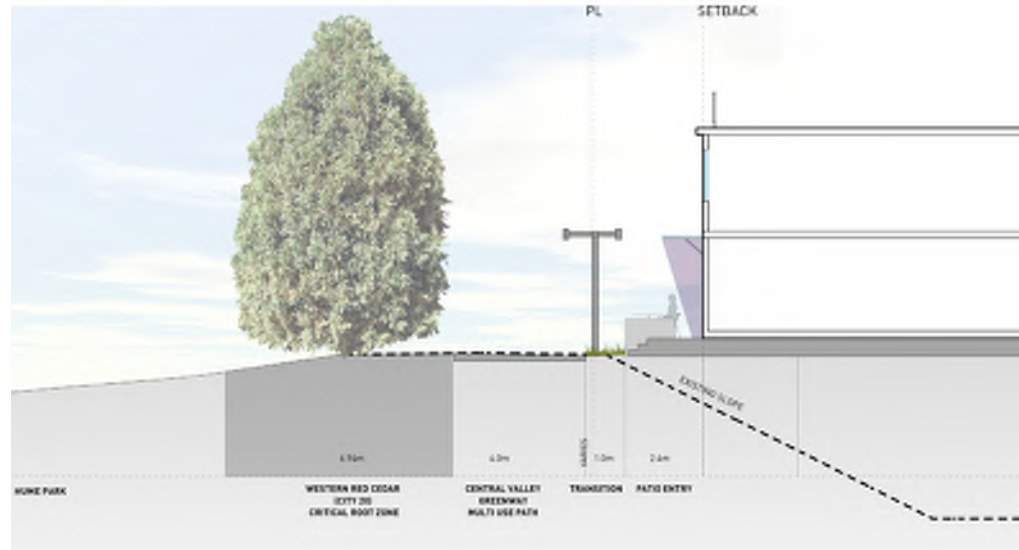


99.2 Existing trees along Sapperton Reach

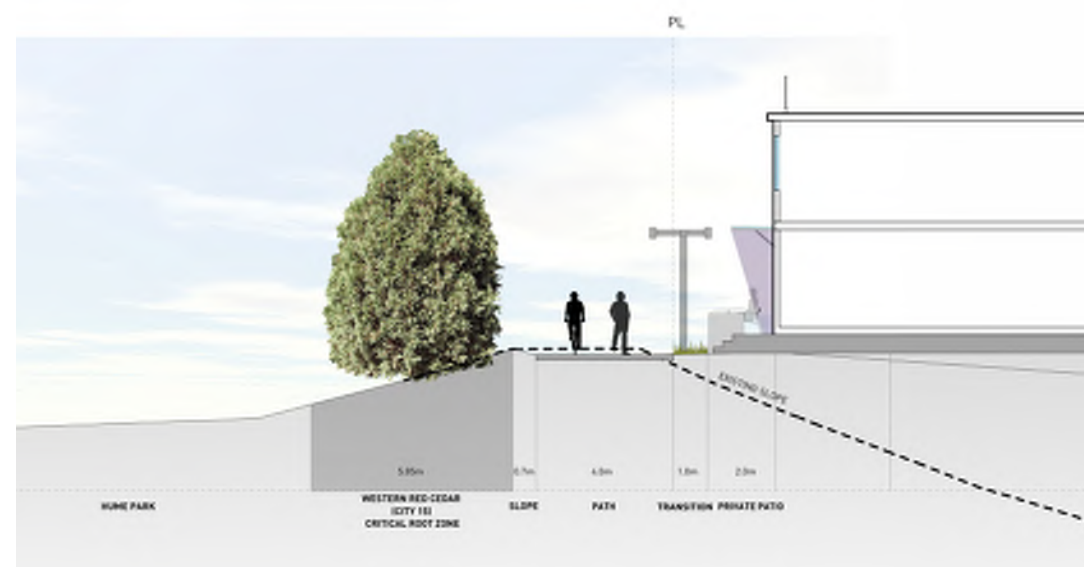


99.3 Existing trees along Sapperton Reach

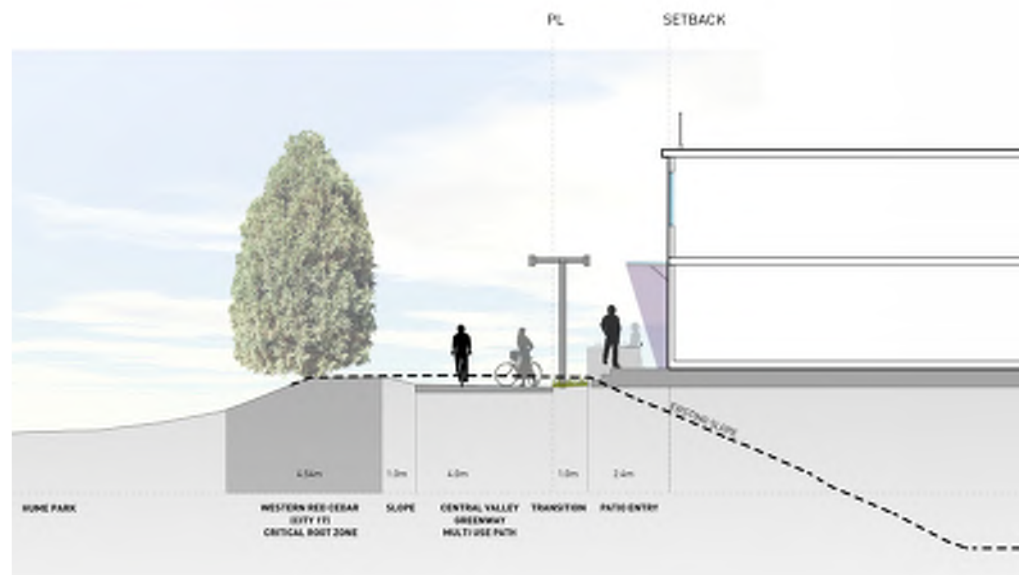
EXISTING TREES ALONG CENTRAL VALLEY GREENWAY



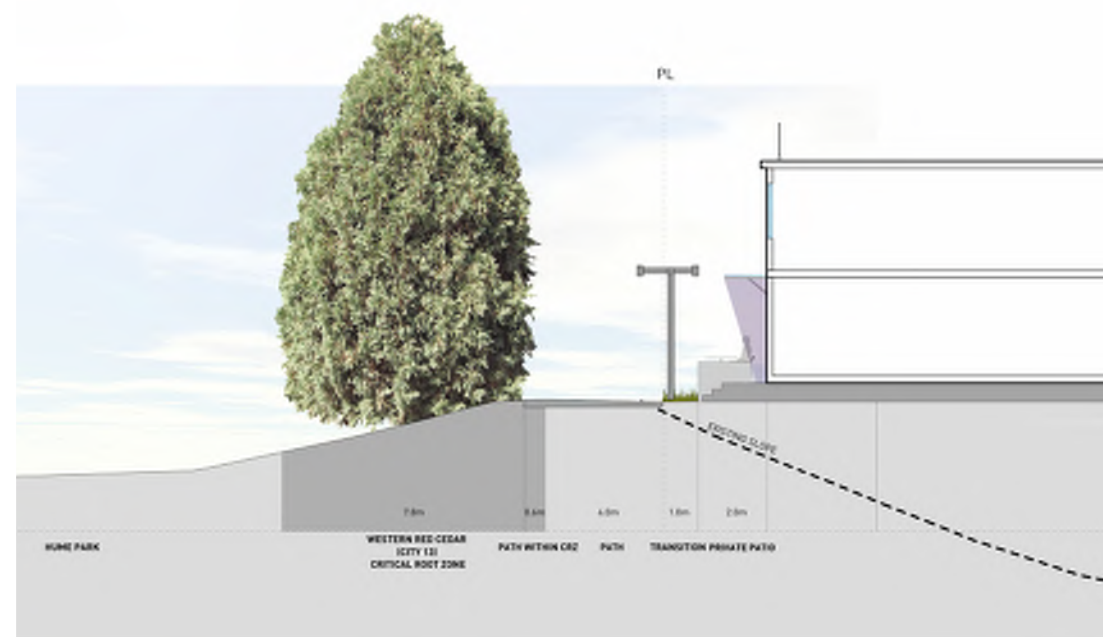
Section 1: Hume Park Edge



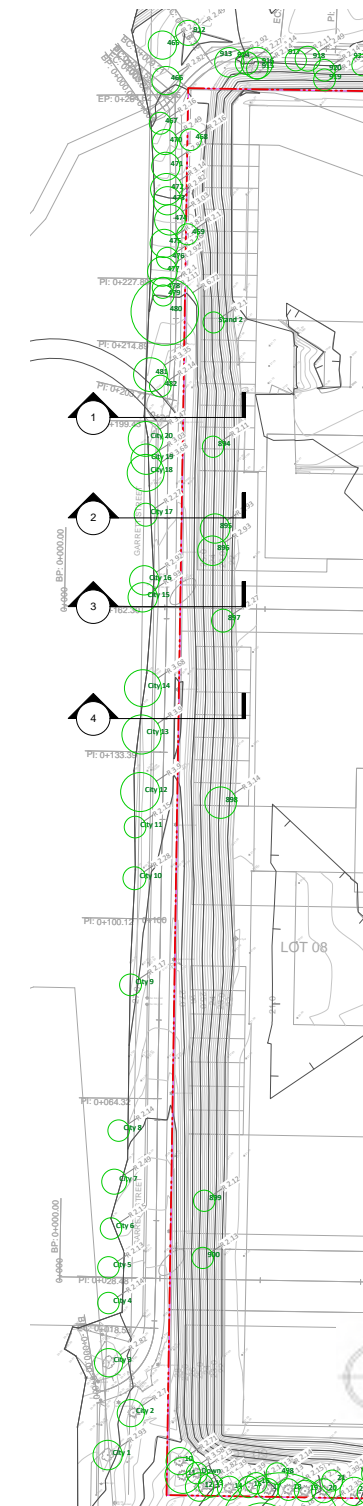
Section 3: Hume Park Edge



Section 2: Hume Park Edge



Section 4: Hume Park Edge



Key Plan

ENVIRONMENTAL

WILDLIFE AREAS AND SIGNIFICANT CORRIDORS

Brunette River Edge

The Sapperton Green re-development will substantially increase the size and quality of the Brunette River riparian zone by creation of a 20m wide from top of bank Naturalized Zone. This will convert existing developed land within the property (i.e. warehouse building, asphalt pavement and railway tracks) along the Sapperton Reach of the Brunette River to native riparian vegetation for fish and wildlife habitat. The Brunette River 25-year flood levels are at about 4.4m at the upstream property boundary and 3.5m at the downstream end, which are well below the top of bank. The approximate new edge of the Naturalized Zone will exceed 10m elevation at the lowest point providing upland riparian migration corridors and habitat.

Creation of the Naturalized Zone will include removal of heavy infestations of invasive species such as knotweed and blackberry along the top of bank and upper slope prior to planting native vegetation. Planting will include coniferous and deciduous trees, shrubs, and herbaceous native riparian species. To further improve wildlife habitat, large woody debris will be placed and vertical logs installed used by raptors and cavity species to compliment the existing wildlife trees present along the escarpment. Addition of the native vegetation in the Naturalized Zone will provide a wildlife corridor along the top of the escarpment that will extend along the entire Sapperton Reach section of the site, benefitting song birds, raptors, several species of wildlife, and pollinators such as bees. Installing bird and bat boxes at strategic locations will also provide additional benefits to wildlife.



101.1 Bird Box



101.2 Bat Box



101.3 Course Woody Debris



101.4 Vertical Log

ENVIRONMENTAL

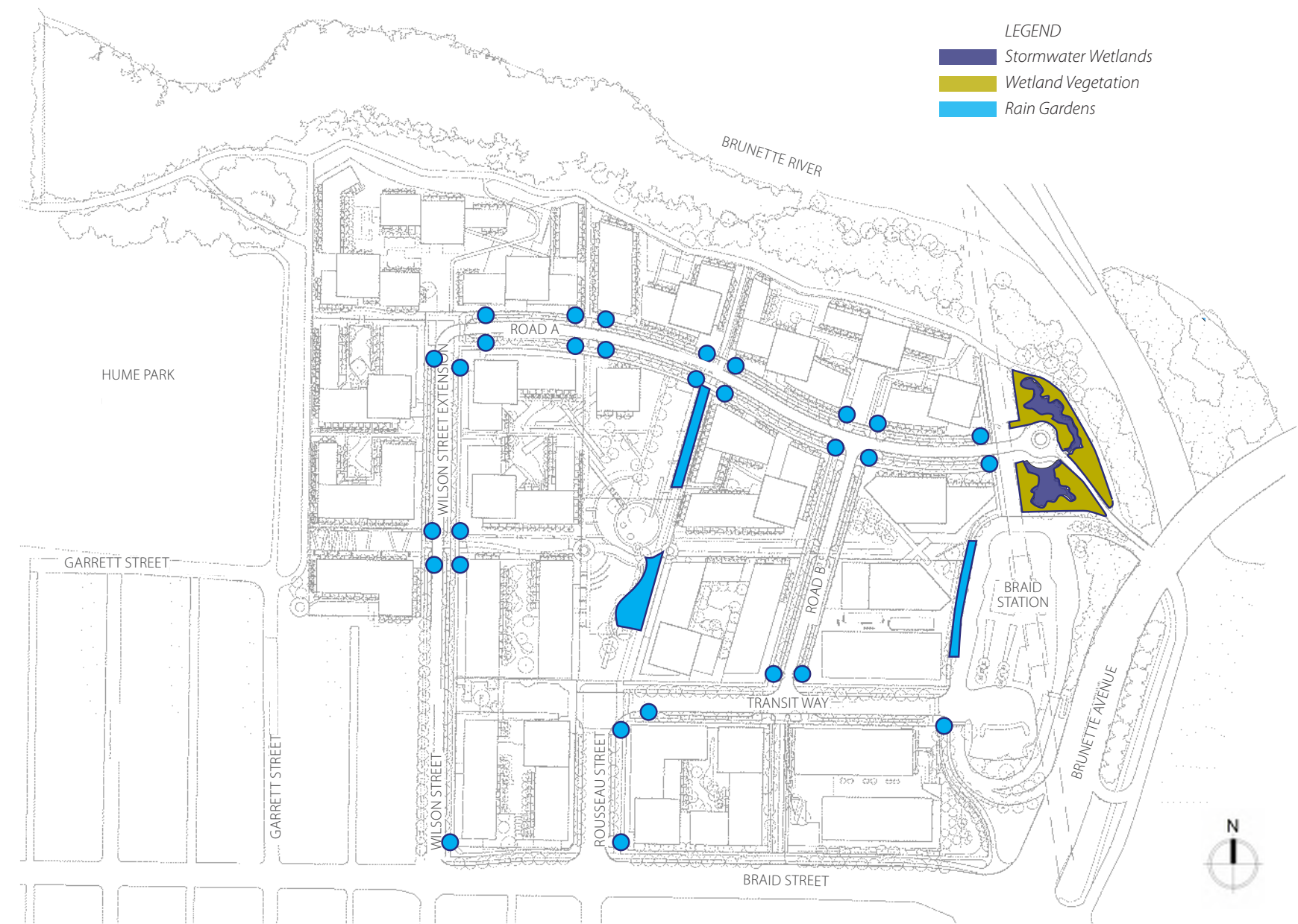
WILDLIFE AREAS AND SIGNIFICANT CORRIDORS

Rain Gardens and Stormwater Wetland

In keeping with green infrastructure objectives, state of-the-art stormwater design will improve on-site hydrologic function by reducing rainwater runoff through retention, infiltration, and treatment to reduce erosion and improve water quality of surface water inputs to the Brunette River. Redevelopment of the industrial site will reduce impervious surface area to less than 60% from current conditions. An integrated system of bioswales, rain gardens, retention ponds, and wetland infiltration/filtration will reduce surface runoff from the site and improve water quality of discharges into the Brunette River.

A wetland retention and filtration system will be installed in the northeastern section of the site to treat collected runoff water prior to release into the Brunette River. Native emergent marsh plants (e.g. cattail, rushes, and bulrushes) will be used to create the treatment wetland to create multi-function benefits that include wildlife habitat as well as surface water retention and contaminant filtration and sediment trapping. The new stormwater management system will reduce the number of existing discharges into the Brunette, several of which consist of uncontrolled pipe flows at the top of the steep embankment.

Storm water collection and conveyance will range water retention ponds in park areas and rain gardens associated with street edges and parks. The flow of storm water will move to the northeast wetland complex where it will be retained and slowly released. Throughout the site soft landscape will be used to create edges consisting of two layers: trees and low groundcover understory.



102.1 Rain gardens for stormwater conveyance



102.2 Wetland retention



102.3 Stormwater collection



102.4 Rain gardens at street edges

ENVIRONMENTAL

SITE CONTAMINATION - STATUS AND REMEDIATION PRINCIPLES

As part of the original Rezoning application in 2017, a site profile was submitted to the Ministry of Environment. Site Profiles are a screening tool used to identify potentially contaminated sites. They are required for submission when potentially contaminated sites area:

- Being decommissioned
- In foreclosure proceedings
- Subject to local government applications and/or permits
- Properties being sold

Contaminated sites are regulated by the Provincial Ministry of Environment. In British Columbia, a site is contaminated if its land, water and/or sediment are unsuitable for particular uses. This means areas of a site that has waste contaminating the soil, groundwater or sediment in an amount or concentration that exceeds environmental quality standards. Identifying and cleaning up contaminated sites helps minimize negative impacts to the environment. Environmental hazards can include:

- Harm to fish, animals and birds
- Accumulation in the food web
- Causing imbalance to ecological functions or systems

The Ministry of Environment has reviewed and allowed for the rezoning application to proceed.

Based on the history of the site, further investigation is recommended at such time any development commences.

The Sapperton Green community will provide a healthy, safe and secure environment to all occupants of its sites.

Any ares of the site which do not fulfill provincial regulations and requirements will be remediated to the acceptable standard.

The recent Environmental Site Assessment (ESA) report has identified the current uses on and surrounding the site to be of low risk for contamination.



103.1 Braid Station



103.2 Amazon Fulfillment Centre



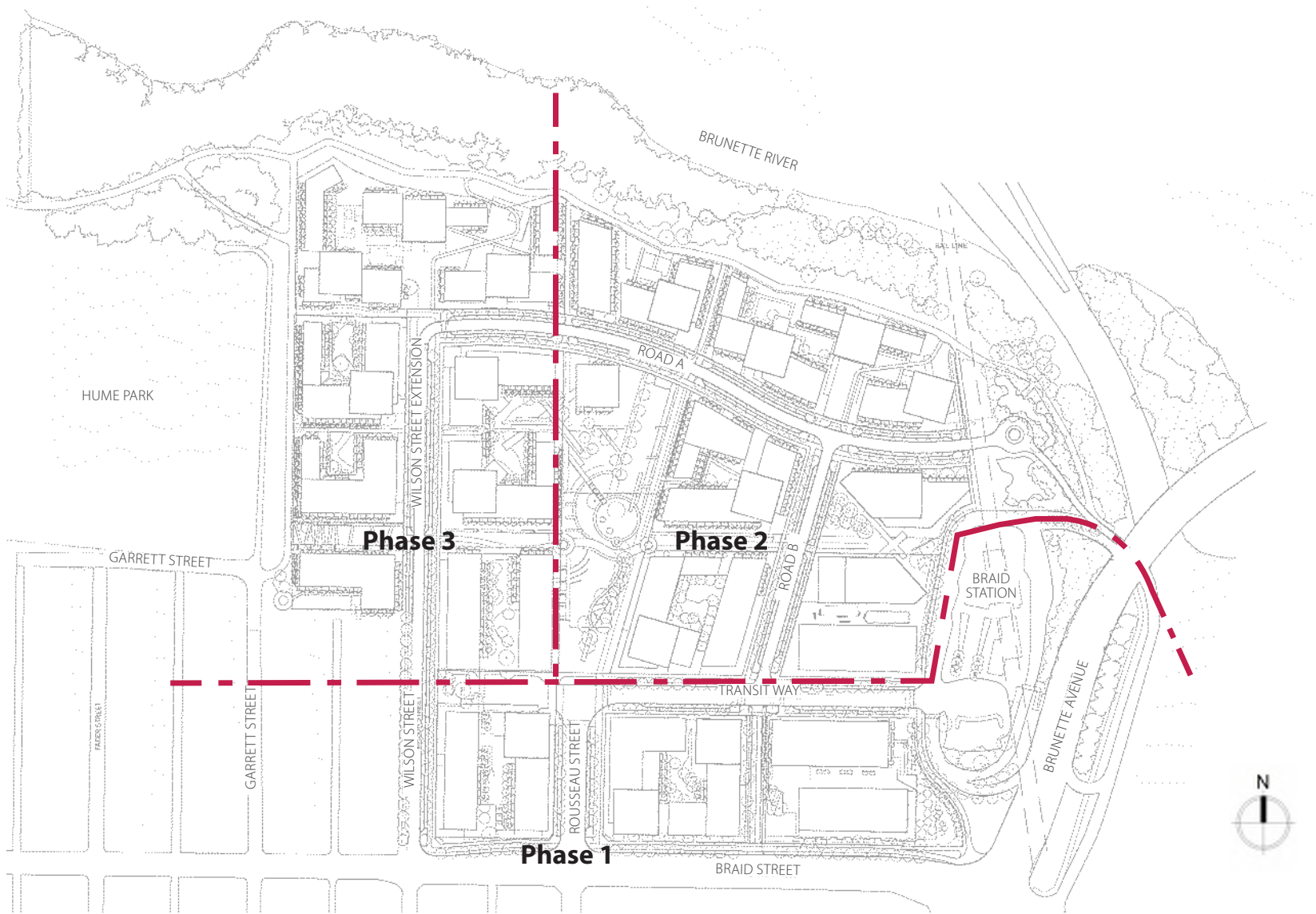
103.3 Hume Park Embankment

PHASING, PARCELIZATION, AND LAND USE OVERVIEW

PHASING PRINCIPLES

Phasing has been designed to allow early development of vacant land, combined with continuity of site access during interphase development. Economic viability is optimized by enabling existing uses to stay on site until development sites are required.

- **Phase 1**
Residential, Retail, Office
- **Phase 2**
Residential, Retail, Office
- **Phase 3**
Residential, Retail, Community Centre



Phase 1



Phase 2



Phase 3

PHASING, PARCELIZATION, AND LAND USE OVERVIEW

SUBDIVISION PRINCIPLES

Principles

The proposed lot subdivision is mainly defined by road access.

The sufficient site frontage exposure maximizes the development potential of each lot.

The planned lot and size of area, distinguished by the site boundary, allows development flexibility in subdivision, shared parking, phasing, change in use, and market demand/supply.



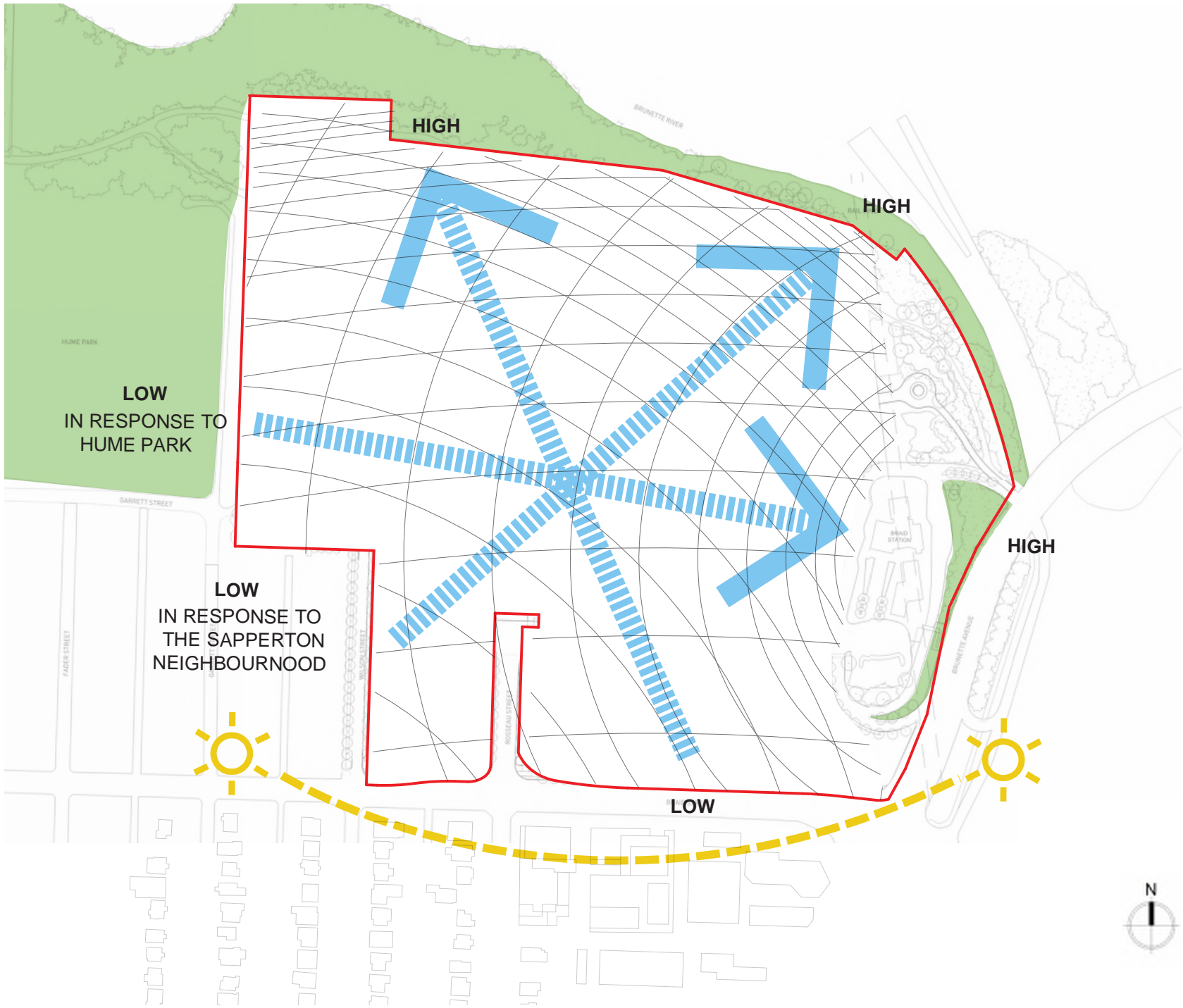
PHASING, PARCELIZATION, AND LAND USE OVERVIEW

DENSITY AND HEIGHT

There are three strong influences on the site which will help determine the location of building heights: the surrounding neighbourhood and Hume Park, solar orientation and Braid Station.

1. The development will provide a transition in building height and massing in relation to the surrounding Sapperton Neighbourhood and Hume Park. Lower buildings along the park and neighbourhood will transition to taller buildings along the Brunette Creek Greenway and Highway 1.
2. Building heights will respond to the solar path by having lower buildings along the south edge of the site transitioning to taller buildings along the Brunette Creek Greenway to the north. The buildings will avoid adverse microclimatic effects on and off-site related to wind and shadowing.
3. Embracing the station with a higher density of development reinforces the transit-oriented nature of Sapperton Green.

Perceived height and massing will be minimized through such things as building setback variations, building orientation, roof treatment and profiles, and choice of exterior materials and colours.



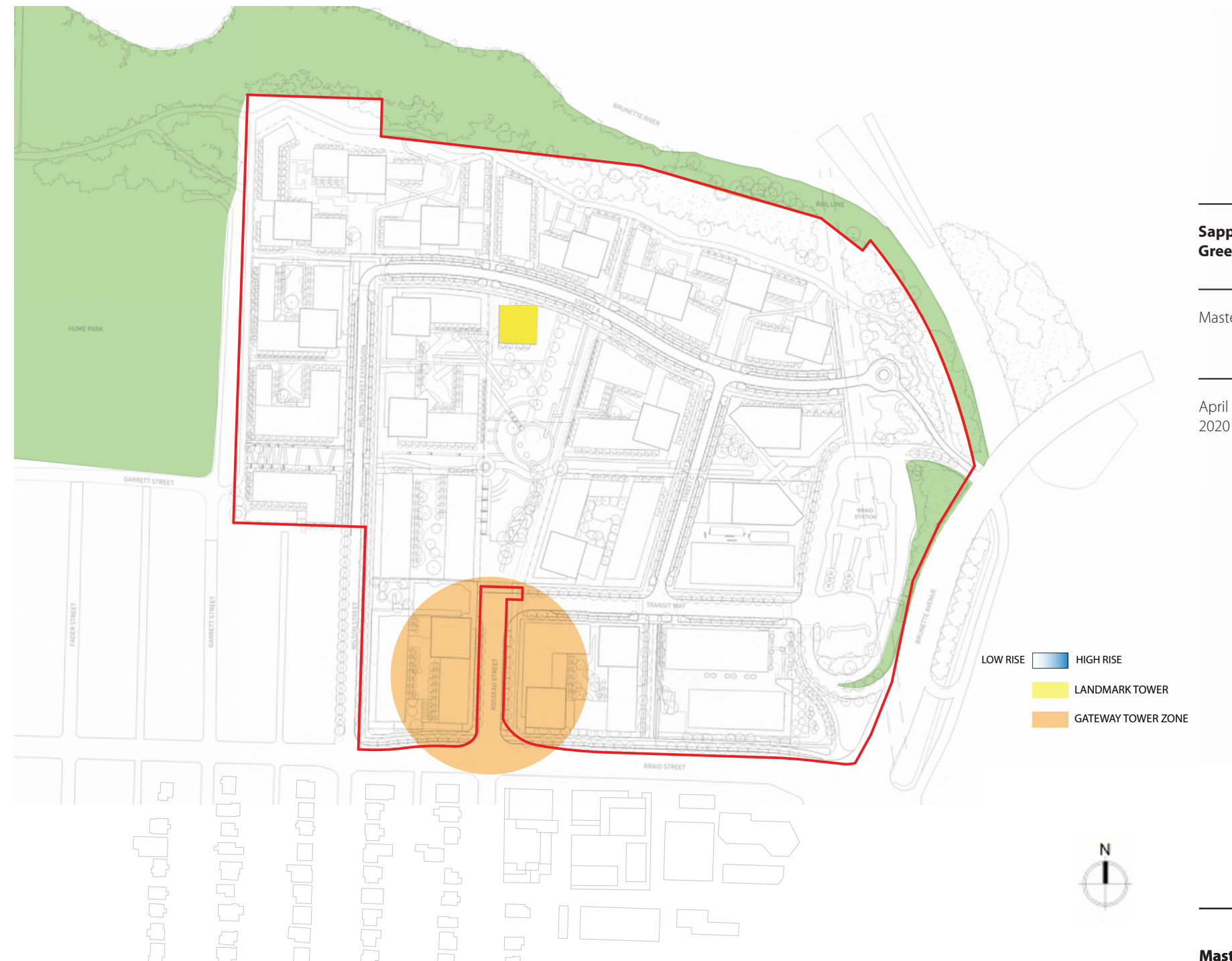
PHASING, PARCELIZATION, AND LAND USE OVERVIEW

DENSITY AND HEIGHT

The site is mainly bounded by detached or single family neighbourhoods and transferring to low-rise light industries. Adding the concern of south sun exposure, the density and height of the proposed development generally increase from south to north and west to east. Towers will predominantly be located towards the north and east of the site.

The expressed tower heights create skyline topography appreciating the north mountain view, while also animating the massing along the highway to travelers. Concentrated density close to the existing Braid Street Station hub reinforces the transit-orientated focus within this vibrant sustainable mix-use community.

There is a proposed mid-rise tower across the Braid Street to the South.



**Sapperton
Green**

Master Plan

April
2020

Master Plan

PHASING, PARCELIZATION, AND LAND USE OVERVIEW

GENERAL LAND USE PLAN

Land uses for the Sapperton Green community encourage mixed uses close to Braid Station and Braid Road and residential use next to Hume Park as a transition between the context and the new community.

There are three land uses proposed for the Sapperton Green neighbourhood, commercial office, mixed-use and residential.

1. Office

Along Braid street will sit a development permit approved office complex. The five-plus storey office buildings will provide a strong street wall along Braid Street with great visibility to attract new office users to New Westminster. This is an ideal location for an office use to provide the neighbourhood a buffer from the street traffic along Braid Station.

2. Mixed-use

The entrance from Rousseau Road and along Transit Way, towards the SkyTrain Station, will define the mixed-use zone. This zone will be a transition zone from the office zone to the south to the residential zone to the north. This zone will be mixed-use with office, retail, and residential. The streetscape will be active and inviting, with the introduction of retail on the ground floor with sidewalks protected from the elements by canopies and awnings.

3. Residential

The remaining site, north and west from the mixed-use zone, will be a residential zone. A diversity of residential types such as townhomes, stacked townhomes, low and mid-rise apartments and high-rise apartments will provide changes in street scale and a transition to the taller built forms. The residential zone will provide active street walls through stoops, porches, windows at ground level, and inviting building entrances.



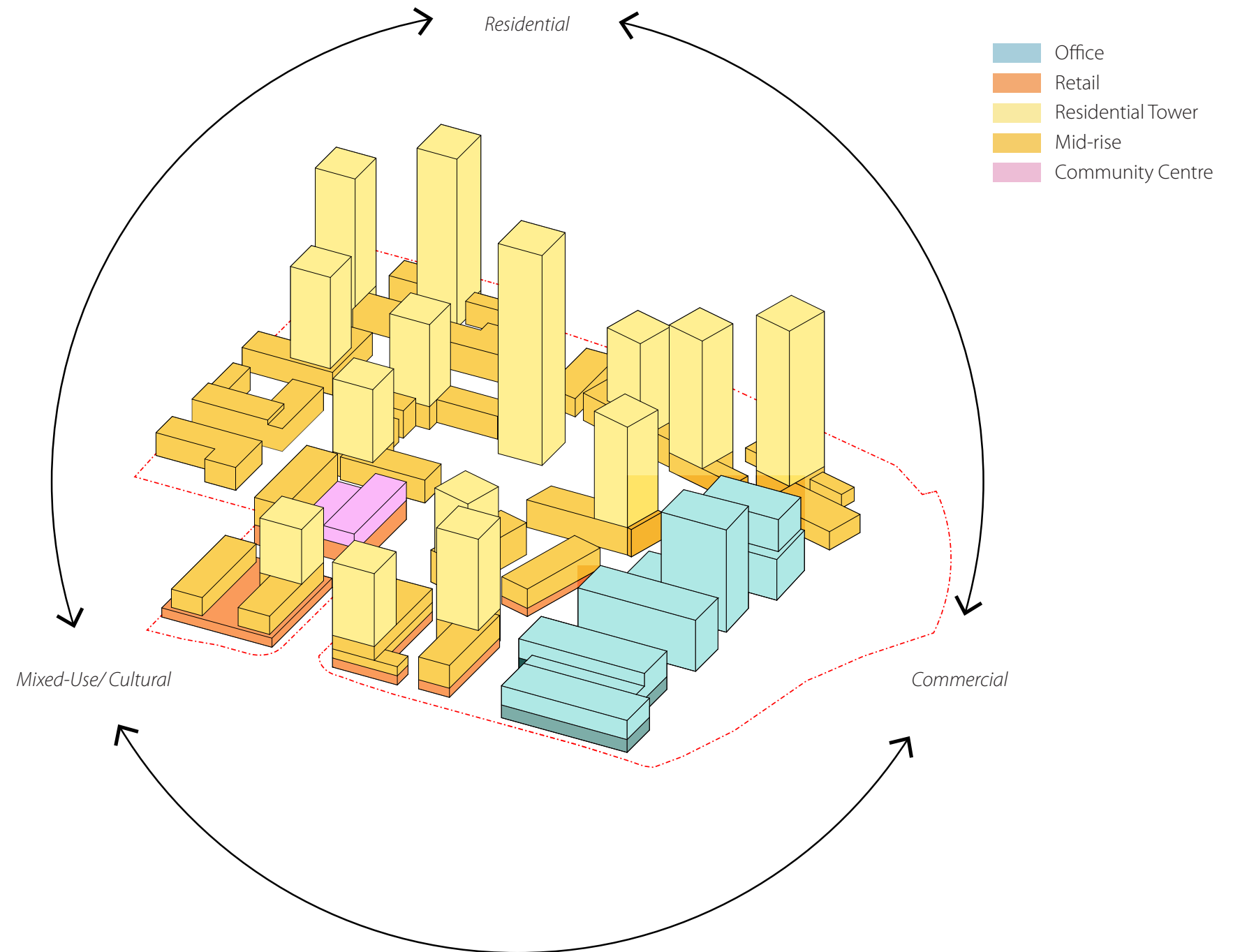
PHASING, PARCELIZATION, AND LAND USE OVERVIEW

USES, DENSITY AND HEIGHT APPROACH TO FLEXIBILITY

The proposed Sapperton Green Master Plan is a large-scale, mixed-use, transit-orientated, organic development. The success of this organic plan requires flexibility in development to create community growth as the future emerging site and economic context changes. Flexibility creates the unique project quality and capacity of:

- A high level collaboration between uses, responding to each other in a mixed use environment,
- The ability to cater to future emerging business models,
- Adaptability to the future trends, (needs),
- Strong sense of belonging and place making.

The methodology for delivering the flexibility across the development in different phases and development lots is by the articulation of **Uses, Density, and Height** (Optimum building height before density transfer).

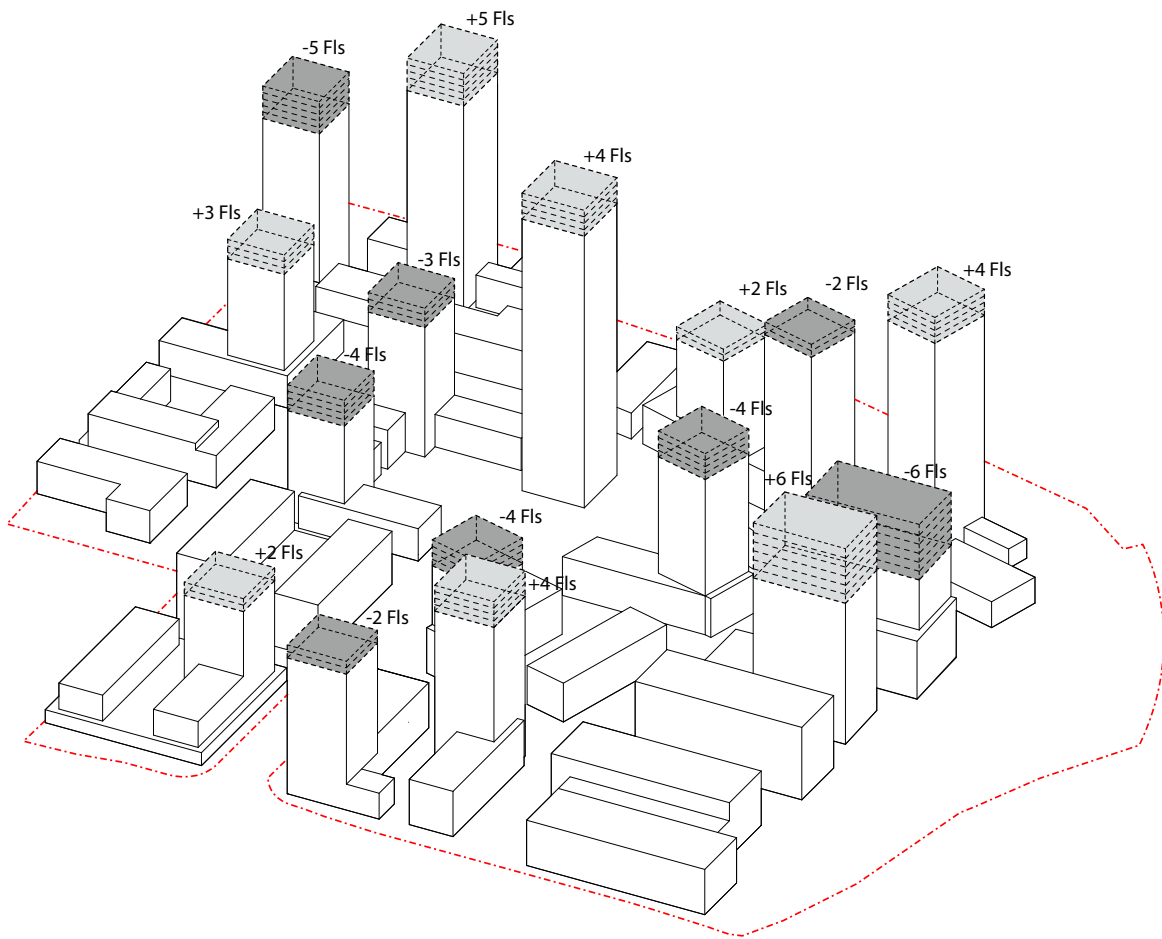


Uses

For future innovation, the use of an omnibus density designation allows for emerging trends, while also enabling uses be inclusive and diversified.

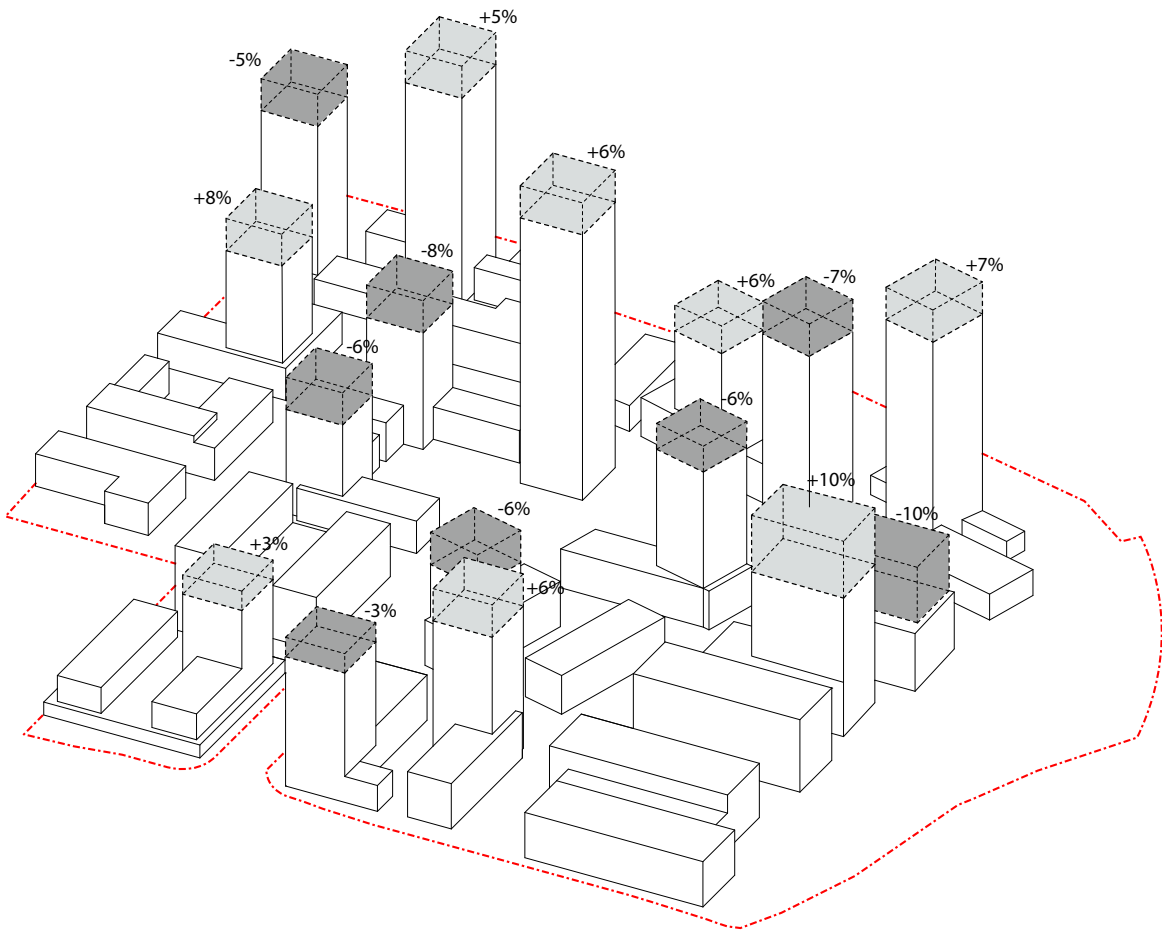
PHASING, PARCELIZATION, AND LAND USE OVERVIEW

USES, DENSITY AND HEIGHT APPROACH TO FLEXIBILITY



Height

To enable density to be transferred, the building height and envelope has allowed for the transfer of 15% of the site designated density.



Density

Maximum 15% Lot FSR density can transfer between development lots. The density transfer is to be responsive to future demand and site context.

PHASING, PARCELIZATION, AND LAND USE OVERVIEW

PUBLIC AMENITIES - OVERVIEW



COMMUNITY FACILITIES AND OPEN SPACE

SIZE AND DESCRIPTION OF OPEN SPACE SYSTEM

Dedicated City Land: 18,902m²
Right of Way: 13,954m²

- Brunette Fraser Greenway 14,711m² Dedicated City Land
- Urban Heart 1138m² Right of Way
- Community Park 2512m² Right of Way & 1590m² Dedicated City Land
- Community Green 1946m² Dedicated City Land
- East-West Greenway 2866m² Right of Way & 305m² Dedicated City Land
- North-South Greenway 590m² Right of Wa & 350m² Dedicated City Land
- Station Plaza 4329m² Right of Way
- Braid Brunette Corner 857m² Right of Way
- Greenway Connections 2054m² Right of Way



COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

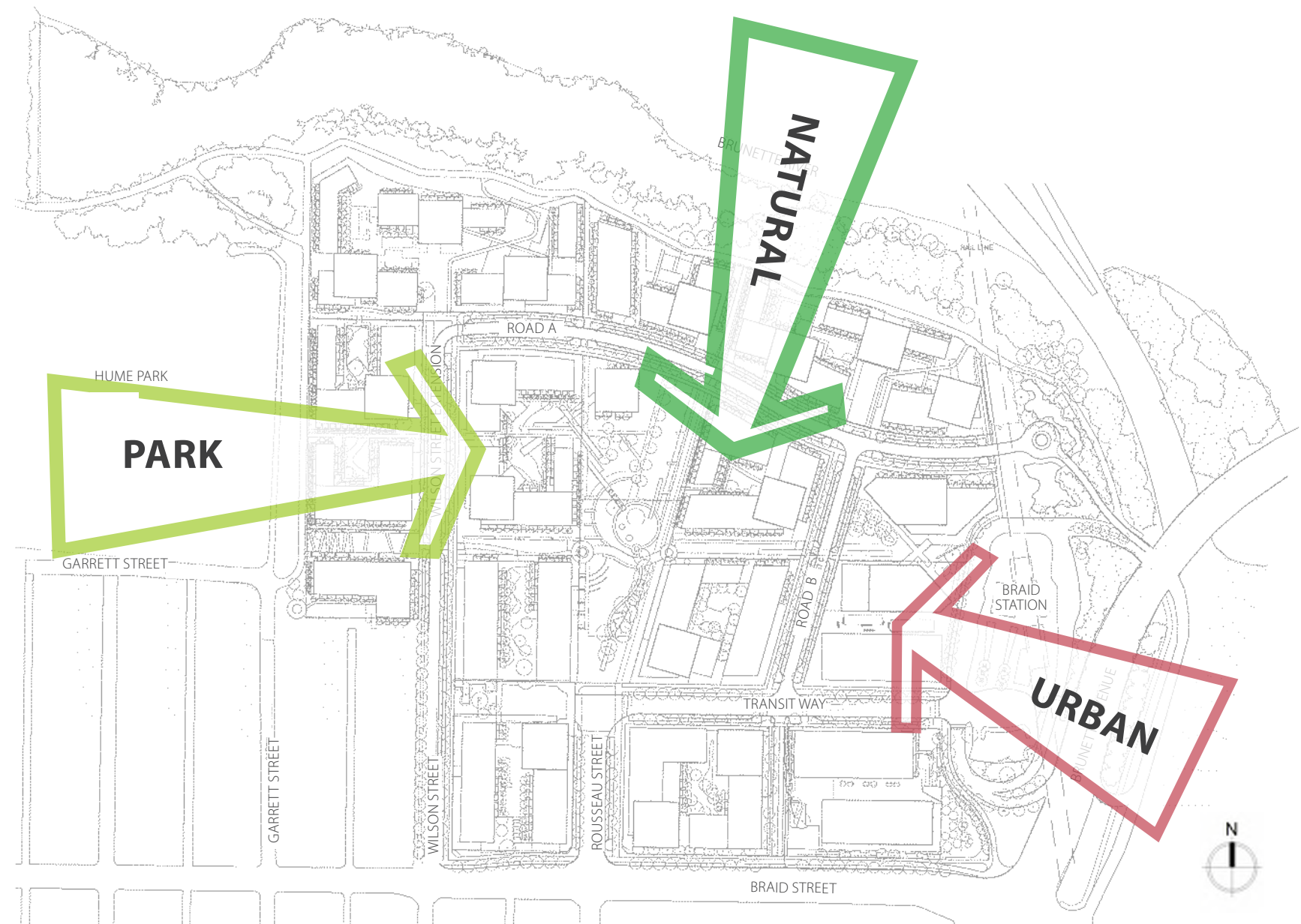
Concept

Sapperton Green is bordered by three distinct landscape types: park, natural (Brunette River edge) and urban. The strategy for plant selection including tree planting at Sapperton Green is to respond by employing a gradient of plant selections that recognize all three of these biotypes.

Where possible the selection plant material should respond to the adjacent landscape expression and palette of plants.

As the planting expression moves further into Sapperton Green, the planting style and character begin to transition and respond to their location within new community or development.

The character of planting adjacent to the park, river, and urban edge is modified to suit by manipulating the selection of trees, tree canopy, spacing, and layering of shrubs and groundcover to respond to its location in community.



COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Street Tree Planting Strategy

The urban forest at Sapperton Green is an important place-making element. Trees will define streets, different neighbourhoods and urban spaces. They will create a sense of scale and soften the impact of the built form.

Tree species must withstand urban conditions, provide seasonal interest, have minimal fruit or seed drop, be high branched and scaled to suit the size of space.

Planting should be diverse, robust, easy to maintain and where applicable, drought tolerant when possible to limit amount of watering during summer months.

- Liquidambar styraciflua ‘Worpleston’
- Acer platanoides columnar 15'
- Fagus sylvatica Dawcky 15'
- Stewartia pseudocamellia
- Quercus robur Crimschmidt 12'
- Tila cordata Corzam 15'
- Acer freemanii Autumn Blaze 35'
- Fraxinus oxycarpa Raywood 30'
- Carpinus betulus Frans Fontaine

Sweetgum

Columnar Red Maple

Columnar Beech

Japanese Stewartia Crimson

Spire Columnar Oak

Corinthian Littleleaf Linden

Autumn Blaze Maple

Raywood Ash

Frans Fontaine Hornbeam



114.1 Liquidambar styraciflua ‘Worpleston’



114.2 Fagus sylvatica Dawcky



114.3 Quercus robur Crimschmidt



114.4 Acer platanoides columnar



114.5 Acer freemanii Autumn Blaze



114.6 Fraxinus oxycarpa Raywood

COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Natural Planting: River Edge

Trees are primarily native in undefined groups of varied height, density, and species. Evergreen and fruiting species are encouraged. Planting has more naturalized character with variety of shrubs and evergreen groundcovers.

Populus trichocarpa / Black Cottonwood

Alnus rubra / Red Alder

Thuja plicata / Western Redcedar

Acer macrophyllum / Big Leaf Maple

Pseudotsuga menziesii / Douglas Fir

Tsuga heterophylla / Western Hemlock

Malus diversifolia / Western Flowering Dogwood

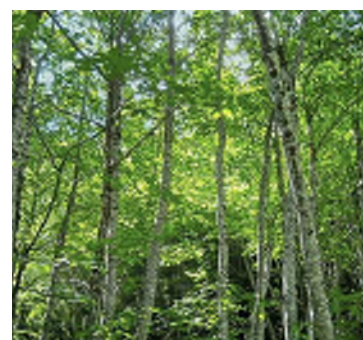
Cornus nuttallii / Western Flowering Dogwood

Prunus emarginata / Bitter Cherry

Acer circinatum / Vine Maple



115.1 Western Flowering Dogwood



115.2 Red Alder



115.3 Western Redcedar



115.4 Big Leaf Maple



115.5 Pacific Crabapple



115.6 Douglas Fir

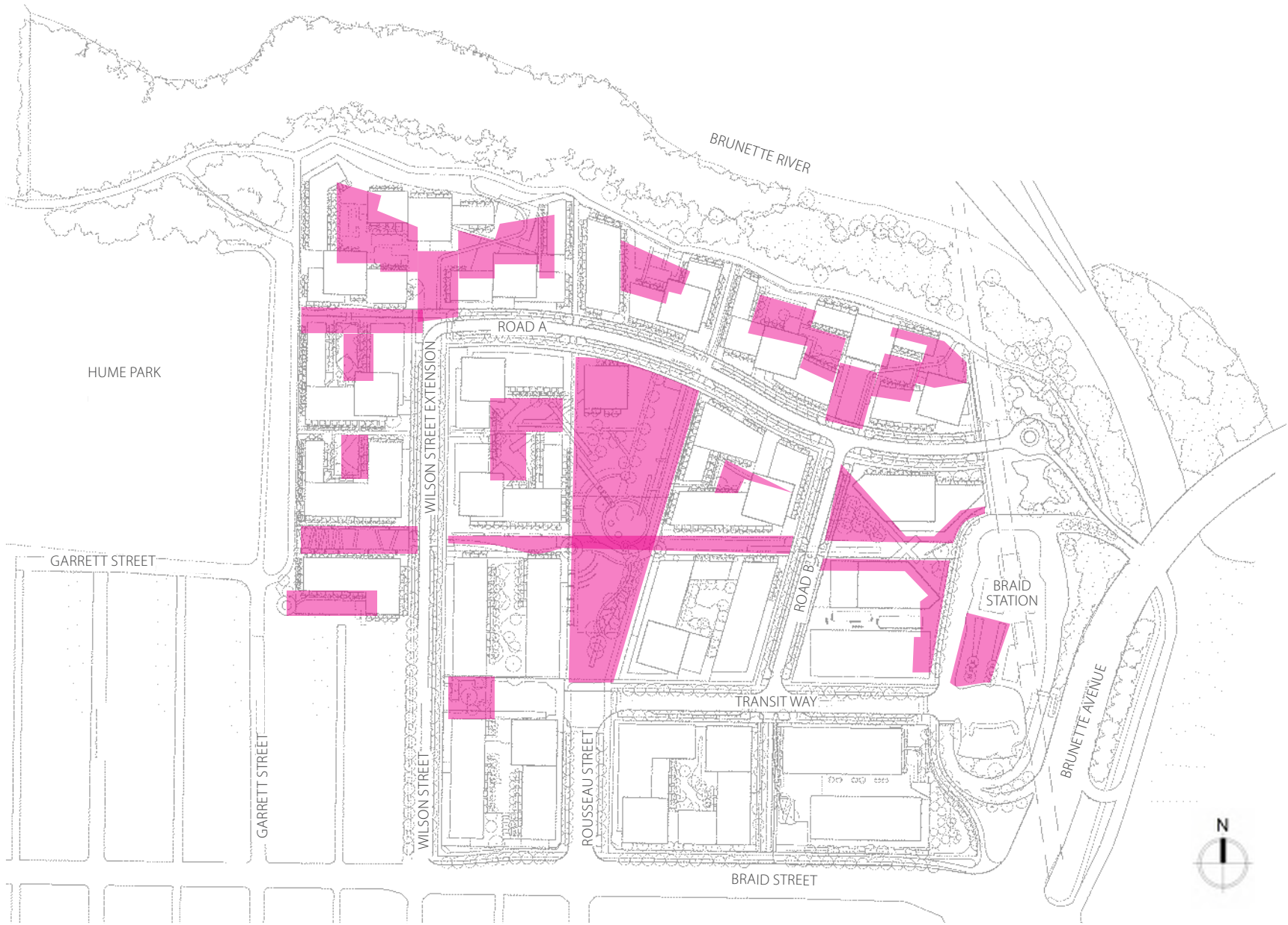
COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Urban Planting

Planting has defined edges and is more urban in its character. There is a distinct evergreen look to the plant selection that includes plants that flower and produce fruit. The overall organization of plants responds to a layered urban look that responds to CPTED principles while creating four season interest. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy.

All plants should provide seasonal interest, and reinforce the goals of ecology and sustainable urban design.



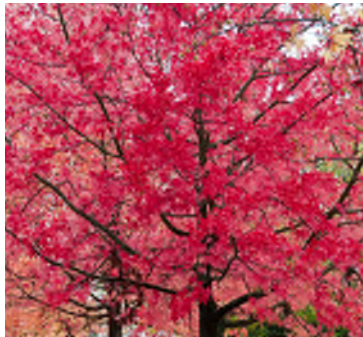
116.1 Planted Edge



116.2 Residential Edge



116.3 Residential Edge



116.4 Quercus coccinea



116.5 Styx Japonica



116.6 Stewartia pseudo camelia

COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Park

Planting has defined edges and is more urban in its character with low shrubs and groundcover to maximize visibility and minimize maintenance. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy, provide seasonal interest, and reinforce the goals of ecology and sustainable urban design. Tree species are either native or adapted non-native that may provide seasonal interest and are large scale. Planting may be in defined groups or a mixture of species and sizes. Some ever-green species are encouraged.

Tree

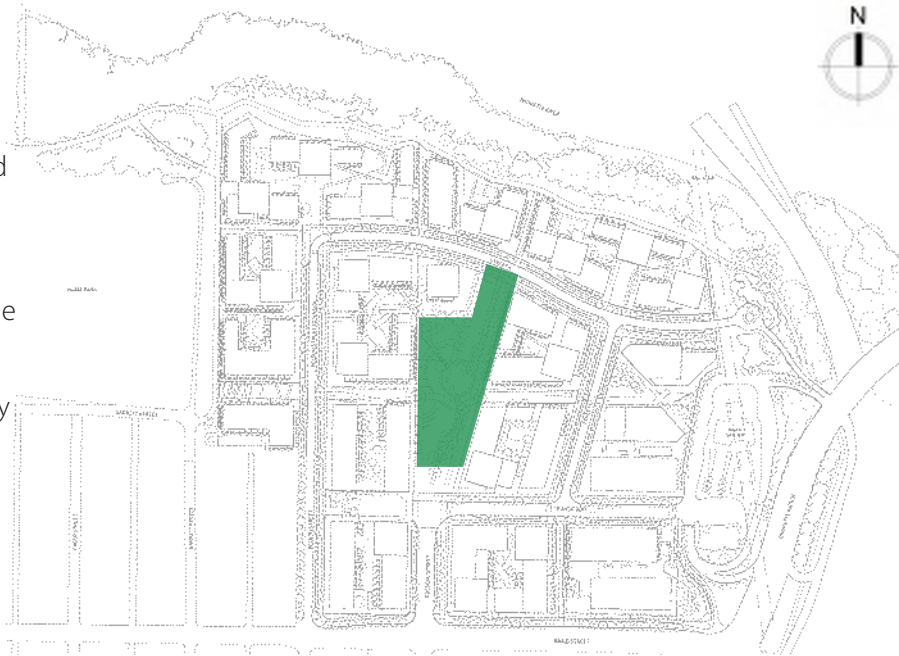
- Liquidambar styraciflua ‘Worpleston’
- Acer platanoides ‘Cleveland’
- Quercus palustris
- Acer rubrum ‘Sun Valley’

Plaza

Planting has defined edges and is more urban in its character with low shrubs and groundcover to maximize visibility and minimize maintenance. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy, provide seasonal interest, and reinforce the goals of ecology and sustainable urban design.

Tree

- Liquidambar styraciflua ‘Worpleston’
- Acer platanoides ‘Cleveland’
- Quercus palustris
- Acer rubrum ‘Sun Valley’
- Stewartia pseudocamellia

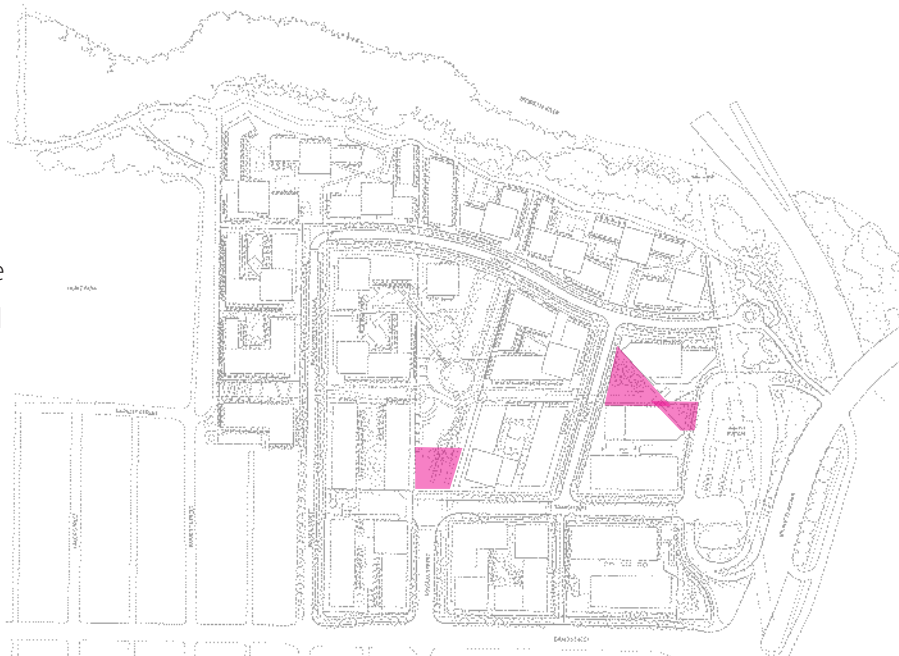


- Stewartia pseudocamellia
- Acer rubrum ‘Red Rocket’
- Quercus coccinea
- Carpinus betulus ‘fastigiata’
- Malus diversifolia
- Acer circinatum
- Cornus nuttallii ‘Eddies White Wonder’
- Thuja plicata
- Pseudotsuga menziesi

Shrub

- Vaccinium ovatum ‘Thunderbird’
- Viburnum davidii
- Choisya ternata
- Prunus laurocerasus ‘Otto

- Luyken’
- Sarcococca hookeriana humilis
- Skimmia japonica
- Spiraea bumalda ‘Anthony Waterer’
- Viburnum carlesii
- Buxus microphylla ‘Winter Gem’
- Rhododendron sp
- Rosa sp.
- Cornus sp.
- lex crenata sp.
- Arbutus unedo ‘Compacta’
- Amelanchier sp.
- Hamamelis sp.



- Acer rubrum ‘Red Rocket’
- Quercus coccinea
- Platanus acerfolia
- Fraxinus oxycarpa ‘Raywood’
- Parrotia persica ‘Ruby Vase’

Shrub

- Vaccinium ovatum ‘Thunderbird’
- Viburnum davidii
- Choisya ternata
- Prunus laurocerasus ‘Otto
- Luyken’
- Sarcococca hookeriana humilis

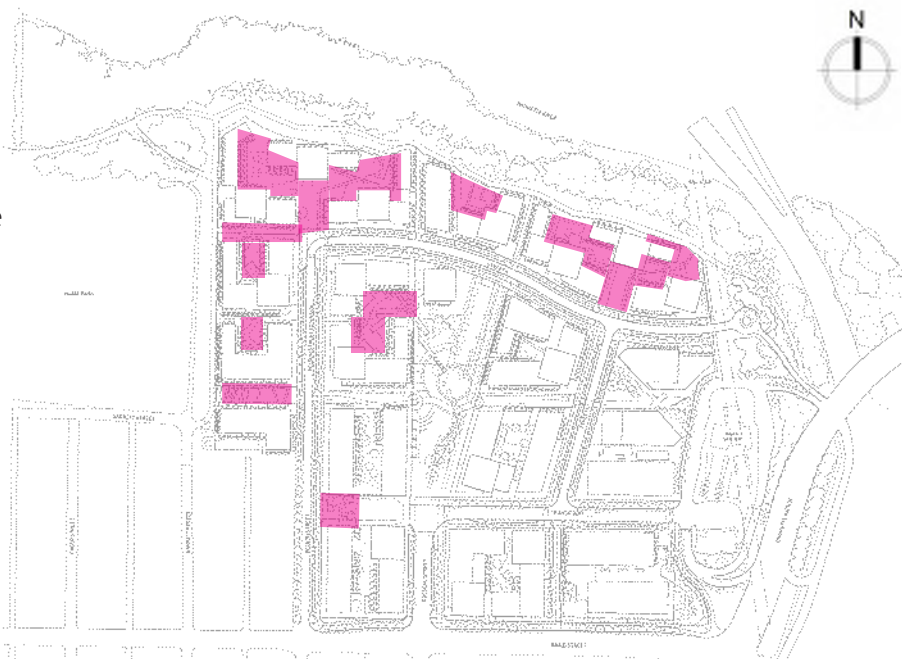
- Skimmia japonica
- Spiraea bumalda ‘Anthony Waterer’
- Viburnum carlesii
- Buxus microphylla ‘Winter Gem’
- Rhododendron sp.
- Rosa sp.
- lex crenata sp.

COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Public Edge

Planting has defined edges and is more urban in its character with low shrubs and groundcover to maximize visibility and minimize maintenance. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy, provide seasonal interest, and reinforce the goals of ecology and sustainable urban



Tree

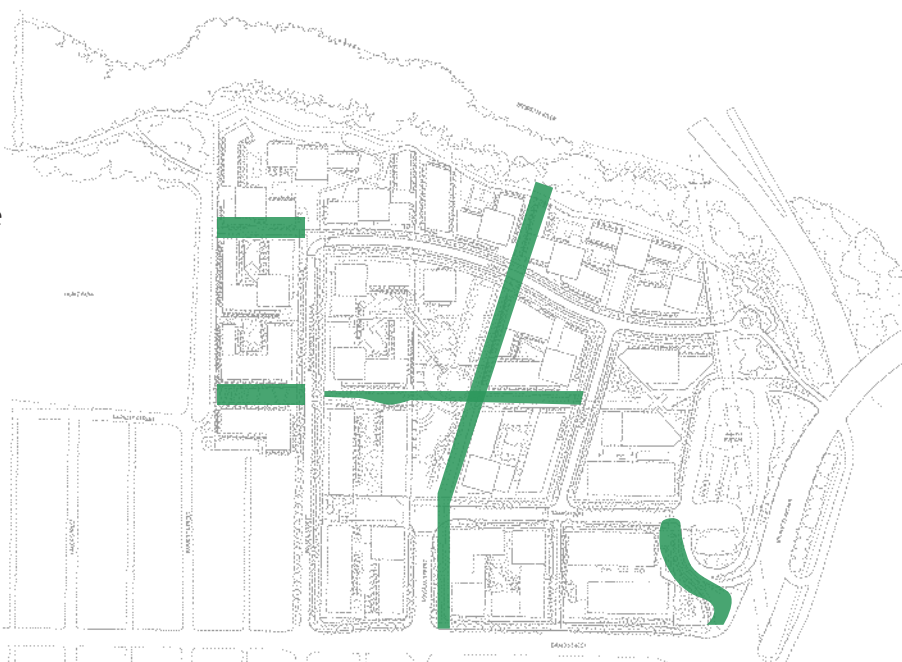
- Liquidambar styraciflua ‘Worpleston’
- Acer platanoides ‘Cleveland’
- Quercus palustris
- Acer rubrum
- Stewartia pseudocamellia
- Quercus coccinea
- Platanus acerifolia
- Fraxinus oxycarpa ‘Raywood’
- Parrotia persica ‘Ruby Vase’

Shrub

- Vaccinium ovatum ‘Thunderbird’
- Viburnum davidii
- Choisya ternata
- Prunus laurocerasus ‘Otto Luyken’
- Sarcococca hookeriana humilis
- Skimmia japonica
- Spiraea bumalda ‘Anthony Waterer’
- Viburnum carlesii
- Buxus microphylla ‘Winter Gem’

Greenways

Planting has defined edges and is more urban in its character with low shrubs and groundcover to maximize visibility and minimize maintenance. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy, provide seasonal interest, and reinforce the goals of ecology and sustainable urban



Tree

- Liquidambar styraciflua ‘Worpleston’
- Acer platanoides ‘Cleveland’
- Quercus palustris
- Acer rubrum
- Stewartia pseudocamellia
- Quercus coccinea
- Platanus acerifolia
- Fraxinus oxycarpa ‘Raywood’
- Parrotia persica ‘Ruby Vase’

Shrub

- Vaccinium ovatum ‘Thunderbird’
- Viburnum davidii

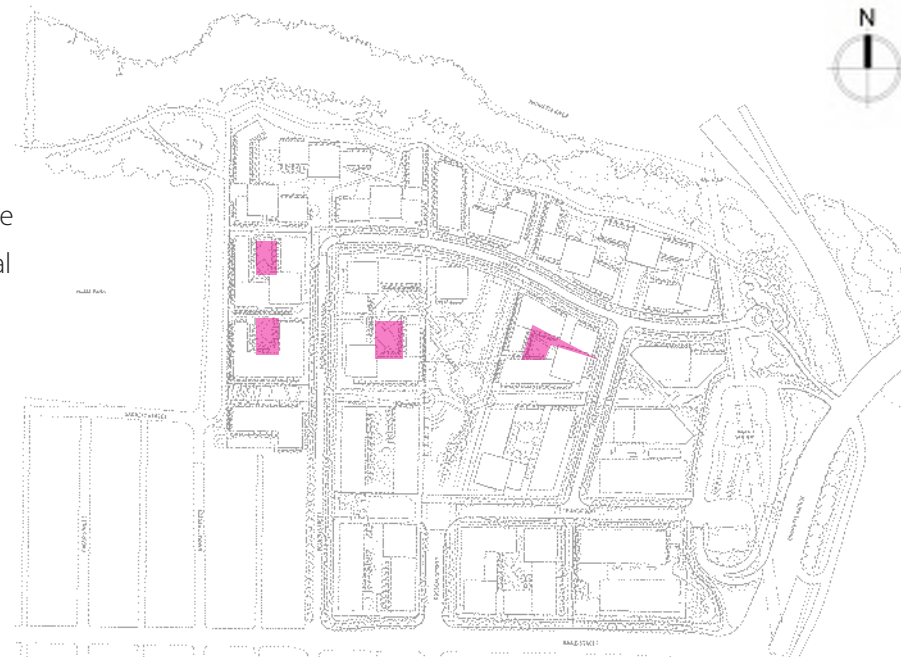
- Choisya ternata
- Prunus laurocerasus ‘Otto Luyken’
- Sarcococca hookeriana humilis
- Skimmia japonica
- Spiraea bumalda ‘Anthony Waterer’
- Viburnum carlesii
- Buxus microphylla ‘Winter Gem’
- Rhododendron sp.
- Rosa sp.
- Cornus sp.
- Ilex crenata sp.
- Arbutus unedo ‘Compacta’
- Amelanchier sp.
- Hamamelis sp.

COMMUNITY FACILITIES AND OPEN SPACE

OVERALL TREE PLANTING STRATEGY

Private Property

Planting has defined edges and is more urban in its character with low shrubs and groundcover to maximize visibility and minimize maintenance. Trees should be used to define landscape spaces and corridors, create interest, soften the built form, reinforce human scale through the height of the underside of the canopy, provide seasonal interest, and reinforce the goals of ecology and sustainable urban design.



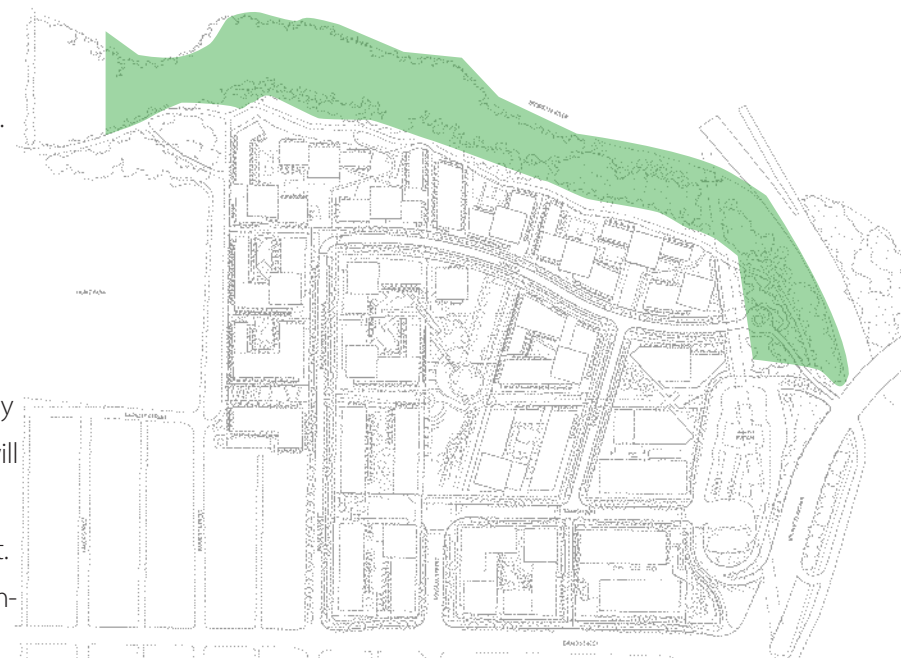
Tree

Liquidambar styraciflua 'Worpleston'
Quercus palustris
Stewartia pseudocamellia
Acer rubrum 'Red Rocket'
Quercus coccinea
Carpinus betulus 'fastigiata'

Sweetgum
Pin Oak
Japanese Stewartia
Red Maple
Scarlet Oak
Hornbeam

Natural Planting

Trees are primarily native in undefined groups of varied height, density, and species. Evergreen and fruiting species are encouraged. Planting has more naturalized character with variety of shrubs and evergreen groundcovers. The character of the river's edge landscape will be informal, and respond to the plant palette of the native forest and take on organic shapes and forms in keeping with the area. The design of the upland portion of the river edge includes an improvement and realignment of the Brunette Fraser Greenway. The greenway path location will be moved out of the protected riparian zone and will accommodate bicycles and pedestrians. The surface material should respond to the forest/river edge and respect this natural environment. The landscape will explore opportunities for a variety of spaces accommodating informal passive activities that enhance the safety and use of this area. Interpretive breaks along the greenway that focus on the ecological and natural systems, flora and fauna will enhance the public



Tree

Populus trichocarpa
Alnus rubra
Thuja plicata
Acer macrophyllum
Pseudotsuga menziesii
Tsuga heterophylla
Malus diversifolia
Cornus nuttalli
Prunus emarginata
Acer circinatum

Black Cottonwood
Red Alder
Western Redcedar
Big Leaf Maple
Douglas Fir
Western Hemlock
Pacific crabapple
Western Flowering Dogwood
Bitter Cherry
Vine Maple

Sapperton
Green

Master Plan

April
2020

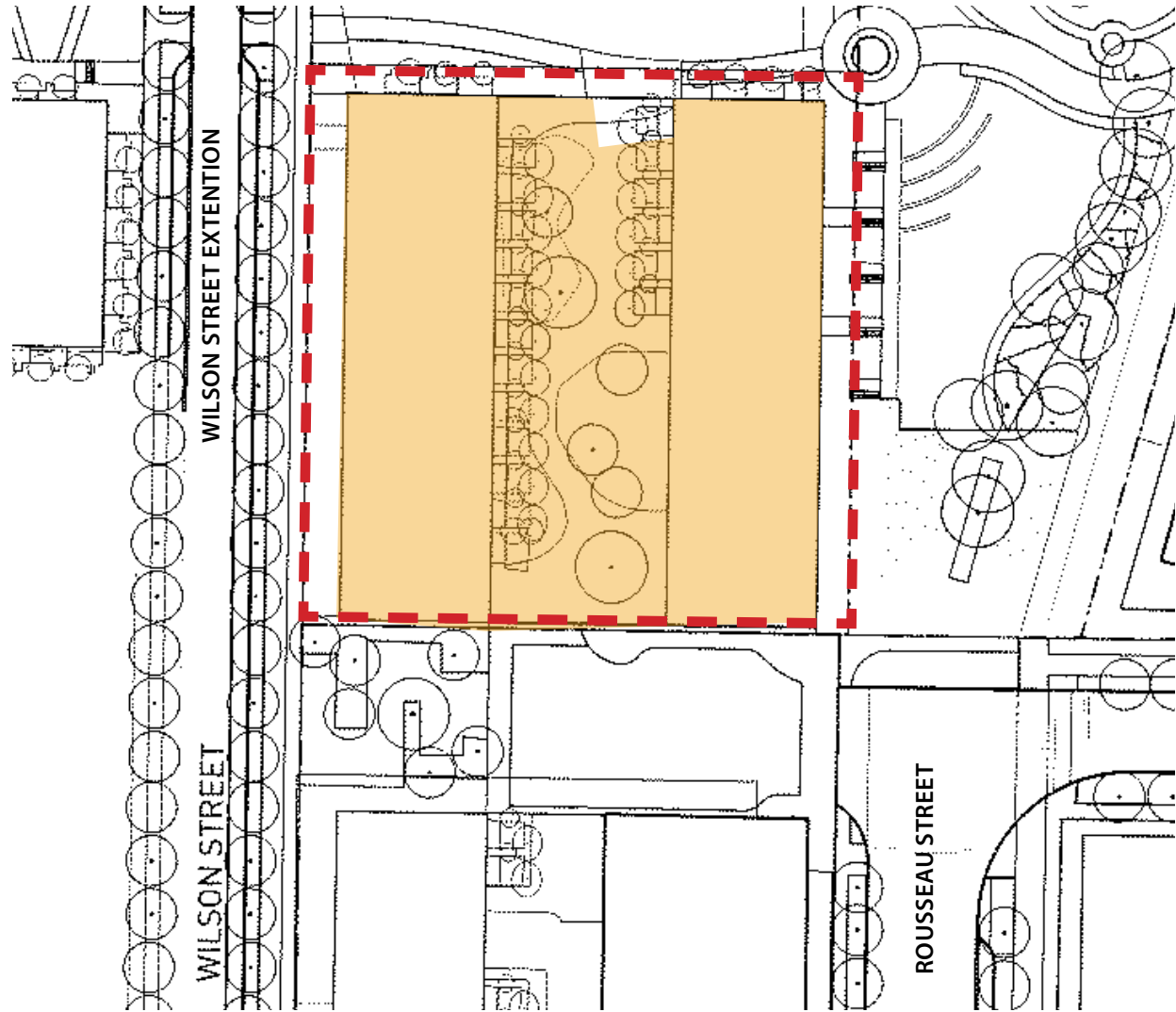
Master Plan

COMMUNITY FACILITIES AND OPEN SPACE

PROPOSED FUNCTIONAL PROGRAM SPACELIST OF COMMUNITY/RECREATION CENTRE

Function		Unit Area SF	Assigned Area SF	Assigned Area SM
1.0 Front-of-House				
1.1 Community Living Room (Lobby)	Dedicated	500	750	70
1.2 Reception / Control Counter	2 stations	250	250	23
1.3 Administration Offices	Enclosed offices	110	440	41
1.4 Comm. Policing / Unassigned Office	Enclosed office	100	100	9
1.5 Copy / Storage	Adjacent	60	60	6
2.0 Multi-Purpose				
2.1 Large Multi-Purpose (cap. 60)	Sub-dividable	2,000	2000	186
2.2 Movement Studio (cap. 30)	Sprung floor, A/V closet	1,500	1500	139
2.3 Medium Multi-Purpose (cap. 20)	Wet' spaces with sink	900	1800	167
2.4 Large Meeting Room (cap. 12)		350	350	33
2.5 Small Meeting Room (cap. 6)	Meeting / music room	175	175	16
2.6 Community Kitchen	Commercial grade	325	325	30
2.7 Multi-Purpose Storage	1 per MPR	50	250	23
2.8 Gymnasium	58' x 102' clear span	5,900	5,900	548
2.9 Gymnasium Storage	Adjacent	300	300	28
3.0 Childcare				
3.1 Childcare (49 children)	142 net sf/child	100	5,350	497
3.2 Kitchen / Laundry	Dedicated	140	210	20
3.3 Staff / Storage	Dedicated	110	220	20
3.4 Dedicated Washrooms	Child-scaled fixtures	25	100	9
3.5 Fenced Outdoor Play Area	Licensing req't: 50%	n/i	n/i	
4.0 Fitness				
4.1 Fitness Equipment Room				
- Cardio machines	75 sf / station	75	1800	167
- Strength machines	75 sf / station	75	1800	167
- Free weights stations	100 sf / station	100	1000	93
- Stretching/balls stations	50 sf / station	50	400	37
4.2 Yoga Room (cap. 20)	Acoustic isolated	750	750	70
4.3 Spin Room (cap. 20)	Acoustic isolated	550	550	51
4.4 First Aid / Consult Room	EMS access	60	60	6
5.0 Change Rooms				
5.1 Women's Change Room	Day lockers, 2-3 showers	300	450	42
5.2 Men's Change Room	Day lockers, 2-3 showers	300	450	42
5.3 Universal Change Room	Single person / HC	50	100	9
6.0 Back-of-House				
6.1 Staff Room	Breakroom / lockers	150	150	14
6.2 Staff WC / Shower	Dedicated	40	40	4
6.3 Facilities Maintenance Room	Repair and custodial	110	110	10
6.4 Waste Management		50	50	5
		Assigned Area Sub-Total SF/SM	27790	2581
Circulation Allowance		15%	4169	387
Public Washrooms Allowance *		50 sf per stall	850	79
Mechanical / Electrical Allowance		5%	1390	129
Walls and Structure Allowance		2.5-3%	802	75
Loading Dock		Not included or shared	0	0
		Gross Building Area Total SF/SM	35000	3250
Underground Parking				
Childcare Short-Term Drop-off Parking (6 stalls)		350	2100	195
User Parking (40 stalls)**		350	14000	1301
Staff Parking / Loading (4 stalls)		350	1400	130
		Underground Parking Gross Area	17500	1626

* Washroom stall-count provides for assembly capacity of 400 in gymnasium
** Dedicated stall count could be reduced if shared-use agreement can be struck with office tenants whereby Community Centre could have access to stalls during evenings and weekends when demand is peak



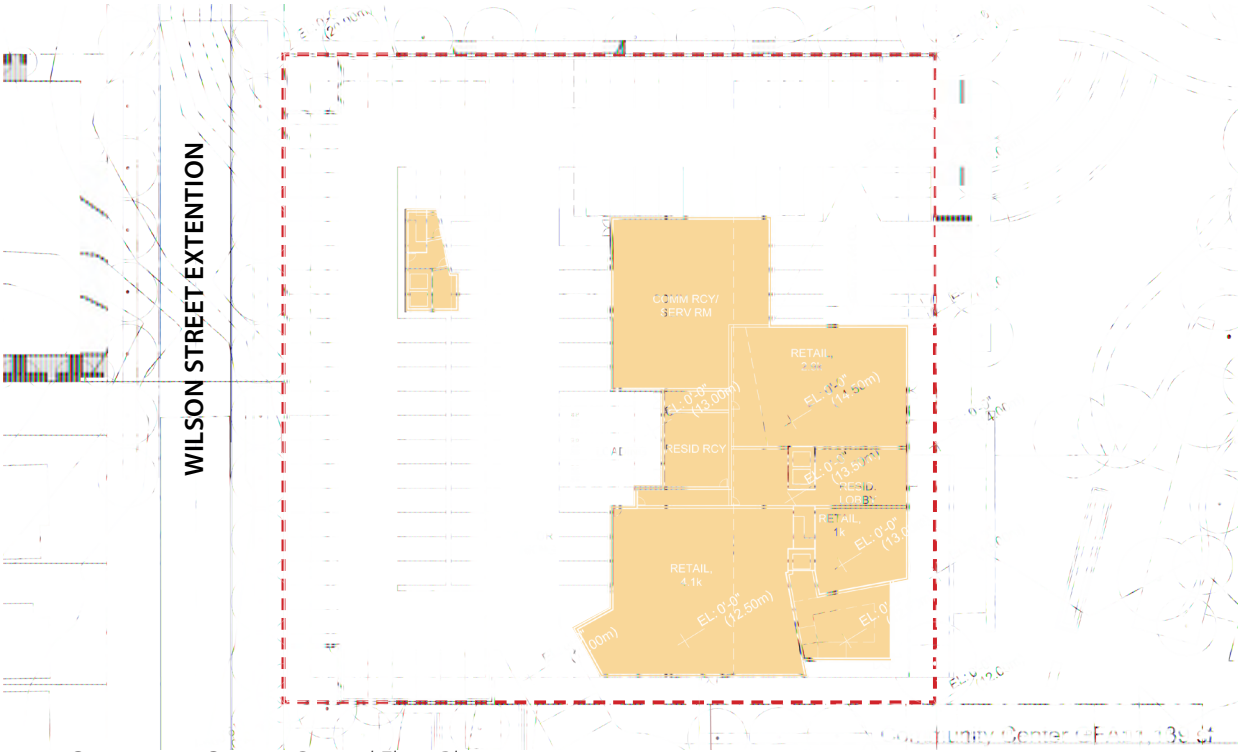
120.1 Community Centre - Site Plan



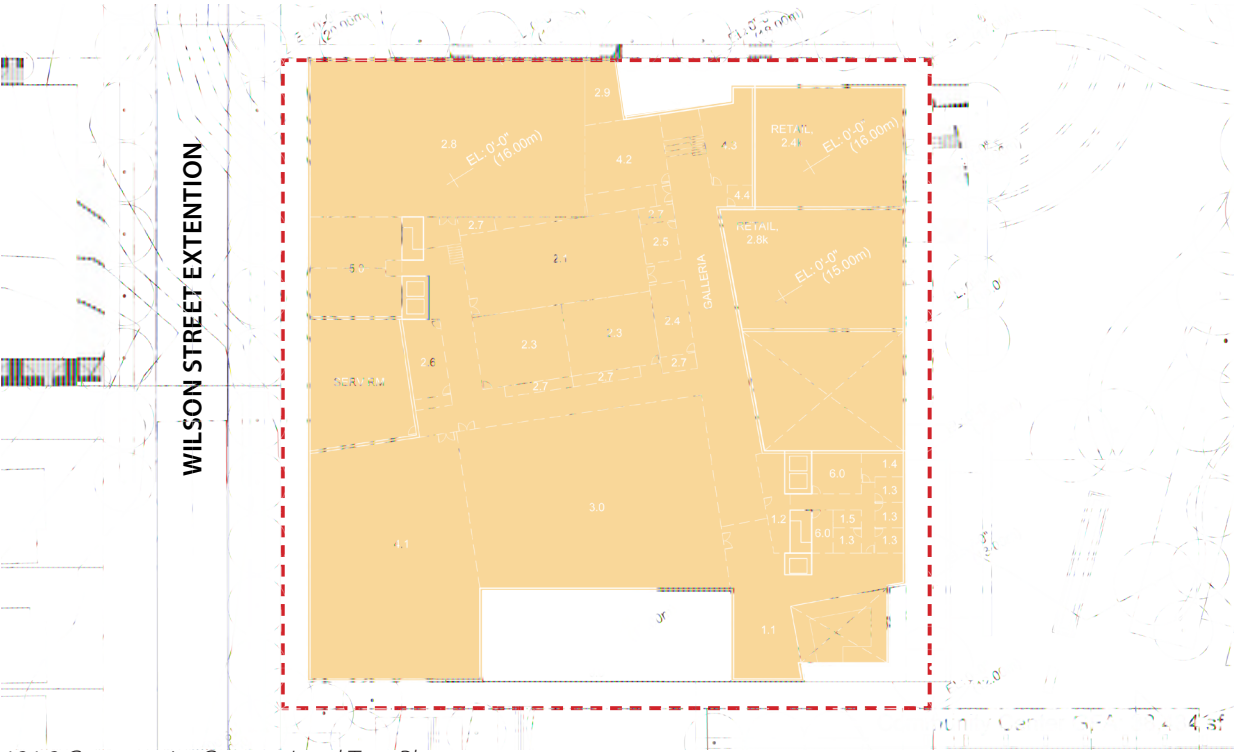
Key Plan

COMMUNITY FACILITIES AND OPEN SPACE

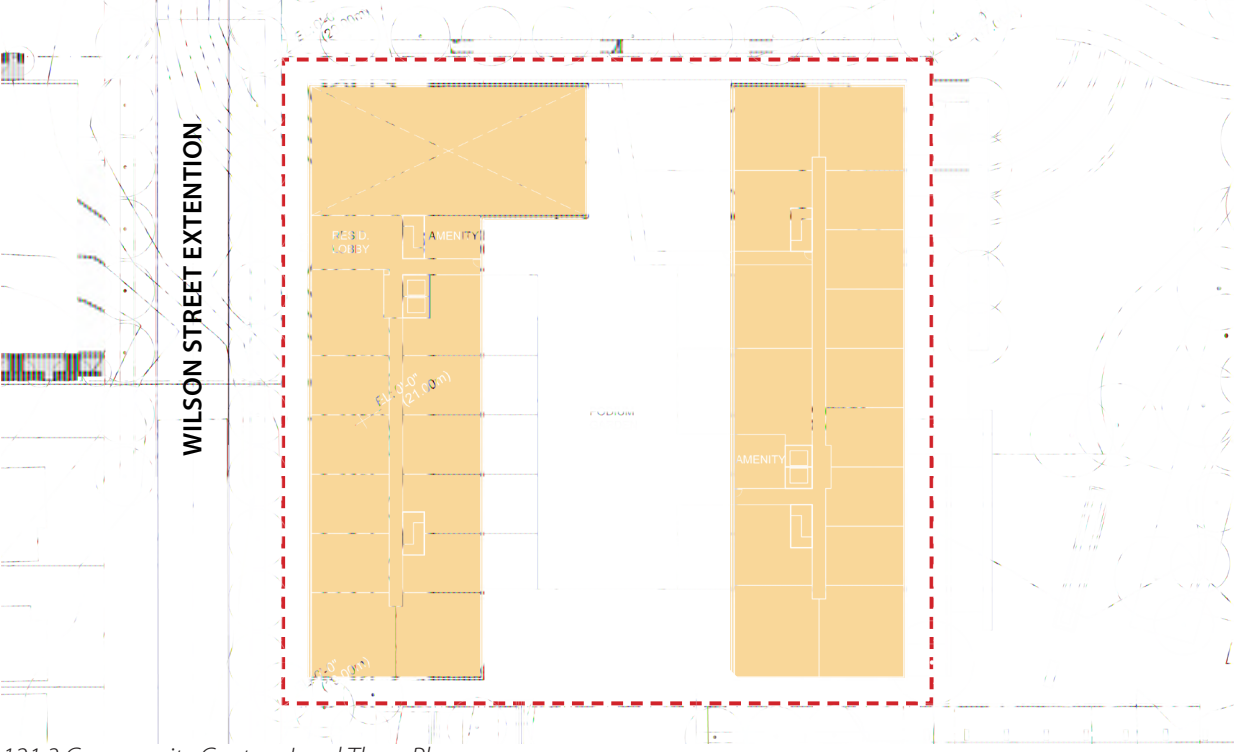
PROPOSED PROGRAM OF COMMUNITY/RECREATION CENTRE



121.1 Community Centre - Ground Floor Plan



121.2 Community Centre - Level Two Plan



121.3 Community Centre - Level Three Plan

COMMUNITY FACILITIES AND OPEN SPACE

CONCEPTUAL DESIGN OF COMMUNITY PARK AND COMMUNITY GREEN

- 1 East West Greenway: Park West Node
- 2 East West Greenway: Park East Node
- 3 Residential Frontage with 1.5m path.
- 4 North-South Greenway Multi-Use Path
- 5 Residential Frontage with Multi-Use Path
- 6 Mixed-Use Frontage with Multi-Use Path
- 7 Adventure Play
- 8 Terraced Urban Lawn
- 9 Rain Garden
- 10 Plaza
- 11 East-West Greenway



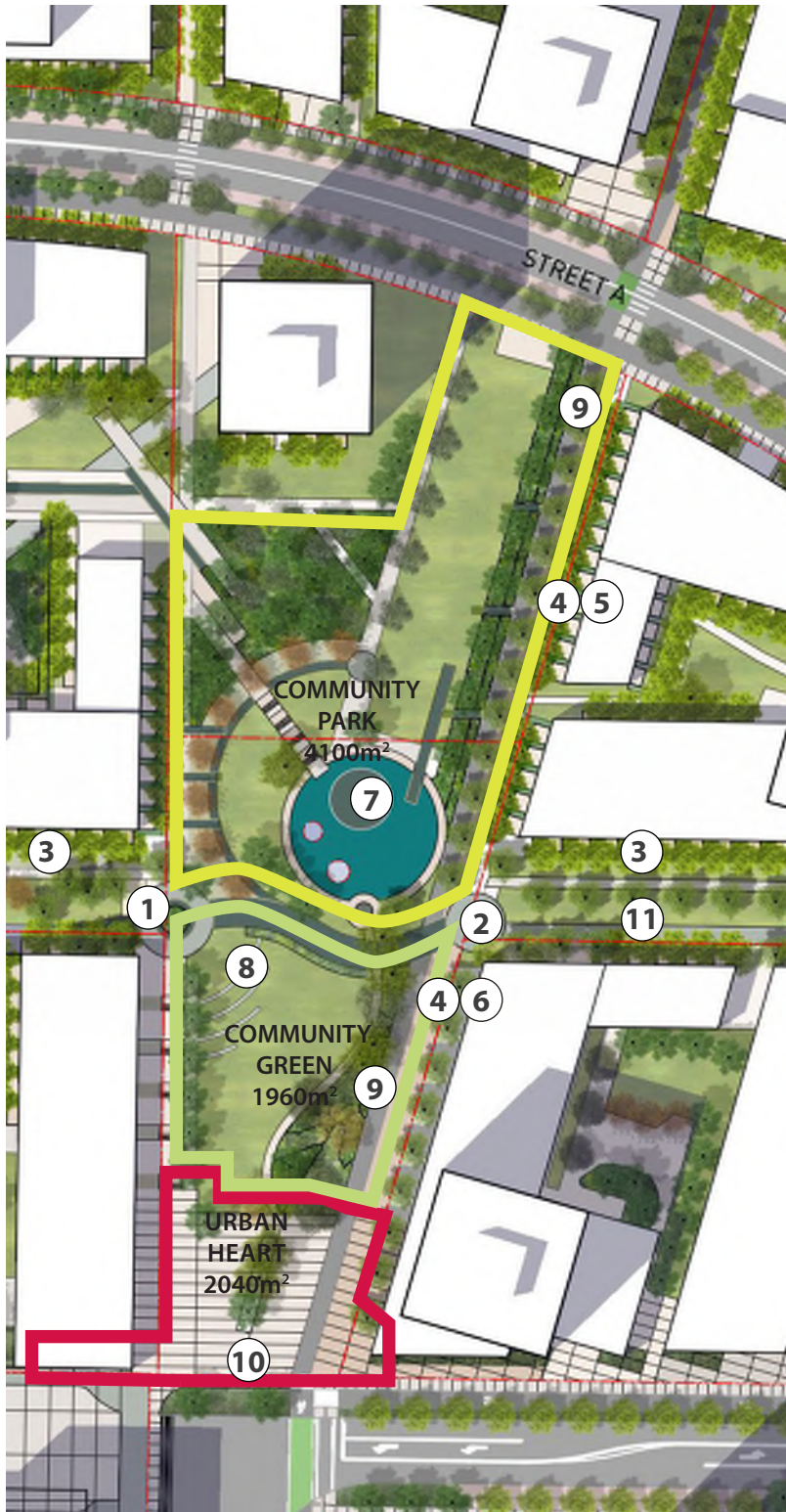
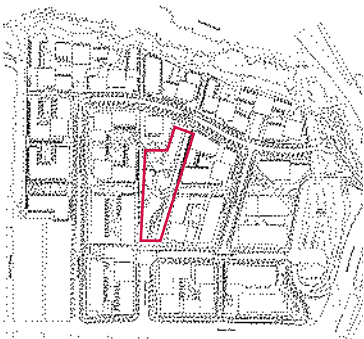
122.1 Terraced lawn



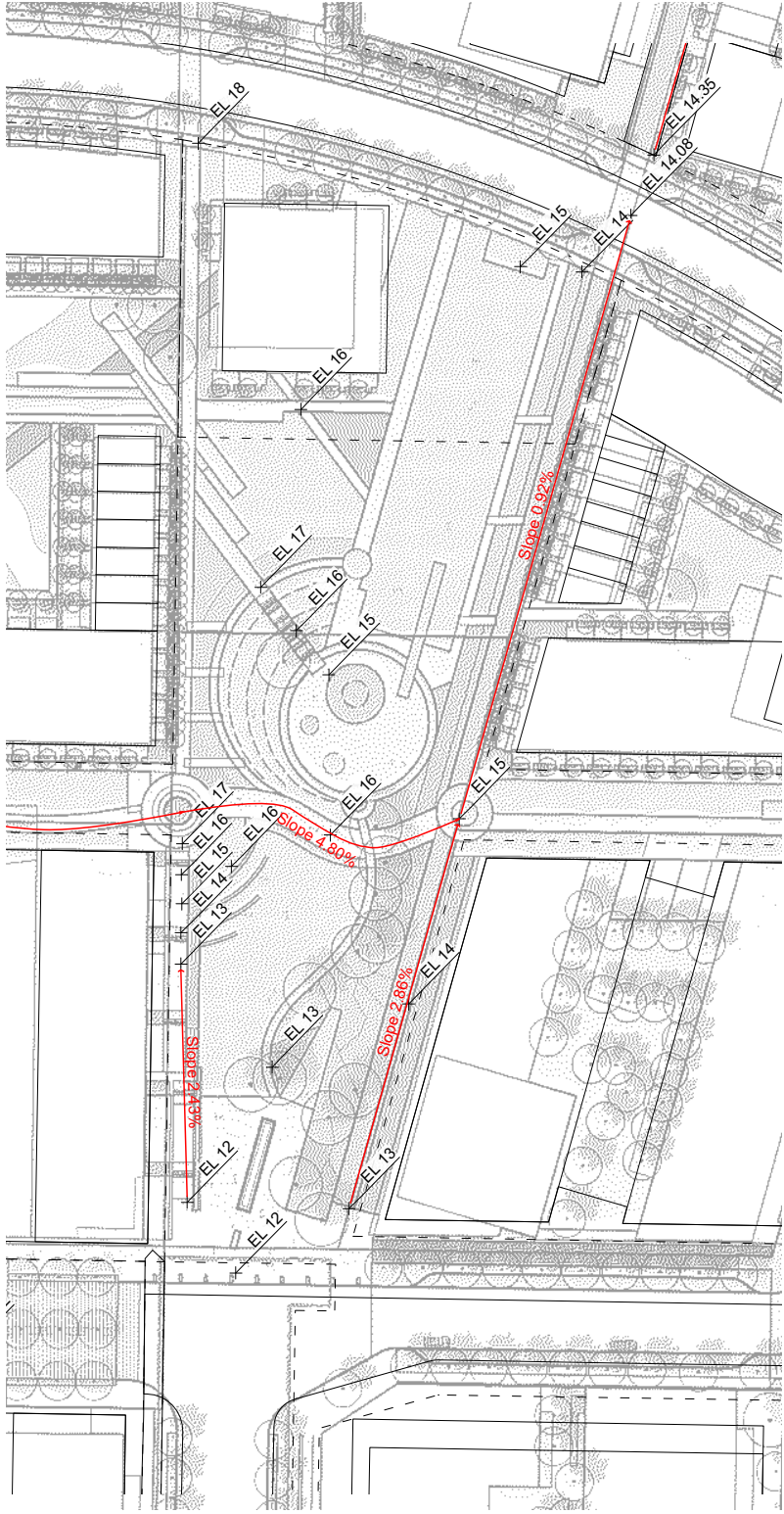
122.2 Plaza



122.3 Rain garden



Neighbourhood heart - Concept

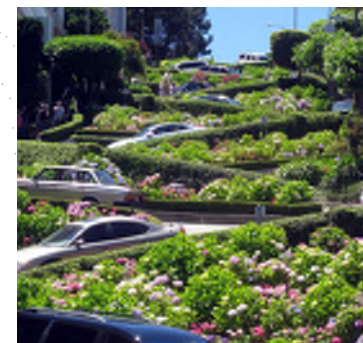
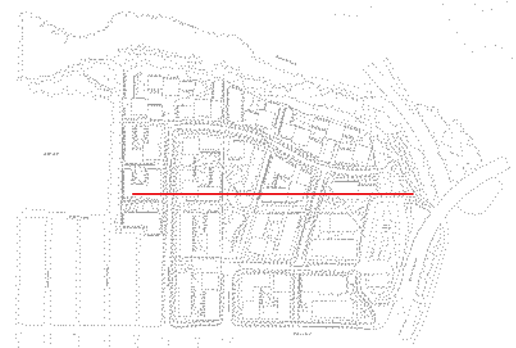
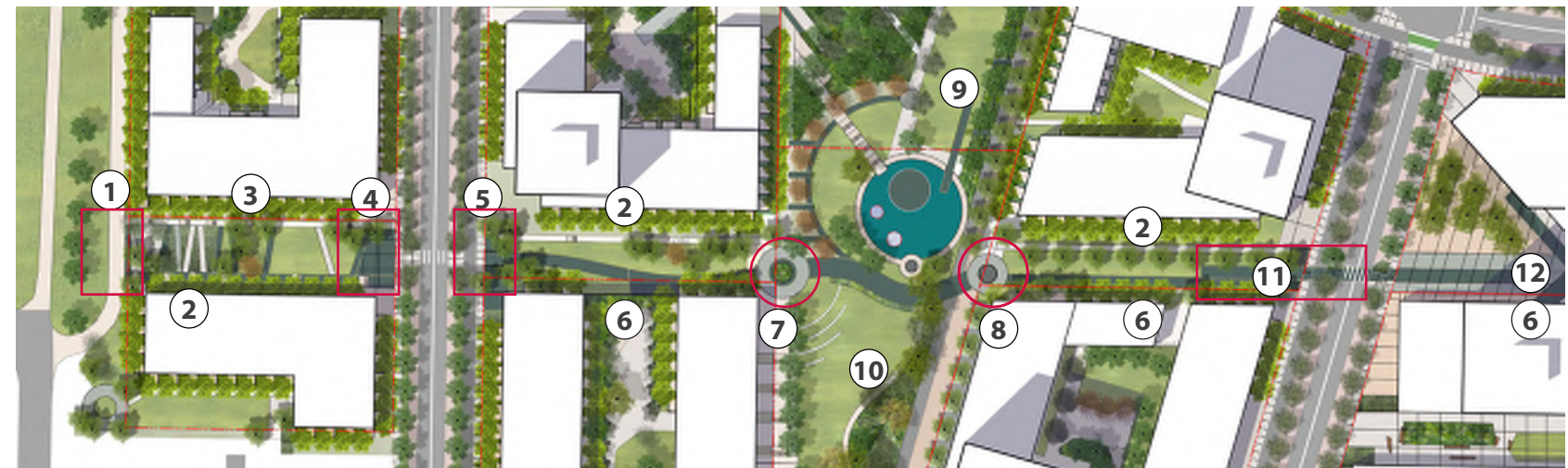
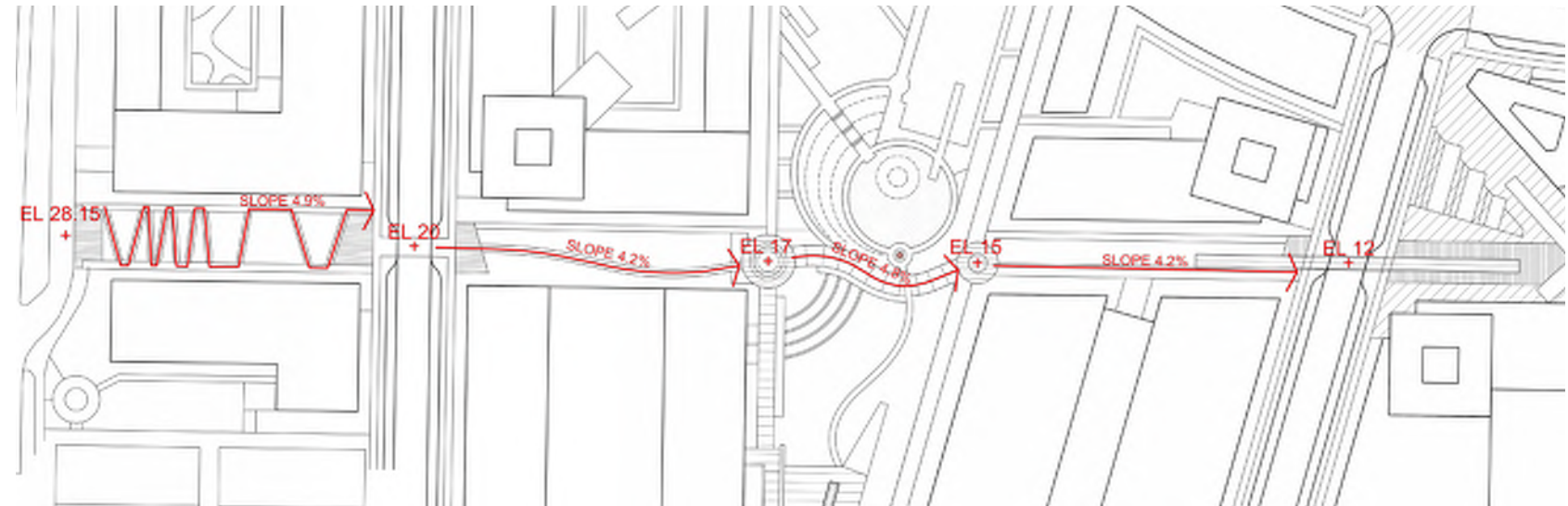


Grading Study

COMMUNITY FACILITIES AND OPEN SPACE

CONCEPTUAL DESIGN OF EAST-WEST GREENWAY

- ① Central Valley Node
- ② Residential Frontage with 1.5m path
- ③ Accessible Pathway 3m
- ④ Wilson Street Plaza
- ⑤ Wilson Street Node
- ⑥ Retail Frontage
- ⑦ Greenway Node at West Park Edge
- ⑧ Greenway Node at East Park Edge
- ⑨ Community Park
- ⑩ Community Green
- ⑪ Road B Node
- ⑫ Station Plaza



123.1 Road B node



123.2 Greenway node



123.3 Accessible pathway

COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: CONCEPTUAL DESIGN

Conceptual Design of Hume Park Greenway

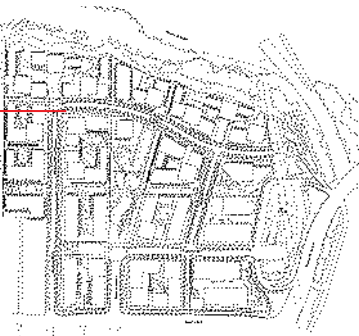
- 1 Central Valley Greenway Node
- 2 Residential Frontage
- 3 Accessible Pathway 3m
- 4 Road A Node
- 5 Vehicular Drop off
- 6 Connection to multi-use path Brunette Fraser Greenway



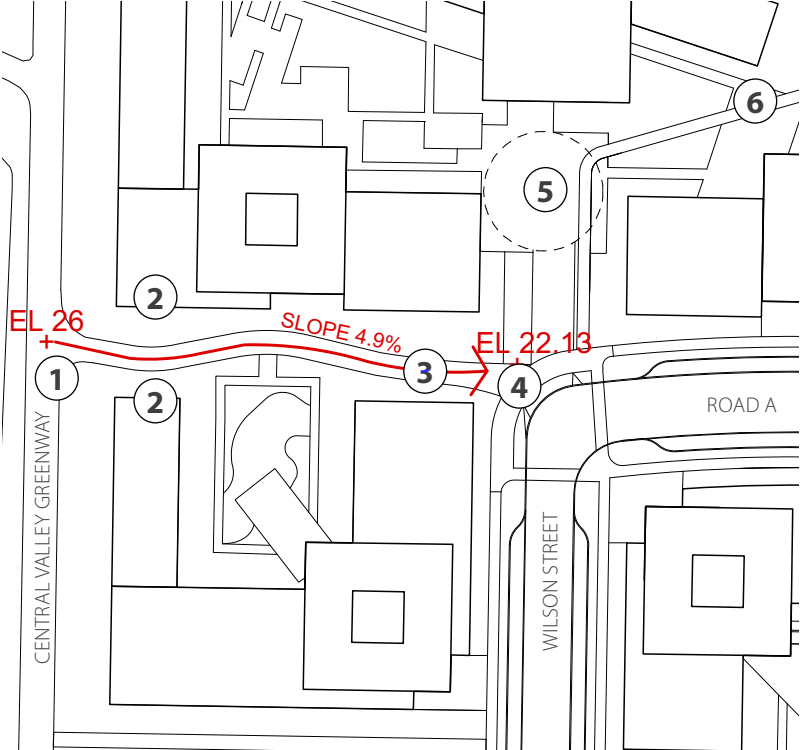
124.1 Residential frontage



124.2 Community path



124.3 Connection to multi-use path



Hume Park Greenway conceptual Grading

Conceptual Design of Greenway Connection

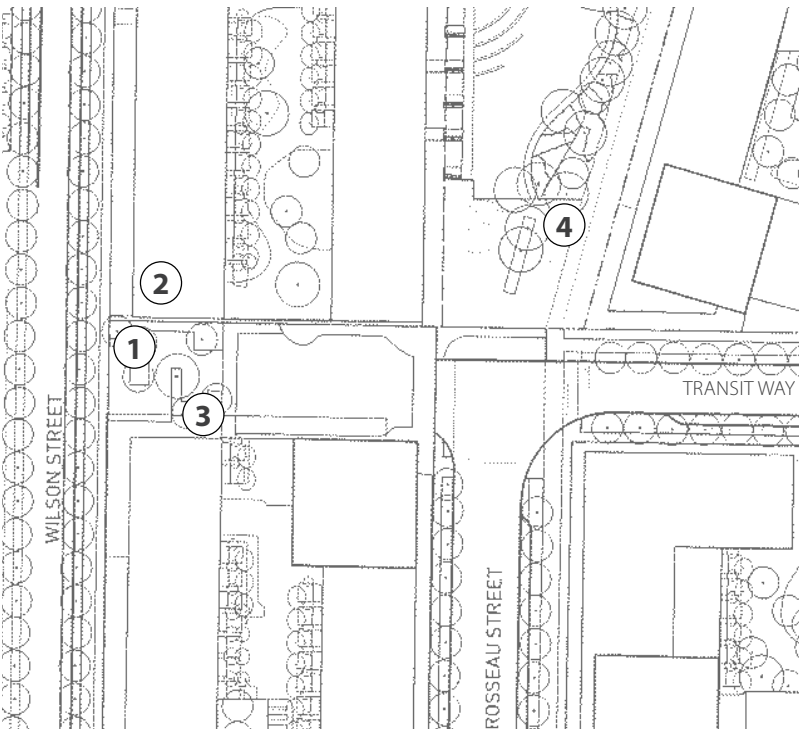
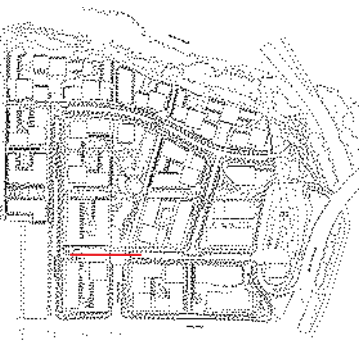
- 1 Wilson Street Node
- 2 Retail Frontage
- 3 Stepped Pathway
- 4 Urban Heart Plaza



124.4 Public art installations



124.5 Urban plaza

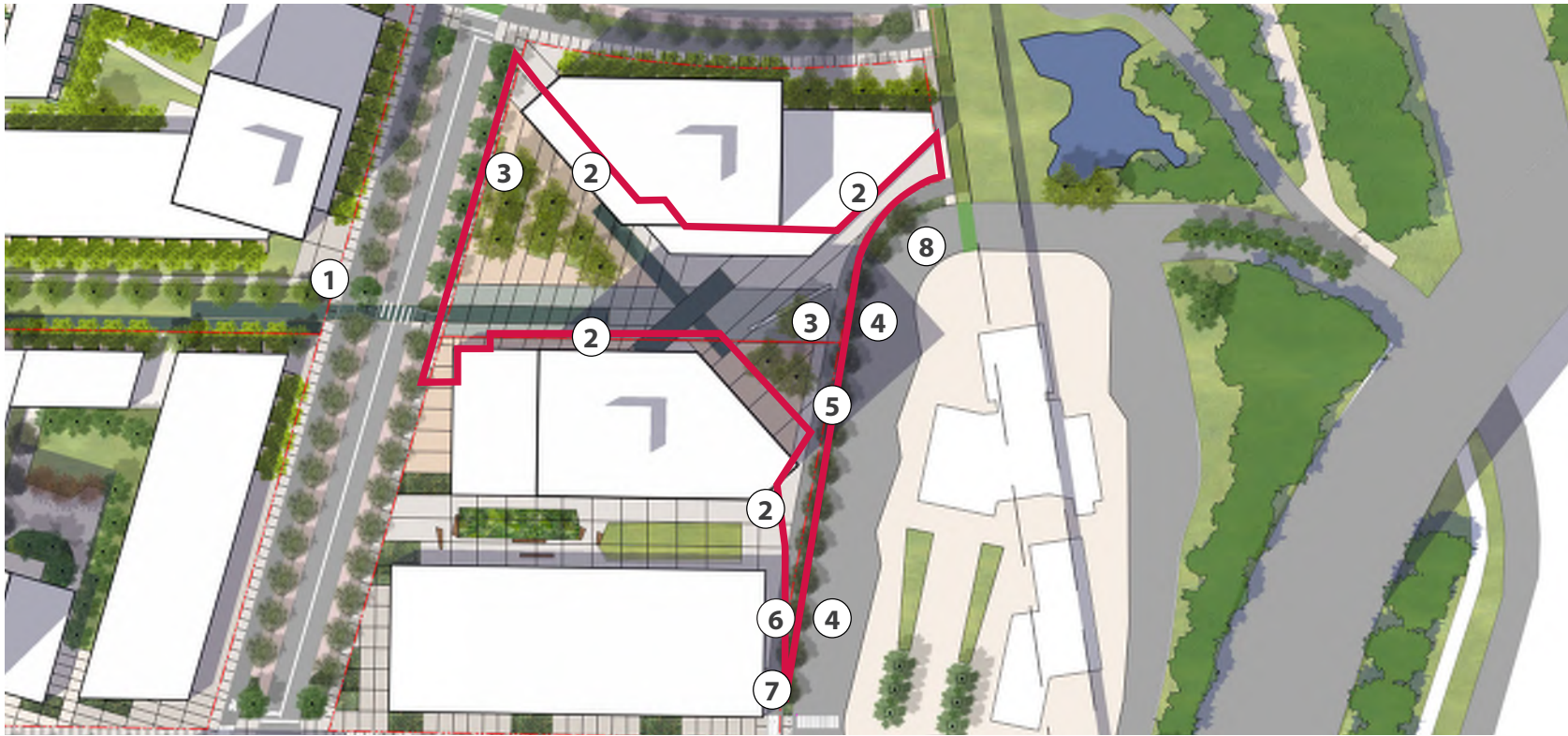


Transit Way Pedestrian Connection

COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: CONCEPTUAL DESIGN

- 1 Multi-Use East-West Greenway
- 2 Retail Frontage
- 3 Planted Plaza
- 4 Rain Garden
- 5 Cyclist Dismount Zone
- 6 Multi-Use Path
- 7 Connection to Transit Greenway
- 8 Crosswalk to Braid Station



Transit hub conceptual design



125.1 Wave benches in timber



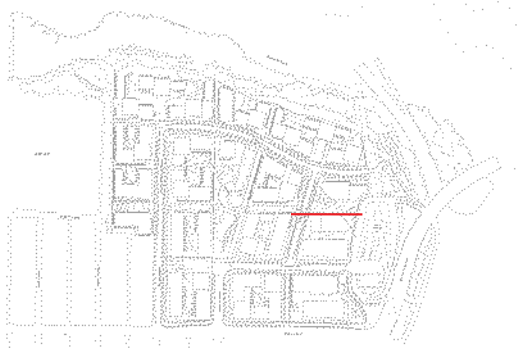
125.2 LED illumination



125.3 Creative light installation



125.4 Seating for socializing



125.5 Meeting points



125.6 Moveable seating



125.7 Colour and light activation

COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: CONCEPTUAL DESIGN

Conceptual Design of Storm Water Ponds

- 1 Stormwater Pond
- 2 Wetland Vegetation
- 3 Multi-Use Brunette River Greenway
- 4 Retail Frontage
- 5 Residential Frontage
- 6 Under SkyTrain Guideway
- 7 Bus Route
- 8 Vehicle Route
- 9 Connection to Brunette Fraser Greenway
- 10 Crosswalk to Braid Station



126.1 Stormwater pond



126.2 Cycling route



126.3 Lush plantings



126.4 Connection to Greenway



126.5 Rain garden



126.6 Stormwater treatment



126.7 Conveyance in urban area

COMMUNITY FACILITIES AND OPEN SPACE

STRATEGY TO MEET UNIVERSAL ACCESS REQUIREMENTS TO COMMUNITY FACILITIES AND OPEN SPACES

Universal Design

Inclusive community design is at the heart of the Universal Design concept which seeks to ensure that products, buildings and exterior spaces are usable by all people. With the rapid increase of seniors populations, there is a growing need for Universal Design. Universal design has demonstrated its multiple benefits including reduced health care costs and stress, opportunities for dignified aging in place and safer environments that accommodate diverse lifestyles.

Site Design Considerations

Site design features to consider for universal design in Sapperton Green include, parks, signage, street furniture, pathways and trails, curb ramps, pedestrian crossings, parking, exterior routes, arrival and departure areas, outdoor amenities, obstructions, stairs and waterfront.

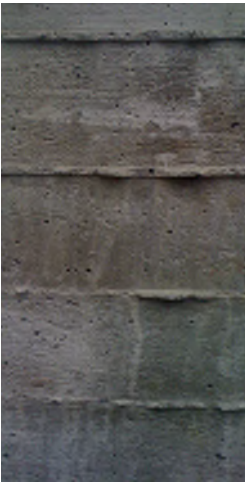
Seven Principles of Usability

Designers wishing to better integrate features that meet the needs of as many users as possible should consider the following seven principles of usability:

1. **Equitable use:** The design is useful and marketable to people with diverse abilities.
2. **Flexibility in use:** The design accommodates a wide range of individual preference and abilities.
3. **Simple and intuitive use:** Use of design is easy to understand, regardless of the user’s experience, knowledge, language skills or current concentration level.
4. **Perceptible information:** The design communicates necessary information effectively to the user; regardless of ambient conditions.
5. **Tolerance for error:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. **Low physical effort:** The design can be used efficiently and conformable and with a minimum of fatigues.
7. **Size and space for approach and use:** Appropriate size and space is provided for approach, reach, manipulation and use regardless of the user’s body size, posture or mobility. In addition to usability, other considerations including economic, engineering, cultural, gender and environmental must also be incorporated into universal design initiatives.



127.1 Cultural material usage



127.2 Textural detail



127.3 Site Furnishings

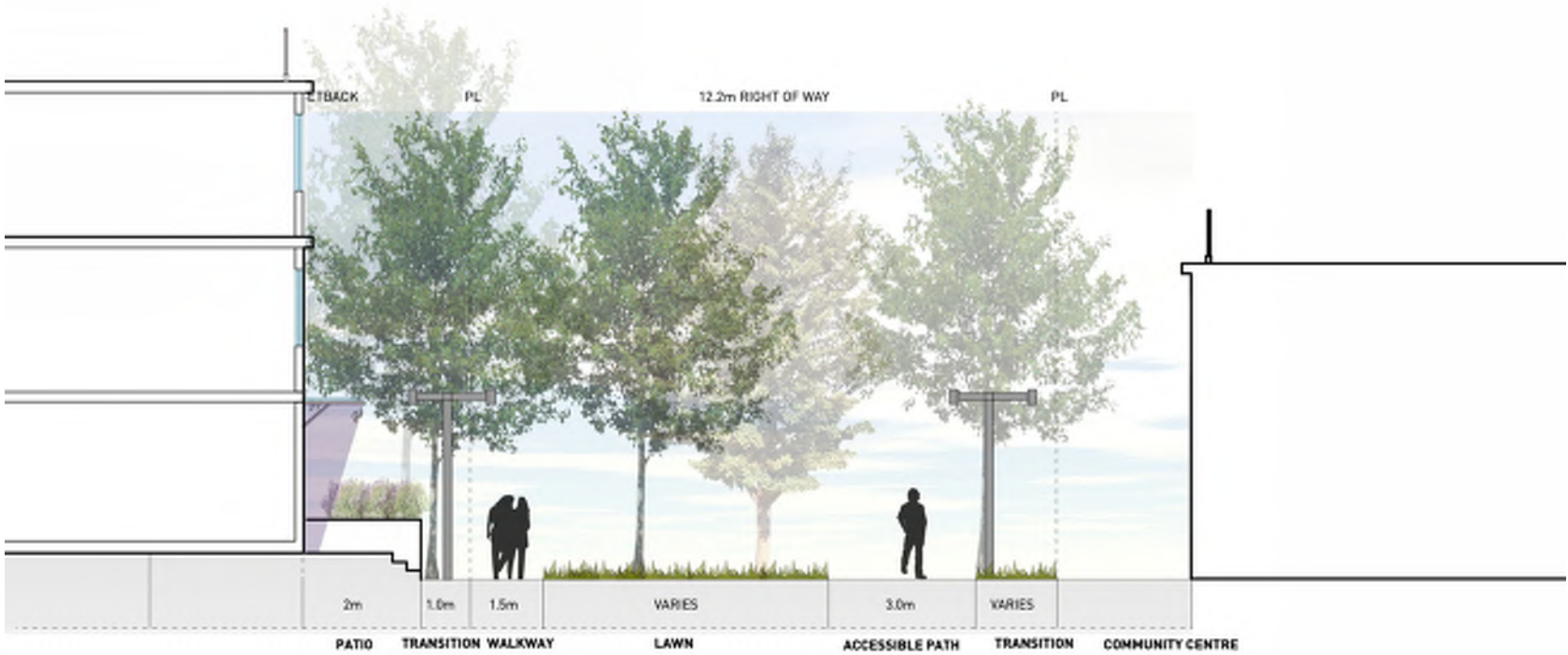


127.4 Universal design cues

COMMUNITY FACILITIES AND OPEN SPACE

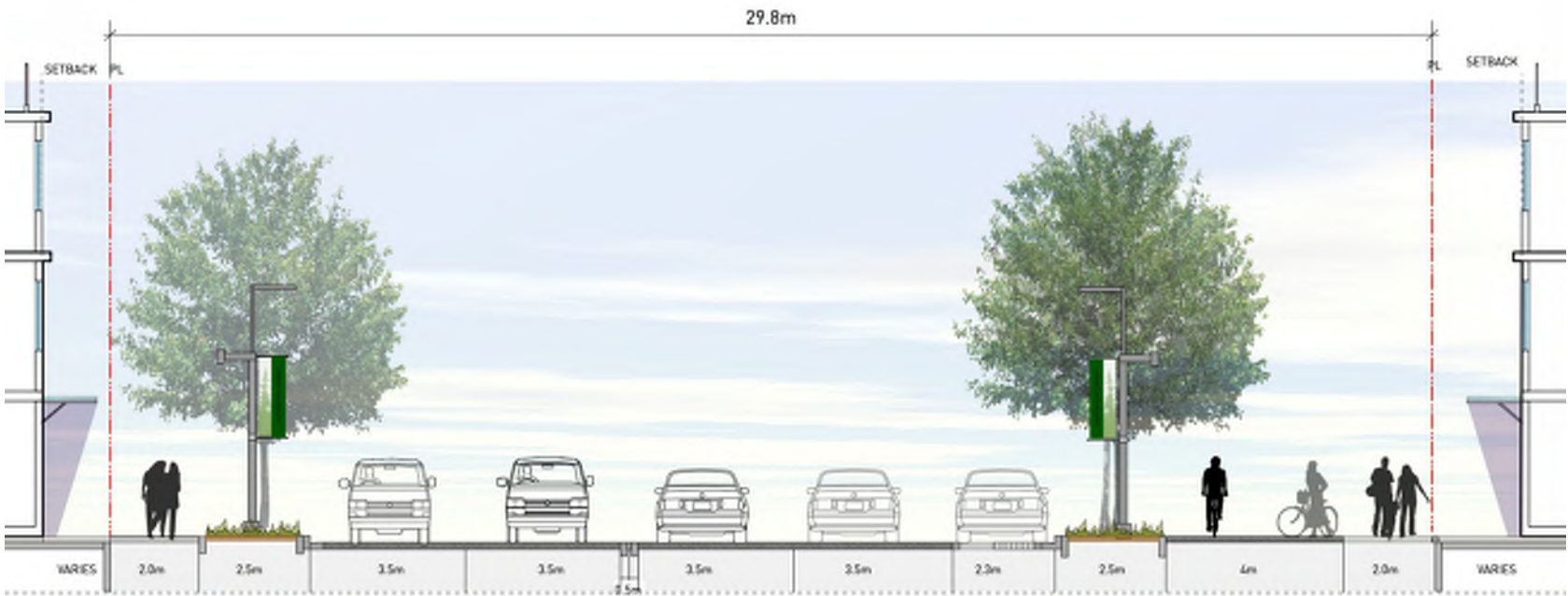
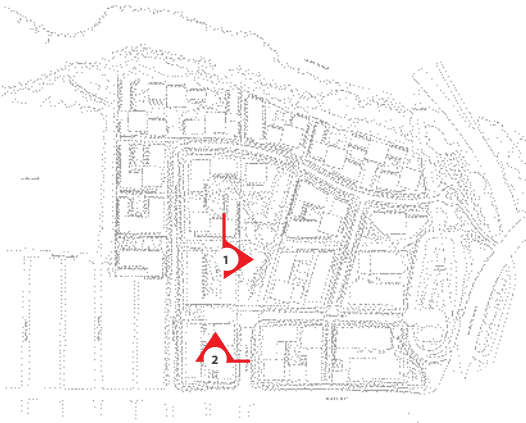
DRAWINGS: INTERFACE

East West Greenway



Section 1: East - West Greenway

Rousseau Street Edge

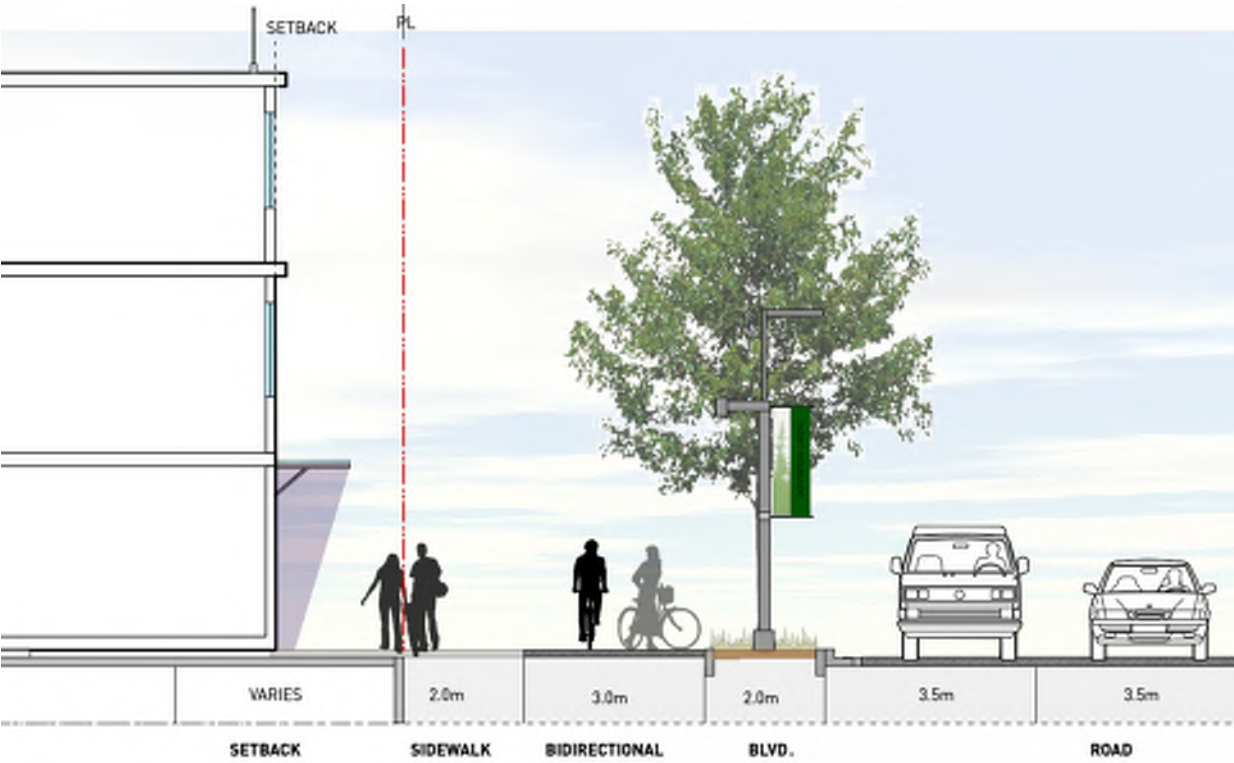


Section 2: Rousseau Street

COMMUNITY FACILITIES AND OPEN SPACE

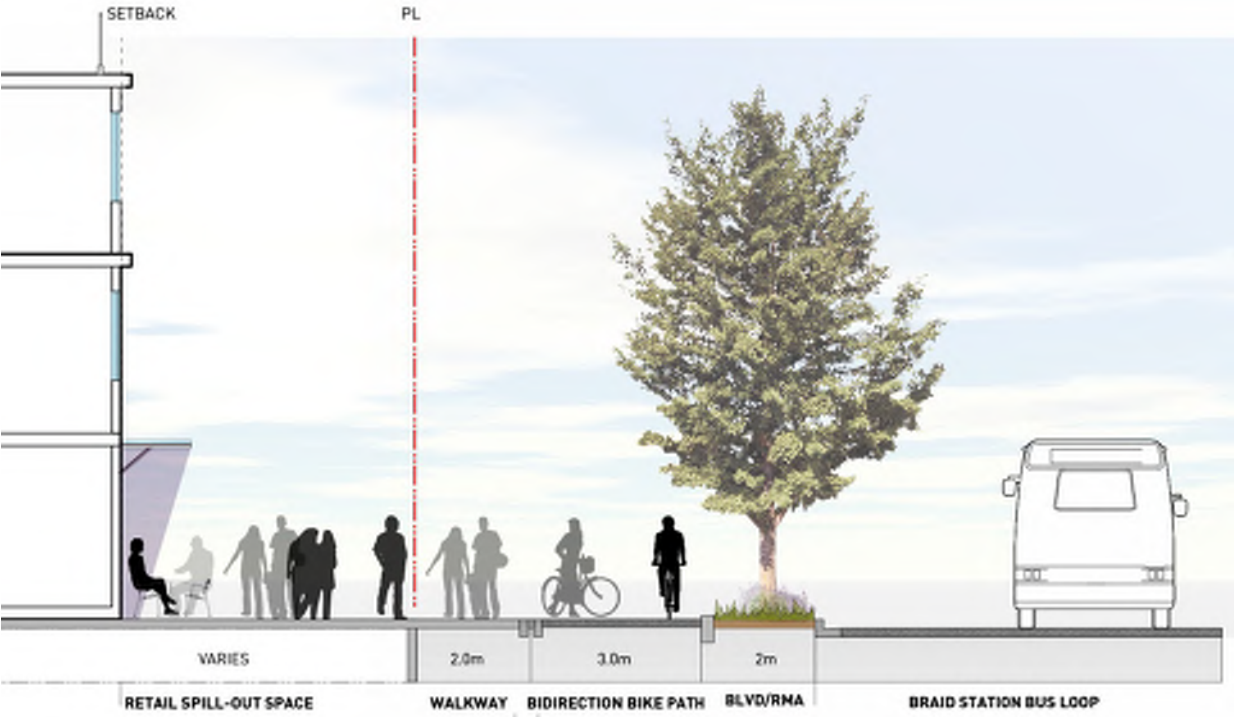
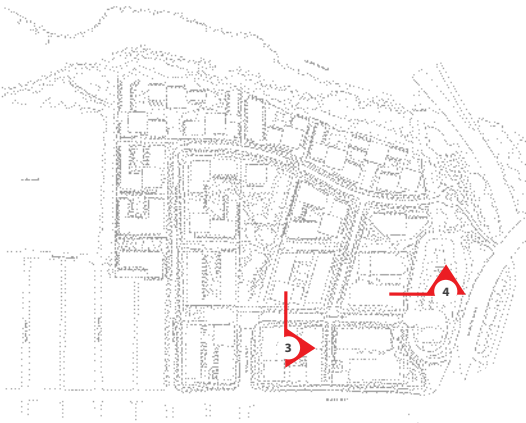
DRAWINGS: INTERFACE

Transit Way Street Edge



Section 3: Transit Way

Transit Plaza Edge

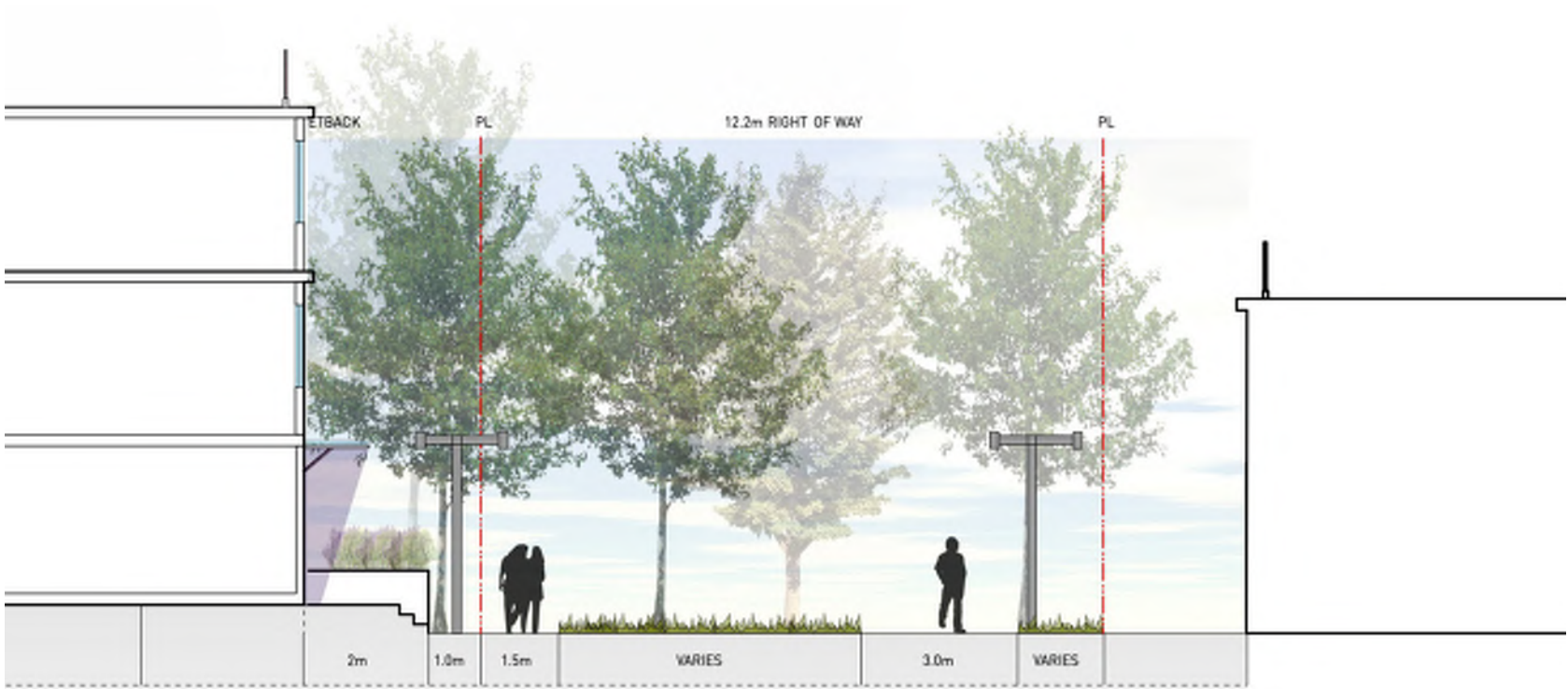


Section 4: Transit Plaza

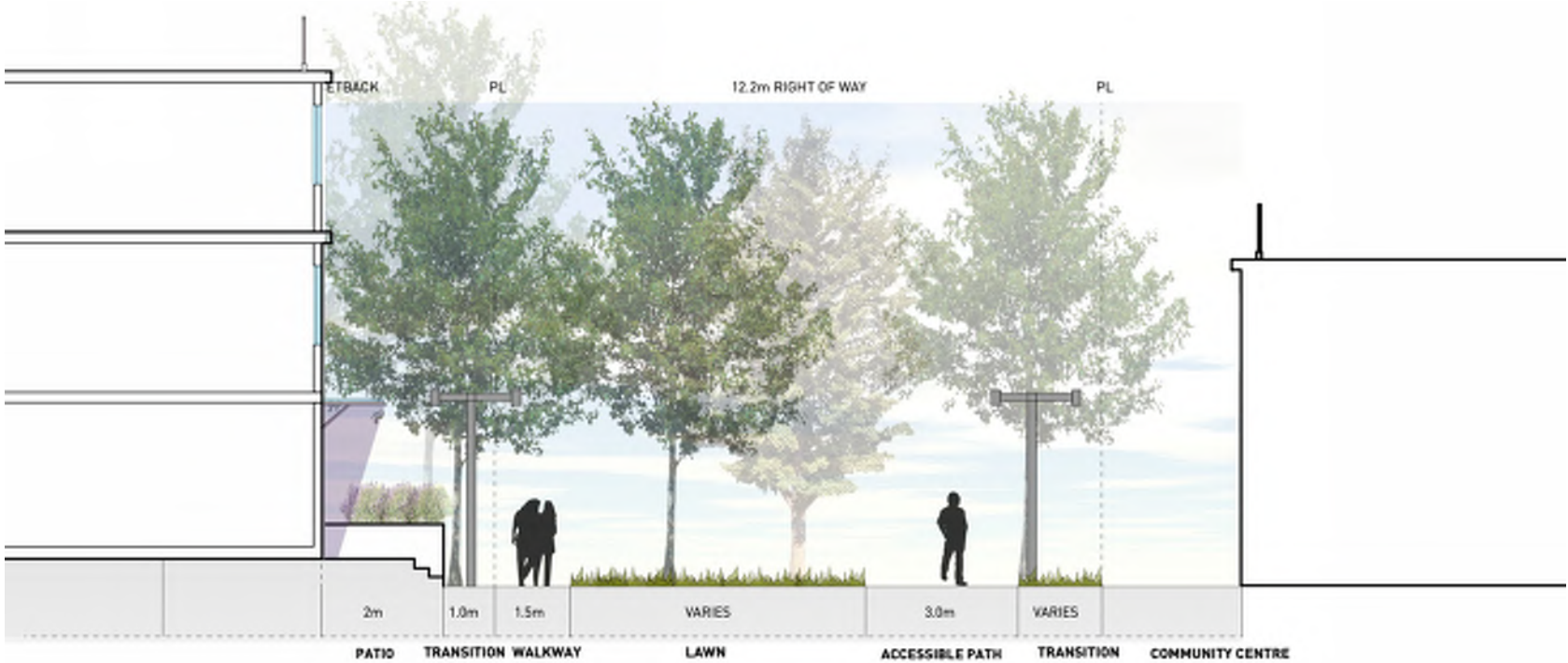
COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: INTERFACE

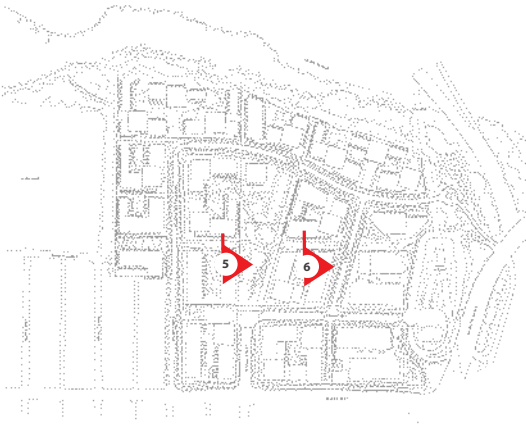
East - West Greenway Edge



Section 5: East - West Greenway



Section 6: East - West Greenway



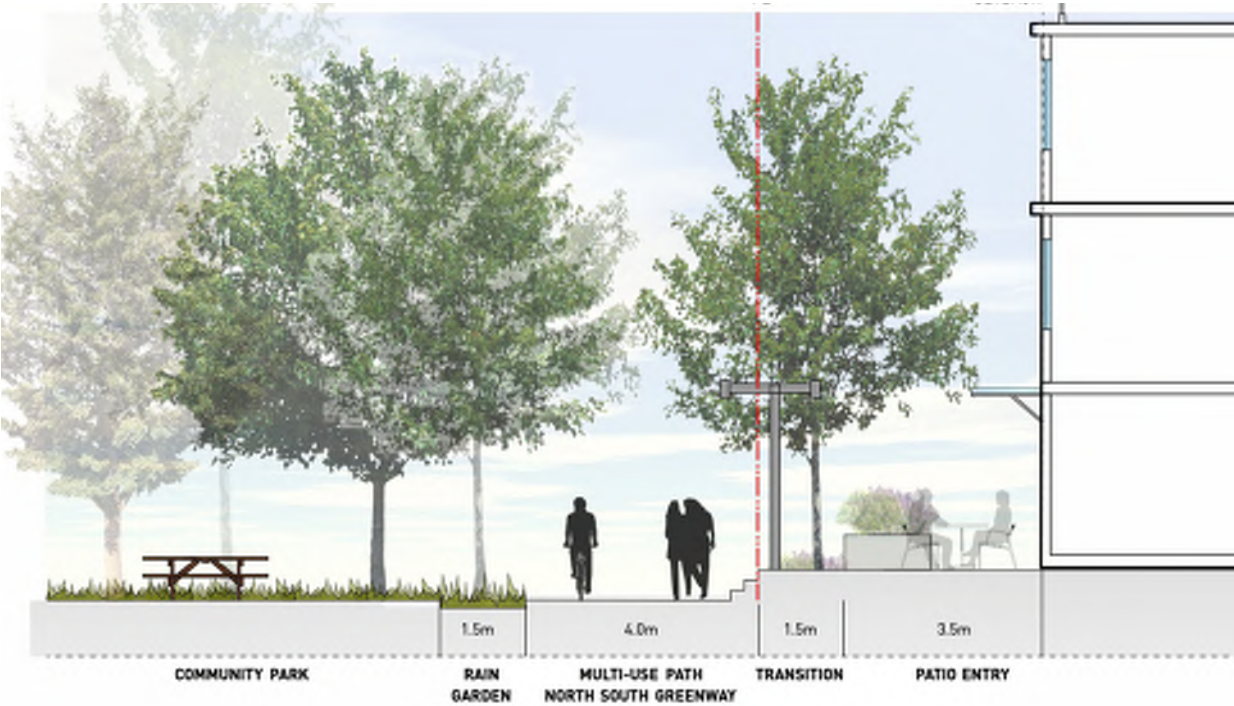
COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: INTERFACE

Community Park Edge



Section 7: Park West



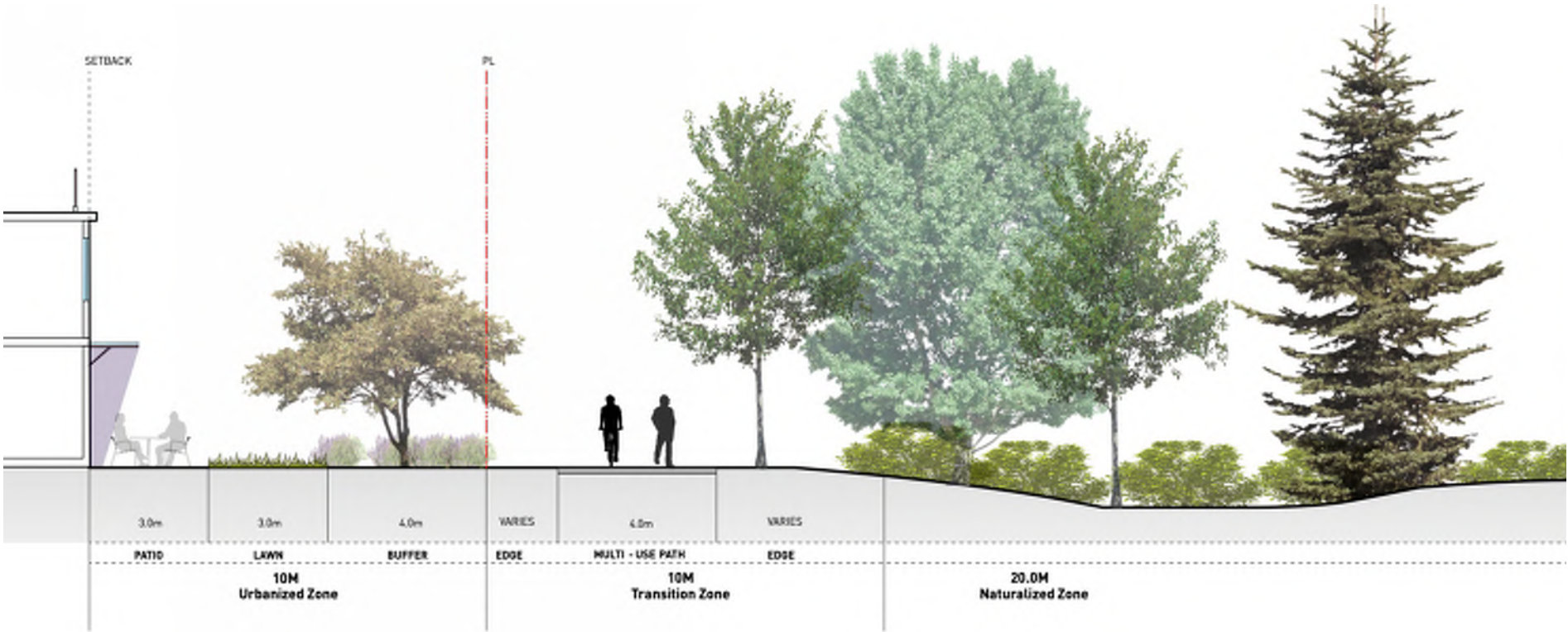
Section 8: Park East



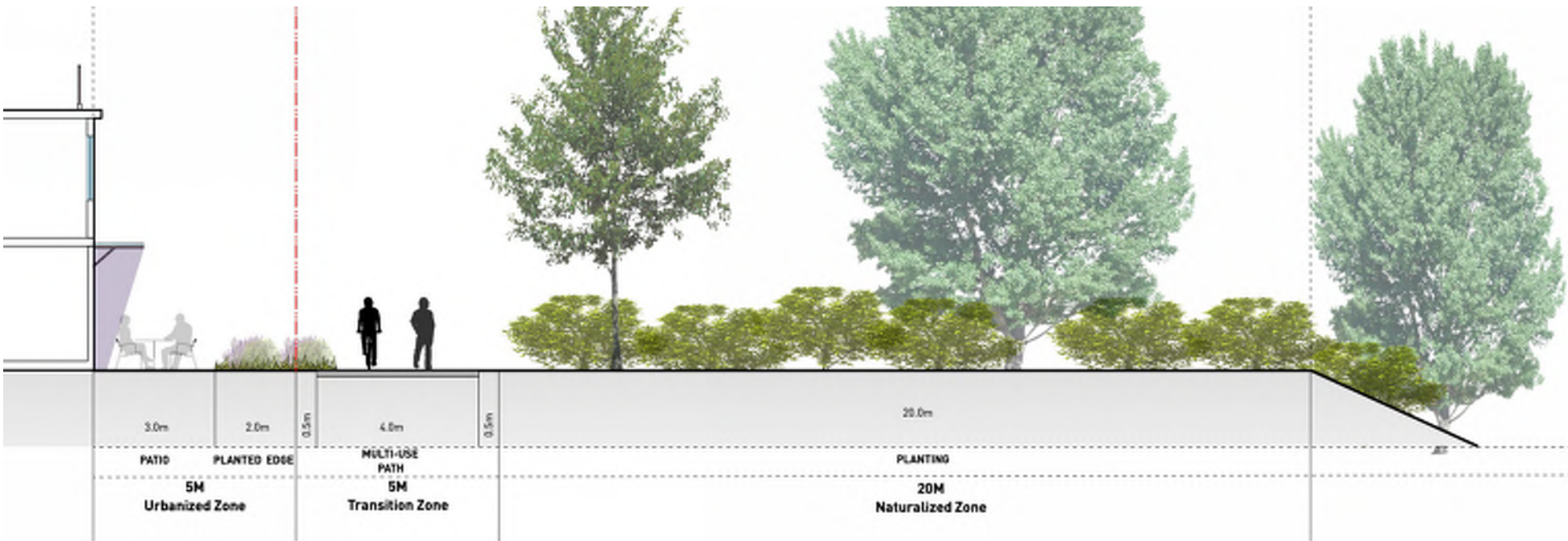
COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: INTERFACE

Brunette River Edge



Section 9: Brunette Greenway

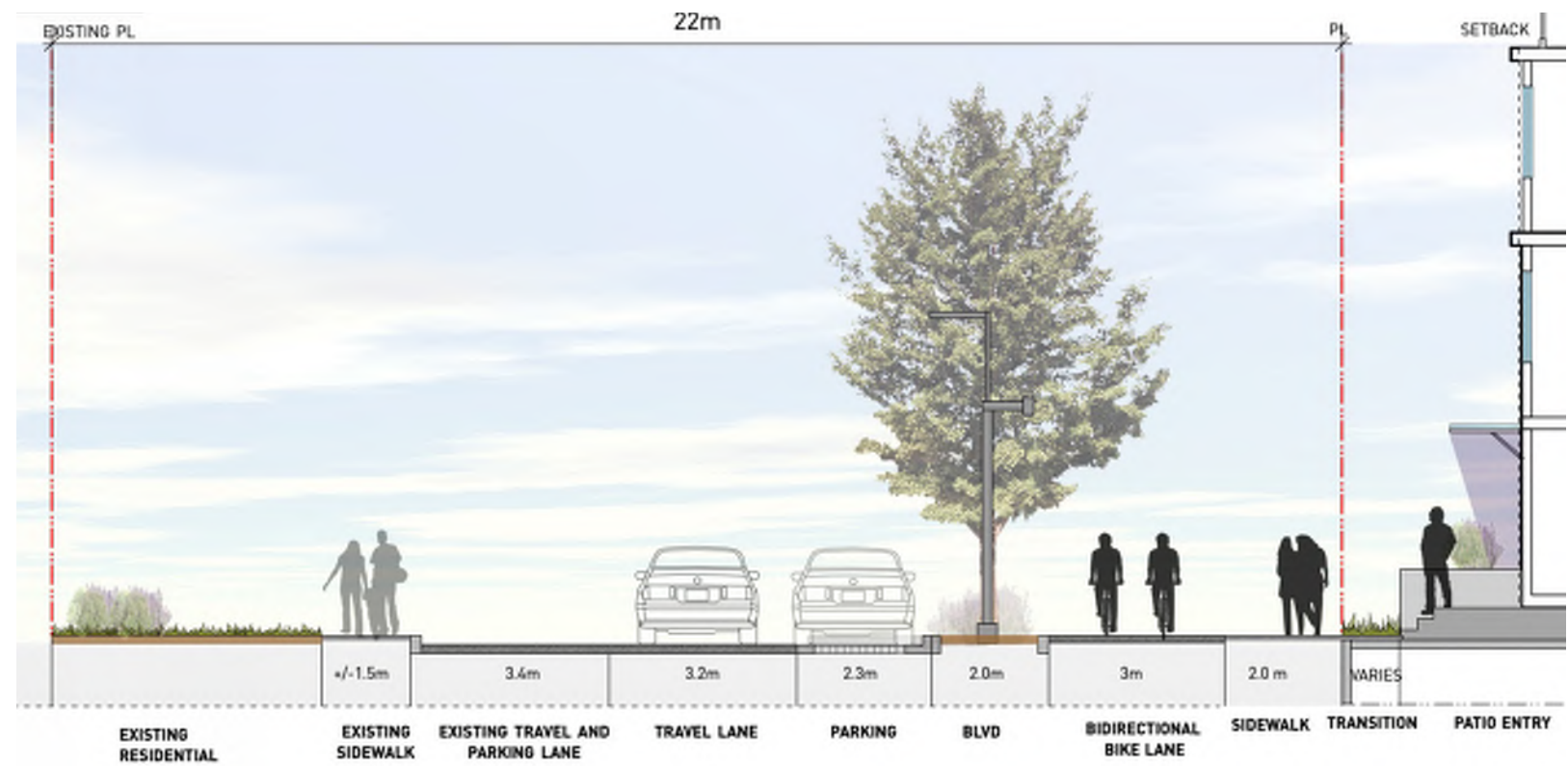


Section 10: Brunette Greenway

COMMUNITY FACILITIES AND OPEN SPACE

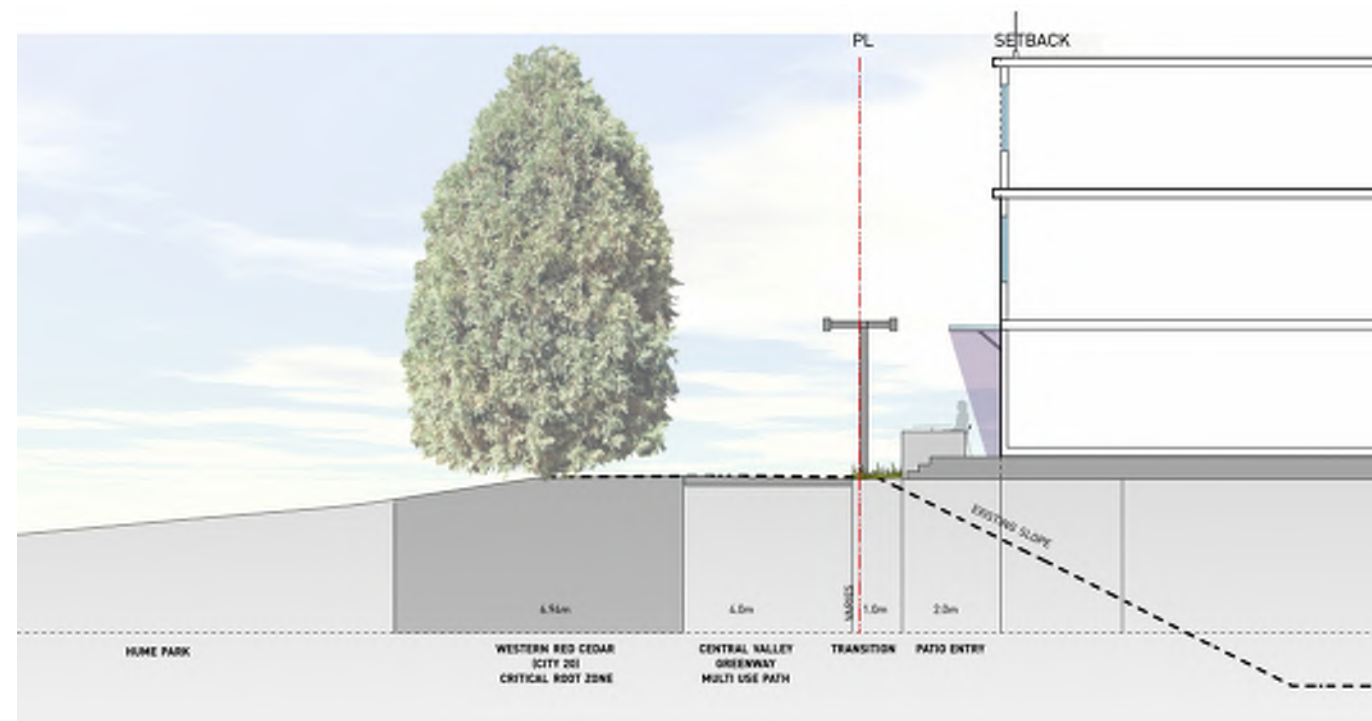
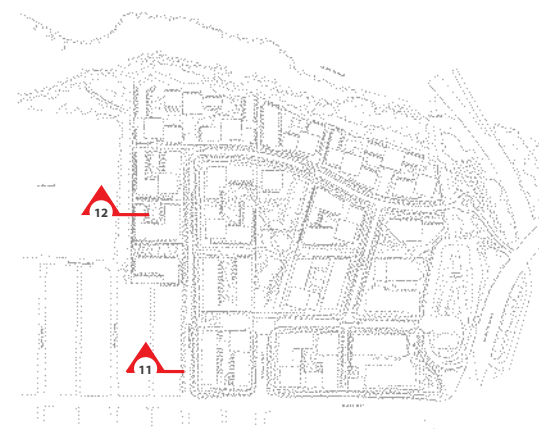
DRAWINGS: INTERFACE

Wilson Edge



Section 11: Wilson street

Central Valley Greenway Edge

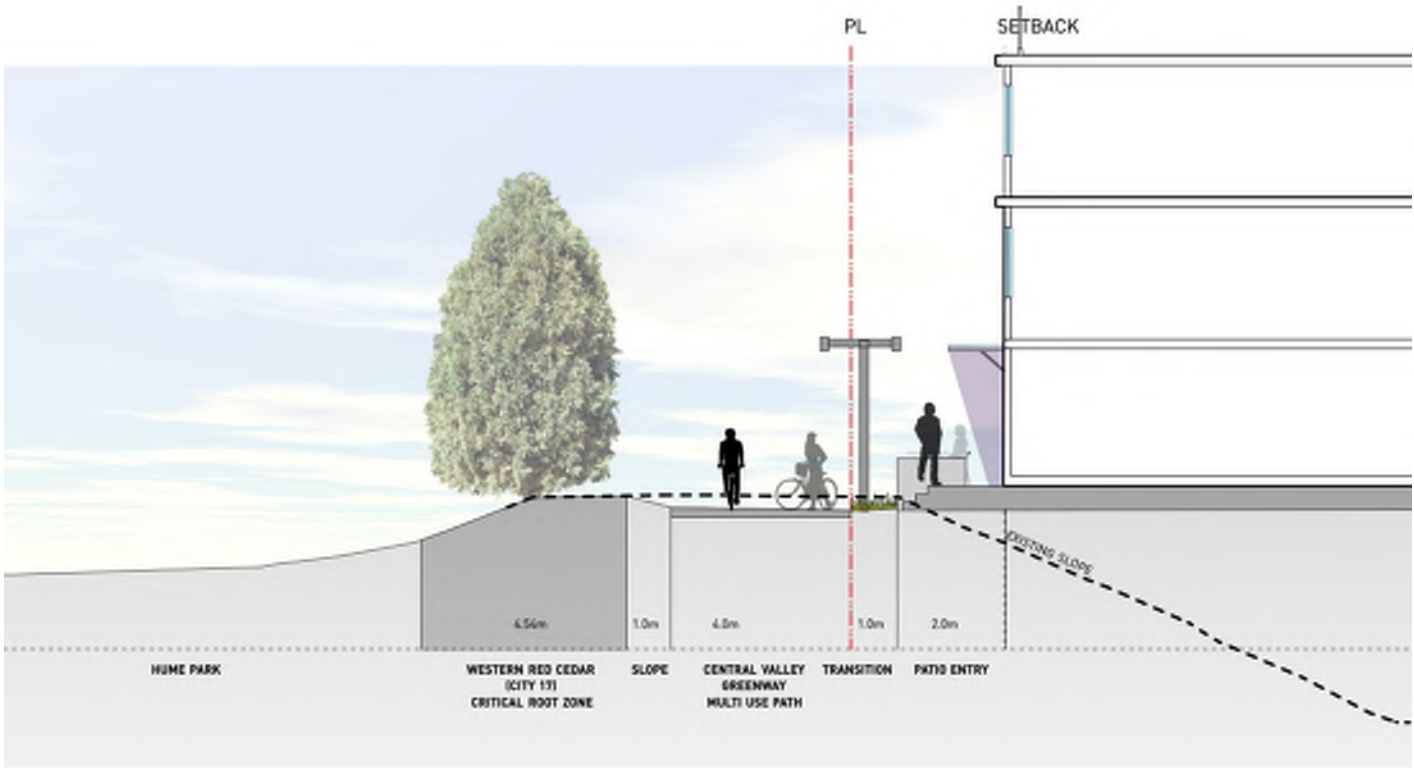


Section 12: Central Valley Greenway

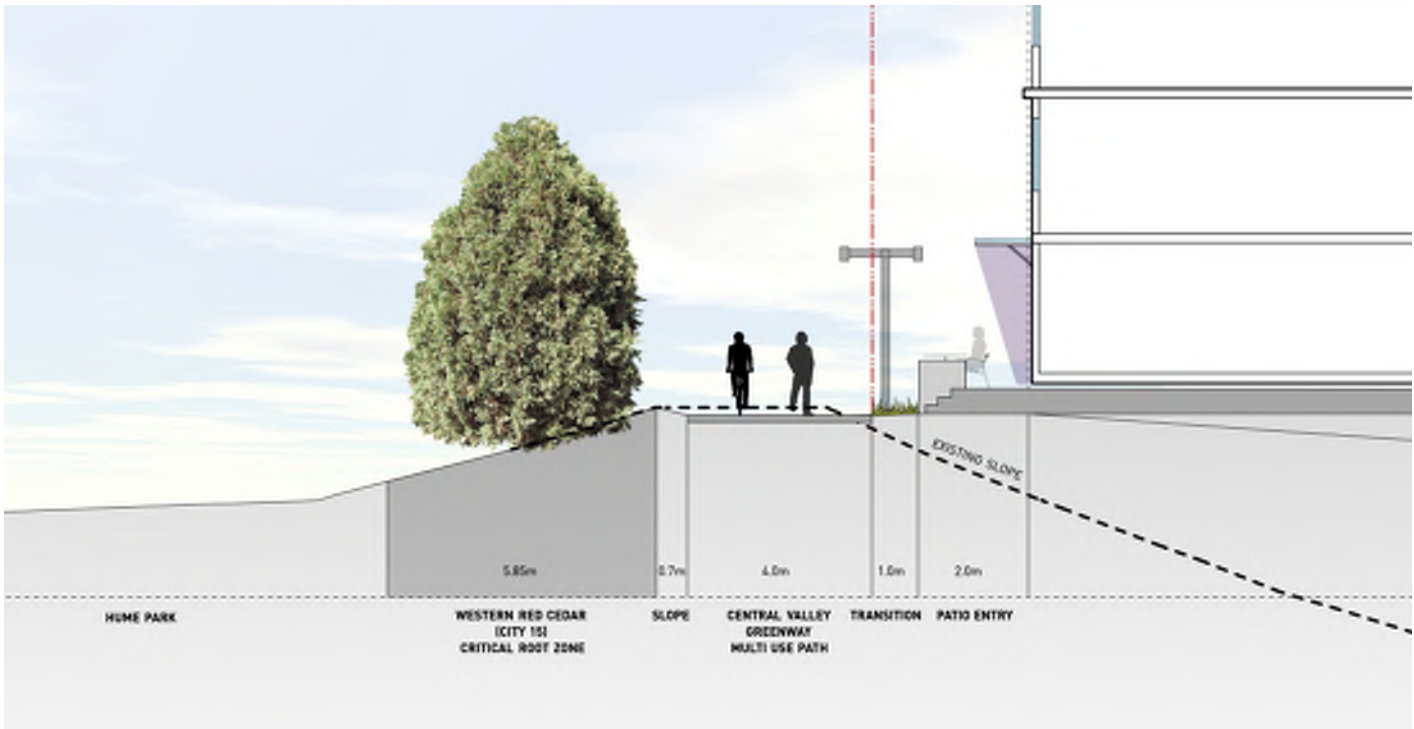
COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: INTERFACE

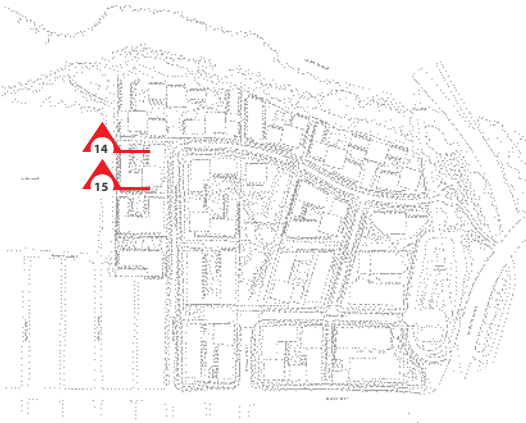
Hume Park Edge/ Central Valley Greenway Edge



Section 14: Central Valley Greenway



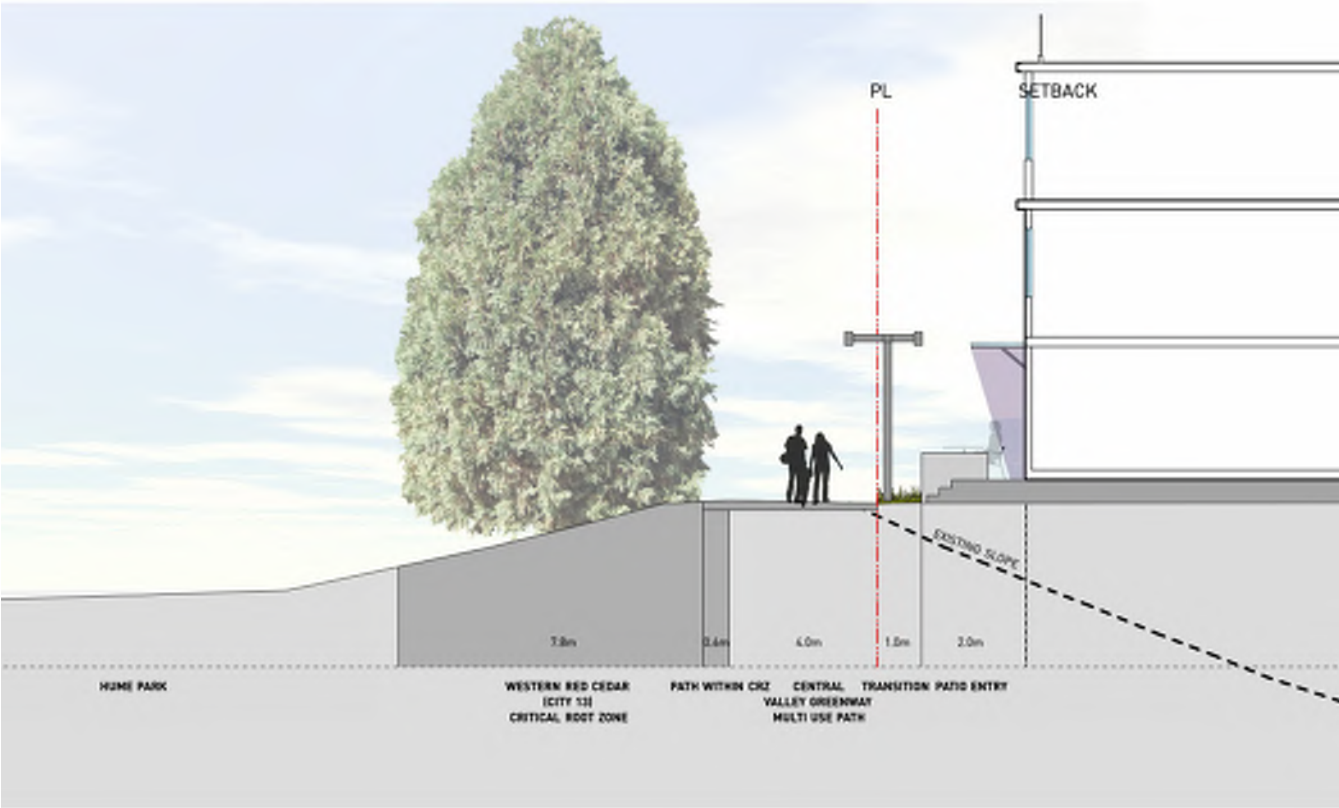
Section 15: Central Valley Greenway



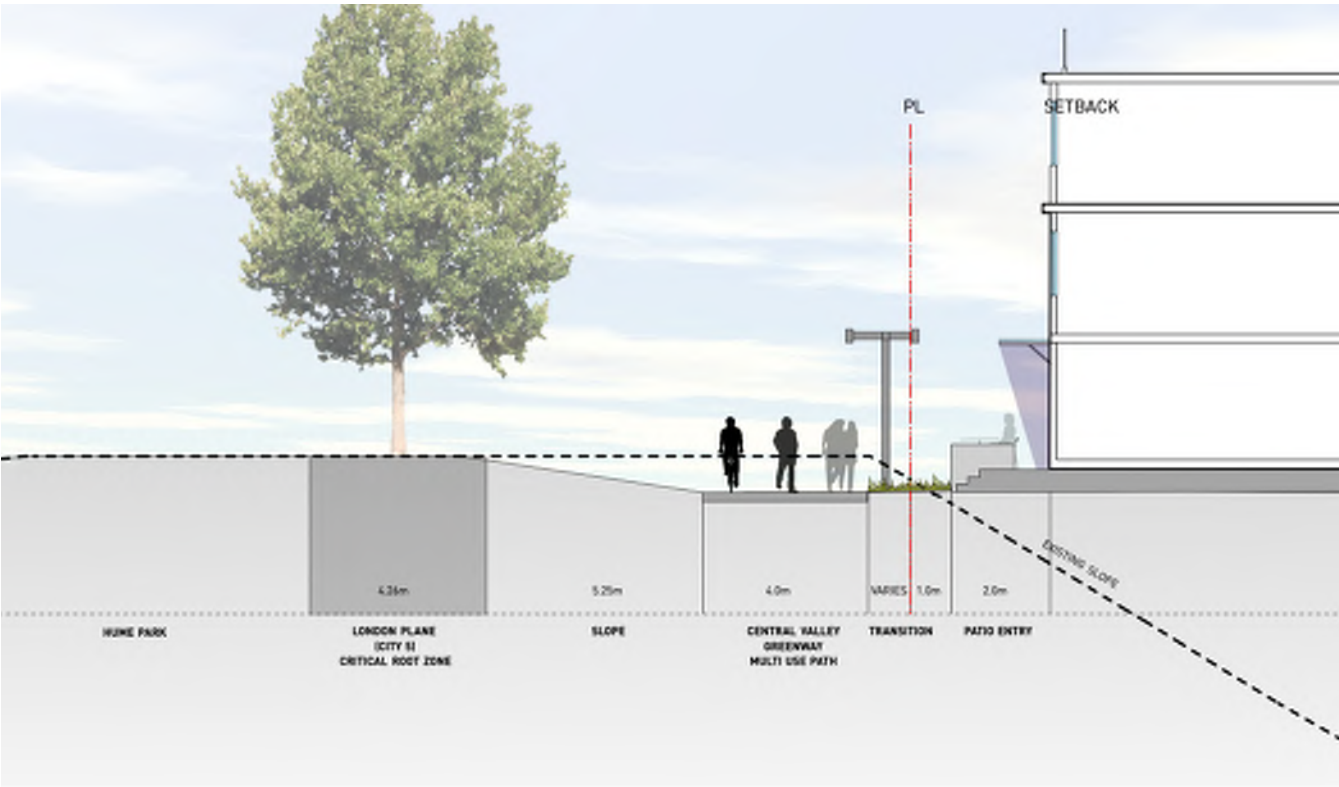
COMMUNITY FACILITIES AND OPEN SPACE

DRAWINGS: INTERFACE

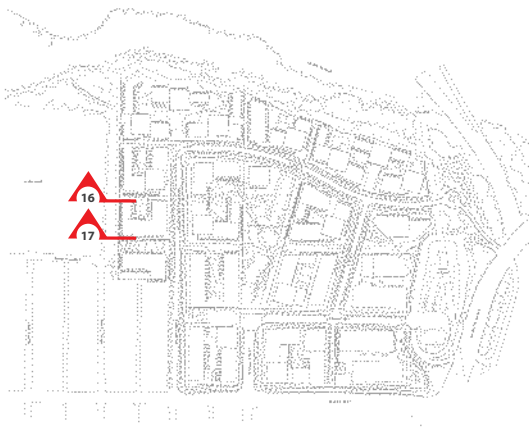
Hume Park Edge/ Central Valley Greenway Edge



Section 16: Central Valley Greenway



Section 17: Central Valley Greenway



RESIDENTIAL DEVELOPMENT

HOUSING TYPES AND MIX

As a transit-oriented, compact, mixed-use community, urban development at Sapperton Green will range from medium- to high-density with a significant residential component. Sapperton Green will provide a range of housing choices that reflect the diversity of the community, including those appropriate for families.

Residential uses will mainly be located towards the western and northern edge of the neighbourhood with mixed-use development around the Neighbourhood Heart. This allows for homes to be located in close proximity to public green space including the Brunette River Edge, Hume Park and the centrally located park.

Various residential building forms will range from townhouses to high-rise apartments, with no single-family homes. The retail area and Neighbourhood Heart residential uses are mixed with commercial uses in low to high-rise building. This diversity in housing form will be reflected on individual parcels and will require a comprehensive design to ensure that the variety in forms is differentiated, but well integrated. With the tallest residential buildings located to the north, the master plan is mindful of shadowing for the mid and low-rise buildings. A variety in heights of residential buildings will create a skyline with visual interest. Market strata housing , market rental housing and affordable housing will be integrated into the development to help ensure housing choice.

The range of housing options at Sapperton Green will include (As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110):

- High-rise apartment buildings with a maximum height of 38 storeys and one iconic tower to 46 storeys.
- Townhouses as part of building podiums between 2-3 storeys, oriented to the street or parks and open spaces. Townhouses will be accessible from the ground floor.



- Stacked townhouses accessed from a common entry and/or the ground floor with a maximum height of 4 storeys.
- Mid-rise buildings between 4 and 8 storeys.
- Mixed-use low and mid-rise buildings with retail at grade.
- Increased affordability for home ownership and rental housing through the design of smaller square footage units, innovative design and appropriate construction materials.

As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110.

RESIDENTIAL DEVELOPMENT

PROJECTIONS FOR ADDRESSING THE CITY’S FAMILY FRIENDLY HOUSING POLICY

Reflecting the land use principles of promoting diversity of residential types, Sapperton Green will provide a variety of multi-family housing choices, accommodated in low, mid and high density building forms. Residential uses will be found in all three precincts on site, with the Hume Park precinct being residential only and both the Braid Street and Station precincts having residential, retail and office uses in a mixed-use format.

The site will see a range of building types as well as a mix of unit types and tenure. Residential building forms will range from townhouses to high-rise apartments with no single-family homes. All buildings will be sited to be mindful of adjacent uses, solar orientation, shadowing, view impacts and will seek to create a skyline with visual interest.

Policies

- The site will accommodate a maximum of 4,455,000 square feet of residential uses.
- The distribution of residential land use will generally be in accordance with the Density/Height Map (See page 103).
- A diversity of residential types including a mix of building forms, unit sizes and tenures will be encouraged.
- A variety of multi-family housing forms will be encouraged and include (As outlined in the bylaw, tower height may vary dependent upon density transfer – refer to page110):

Low-Density

Low Density Multi-Family (up to 8 storeys)

This designation provides low density residential uses that may include townhouses (side-by-side or stacked) and apartments in a low-rise form.

Low Density Mixed Use (up to 8 storeys)

This designation provides residential apartment uses over retail and/or office uses in a low-rise form.

Medium-Density

Medium Density Multi-Family (up to 12 storeys)

This designation provides for medium density residential uses that may include townhouses (side-by-side or stacked), apartments, or a combination including apartments over townhouses in a mid-rise form.

Medium Density Mixed Use (up to 12 storeys)

This designation provides for medium density residential development including apartments over retail and/or office uses in a mid-rise form.

Medium-High Density Multi-Family (up to 25 storeys)

This designation provides for medium density residential uses that may include townhouses (side-by-side or stacked), apartments, or a combination including apartments over townhouses in a mid-rise form.

Medium-High Density Mixed Use (up to 25 storeys)

This designation provides for medium density residential development including apartments over retail and/or office uses in a mid-rise form.

High-Density

High Density Multi-Family (up to 46 storeys)

This designation provides for high density residential development in a high-rise form.

High Density Mixed Use (up to 26 storeys, with one building up to 35 storeys)

This designation provides for high-density residential development over retail and/or office uses in a high-rise form.

- Increase housing choice on site by providing market rental housing on site.
- Wherever possible ground-oriented units will be oriented to the street or parks and open space areas.

- High-rise building forms will be integrated with low to mid-rise apartment or townhouses and where possible ground-oriented units will be encouraged.
- Ensure the design of residential units in mixed-use buildings will be integrated with the form and character of the commercial uses.
- Ensure individual units, their entries and private outdoor spaces are designed to maximize privacy and clearly delineate private and public spaces.
- In general, buildings will be sited to enhance and reinforce the surrounding streetscape and open space. Location of built form shall capitalize on solar orientation.
- Building form, character and urban design elements of multi-family units will be consistent with the Development Permit Area Guidelines. All residential development will be required to obtain a Development Permit as outlined in Section 7 of the Neighbourhood Plan.
- Sustainable planning principles will be implemented, consistent with Section 3 of the Neighbourhood Plan.



Musson
Cattell
Mackey
Partnership



Sapperton
Green

Master Plan

April
2020

Master Plan

RESIDENTIAL DEVELOPMENT

NON-MARKET HOUSING STRATEGY

Sapperton Green will be an inclusive community that will provide a range of housing options to meet the needs of current and future New Westminster residents. In response to the City of New Westminster’s policy objectives, 7.5% of the total residential square footage (based on the original 3.4 million square feet of residential density outlined in the 2015 Official Community Plan Amendment) will be in the form of affordable housing. Upon completion, the community of Sapperton Green will include 255,000 square feet of affordable housing. Each of the three building phases will include approximately 85,000 square feet.

Phase I

Phase I is estimated to start in 2021 and will include BC Housing funding to facilitate approximately 85,000 square feet of affordable housing. This will include the creation of an air space parcel which will be transferred to be owned by either BC Housing or a not-for-profit housing provider. Further details will be outlined by an agreement between BC Housing, the City of New Westminster and QuadReal Properties.

Phase II and III

It is intended that the delivery of affordable housing in Phases II and III will follow a similar model as Phase I provided BC Housing (or other) funding is available. In case of the event funding is not available, the delivery of the affordable housing component for each Phase is the obligation of the developer as defined by a Housing Agreement with the City of New Westminster.

Not-for-profit Housing Provider

In 2020 the City of New Westminster created a list of approved not-for-profit housing providers who could be selected to manage new affordable housing units in the city. All phases of affordable housing at Sapperton Green will be managed by one of the not-for-profit housing providers approved by the City of New Westminster.



Unit Mix

Residential development at Sapperton Green will respond to the City of New Westminster’s Family Friendly Housing Policy and include at least 30% two and three-bedroom units of which at least 10% will be three-bedrooms. The unit mix will also respond to the needs of the not-for-profit operator and BC Housing.

- 30% Affordable Market Rents (Low to Moderate Income)
- 50% Rent Geared to Income (Housing Income Limits)
- 20% Deep Subsidy

Income Levels

Target income levels will align with the City of New Westminster’s Inclusionary Housing Policy and BC Housing’s Community Housing Fund and would include the following:

OFFICE DEVELOPMENT

Office space is a key component of a vibrant, mixed-use sustainable community that provides opportunities to live/work within the neighbourhood and that is accessible.

- Variety of office space incorporates large and small tenant demands.
- Office developments have been located to act as a buffer for the community from the busy Braid Road and active SkyTrain Station .
- Office space to be located close to SkyTrain Station for proximity and ease of access.
- Office space to be phased in consumable components to increase viability of office development.



RETAIL DEVELOPMENT

The retail strategy for Sapperton Green envisions a diverse range of business types and sizes. The following design strategies will be employed to execute on this vision:

- Stretchable retail space sizes, to promote flexibility for future economic trends and community needs.
- Strategically locate large tenants or restaurants to at the corner of streets, with frontage facing to retail cores, and project gateways such as Rousseau and Braid Street, to signify the importance of the development.
- Setbacks for outdoor patios to promote eyes on street, viable threshold between private and public, interactions between pedestrians and occupants, and stretchable outdoor retail space.

Aiming to balance the retail needs of residents with the neighbourhood retailers and anchor retailers, anchor retailers will be strategically located at the retail cores, Community and Transit Heart. Neighbourhood retailers will be located as supplementary in-filled tenants at the cores and collectively at secondary retail areas.

In order to meet the requirements of both residents and office users on site:

- Anchor retailers may include grocery store and restaurant, and will be proposed in Phase 1 to fulfill the needs of both residents and office users at first phase acting as a catalyse for future phases.
- Most of the retail spaces will be located in Phases 1 and 2 to address the future retail needs of all 3 phases to development completion.
- High-headroom ground floor office space will allow future flexibility in developing into retail space over time as critical mass is reached and be able to respond to change in economic trends and community needs.



RETAIL DEVELOPMENT

Retail area located on East Columbia Street has an influence on the retail at Sapperton Green as follows:

- Architecturally, the proposed retail frontage design will be inspired by the street wall and public realm of East Columbia Street, and the history of the site
- The retail mix will provide a variety of retail types and sizes, walkable distance for local residents, and a car-free welcome to visitors across the city through public transit

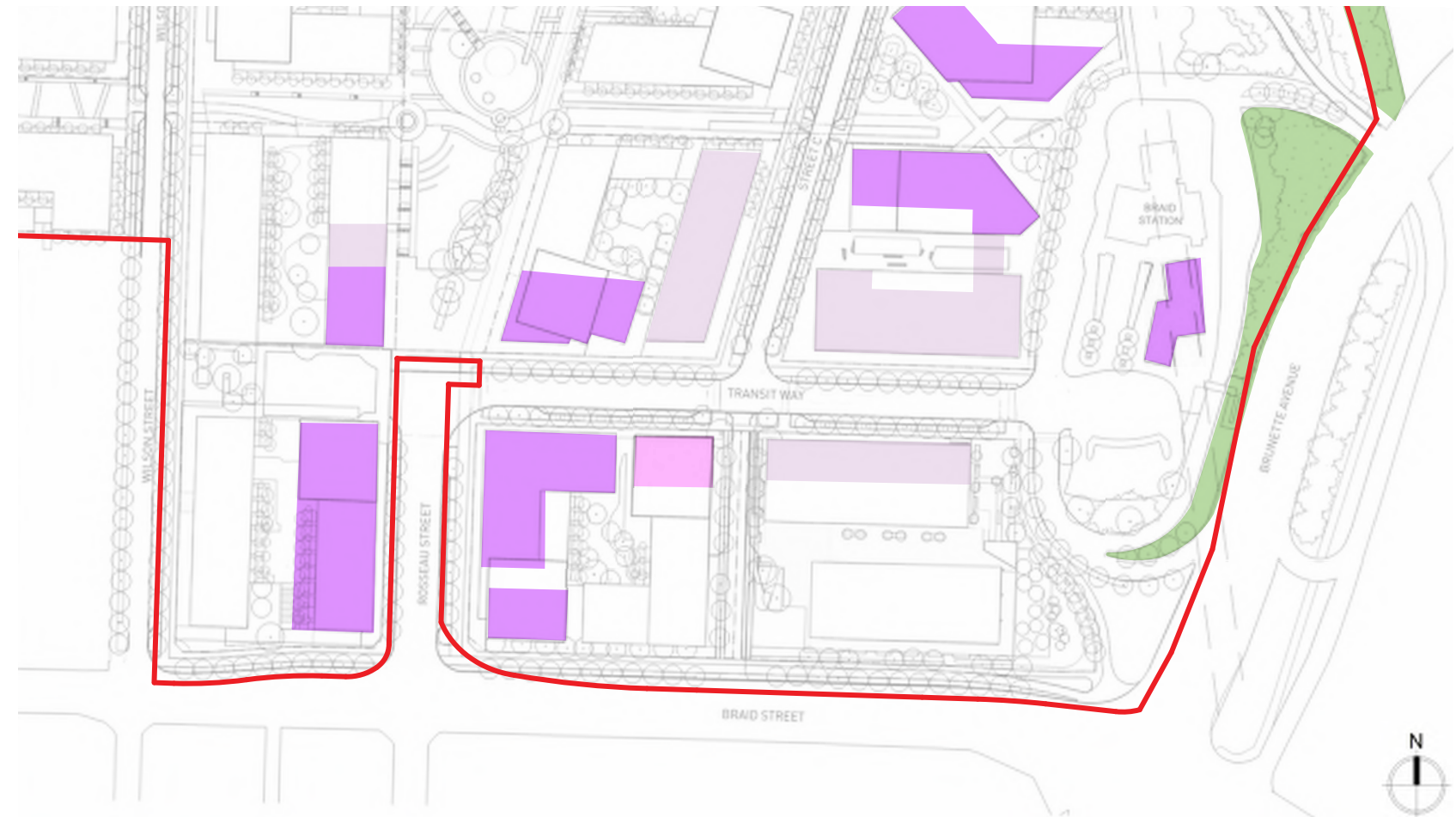
There are two kinds of retail proposed, core retail and secondary retail.

Core Retail:

- Within 'retail cores' the uses permitted at grade level shall be active building lobbies, commercial retail uses which could include retail, restaurant, café and food service.
- Space shall be provided for commercial uses to spill out from the building and create truly 'sticky streets'
- Banks shall be allowed if active uses are orientated to the street.
See image 141.1
- The following practices which would detract from street engagement are discouraged:
 - a. passive retail uses at grade,
 - b. passive portions of business adjacent to the street (e.g. banks with offices).
 - c. extensive window coverings, blinds, vinyl wraps.

Secondary retail areas:

- Institution and Educational uses would be considered to activate this area



- PRIMARY RETAIL USES
- SECONDARY RETAIL USES
- OPTIONAL RETAIL USES



141.1 Bank with active uses orientated to the street

MIXED-USE DEVELOPMENT

PRINCIPLES

Goal

- Articulate the physical design elements that are required to achieve the vision of creating true “people places”.
- Support the local residents and Citywide demands.
- Provide flexibility of use for future community and economic trends.
- Support community smart growth.
- Improve public realm and create active streetscape.
- Create three-dimensional, pedestrian-oriented places that layer compatible land uses, public amenities, and utilities together at various scales and intensities. This variety of uses allows for people to live, work, play and shop in one place, which can then become a destination for people from other neighborhoods.
- Allow for the horizontal and vertical combination of land uses in a given area.
- Optimize use of scarce land resources.
- Create a walkable community for diverse residents.
- Facilitate a transition from existing to future uses, in terms of scale and intensity.

Policy

- Provide strategic location of the commercial program.
- Provide ease of access, and well-defined program areas.
- At Rousseau Street Entry: Locate commercial foci within the Master Site Plan.
- Along Transit Way: Connecting amenities down the community high street, terminating in the west at the transit node.
- Create proximity between retail and residential uses, for shopping and leisure.
- Create an activated employment area.
- Integrate light industrial into mixed-use development.
- Respond to the character of the community.

Design guidelines

- Provide future-proofed parking.
- Provide separate entries for different uses.
- Promote pedestrian activity by placing entrances at grade level and unobstructed from view of the public right-of-way.
- Create a variety of building forms and landscapes.
- Articulate a clear structure and organization of parts within mixed use areas.
- Orient mixed use buildings with at-grade retail along the street.
- Locate small to medium sized retail along primary streets to create a continuous street wall.
- Minimize building setbacks to create a pedestrian-scaled street environment.
- Where possible, commercial space should provide for ceiling heights of 4.5 metres to ensure that commercial units are flexible to support a variety of uses.
- Address any potentially disruptive impacts such as noise, vibration or odor between commercial and residential units. Measures could include:
 - Improved insulation.
 - Improved ventilation systems.
 - Sensitive unit layout and room placement, (i.e. place noise-sensitive residential rooms as far away as possible from commercial areas).
- Commercial units shall include ventilation systems, or the provision to easily install one in the future, to accommodate a commercial kitchen. Ventilation systems shall be exhausted at a location that has the least impact on both the sidewalk and residential livability.
- Consider the needs of ‘back of house’ functions in commercial unit layout to meet the needs of a variety of commercial tenants including restaurants and commercial kitchens. This can include individual space for, or internal building access to, solid waste disposal, loading, storage, and utility areas.



143.1 Mixed-use Development



143.2 Shopping Centre



143.3 Mixed-Use Development

**Sapperton
Green**

Master Plan

April
2020

Master Plan

143

SERVICING

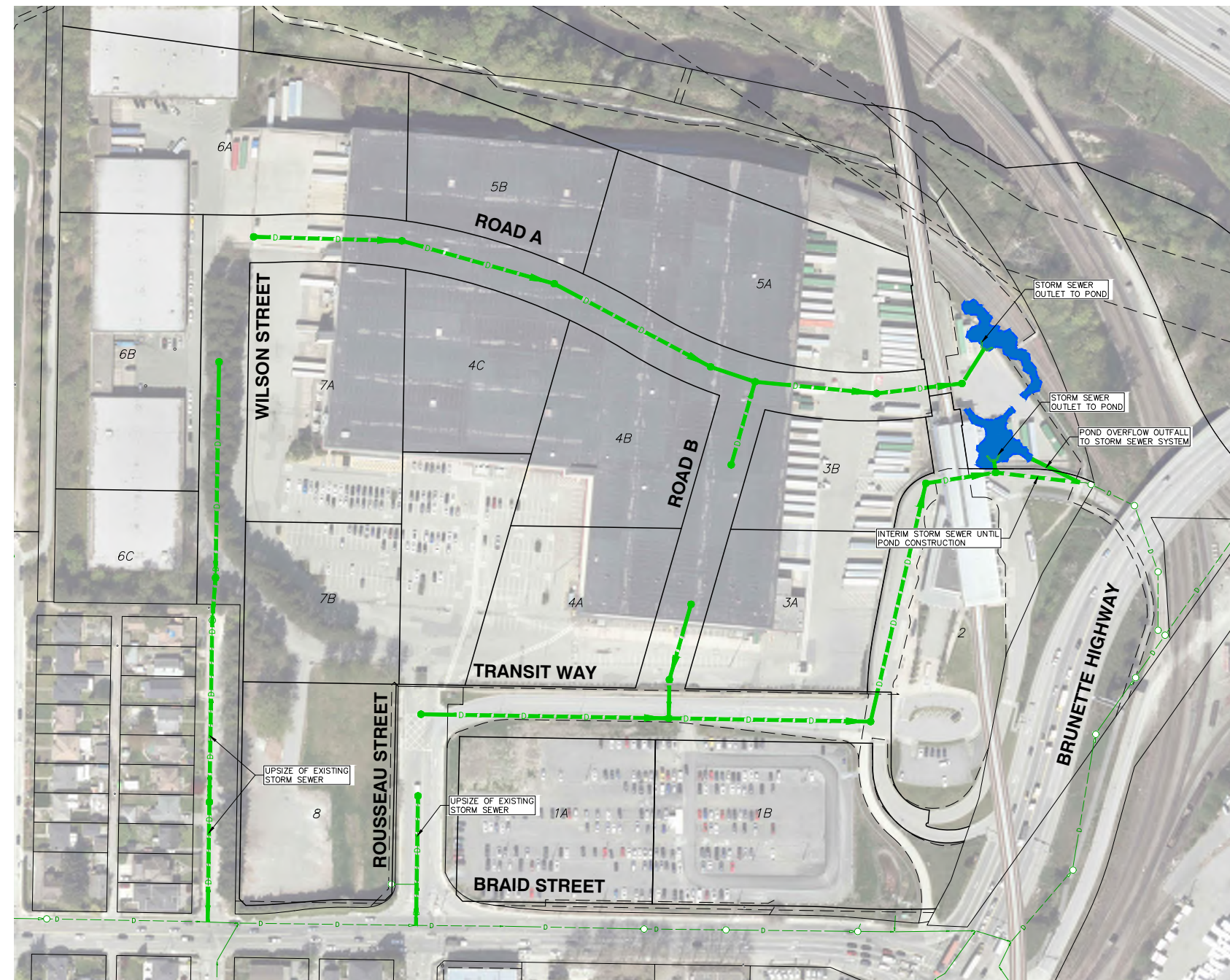
STORM SEWER SERVICING

Storm servicing is expected to be carried out in accordance with the figure which depicts the ultimate servicing concept for the Master Plan area.

The majority of the Land within the Sapperton Green site was built as impermeable warehouse buildings surrounded by large, impermeable pavement areas. The Master Plan for the Sapperton Green site contemplates significantly improving the storm water catchment and management by reintroducing soft landscape components throughout the development.

The majority of new road frontages will contain street trees, rainwater management facilities, raingardens and boulevard treatments. The Master Plan for the site also includes a large central park and numerous other landscape pocket parks and rooftop amenities. The sizeable greenway extending from the west side of the site to the east is also being explored for potential storm water management opportunities. A pond is being incorporated into the site plan in the northeast corner. This pond is proposed in part as a decorative pond as well as a detention pond with storage capacity for runoff retention. As the Master Plan is built over time, each subsequent phase will continue to explore new environmentally sustainable technologies and systems. Each phase will be required to direct the first 50mm of rainfall away from the City's conventional storm sewer in order to comply with the City Innovative Storm Water Management Plan.

The grade of the site permits storm runoff from Phase 2 and Phase 3 of the site to be directed through the storm sewer network to the northeast quadrant of the site and the detention pond. Overflow from the detention pond will discharge to the existing City storm sewer located to the east of Brunette Avenue. Runoff from Phase 1 of the site will be directed towards the existing storm system on Braid Street. In the absence of a community type detention facility



144.1 Conceptual storm servicing plan

for the parcels that are part of Phase 1 storm detention requirements will be incorporated into the onsite works in order to address the City Innovative Storm Water Management requirements. All runoff from the site is ultimately discharged to the Brunette River.

All parcels are to be serviced by, minimum one storm sewer service connection

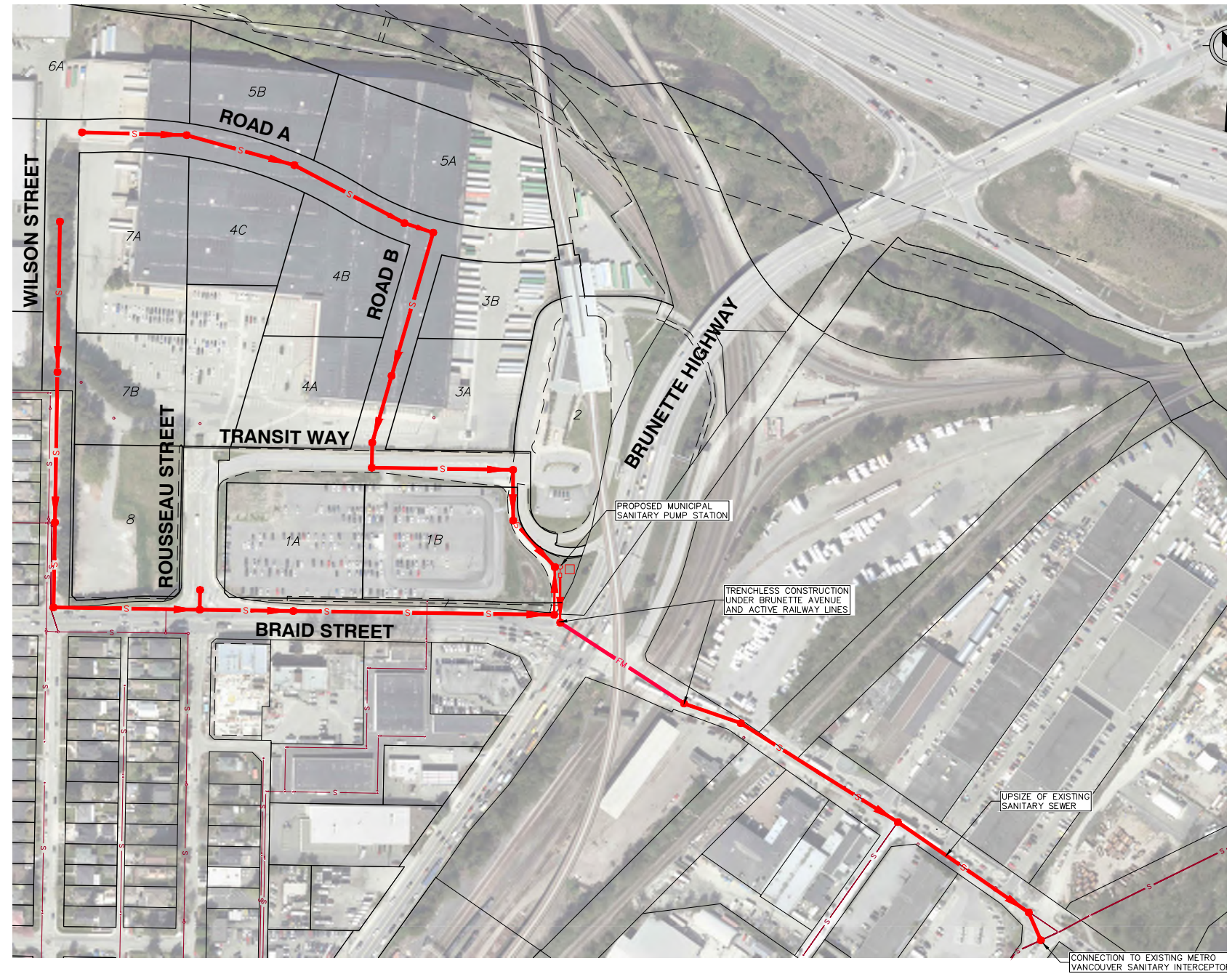
SERVICING

SANITARY SEWER

Sanitary servicing is expected to be carried out in accordance with the figure, which depicts the ultimate servicing concept for the Master Plan area.

New sanitary sewer is proposed for all the new roadways within the development and along Braid Street. All site flows will be directed towards a pump station located at the southeast property corner. Flows from the pumps station will be discharged to a new 300mmØ sanitary sewer connecting across Brunette Avenue and east along Braid Street. This will replace a portion of existing 200mmØ sanitary sewer along Braid Street up to the discharge point to the existing Metro Vancouver interceptor sanitary sewer main located at the intersection of Braid Street and Canfor Avenue.

All parcels are to be serviced by, minimum one sanitary sewer service connection.



145.1 Conceptual sanitary servicing plan

SERVICING

WATER SERVICING

Water servicing is expected to be carried out in accordance with the figure, which depicts the ultimate servicing concept for the Master Plan area.

A 250mmø water is to be installed in Transit Way, Road A, Road B and Wilson Street. This new loop will tie into the existing City water network in two locations: the existing 250mmø water main at the north end of Rousseau Street and the 150mmø water main at the north end of Wilson Street. A second loop will be created through a connection between the east end of Transit Way and the existing 250mmø water main on Braid Street. The existing 150mmø on Wilson Street will need to be upgraded to a 200mmø water main. These upgrades are required to achieve sufficient fire flow to the site.

This new looped system will provide domestic and fire protection to all the development parcels. It is intended that all parcels will have their own individual domestic water service connection. It is assumed that each service connection will have a water meter chamber located onsite. Where appropriate, onsite fire protection, such as fire hydrants and sprinklers, will be serviced by a single fire protection loop common to all towers, parkades and commercial areas located within the buildings footprint on the parcel. The onsite fire protection loop is to be connected to the City water main at a minimum of one location.



146.1 Conceptual water servicing plan

SERVICING

SHALLOW UTILITY INFRASTRUCTURE

Expansion of the existing shallow underground utility infrastructure will occur as part of the Sapperton Green development. This will include expansion of the City owned electrical servicing, fibre optic networks and District Energy Service (DES) as well as the private telephone, cable and gas networks. BC Hydro does not manage infrastructure directly servicing the existing site and at this time upgrades to BC Hydro infrastructure are not expected.

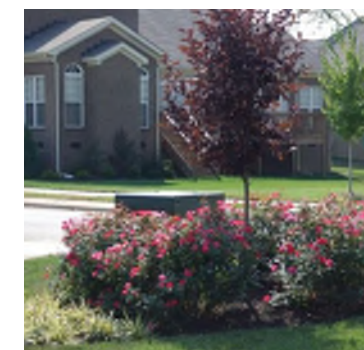
The City underground electrical utility infrastructure will be expanded along the new roadways as part of the new infrastructure. New conduits will be installed in all new roadways for this utility service.

The City owned fibre optic network located on Columbia Street will be extended east along Braid Street and into the site. Infrastructure will be installed to facilitate this expansion within all the new roadways as part of the development.

The City District Energy System will be expanded along the new roadways of the project to permit distribution of energy from the City operated supply facility to the individual parcels. The date of operation for this system will be dependent on way infrastructure is extended to the site boundary by the City.

TELUS and cable infrastructure will be expanded along the new roadways with service provided to each of the parcels for the development. This infrastructure is expected to extend of the existing infrastructure on Rousseau Street.

Fortis gas service will be extended along the new roadways with service provided to each of the parcels. This infrastructure is expected to extend of the existing infrastructure on Rousseau Street.



147.1 Examples of screened and decorative utility service kiosks

ACKNOWLEDGMENT





ABOUT QUADREAL



Owner

Headquartered in Vancouver, BC. QuadReal Property Group is a global real estate investment, operating and development company. QuadReal manages the real estate and mortgage programs of BCI (BC Investment Management Corporation).

In Canada, we are an established real estate operator and developer. Globally, we invest strategically with long-term partners offering local experience in dynamic Global Cities such as New York, London and Hong Kong. Our office, retail, residential and industrial portfolio spans 23 Global Cities across 17 countries. We will be measured by our ability to deliver prudent growth and strong real estate investment returns. Our success is a team effort, supported by a creative, entrepreneurial work environment that attracts and rewards exceptional talent.

We focus on peerless service to tenants and residents, working with the best in-class partners, and building trusting relationships based on a foundation of respect and integrity. Above all we understand that our properties are more than just bricks and mortar, they are places where people live, shop and play. We are proud to create environments that enhance the lives of the people and communities we serve, now and for generations to come.

QuadReal offers breadth and depth of management experience and engagement to tenants, residents and their visitors. In Canada, the portfolio includes 40 million square feet of real estate and 12,000 residential rental suites.



Sapperton Green
New Westminster, BC.



The Post
Vancouver, BC.



First + Main
Vancouver, BC.



Broadway Tech
Vancouver, BC.

PROJECT TEAM



Architects Designers Planners

Design that creates value, service that builds trust. MCM is an established full-service architectural practice based in Vancouver, Canada.

As one of Vancouver's most comprehensive architectural firms, MCM has been shaping the built environment for over 50 years, with over 400 projects, employing a complement of some 100+ architects, technicians and designers. Included in the composition of MCM is MCMI, its affiliated interior design firm, to provide value-added service to all our clients.

We couple our clients' visions and resources with creativity, quality management, construction expertise and exceptional service. MCM's portfolio includes, but is not limited to commercial, residential and master planning projects. Our strength is an experience. Our promise is reliability.



Civil Consultant

Aplin Martin is an innovative, multidisciplinary firm of civil engineers, urban planners, architects, and land surveyors delivering cost-effective design solutions for land development and public works projects based in Vancouver, Canada.

Making Sustainable Communities a Reality is not just our Value Statement to our customers, it is also our Value Statement for our employees, who along with their families, live in the same communities that we help to shape and develop. From creating a Master Community Plan to designing the infrastructures that supports our vibrant communities, sustainable development is at the core to what we do to ensure that the work we design today meets the needs of the present community without compromising the ability of future generations.



Landscape Architects

PWL is a full-service landscape, architecture and urban planning firm with a 40 year history of creating award winning projects, based in Vancouver, Canada.

Since 1976 PWL has approached the challenges with innovation and a driven search for meaningful solutions. Solutions that reflect the firm's vision of place making, engaging people and being inspired by nature.

PWL's collaborative approach has led to the construction of some of North America's most celebrated and iconic landscapes, including numerous projects that have won awards for design excellence and social sustainability. PWL takes pride in its keystone contribution to the variety of public and private urban and natural places that Vancouver's residents and visitors today enjoy.



Transportation Consultant

Bunt & Associates Engineering Ltd. (Bunt) is one of the largest specialist transportation planning and engineering consulting companies in Western Canada.

We place high value on outstanding service, building long-term client relationships, and fostering a family-friendly and supportive culture within all of our offices located in Calgary, Edmonton, Vancouver, and Victoria.

We are proud of our involvement in all types of transportation projects ranging from high profile, dense, and complex urban sites and corridors to individual sites and intersections.

Reputation is everything. Bunt has been the transportation consultant of choice for hundreds of repeat public and private sector clients for more than 25 years.



Urban Planning + Development

Brook Pooni Associates is a leading urban and land development consultancy based in Vancouver, Canada.

With more than 20 years of public and private sector experience, involving over 600 projects, our expertise spans across Metro Vancouver, Western Canada and the United States. Since our inception in 1988, we have helped shape the region through our contribution to land development projects. Our clients have come to rely on our insight into local development realities, political context and community interests. In our work we seek to balance client objectives with municipal requirements.

We are able to craft effective solutions for our clients and are pioneering new and better ways to build communities through communicating and balancing the needs and views of the public and the municipality with the realities and trends of the development industry.

MCM

Musson
Cattell
Mackey
Partnership



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Acknowledgment



Musson Cattell Mackey Partnership
Architects Designers Planners

<http://mcmparchitects.com>