



SECTION A - PUBLIC REALM PLAN

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INTRODUCTION

1.1 Strategies for the Public Realm

The East Fraserlands public realm furthers the vision for a mixed use riverfront community where streets, pedestrian and cycling routes and parks and open spaces all contribute to a richly diverse and highly-walkable experience. The design approach to the public realm for Area 2 of the development is outlined below.

1.2 Establishing the Area 2 framework

- Area 2 extends north-south from Marine Way/SE Marine Drive to the Fraser River and east-west from the Area 1 boundary to the existing West Fraserlands development; this phase is comprised of the west neighbourhood and the southwest portion of the central neighbourhood and three parcels outside the ODP boundary
- Primarily residential, Area 2 is distinguished by a variety of residential blocks organized around a framework of diverse roads and parks
- Three precincts, each with its own character, are built around the public space network

1.3 General Aims of Public Realm Plan

Connectivity: permeability and a fine-grained network

- Primary (major streets), secondary (mews) and tertiary (pedestrian SRW) routes provide a high degree of permeability for vehicles and pedestrians alike – blocks are generally less than a conventional 100m city block and some offer at-grade access through inner block open spaces
- This comprehensive network is intended to provide multiple options for pedestrian trips to encourage walking and and cycling and lend vitality to all parts of the neighbourhood

Legibility: clarity through primary formal and spatial characteristics

- Key public spaces proportioned to express their specific nature, defined by streetwalls and/or strong edge treatments and given additional legibility through various architectural forms including small towers to mark key locations, buildings articulated to draw the eye to a specific place and/or to express key buildings

Diversity: a network of places offering a rich experience from urban to naturalistic

- Focus on different character of public spaces achieved through scale and massing of built form, use of materials, lighting and various other components
- Each public space to have its own distinctive character drawing from its role and location in the public realm network

Sustainability: showcasing the ground-based systems

- Rainwater management system is given a strong presence in the public realm; rain gardens, bioswales and numerous water features celebrate the movement and treatment of water as it moves through the development to the river
- Songbird habitat carefully orchestrated to entice a broad range of birds expressed in the field, shrub and tree plantings within parks and streetscapes
- Ecological initiatives focused on the Kinross corridor and foreshore from restoration and protection of the natural river's edge to introduction of new wetlands – addressing the requirements of the Fraser River Estuary Management Program



2.0

PUBLIC REALM CONCEPT

2.1 Sitewide Design Framework

The public realm plan for East Fraserlands delivers a rich, vibrant and cohesive network of streets and parks with an emphasis on varied streetscapes and strategically placed parks. Many aspects of the public realm plan were established in Area 1, such as the Kent Avenue corridor, the Foreshore Park and the general approach to roads and rainwater management. It also introduces several new components specific to this neighbourhood. The plan for Area 2 is comprised of:

- a variety of streetscapes including pedestrian-oriented mews with limited vehicle access
- Kerr Street Landing provides a focus for local community and commercial uses
- Kinross Park ecological corridor with integrated rainwater management features
- a neighbourhood park corridor linking S.E. Marine Drive/Marine Way to the river
- a riverfront linear park with protected red-coded habitat area and wetlands

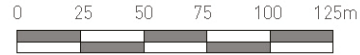
The plans, sections and other drawings contained in the Public Realm Plan are conceptual in nature. All components of the plan will be refined through a more detailed design process. The programming and design of parks will be conducted through public consultation in conjunction with the Vancouver Park Board.

Names suggested for streets, parks and other components of the plan are for reference only.





Overall Public Realm Concept Plan
1:3000



2.2 PUBLIC REALM CONCEPT CHARACTER PRECINCTS

2.2.1 Northwest Precinct

Role: A hillside community with a central townhouse neighbourhood framed by mid-rise forms along its east, west and north perimeters; buildings and landscape are terraced to emphasize the sloping topography and provide a broad range of river view opportunities from both residential units and parks; the highly permeable plan includes multiple north-south pedestrian routes, many with uninterrupted views to the river.

Characteristics:

- Marine Way / S.E. Marine Drive edge defined by a 4 to 6 storey streetwall, broken to provide views through to the south
- townhouse forms on both sides of road E create a comfortable scale for this neighbourhood street; on the north side, the townhouse frontage also serves to mitigate the scale of the 4 to 6 storey buildings behind them and to screen parking structures
- Neighbourhood Park North is the prime public open space within the precinct, with three terraces offering views to the river
- a small tower at the SE corner marks the easterly entry to the precinct and the north extent of Kinross Park

Public Spaces:

Neighbourhood Park North:

- primary neighbourhood open space with two accessible terraces providing usable outdoor spaces. A third central terrace is accessible from adjoining residential parcels
- views to southerly precincts and the river enhance this park
- visual and physical connection to adjoining sites

Kinross Park North:

- part of major linear park corridor running from Marine Way to the river
- provides informal open space for casual recreation
- accommodates a rainwater feature
- includes stream side riparian plantings and opportunities for fruit trees

Pedestrian Mews:

- provides an important visual connection between S.E. Marine Drive and the river.
- provides a stepped connection between S.E. Marine Drive, Road E and Neighbourhood Park North.
- can accommodate several seating platforms with open views to the neighbourhood and river beyond
- includes opportunities for small scale fruit trees and edible landscaping





Northwest Precinct Concept Plan

1:1500



2.2.2 Southwest Precinct

Role: A relaxed riverfront neighbourhood with its hub at the foot of Kerr St where a small local-serving commercial building and new public open space engage the existing pier; eight blocks frame a gently curving east-west street – envisioned as a richly landscaped pedestrian-friendly environment; terraced midrise blocks define a series of generous garden spaces open to the foreshore park; openings along the road H frontage allow views to the river from buildings on the north side of the road;

Characteristics:

- terraced building forms of three easterly riverfront parcels define garden courts opening to the foreshore; buildings step from a maximum of 6 storeys to 3 storeys at the river; a relaxed scale complementing this naturalistic part of the foreshore
- higher forms of 6-9 storeys generally flank key parks and locate density where it will benefit from views and green overlooks
- while townhouse expression is intended along road H, mews and neighbourhood park, a less formal expression is anticipated at foreshore frontages, however, raised private terraces with low walls and planting are intended to provide a defined edge
- lobbies at riverfront parcels are generally located adjacent to the garden courts, taking advantage of sweeping water views
- streetwall on road H is 4-6 storeys with mid-block openings to allow views from the street and daylight to the street;

Public Spaces:

Kerr Street Landing

- a neighbourhood open space at the base of Kerr Street providing a focus for local community and commercial uses
- broad, tree lined sidewalk areas with seating
- pedestrian and bike path connections to Foreshore Park
- surface parking serving local retailers and park users
- serves as forecourt to existing timber boardwalk and pier

Neighbourhood Park South:

- a linear park that broadens out towards the river providing a variety of spaces for play and casual recreation
- provides opportunities for small scale fruit trees, edible landscaping and urban agriculture

Kinross Park South:

- completes EFL's western 'eco-corridor,' a key element of the ODP
- rainwater feature connecting to perched wetland provides for rainwater biofiltration, aquatic and riparian habitats and a naturalized park setting
- provides opportunities for play, casual recreation and urban agricultural uses

Foreshore Park:

- Includes gently curving bike and pedestrian paths and various locations for viewing and sitting
- existing red-coded habitat provides a rich wildlife amenity at the river's edge
- naturalistic park character along the waterfront

Pedestrian Mews:

- continues the visual open space corridor formed by the two Neighbourhood Parks and the northern Pedestrian Mews
- provides an open space connection between Road H and the CPR Railway, with the opportunity for a future link to the North West Precinct, should the proposed rail crossing be granted
- provides a smaller scale open space with connections to adjoining residential parcels and opportunities for seating and casual recreation
- provides an open space node along Road H
- opportunities for small scale fruit trees and edible landscaping





Southwest Precinct Concept Plan
1:1500

2.2.3 Southeast Precinct

Role: Bounded almost entirely by open space, Parcels 23, 24, 25 and 28 give this southwest edge of the central neighbourhood a strong presence; the highly visible school block serves as a prominent civic focus both for the precinct and for the greater EFL development

Characteristics:

- townhouse, midrise and tower forms combine to create a richly-layered foreshore frontage; their respective towers step down from east to west, completing the transition from the central waterfront
- midrise streetwalls give strong definition to Mount Baker Way and contain the south side of the Playfield Park; towers add a rhythmic punctuation to this frontage, each one marking the edge of an open space
- townhouse expression at the base of the midrise becomes 3 storey form flanking the mews and creating a comfortable building scale both here and at the riverfront
- similar to riverfront parcels in the SWV precinct, these three waterfront parcels frame semi-private open spaces that will enhance the foreshore park with a greater sense of openness
- The 3 storey school and child care facility front onto Road A, providing a robust streetwall while the more informal side opens to the outdoor play yard and the larger playing field beyond

Public Spaces:

Playfield Park:

- regulation field offering organized play to EFL residents and the school; bounded by school play yard on the east edge and an informal park area on the west

Foreshore Park:

- provides a newly formed riverside frontage with many ecological features such as the sancturay island, tidal marshes and riparian vegetation
- Includes gently curving bike and pedestrian paths and various locations for viewing and sitting
- naturalistic park character along the waterfront





Southeast Precinct Concept Plan
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3.0

STREETSCAPES MASTER PLAN

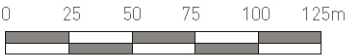
The Public Realm for East Fraserlands Area 2 includes 9 public streetscapes and several shared mews. Street tree plantings, varied ground plane treatments, lighting, street hardware and furnishings define all streets. An important signature component of several of the streets is the inclusion of rain gardens and bio-swales, which are inherent to the rainwater management strategy for the community.

Legend

- Marine Way / SE Marine Drive
- Kent Avenue North
- Kent Avenue South
- Kerr Street
- Kinross Street
- Mount Baker Way
- Road E
- Road H
- Road A
- Shared Mews
- Pedestrian Mews



Streetscape Conceptual Masterplan
1:3000



3.1

MOVEMENT

Overview

East Fraserlands will be developed as a compact, vibrant and socially interactive community with everyday amenities within walking and cycling distance of the new and neighbouring communities. It will be developed around a fine-grained network of pedestrian and cycling connections that will permeate out to integrate with the surrounding neighbourhoods.

Transit connections to the Canada Line, SkyTrain and neighbouring communities are expected at an early stage of the development. In the future there could potentially be a rapid transit line on the Canadian Pacific rail corridor.

Area 2 will feature 4 vehicular connections to the external road network via existing City roads including Kerr Street, Kent Avenue North, Kent Avenue South, and Kinross Street. A new traffic signal will be installed at the intersection of Kinross Street and Marine Way.

At final build out, there will be a total of 4 signalized intersection connections to SE Marie Drive/Marine Way (including 3 new signalized intersections at High Street and at both ends of the planned Crescent Street), 3 road connections to Kerr Street, and 3 road connections to Boundary Road/SE Marine Drive.

Sustainability

East Fraserlands is adopting a comprehensive sustainable design strategy in its approach to streets and circulation. One of the key aspects of this strategy is to focus the design of streets on pedestrians and cyclists before consideration is given for vehicular movements. In adopting this approach, road and intersection geometry can be kept to the operational minimum and, in fact, would form part of the traffic calming strategy. Another key aspect is having adequate bus penetration within the new community so that everyone is within a 5-minute walk of bus stop. Parking is also an important component of the strategy and therefore opportunities for reducing it will be investigated in the context of transportation demand management measures.

3.1.1

ACCESS & CIRCULATION

Transportation Policy

The City of Vancouver’s City Plan 1995 set out the following transportation policies:

- “enhance the transportation system to provide a greater emphasis on transit, walking, and biking within and between neighbourhood centres and downtown; and make better use of the existing street system for moving people and goods.”
- manage land-use in the region to establish a more compact urban form and complete communities to minimize travel times.
- adjust transport service levels, including speed, convenience, frequency of service, and comfort. This can mean among other things allowing congestion to increase for single occupancy vehicles, in part to ensure Transportation Demand Management measures are more effective.”

The above policies are aimed at reducing the number and length of private automobile trips, and prioritizing the street environment so that it is focused on the movement of people and goods rather than vehicles. These policies are consistent with the design approach that has been adopted for the EFL masterplan.

Design Principles

East Fraserlands is planned as a complete community with a wide variety of residential, retail, cafés and service uses, together with a community centre, schools and parks. It will be structured on design principles that promote walking, cycling, and transit use ahead of the private automobile.

A wide range of shops, restaurants, cafés, health related facilities, services, education, community facilities, etc., are planned, and these will all be within a 10-minute walk for the new community, as well as from parts of the West Fraserlands and Champlain Heights neighbourhoods. These uses will be clustered in and around the neighbourhood centre so as to maximize the synergy that they will generate. In particular, it will reduce walking distances, minimize auto use, provide better integration with transit and maximize the opportunities for communal / shared parking areas. Area 2 is primarily residential but will include the elementary school, daycare and local neighbourhood retail. The residential will also be supportive of the amenities in Area 1. Access from Area 2 to the central neighbourhood is convenient, offering many routes, especially for walking and cycling. The planned west neighbourhood hub at Kerr St Landing will also benefit from easy pedestrian and bike connections for residents in EFL and those in adjacent West Fraserlands.

Urban form has played a pivotal role in the development of the transportation system for the EFL and the key features are summarized below:

- forming a permeable and fine-grained street and walkway network, providing pedestrians with choices of routes than other road users;
- creating an engaging environment for people to walk through having buildings fronting and overlooking sidewalks and walkways to provide the 'eyes on the street;
- keeping road widths to the operational minimum to reduce vehicular speeds, minimize crosswalk distances and maximize the public realm;
- developing a cycle-friendly environment, including ample bicycle parking site-wide, and through a network of streets, lanes, mews, all of which will have low traffic flows and vehicle speeds, and which will be interconnected with designated commuter, riverfront and parkland routes; and,
- integration of bus waiting facilities within the urban environment making them safe, accessible and convivial for passengers to use.

These design principles will facilitate higher levels of walking, cycling and transit use and lower levels of private automobile use, compared to a conventional low to medium-density development.

3.1.2

PEDESTRIANS

Pedestrian Network

Walking is expected to be the primary form of travel for short journeys and is a realistic form of travel for most people, especially over short distances, i.e. up to 2 kilometres or a 25-minute walk time.

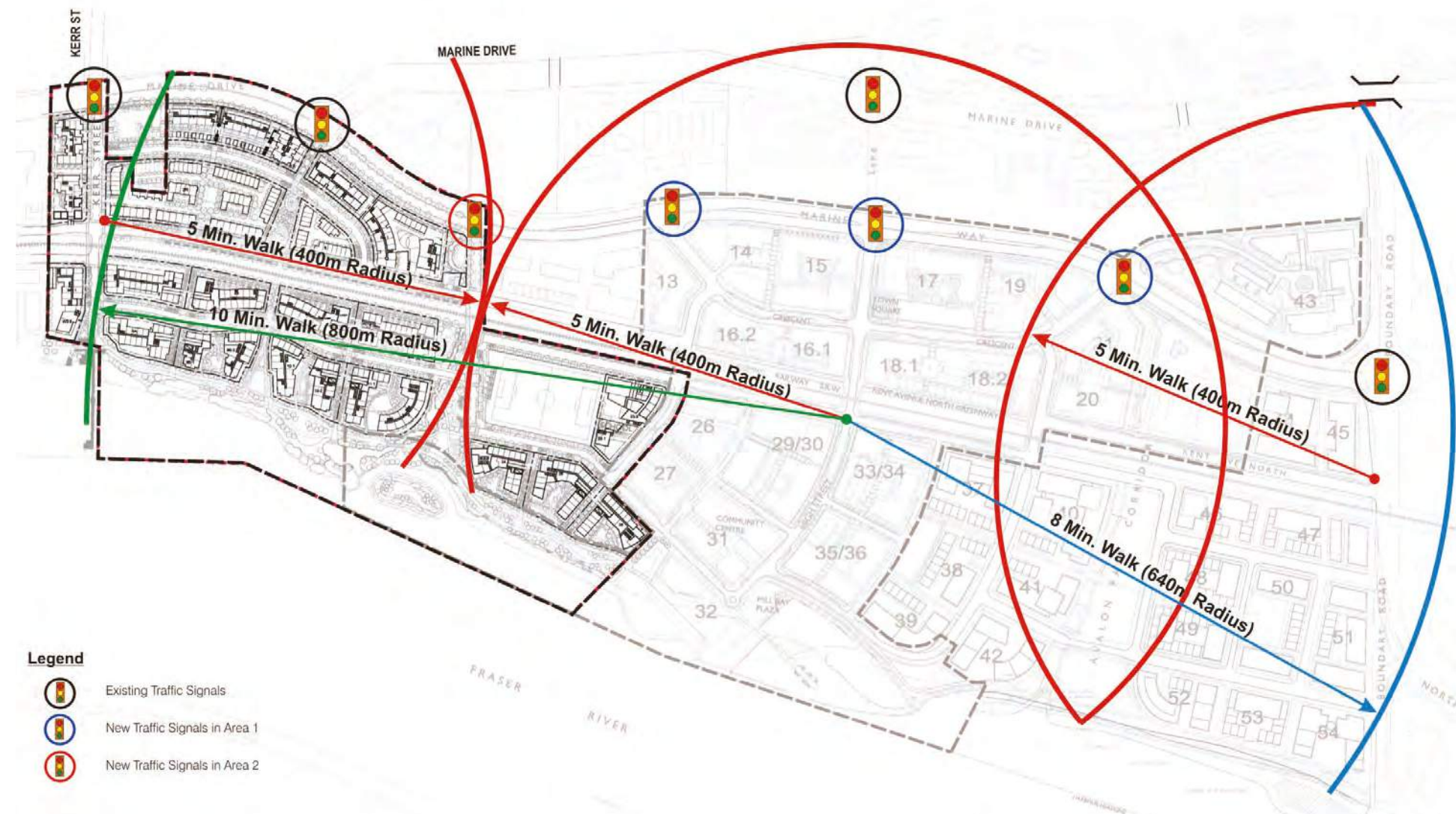
A key design principle is to create a permeable and fine-grained street and walkway network, providing pedestrians with more choice of routes than other road users. These routes connect to surrounding communities at West Fraserlands, Champlain Heights and Marine Way Estates Business Park.

Compactness of the EFL development is demonstrated on the Pedestrian Sheds Diagram, which shows that Kerr Street to High Street is a 10-minute walk, while High Street to Boundary Road is an 8-minute walk. This will ensure that everyday facilities are within a short walking distance, including the elementary school which will have 4,000 to 4,500 residential units within 600 metres or 7.5-minute walk at final build out, and the neighbourhood centre (including the community centre) will have a population of 14,000+ within 800 metres (10-minute walk), including parts of the West Fraserlands and Champlain Heights neighbourhoods.

Pedestrian Route Diagram highlights the street network and walkway system for Area 2. Pedestrians will have a selection of routes consisting of streets, mews, courtyards / lanes and walkways which break up the street blocks into a fine-grained network. Street crosswalk distances will be reduced through the use of curb extensions while the street design treatment will emphasize that this is a shared street environment through measures such as lower curb heights, and pavement materials.

Connections to the neighbouring communities are an important design consideration. A temporary riverfront walkway has already been provided and will be maintained throughout construction of the EFL site.

Area 1 identifies new traffic signals on Marine Way at Crescent and High Street, while Area 2 proposes a new Marine Way traffic signal at Kinross Street. This, along with the existing traffic signals at Kerr Street and SE Marine Drive will include crosswalk facilities that will offer safe and controlled links to the Champlain Heights neighbourhood and parkland areas to the north.



Pedestrian Route Shed Diagram

Walking Time



Pedestrian Route Diagram
NTS

3.1.3

CYCLING

Bicycle Network

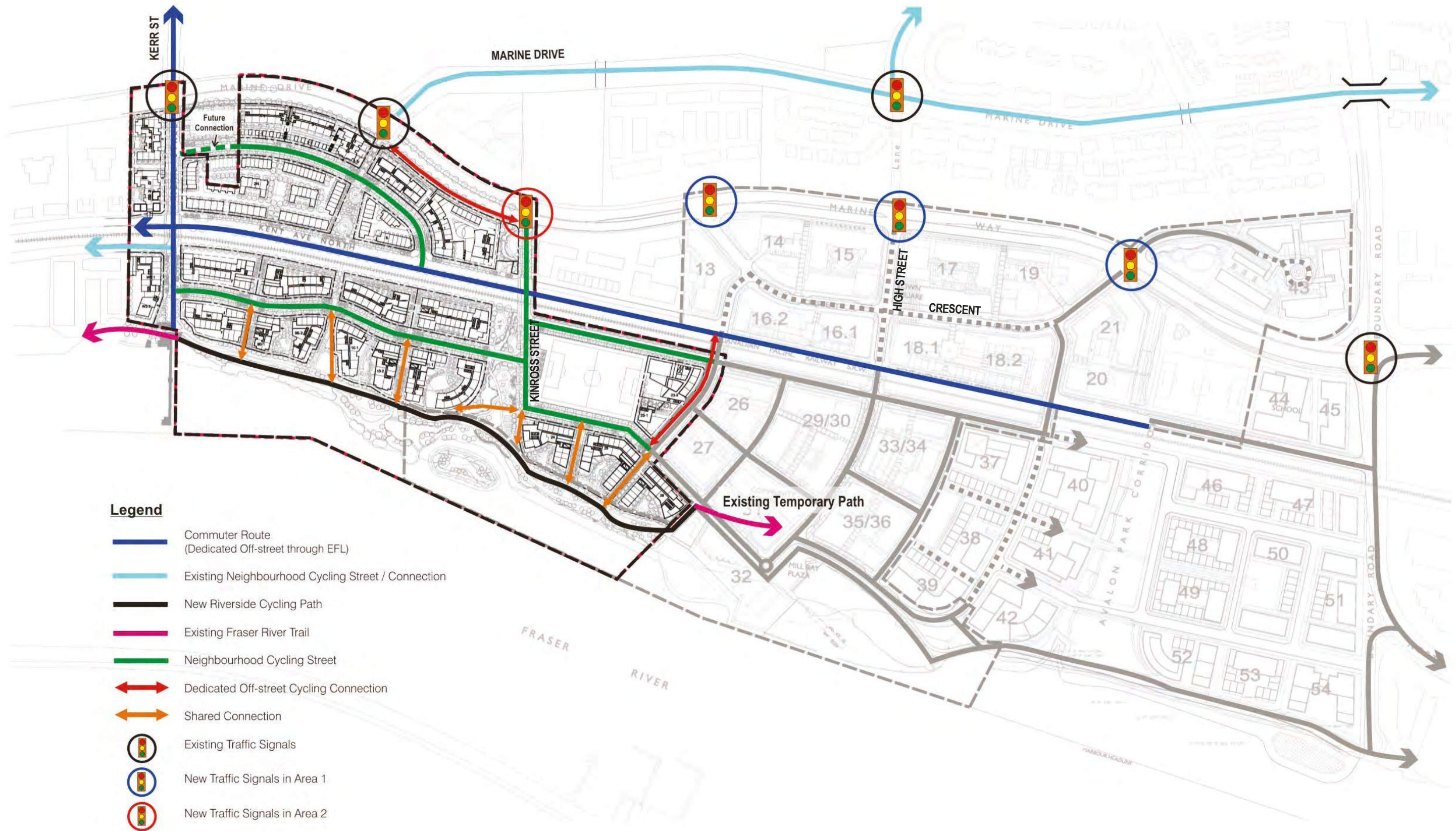
A cycle-friendly environment will be created in EFL through the development of a wide network of streets, lanes, mews', etc., all of which will have low traffic flows and vehicle speeds. These will be interconnected with two main dedicated / marked bike routes, which run in an east-west direction, and with two parkland routes, which run in a north-south direction in the western and eastern neighbourhoods.

At EFL's final build out, it is estimated that 12,000+ people will be within reasonable cycling distance of the neighbourhood centre, including the community centre and schools. In addition, the SkyTrain at Joyce Station and the Canada Line station at SW Marine Drive / Cambie Street will both be within a 20-minute cycle from EFL and these transit stations will be directly accessible via existing bike routes.

The bicycle network is highlighted on the Cycling Route Diagram, and this is shown together with the possible external connections to Champlain Heights. The two existing east-west routes will be upgraded.

Kent Avenue North is a commuter route which runs east-west through the centre of the site.

Cyclists can currently use the riverside route, which provides a comfortable and traffic-free connection for recreational activities, in addition to benefiting less experienced cyclists. It connects West Fraserlands and Marine Way Estates Business Park (via North Fraser Way) with Area 2 of the EFL development and will be improved through build-out.



Cycling Route Diagram
NTS

3.1.4

TRANSIT

East Fraserlands could have a population of 12,000+; it could employ around 2,000 to 3,000 people in the neighbourhood centre / offices, while another 10,000+ people per day could potentially be visitors. These figures suggest that EFL could support at least 3 bus routes with service frequencies at 15 minutes.

There are two existing transit routes that run close to the EFL site: route #100 runs on SE Marine Drive along the northern edge of the site, while route #116 runs on Boundary Road along the eastern edge. In addition, route #26 serves the Champlain Heights neighbourhood with the southern most part of the route at the Champlain Crescent / Matheson Crescent intersection, while route #29 operates on the Elliott Street corridor and currently terminates just north of SE Marine Drive. TransLink will ultimately determine how best EFL is serviced in consultation with the City.

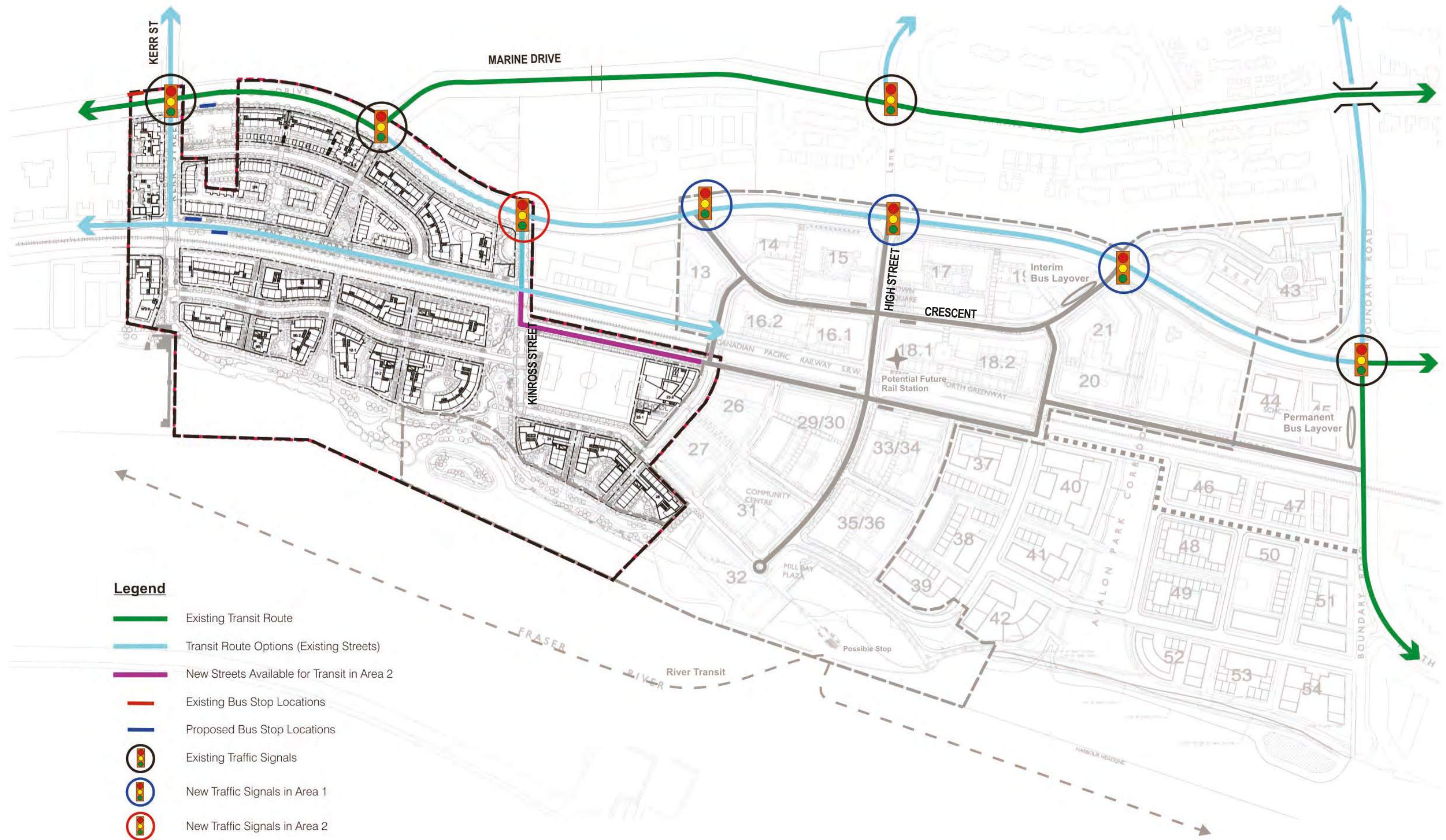
Connections to the Champlain Heights and West Fraserlands neighbourhood are important for EFL as well as those to the Canada Line at SW Marine Drive / Cambie Street (16-minutes by bus) and to the SkyTrain at either Joyce Station, Metrotown, 29th Avenue or 22nd Avenue (15-minutes by bus at the closest point).

The streets planned to accommodate bus routes are shown on the Transit Route Diagram. These routes will ensure that all of the EFL will be within a 5-minute walk of a transit stop (see Pedestrian Sheds Diagram for an indication of the 5-minute walk sheds). Kent Avenue North will be designed to accommodate bus routes.

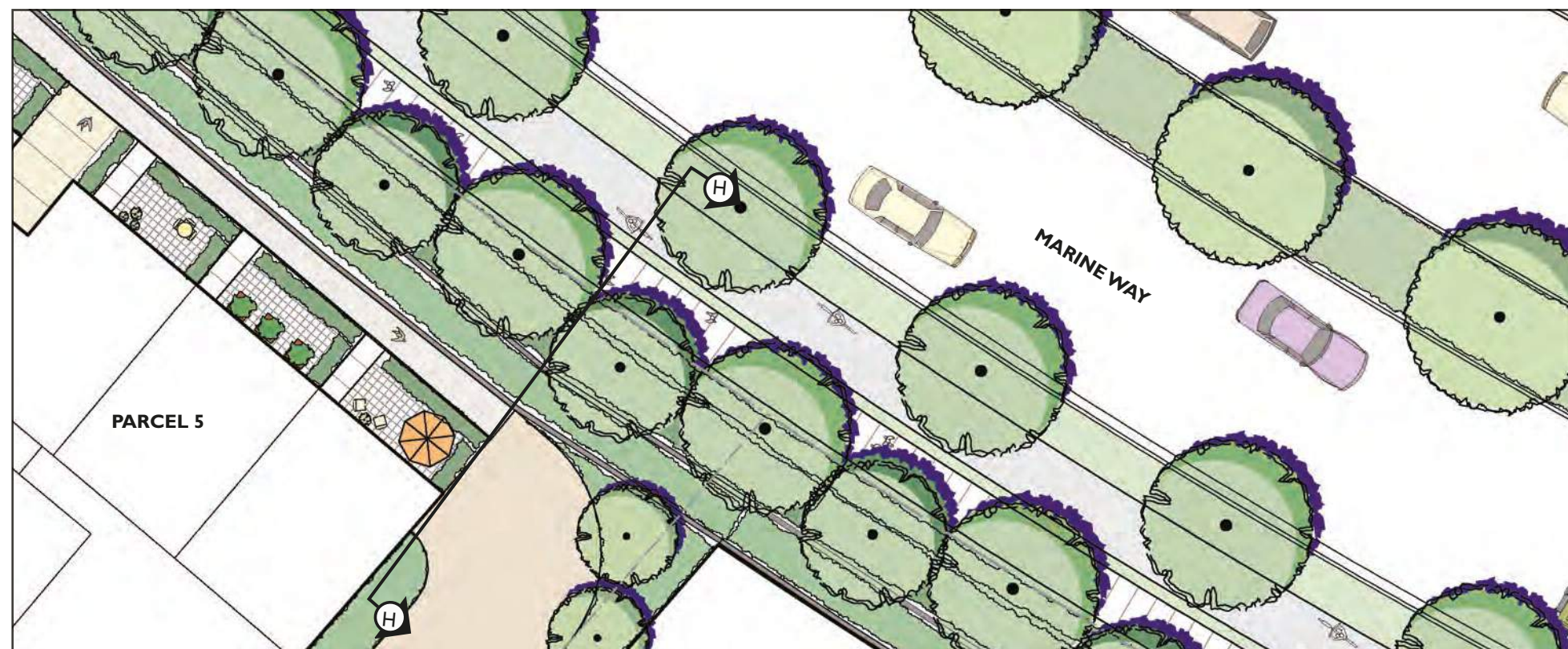
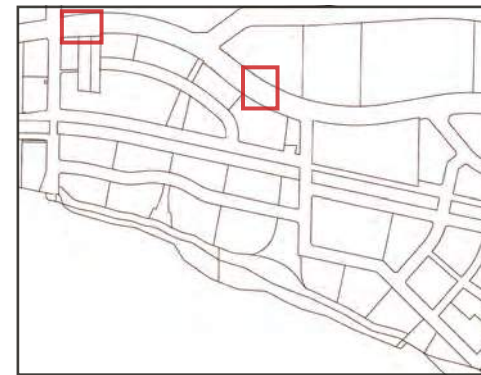
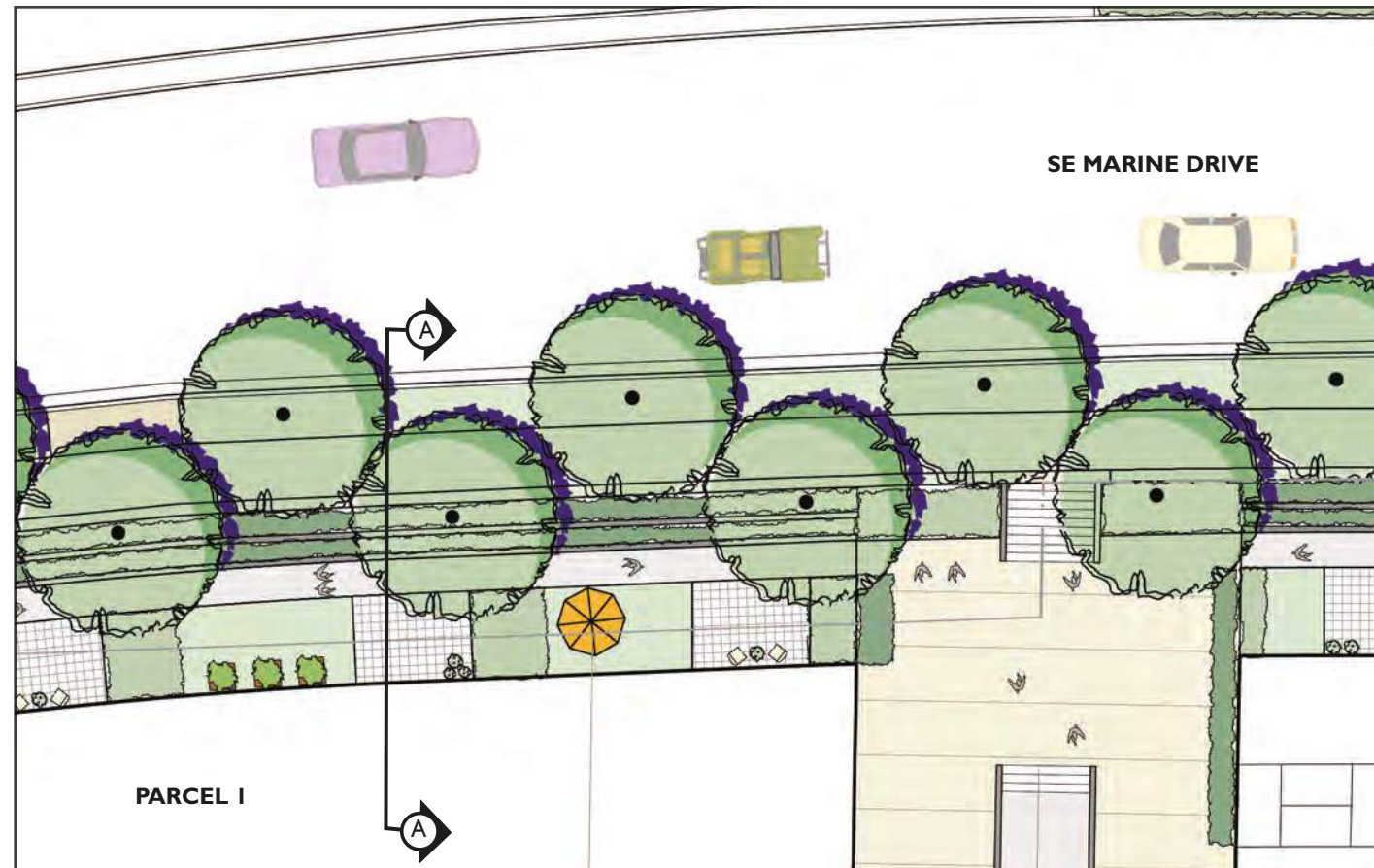
Area 1 identified bus stops close to the Crescent/High Street intersection, adjacent to the town square. In Area 2, two existing locations are retained on SE Marine Drive and three new locations are proposed including one on the south side of SE Marine Drive (east of Kerr Street) and one on each side of Kent Avenue North (just east of Kerr Street). Design of bus stops will require TransLink input.

In the future, the Canadian Pacific rail corridor could become a transit route, possibly connecting the EFL to the Canada Line at SW Marine Drive / Cambie Street and to the SkyTrain in New Westminster. A location for a station facility has been identified on the north side of the rail corridor on High Street, while sufficient space will be provided in and around the High Street and Kent Avenue South streets.

A proposed dock near the waterfront plaza could accommodate a river taxi should service be established.



Transit Route Diagram
NTS



Marine Way Concept Plan

1:250



3.2

PROPOSED STREET CONCEPTS

3.2.1 SE Marine Drive /Marine Way

S.E Marine Drive and Marine Way provide the public frontage to the development. A new sidewalk and associated boulevards are proposed along the south edge of the street with two continuous rows of large scaled avenue trees. Layered shrub plantings are proposed adjoining residential units to provide a buffer to the street.

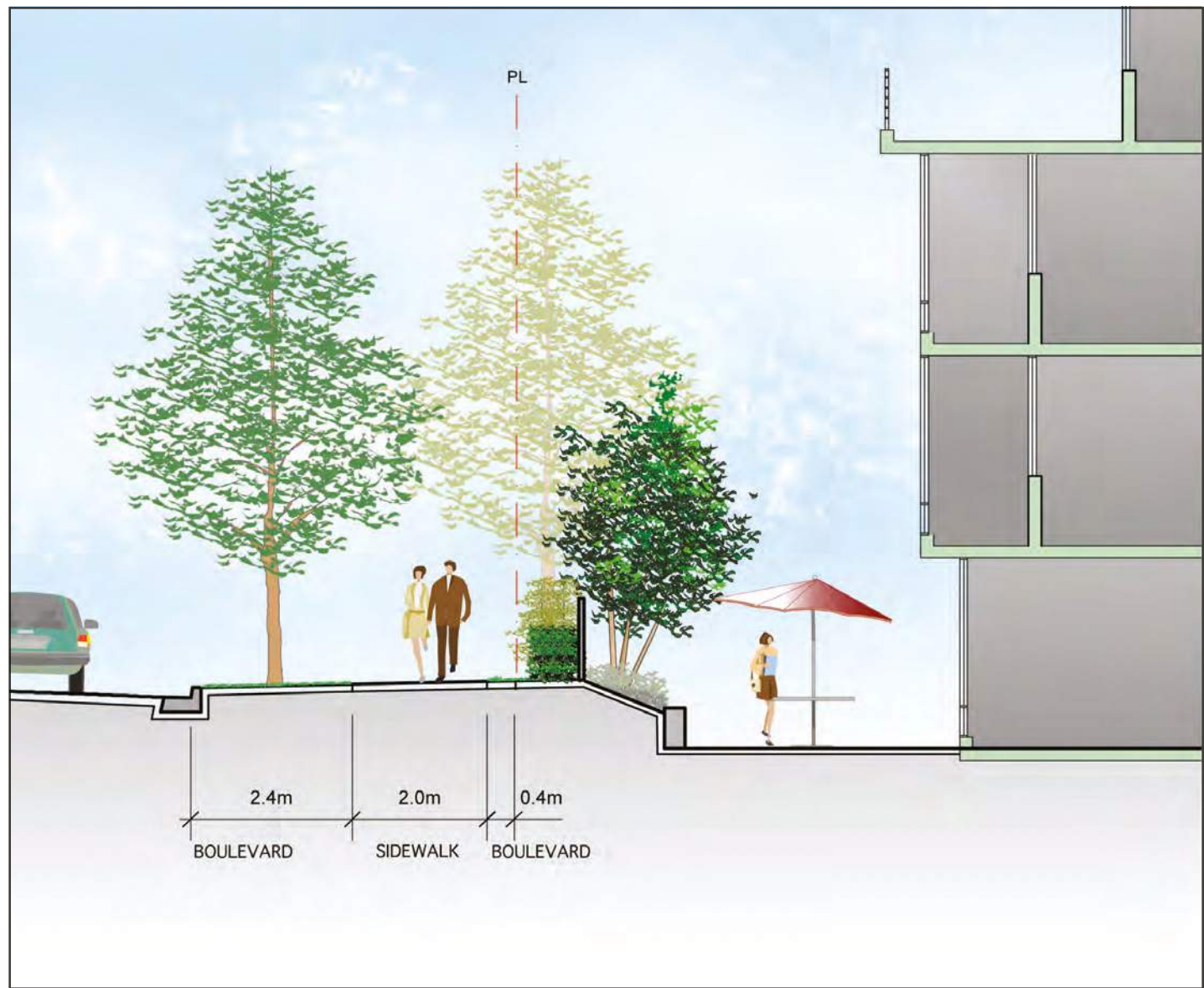
The corner of Kerr Street and S.E. Marine Drive marks the most westerly extent of the East Fraserlands development. At this corner a more formal streetscape expression is proposed to mark the entrance of the neighbourhood. Further to the east, the north end of the Neighbourhood Park North meets S.E. Marine Drive. The streetscape design will be modified adjacent the park entry to recognize this important point of entry for pedestrians.

Between the intersections with Marine Drive and Kinross Street, a separated bicycle / pedestrian path will be provided along the south side of the street to provide an accessible off road route into the neighbourhood.

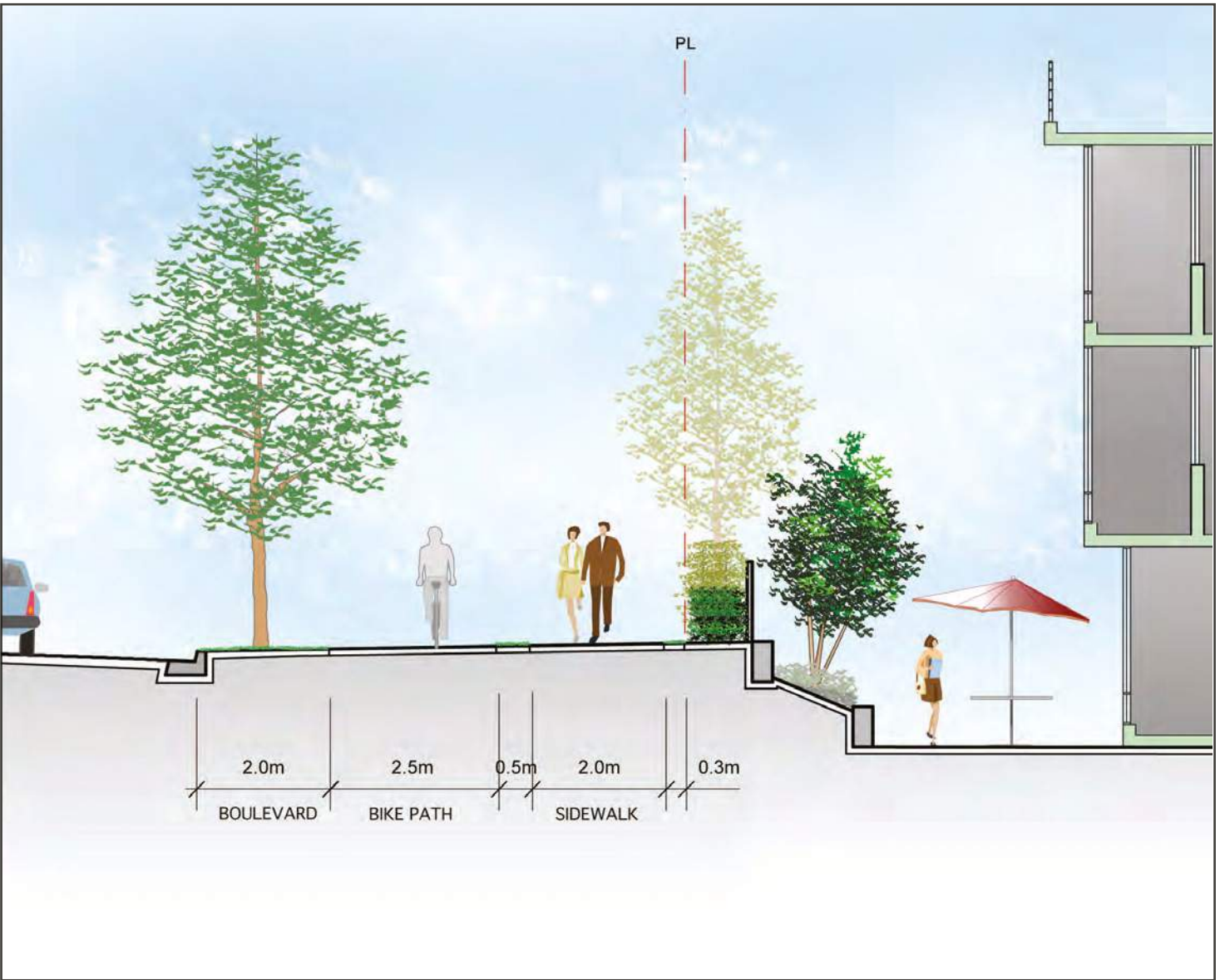
New central medians along S.E Marine Drive and Marine Way will be planted with low drought tolerant plantings and a single line of trees.

Proposed Street Composition:

- Streetscape treatment reinforces sense of entry at intersections with Kerr Street and Kinross Street
- New sidewalk on south side with access to residential buildings
- Separated off-street bicycle / pedestrian path between Marine Drive and Kinross Park
- Concrete sidewalks
- Large scaled street trees along south side
- Front and rear grass boulevards
- Layered buffer plantings for residential frontages
- Street section and materials are subject to review at detailed design



Section AA - SE Marine Drive



Section HH - Marine Way

1:100



Kerr Street Concept Plan (North Portion)

1:250



3.2.2

KERR STREET

This existing steeply inclined street provides a dramatic point of entry into Area 2 of East Fraserlands and connects S.E Marine Drive directly to the public pier at the waterfront. The street terminates at Kerr Street Landing as a plaza. This street provides a dramatic view corridor to the river and beyond.

The layout and detailing of Kerr Street varies from north to south.

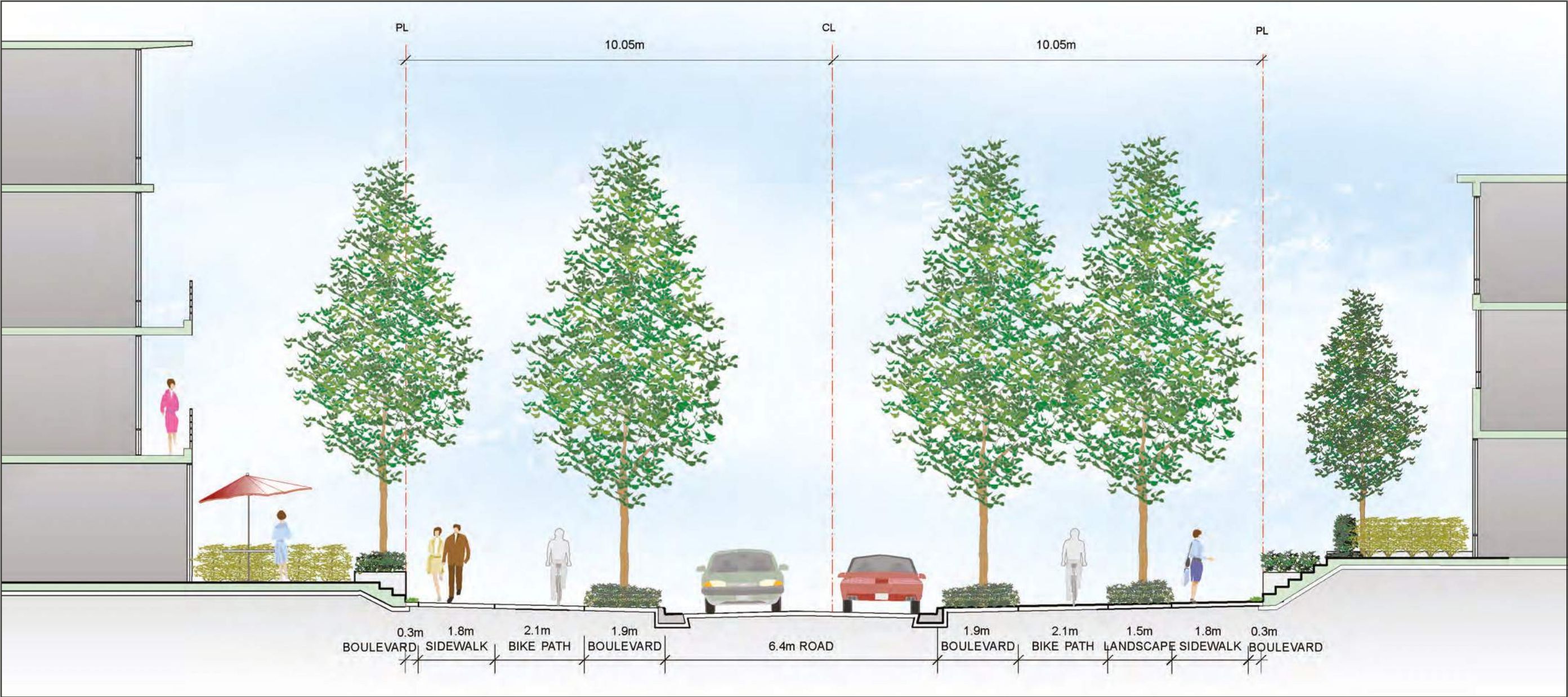
Kerr Street North

Extending from S.E. Marine Drive to Kent Avenue North

Proposed Street Composition:

- Existing 20.1m Road Allowance
- Two drive-lanes with parking on one side
- Sidewalks on both sides
- Bikepaths on both sides
- Asphalt road surface
- Concrete crosswalks
- Streetscape treatment reinforces sense of entry at intersection with S.E. Marine Drive
- Bump-outs with rain gardens at some intersections and crosswalks





Section GG - Kerr Street (North Portion)
1:100





Kerr Street Concept Plan (South Portion)

1:250



Kerr Street South

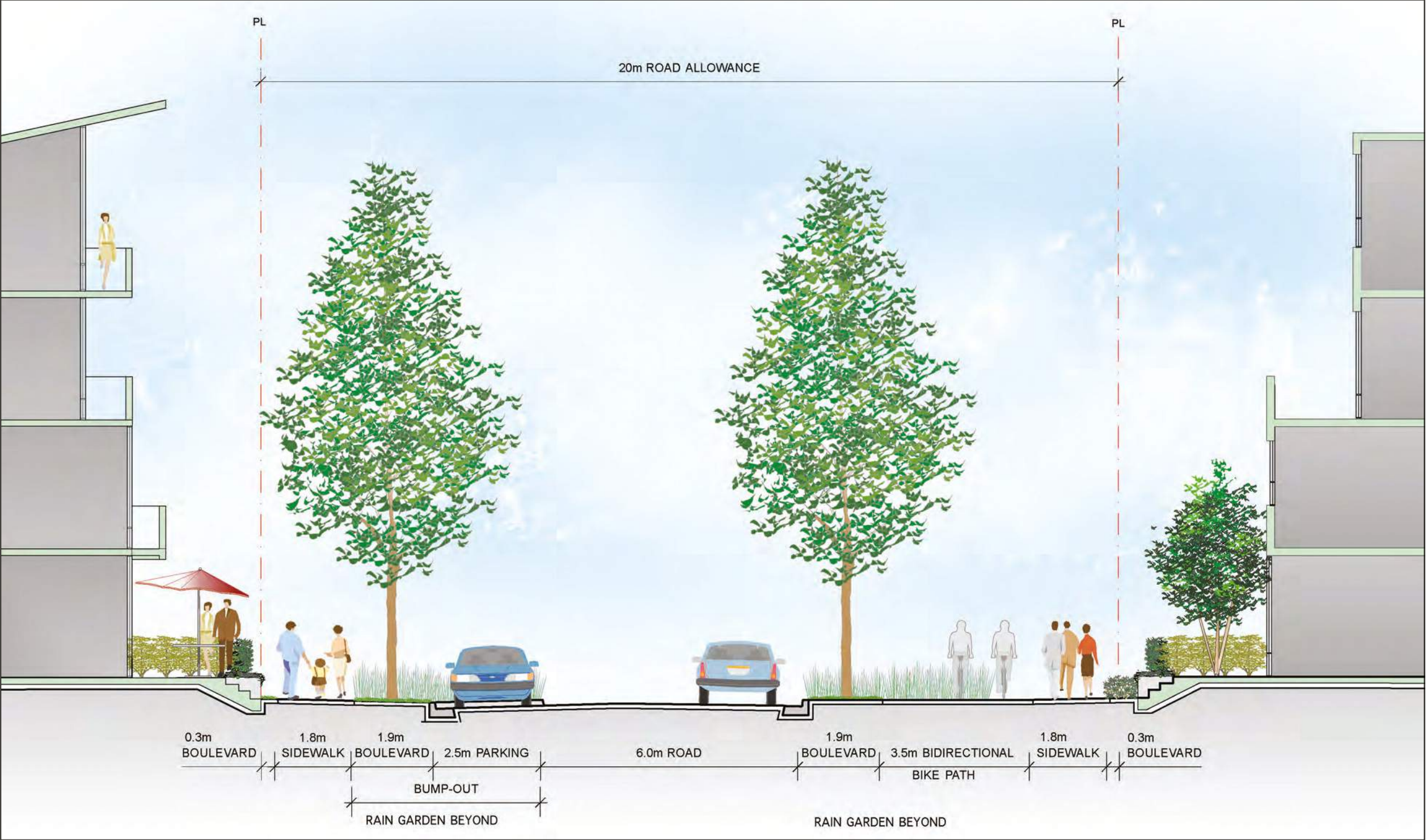
Extending from CPR Railway to Road "H"

- 20.0m Road Allowance
- Two drive-lanes with parking on both sides
- Sidewalks on both sides
- Bikepath on one side
- Paver road surface
- Concrete crosswalks
- Bump-outs with rain gardens

C.P. Rail Crossing:

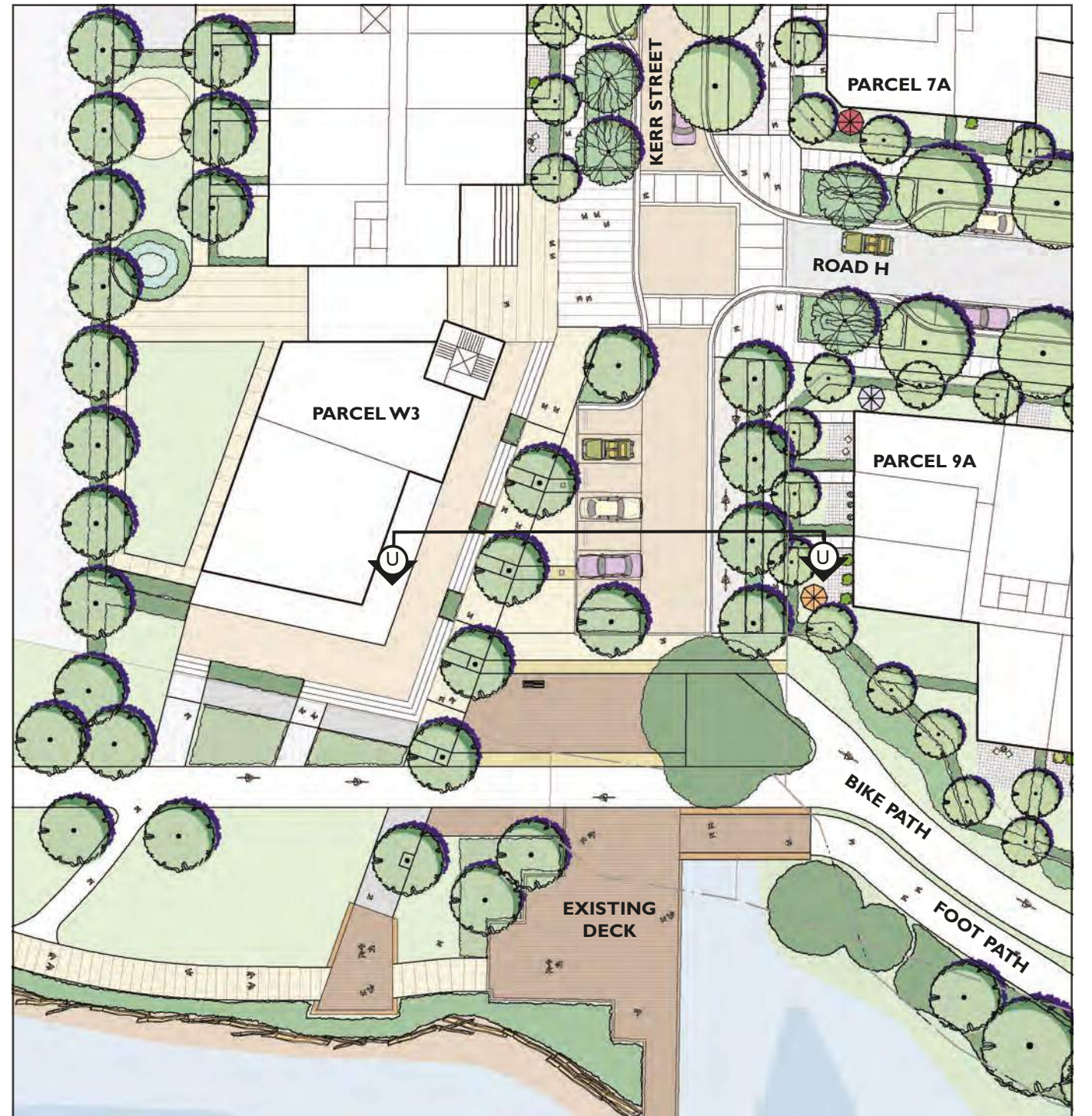
The treatment of Kerr Street at its crossing with the rail-line is intended to reinforce the connection between the two portions of the development. It is proposed that the treatment of the road and sidewalk surfaces be continued into the rail right-of-way and extend as close as is permitted to the line of the tracks. Low shrub plantings are proposed within the right-of-way to better define the pedestrian route.





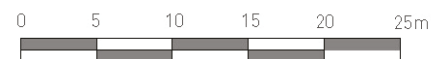
Section QQ - Kerr Street (South Portion)
1:100





South Kerr Concept Plan

1:500



3.2.3

KERR STREET LANDING

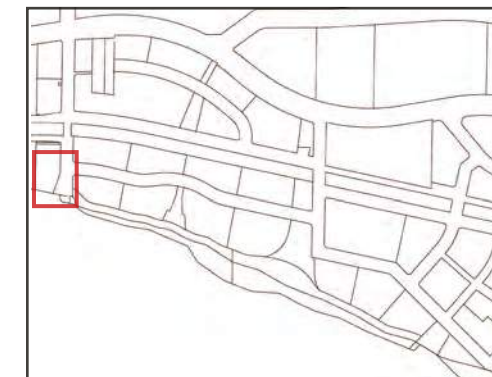
Kerr Street Landing provides the focal point for retail and community activities in Area 2 of East Fraserlands. The landing occupies the southern end of Kerr Street and is designed as a forecourt to the existing public pier.

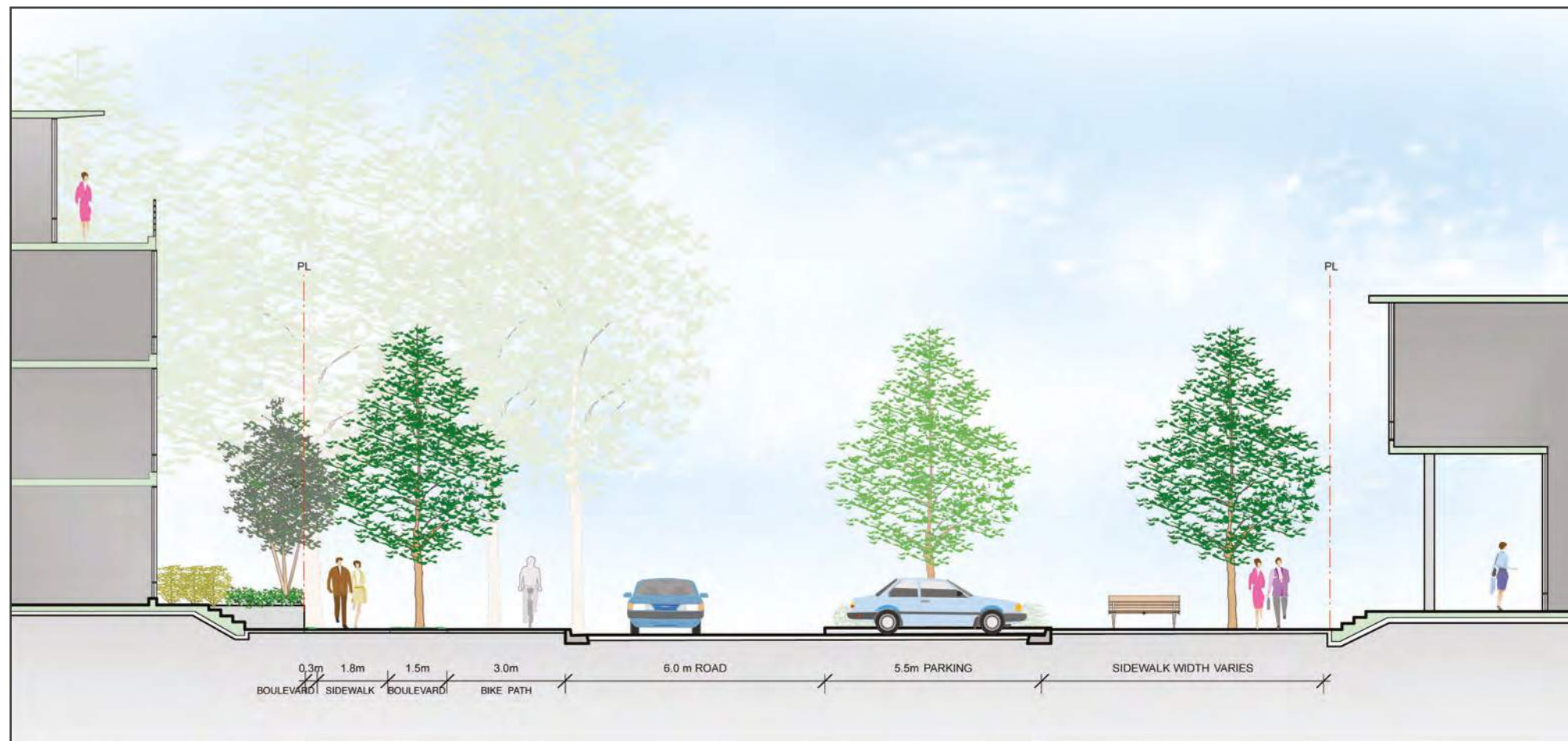
Local neighbourhood retail uses will be located on the west side of this open space; the space will provide a venue for neighbourhood activity and events. In normal operation the open space is designed to accommodate a small number of surface parking spaces adjoining the public pier and retail building. The landing is framed by an over-height two storey retail building on its western edge and a four to six storey high residential buildings to the east. This landing will enjoy an open aspect south to the river. On special occasions, parking could be prohibited to allow use of the space for a small market or community events.

The existing pier extends south to the river's edge and is flanked by the Foreshore Park to the east and Riverfront Park to the west. The pathways proposed along Foreshore Park connect to the existing pathways to the west.

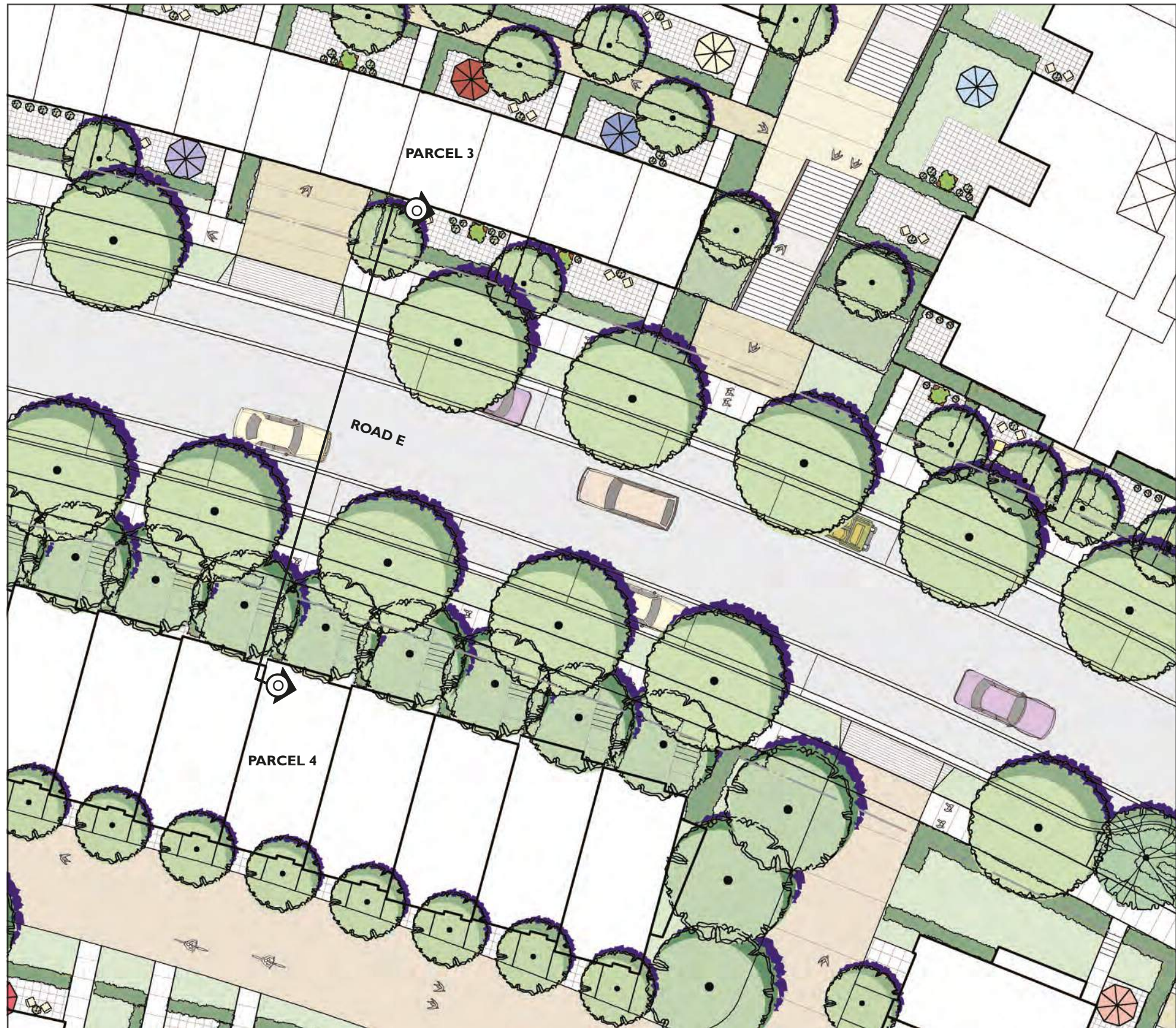
Proposed Composition of Open Space:

- Irregular road allowance
- Min 3.0m wide sidewalk with trees in tree pits on west side
- Right angled parking
- 3.0m wide bi-directional bike path with north-south connection to foreshore park
- 1.8m sidewalk on east side
- Plaza space with seating
- New timber decking north of bike path
- East-west connection to existing bike path
- East-west connection to existing boardwalk footpath
- Retention of existing trees where possible
- Three lines of new trees
- Rain gardens
- Paver finish for roadway, parking and sidewalks
- Street section and materials are subject to review at detailed design





Section UU - Kerr Street Landing
1:150



Road "E" Concept Plan

1:250

3.2.4

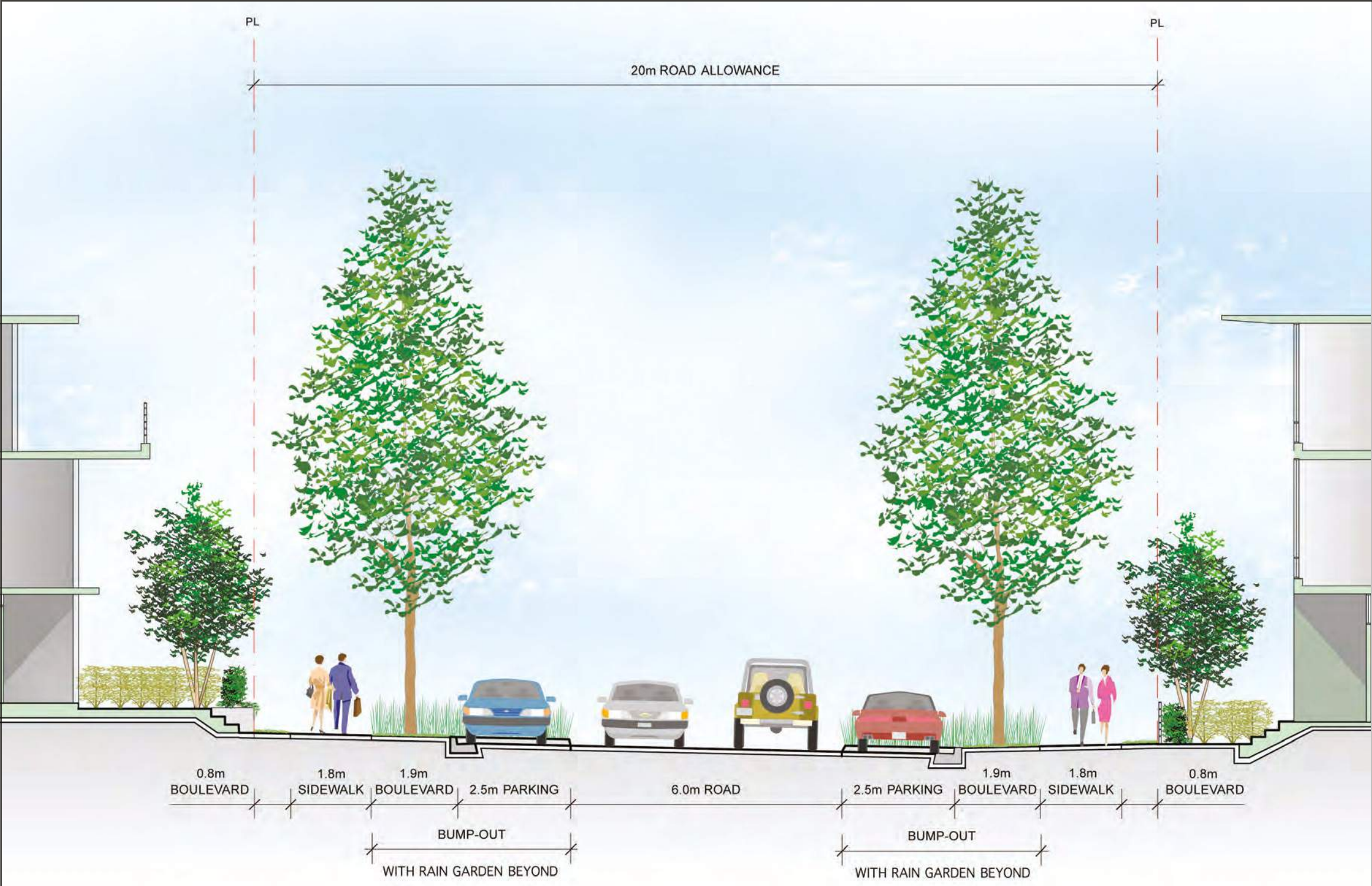
ROAD "E"

Road "E" provides the main access for the development parcels in the northwest precinct and extends from Kerr Street in the west to Kent Avenue North in the east. This road provides two travel lanes with parking on both sides of the street. Bump-outs are provided at intervals along the street to provide a traffic calming function, safer pedestrian crossing points and room for on street rainwater gardens and other streetscape elements. Road "E" is designed to be more or less level from Kerr Street to the north end of neighbourhood park. From this point the road descends down to Kent Avenue North at a slope of around 12%.

Proposed Street Composition:

- 20.0m Road Allowance
- Two drive-lanes with parking on two sides
- Asphalt road surface and parking bays
- Concrete sidewalks
- Front and rear boulevards
- Continuous single lines of street trees.
- Bump-outs with rain gardens
- Street section and materials are subject to review at detailed design

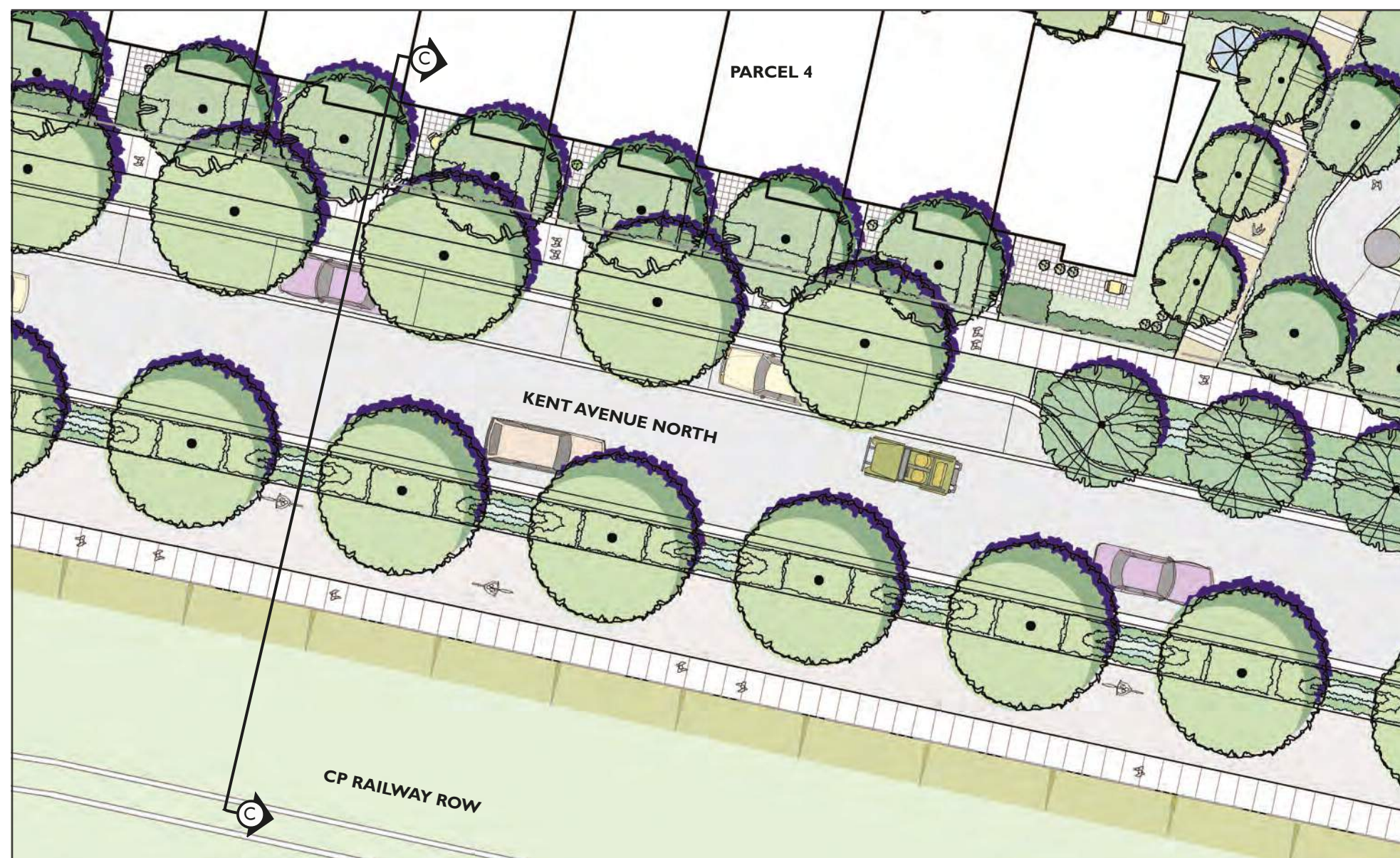




Section OO - Road "E"

1:100





Kent Ave North Concept Plan

1:250



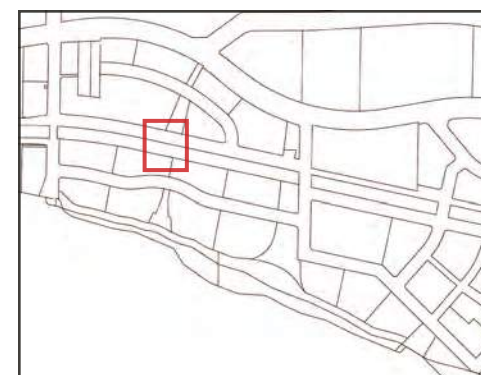
3.2.5

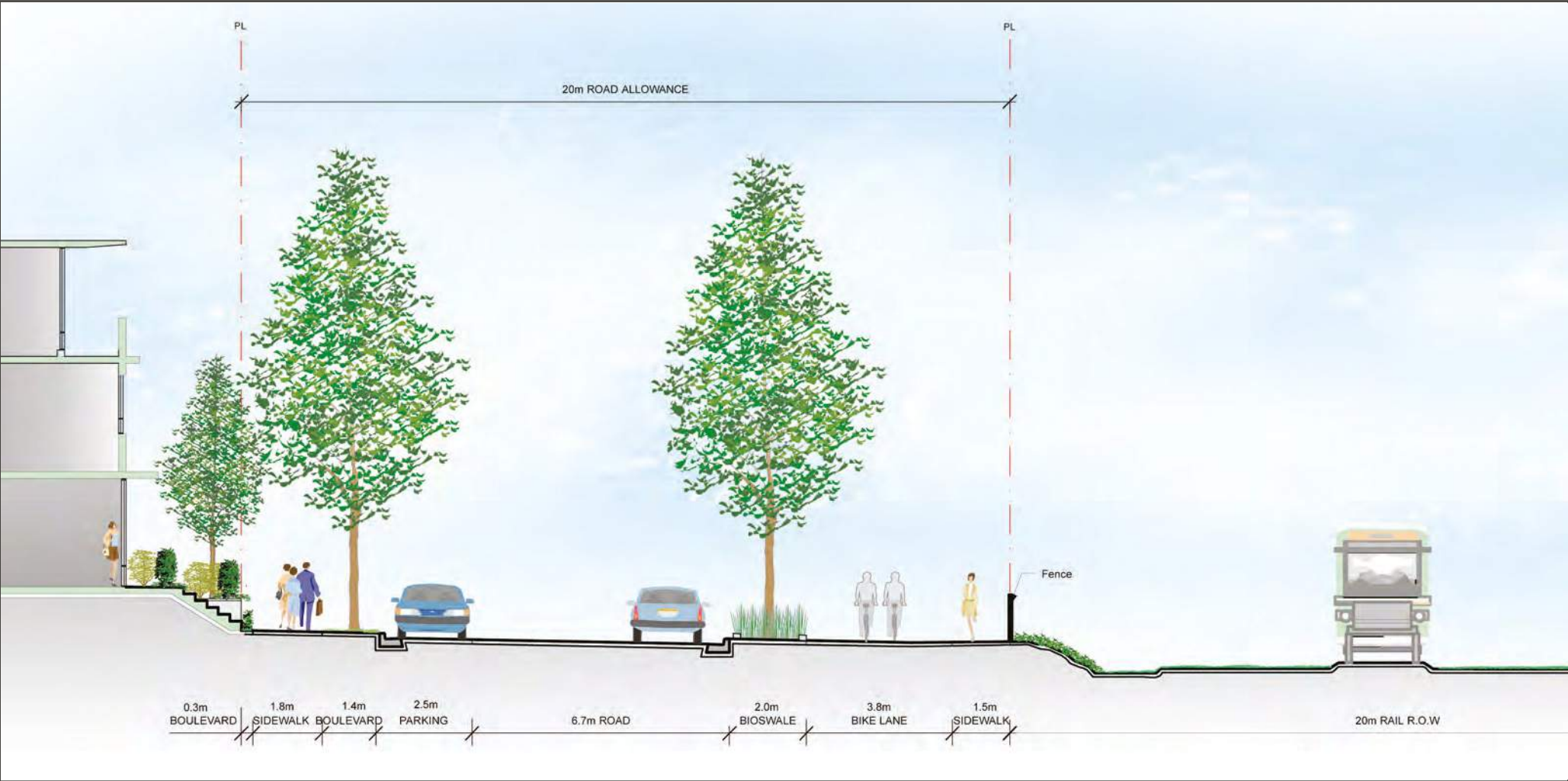
KENT AVENUE NORTH

Kent Avenue North is an important connector road providing circulation to Area 1 and to West Fraserlands to the west. Kent Avenue is designed to accommodate cars, buses and bikes. The avenue is a part of the Kent Avenue greenway system proposed along the entire rail corridor through all phases of East Fraserlands.

Proposed Street Composition Kent Avenue North:

- 20m Road Allowance
- Two drive-lanes
- Parking on one side
- Separated bikepath
- Asphalt road surface and parking bays
- Concrete crosswalks
- Front and rear grass boulevards on north side
- Continuous single line street trees on north side
- Continuous single line of trees in a bioswale adjacent to bikepath
- Bump-outs with rain gardens on the north side
- Street section and materials are subject to review at detailed design



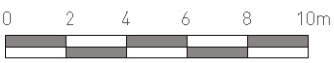


Section CC - Kent Ave North:
1:150





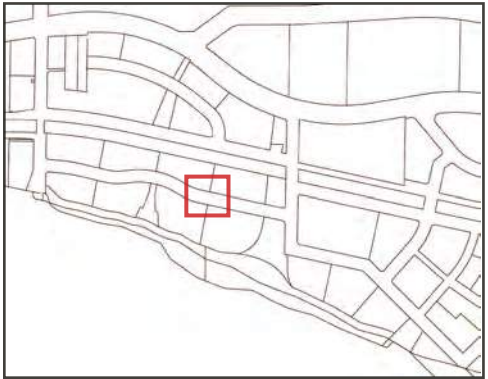
Road "H" Concept Plan
1:250

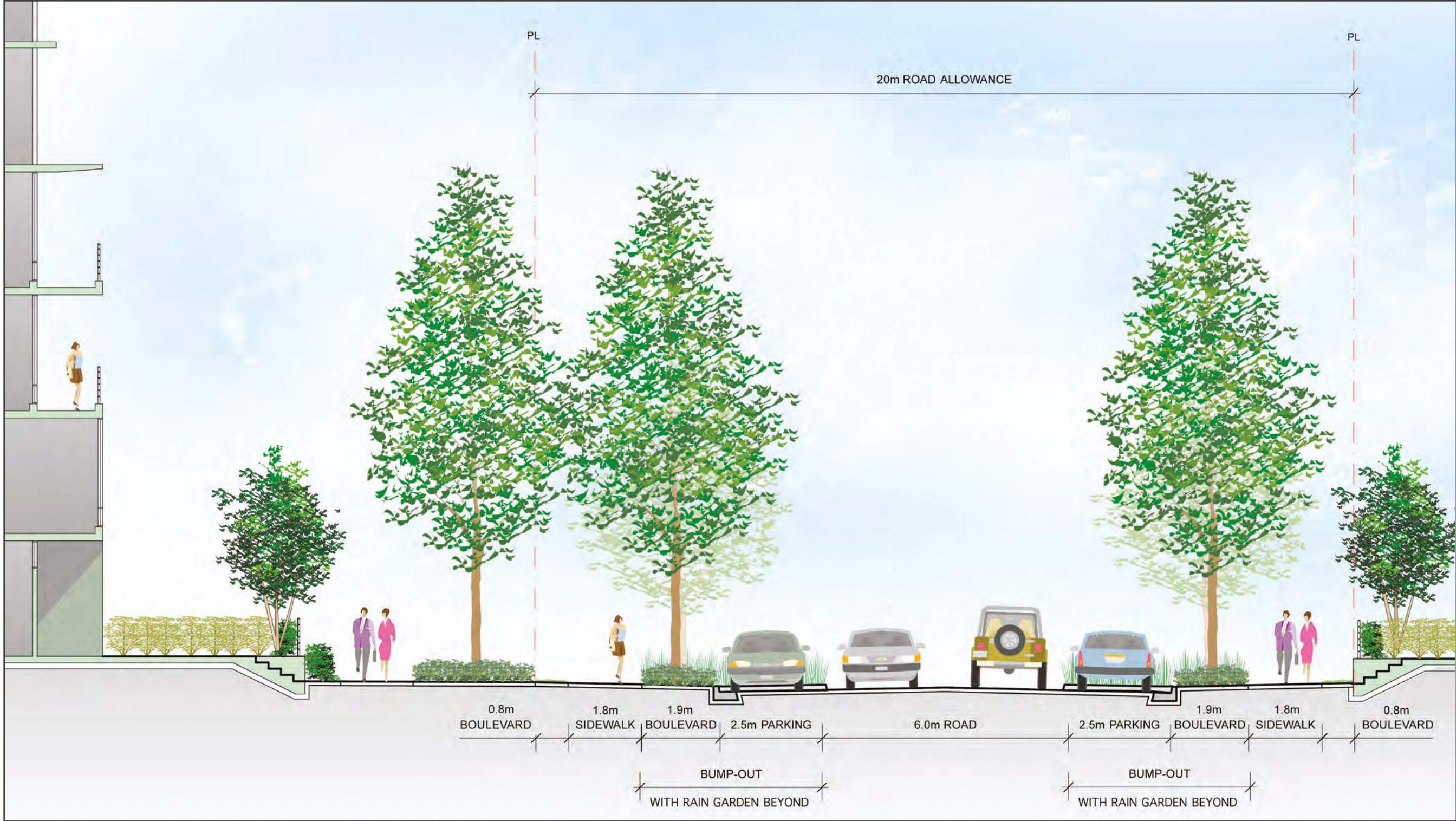


3.2.6 ROAD "H"

Road "H" provides the main access for the development parcels in the southwest precinct and extends from Kerr Street in the west to Playfield Park in the east. Road "H" is designed with a curving alignment in the central section. The axis of the curve is centred on the intersection of the street and Neighbourhood Park South providing a formal composition of street, buildings and open space. Road "H" provides two travel lanes with parking on the both sides of the street.

- Proposed Street Composition:
- 20.0m Road Allowance
 - Curving alignment
 - Two drive-lanes with parking on two sides
 - Bump-outs with rain gardens
 - Asphalt road surface and parking bays
 - Concrete sidewalks
 - Front and rear boulevards
 - Continuous single lines of street trees
 - Street section and materials are subject to review at detailed design





Section PP - Road "H"
1:100



Kinross Street Concept Plan

1:250

3.2.7

KINROSS STREET

Kinross Street slopes down from Marine Way to Kent Avenue North. The street crosses Kent Avenue and the CP Rail line and terminates one block from the river where it turns east to become Mount Baker Way. The shorter northern portion of the street inclines southward while the southern portion of the street is relatively flat.

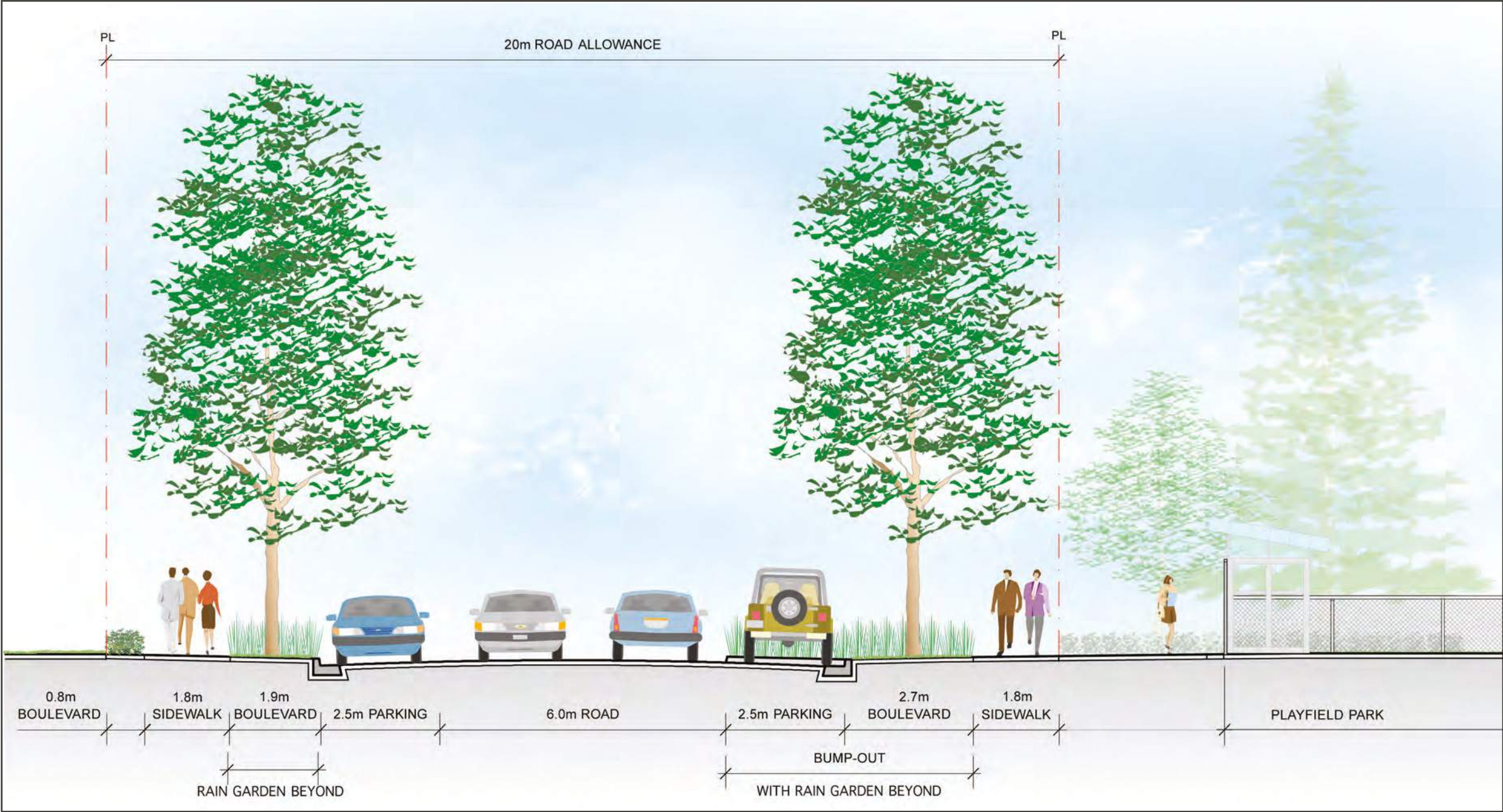
Proposed Street Composition:

- 20.0m Road Allowance
- Two drive-lanes with parking on both sides
- Sidewalks on both sides
- Asphalt road surface and parking bays
- Concrete crosswalks
- Bump-outs at some intersections and crosswalks
- Rain gardens located at bump-outs and intersections
- Sidewalk rest areas on steep sections of street
- Street section and materials are subject to review at detailed design

C.P. Rail Crossing:

The treatment of Kinross Street at its crossing with the rail line is intended to reinforce the connection between the two portions of the development. It is proposed that the treatment of the road and sidewalk surfaces be continued into the rail right-of-way and extend as close as is permitted to the line of the tracks. Low shrub plantings are proposed within the right-of-way to better define the pedestrian route.





Section MM - Kinross Street
1:150





Mount Baker Way Concept Plan
1:250

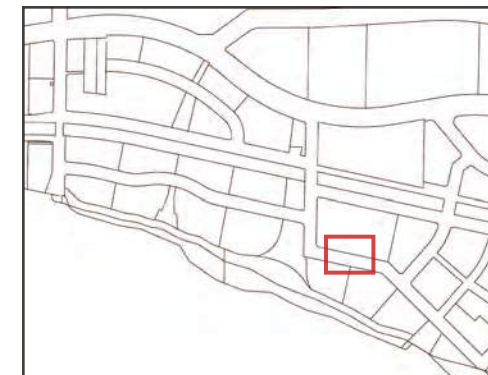
3.2.8

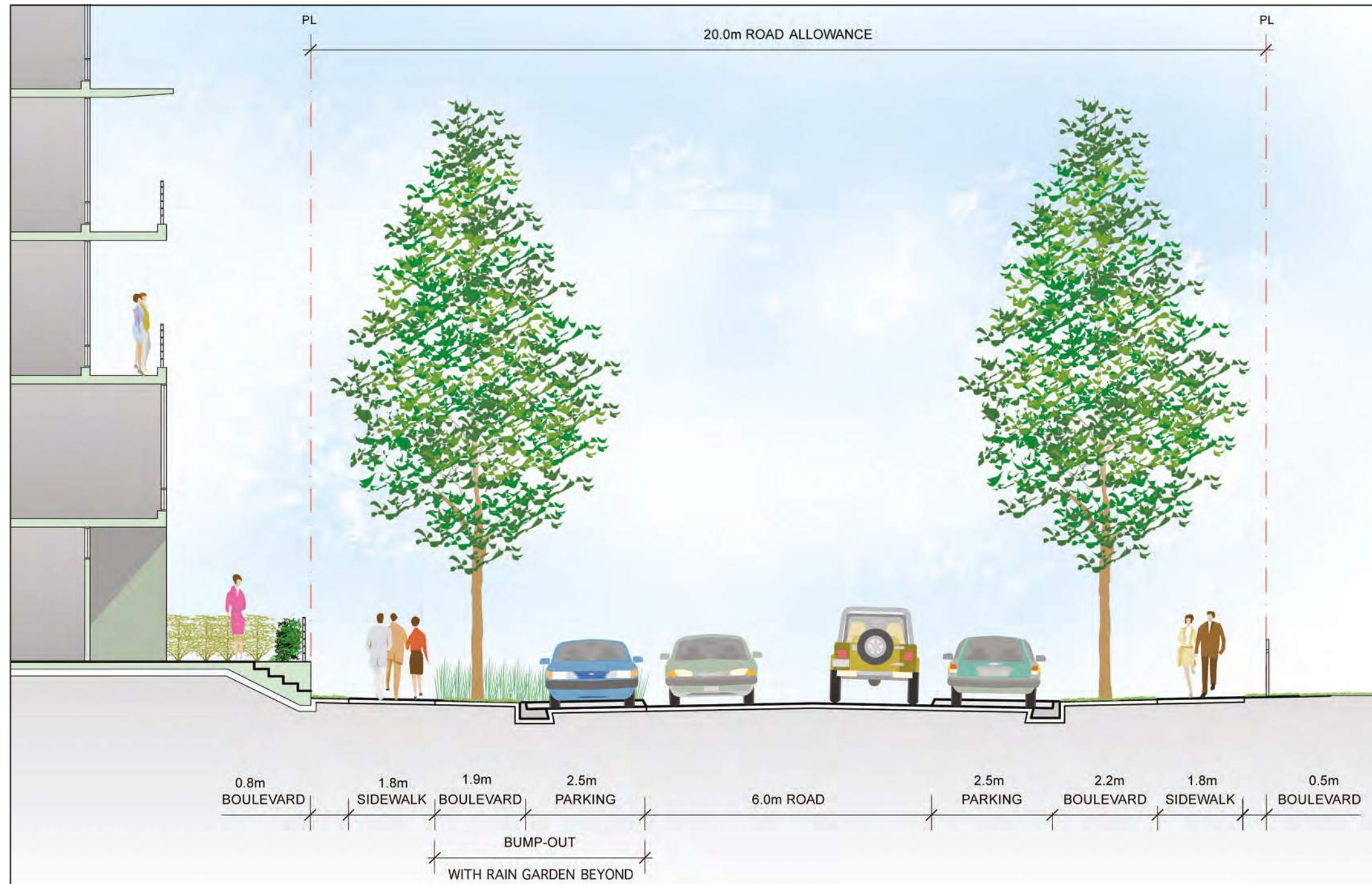
MOUNT BAKER WAY

Mount Baker Way is a collector road, located one block from the riverfront. The street fronts residential parcels to the south and the proposed school site and Playfield Park to the north.

Proposed Street Composition:

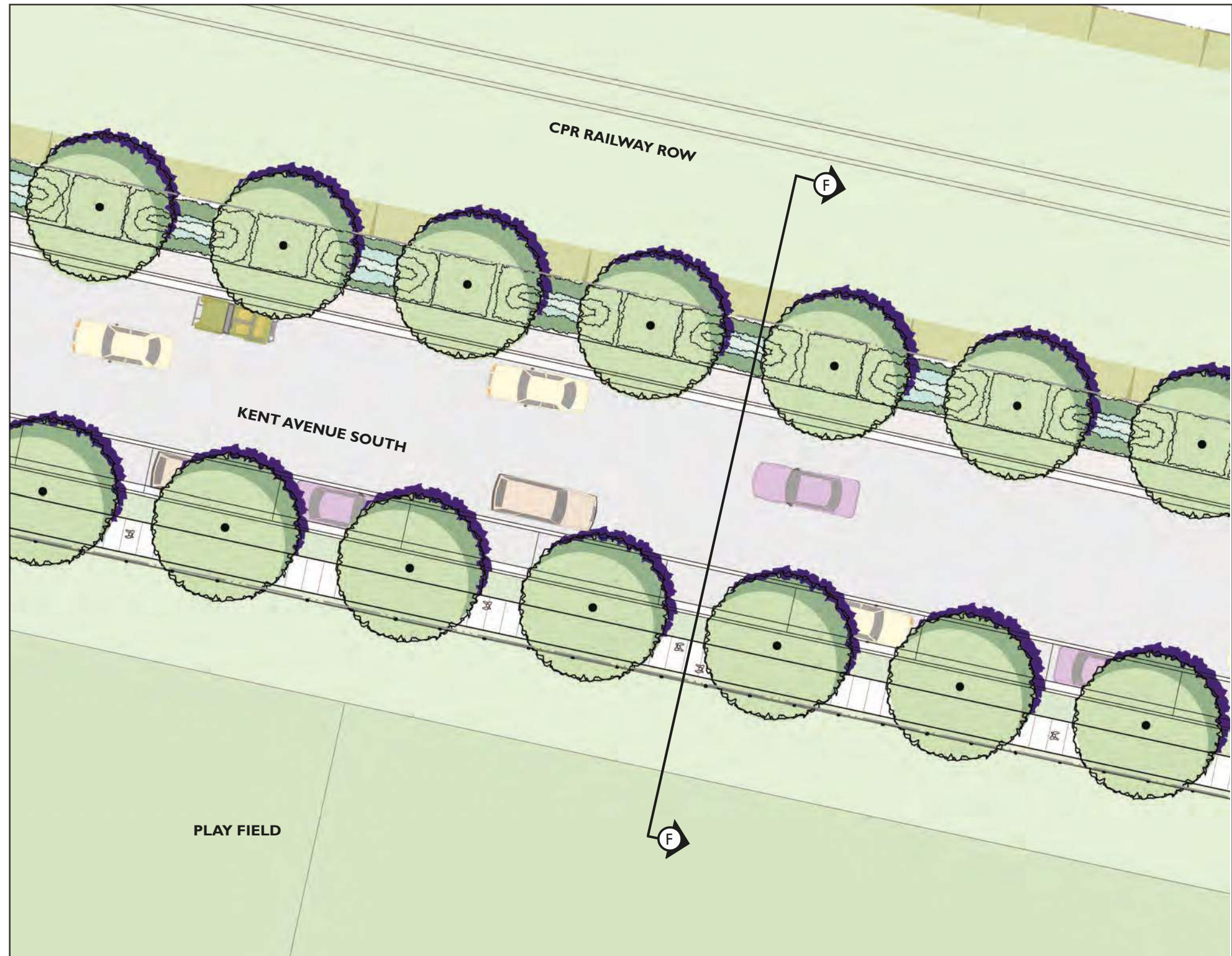
- 20m road allowance
- Two drive-lanes with parking on both sides
- Asphalt road surface and parking bays
- Concrete sidewalks with front and rear grass boulevards
- Continuous line of street trees
- Rain gardens at crosswalks and intersections
- Street section and materials are subject to review at detailed design





Section NN - Mount Baker Way
1:100





Kent Avenue South Concept Plan

1:250



3.2.9

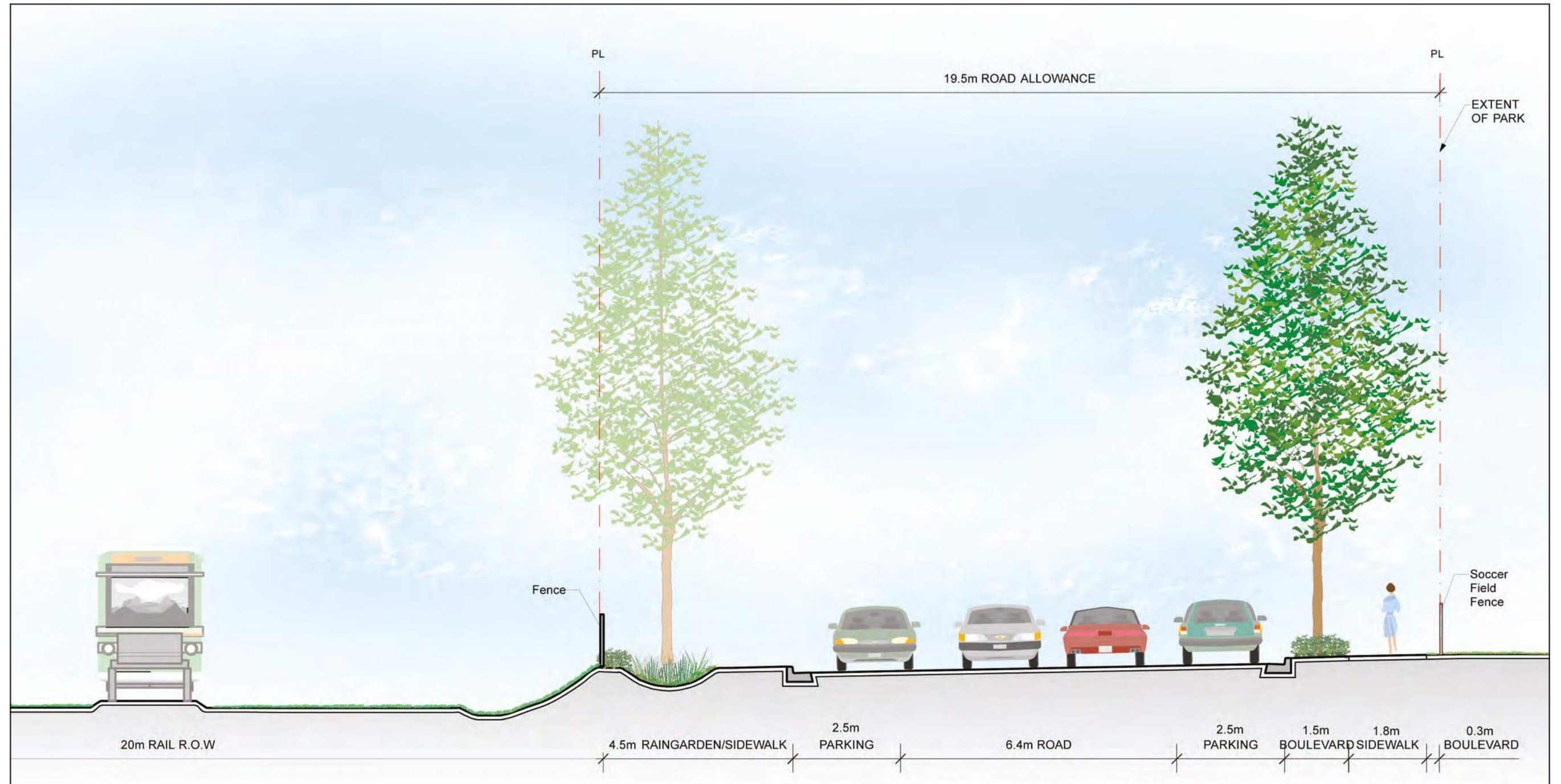
KENT AVENUE SOUTH

Kent Avenue South accommodates east-west traffic movement between Area 1 and Area 2. This street runs along the south side of the CP rail corridor and fronts the proposed school site and Playfield Park.

Proposed Street Composition:

- 19.5m Road Allowance
- Two drive-lanes
- Parking on both sides
- Asphalt road surface and parking bays
- Concrete crosswalks
- Front and rear grass boulevards on south side
- Continuous single line street trees on both sides
- Continuous bio-swales adjacent rail right-of-way
- Street section and materials are subject to review at detailed design





Section FF - Kent Avenue South
1:100





Road "A" Concept Plan

1:250



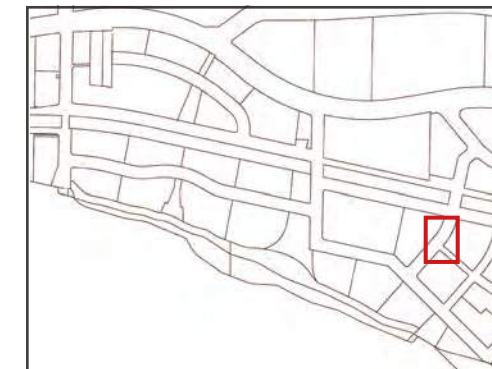
3.2.10 ROAD "A"

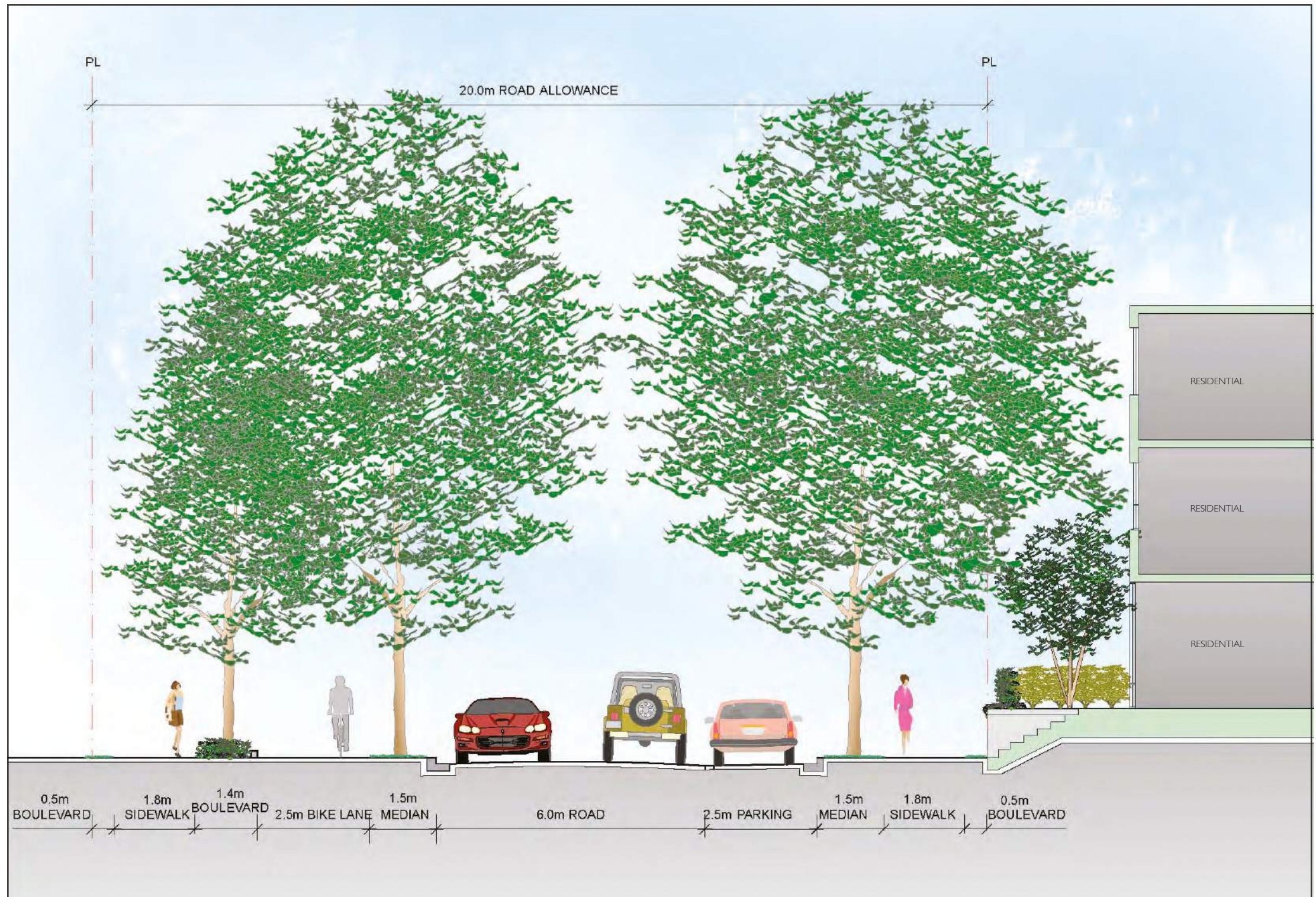
Road "A" is one of the primary collector roads accommodating north-south traffic movement through the development. The section of the street included in Area 2 provides access to the proposed school site and child care centre.

Road "A" is fronted by the school site to the west and an Area 1 residential parcels to the east. Adjoining the school site a bike path is proposed on the west side of the street as illustrated.

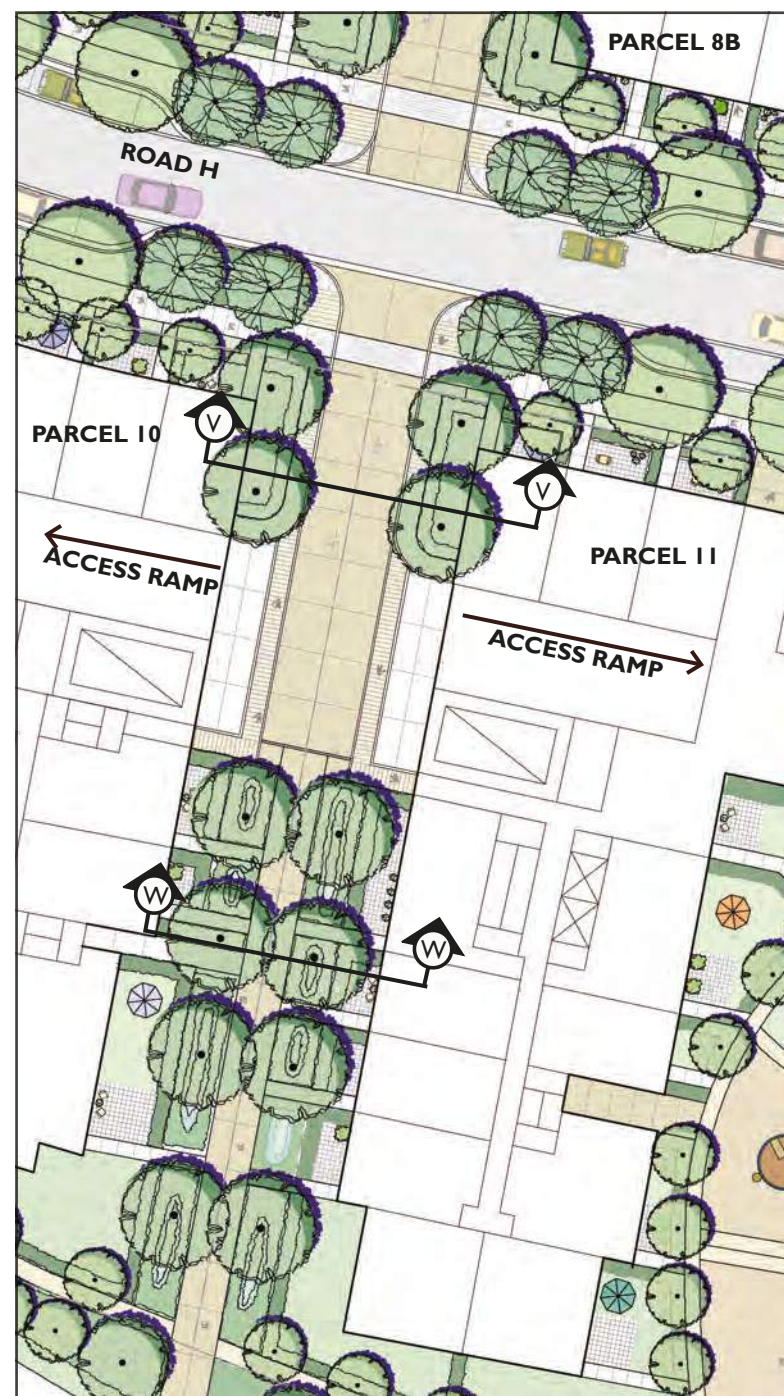
Proposed Street Composition

- 20.0m road allowance
- Two drive-lanes with parking on one side
- Bike path on west side
- Sidewalks on both sides
- Asphalt road surface and parking bays
- Concrete sidewalks
- Front and rear boulevards along residential frontages
- Planted median separating bikepath
- Three continuous lines of street trees
- Rain gardens at crosswalks and intersections
- Street section and materials are subject to review at detailed design





Section II - Road "A"
At future school site only
1:100



Mews Concept Plan
1:500



Mews Concept Plan (Between Parcels 25 and 28)
1:500

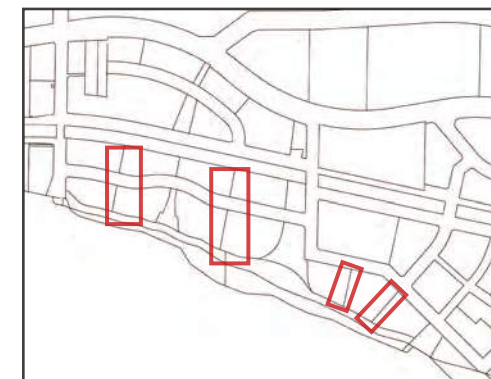
3.2.11

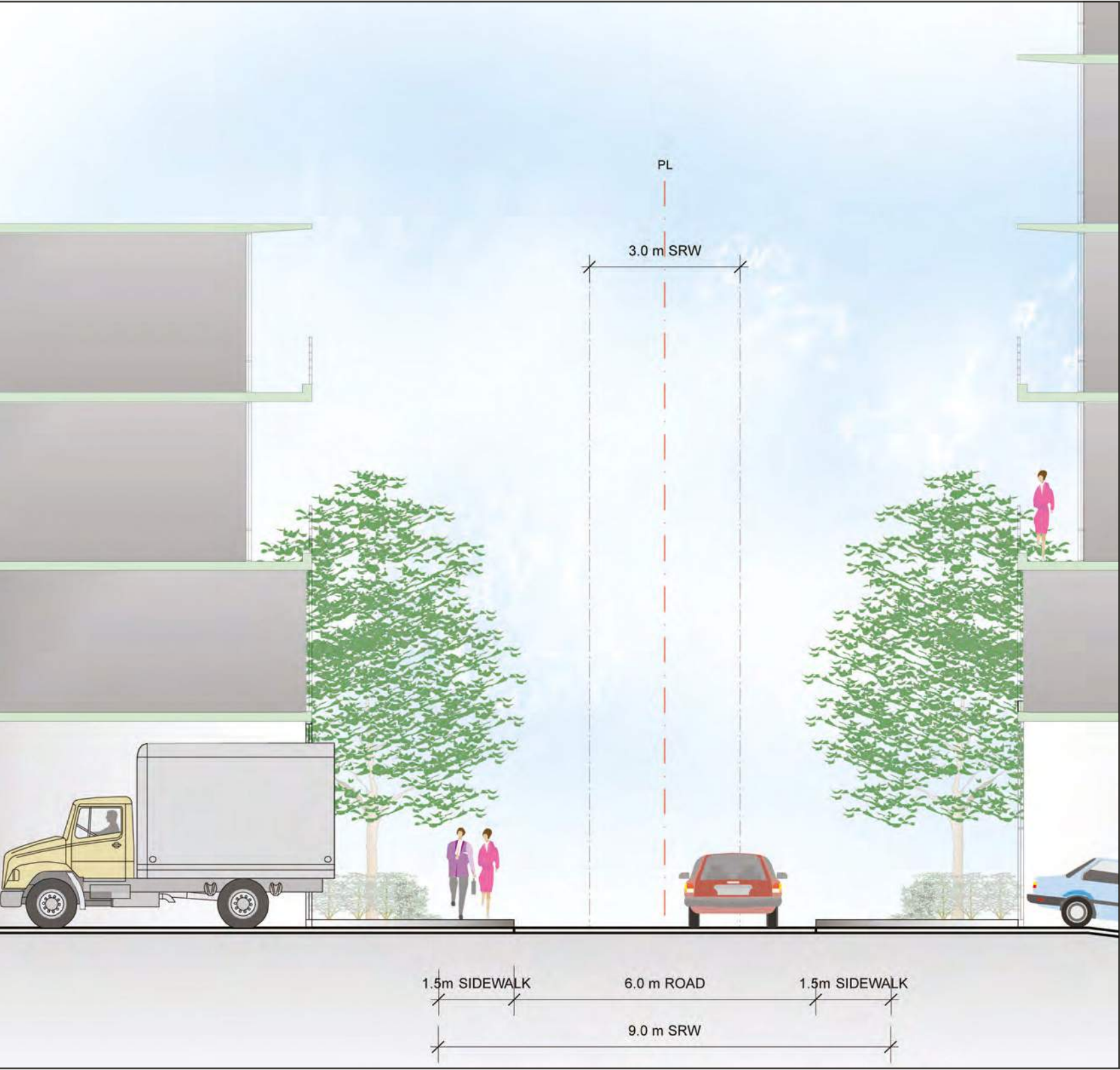
SHARED MEWS

The shared mews accommodate access for pedestrians, bikes and vehicles through development parcels. Typically mews provide access for vehicles entering parkades and loading areas, pedestrian access to building entries and ground oriented residential units and a pathway for pedestrians and cyclists accessing the waterfront. The mews improve permeability for pedestrians and cyclists and provide north south routes connecting to the waterfront.

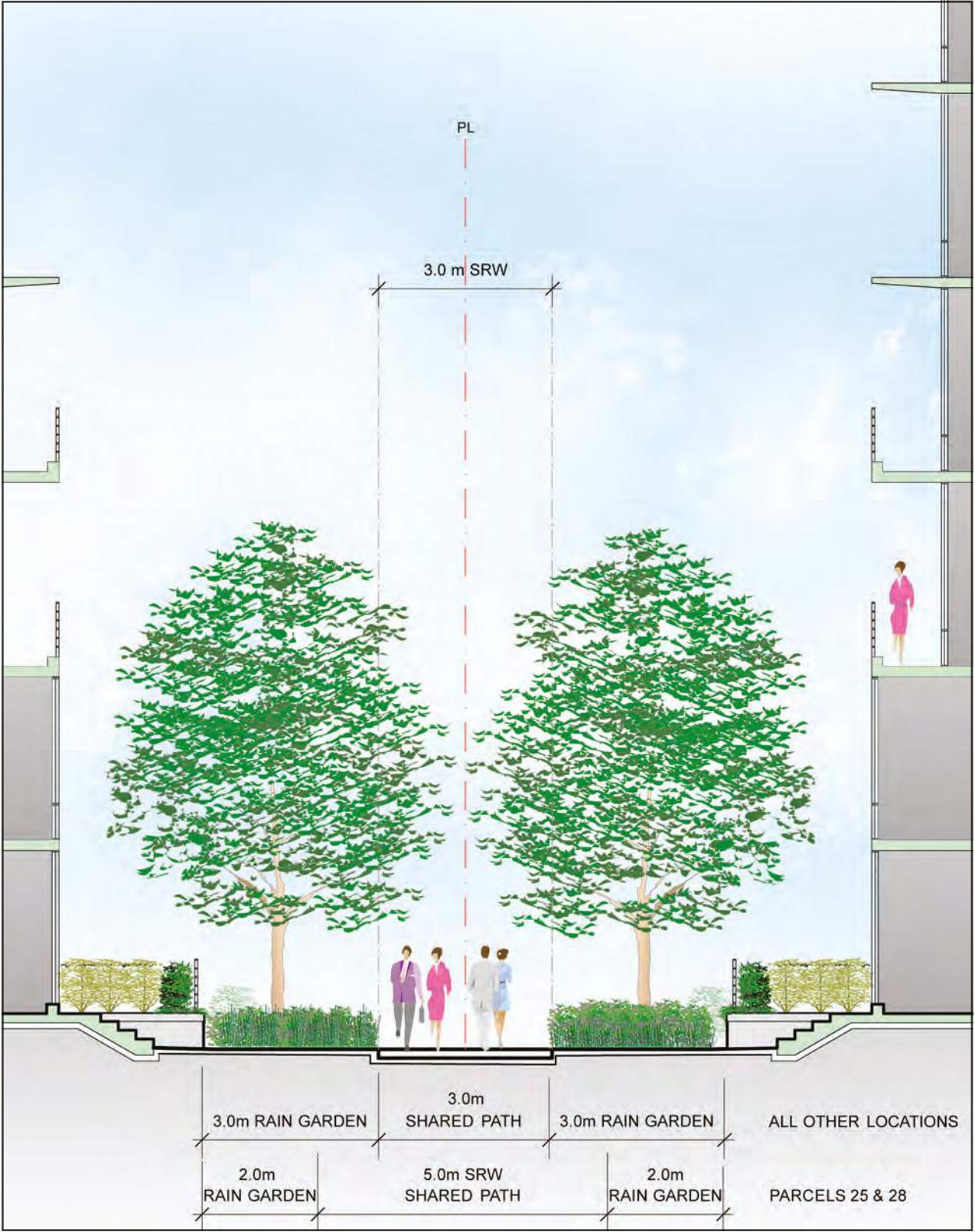
Proposed Street Composition:

- Paved court to accommodate vehicle movements to parkade entries and loading
- 6m wide shared car and bicycle route (between street and paved court)
- 1.5m sidewalk flanking vehicular zone provide for pedestrian comfort
- 3m wide shared bike and pedestrian routes
- Cast concrete or permeable concrete unit pavers surfacing
- Double row of medium sized trees within planted boulevards
- Rain gardens adjoining 3m pedestrian/bike path to receive surface run off
- Entry paths leading directly to residential units
- Opportunities for casual seating
- Mews section and materials are subject to review at detailed design





Section VV - Shared Mews (Vehicular/Pedestrian/Bike Access)
1:100



Section WW - Shared Mews (Pedestrian/Bike Access Only)
1:100



Pedestrian Mews Concept Plan (South)

1:250



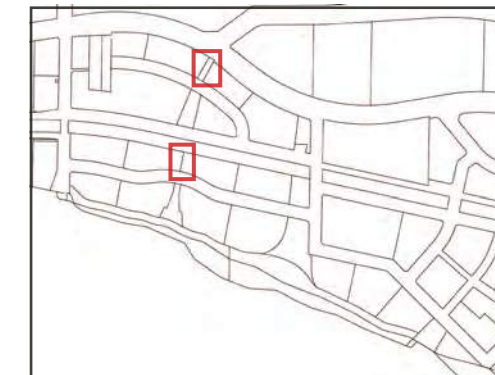
3.2.12

PEDESTRIAN MEWS

The pedestrian mews provide access from Marine Way to Neighbourhood Park North and from Road "H" to a potential future crossing of the C.P.R. railway. The mews provides an important visual connection between S.E. Marine Drive and the river. The mews will provide a minimum 3m wide paved route with associated open space and landscape plantings.

Proposed Mews Composition:

- 3m wide pedestrian routes proposed
- cast concrete or permeable concrete unit pavers surfacing
- double row of medium sized trees
- opportunities for small scale fruit trees and edible landscaping
- entry paths leading directly to residential units in southern Mews
- opportunities for casual seating
- mews section and materials are subject to review at detailed design

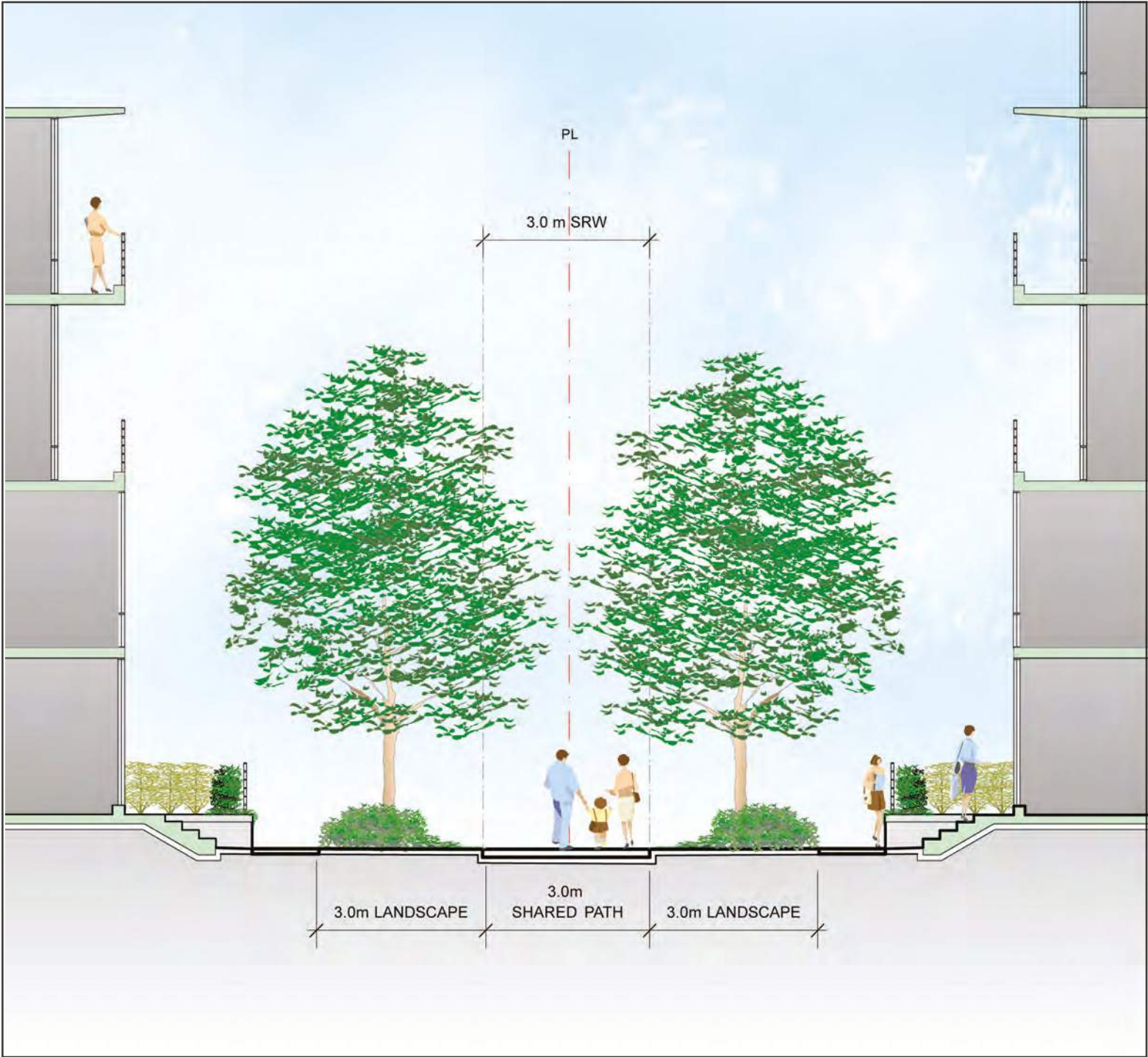




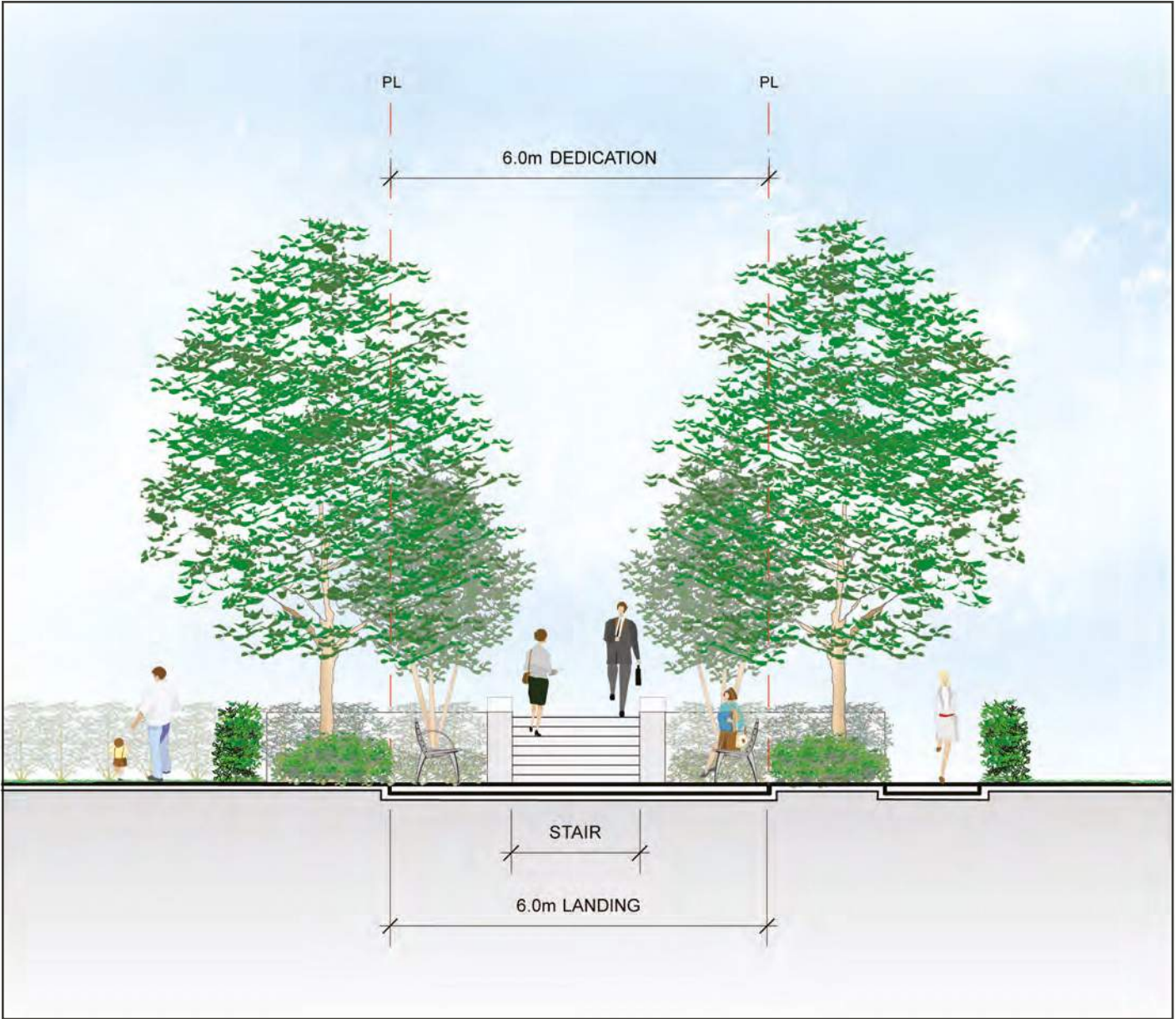
Pedestrian Mews Concept Plan (North)

1:250





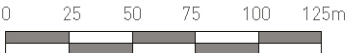
Section XX - Pedestrian Mews
1:100



Section YY - Pedestrian Mews
1:100



Parks Conceptual Diagram
1:3000



4.0 PARK AND OPEN SPACE

The Public Realm Plan includes six distinctive public parks. The public parks include Kinross Park (North and South), Foreshore Park, Playfield Park and two Neighbourhood Parks (North and South). The location of each park is illustrated below and described in more detail on the following pages.

The plans, sections and other drawings contained in the Public Realm Plan are conceptual in nature. All components of the plan will be refined through a more detailed design process. The programming and design of public parks will be conducted through public consultation in conjunction with the Vancouver Park Board.

LEGEND

- Parks**
- ① Neighbourhood Park North
 - ② Neighbourhood Park South
 - ③ Kinross Park North
 - ④ Kinross Park South
 - ⑤ Playfield Park
 - ⑥ Foreshore Park



Neighbourhood Park North Concept Plan
1:500

4.1

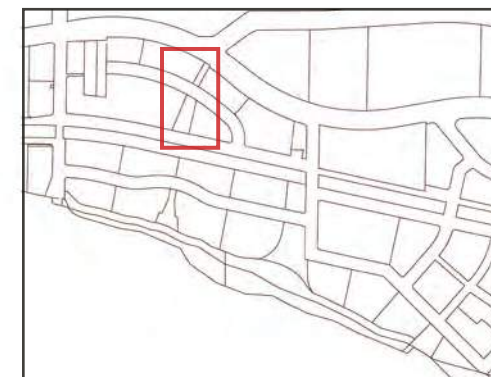
NEIGHBOURHOOD PARK

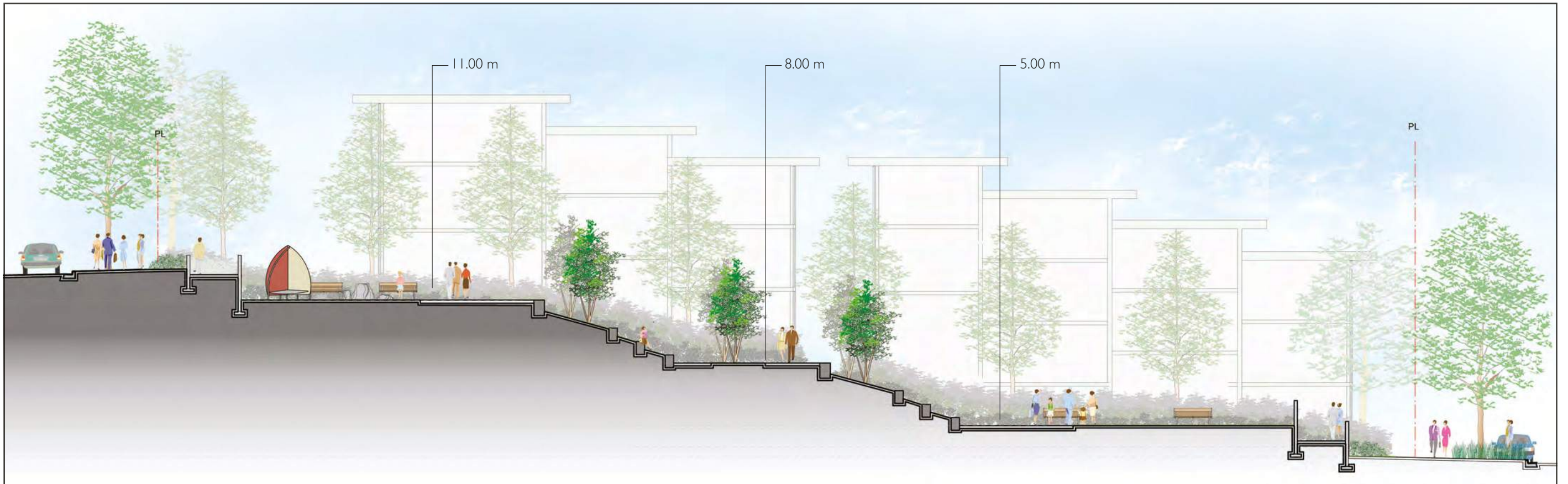
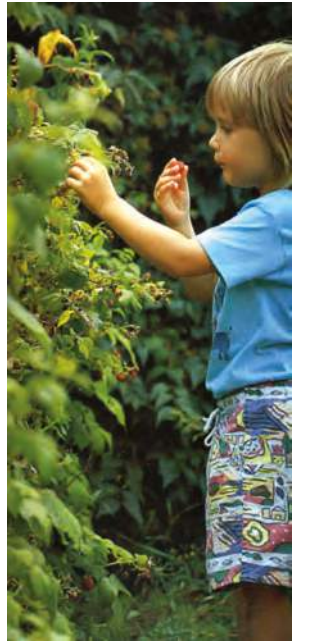
4.1.1 Neighbourhood Park North

Neighbourhood Park North has been designed to provide a range of park uses located on a series of three platforms that are accessible from the adjoining streets or the adjoining development parcels. The shape and elevation of the platforms have been developed to provide accessibility and an acceptable interface between park uses and adjoining residences. The upper and lower platforms have been set at elevations just below and above the adjoining streets, respectively, such that they are accessible via ramps from the street.

The central platform has been set at a mid elevation and is therefore not universally accessible from either street. This has been resolved by organizing public access to the centre portion of the park from the adjoining development parcels. The three platforms are connected via a stepped pathway.

Both the upper and lower park platforms provide opportunities for play spaces or seating. The upper park space utilizes the support wall for the accessibility ramp as a vertical play wall feature. The planted slopes formed between platforms have provided the opportunity for casual terraced seating that takes advantage of the south exposure and views and provide opportunities for communal urban agriculture including a small orchard (refer to 5.1.6).

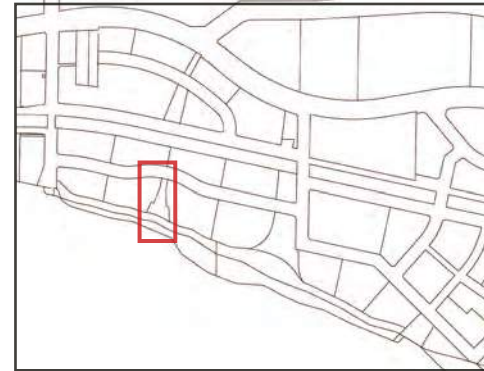




Section DD - Neighbourhood Park North
1:250



Neighbourhood Park South Concept Plan
1:750



4.1.2 Neighbourhood Park South

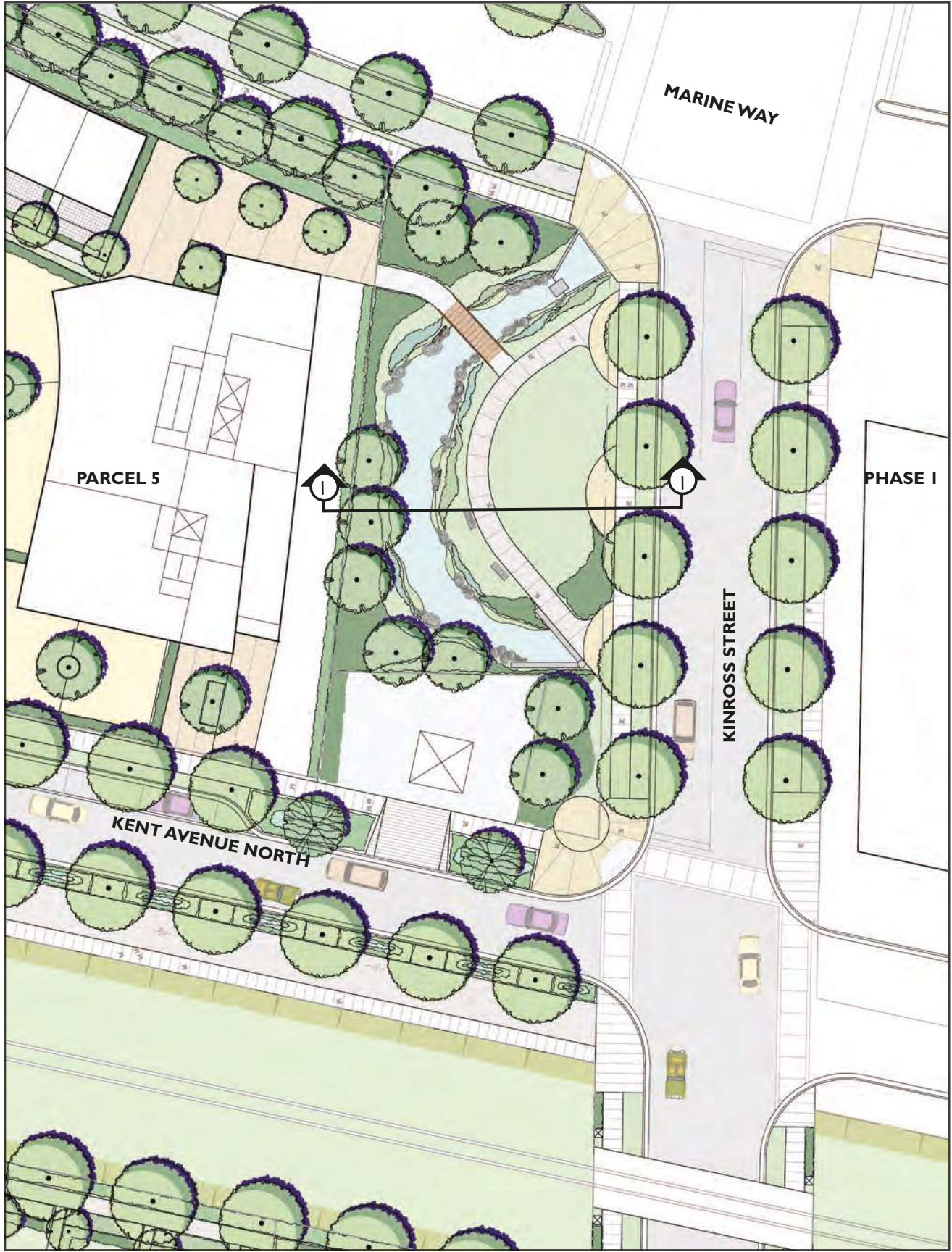
The southern neighbourhood park is located between Road H and the riverfront. The park flares out in width as it approaches the river and flows into Foreshore Park. The park provides room for a variety of potential uses such as informal recreation, children's play, seating, urban agriculture. Pathways have been arranged to provide direct pedestrian access from Road H to the waterfront.



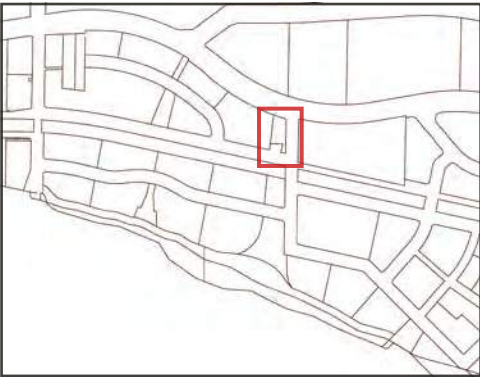


Section SS - Neighbourhood Park South
1:100





Kinross Park North Concept Plan
1:500

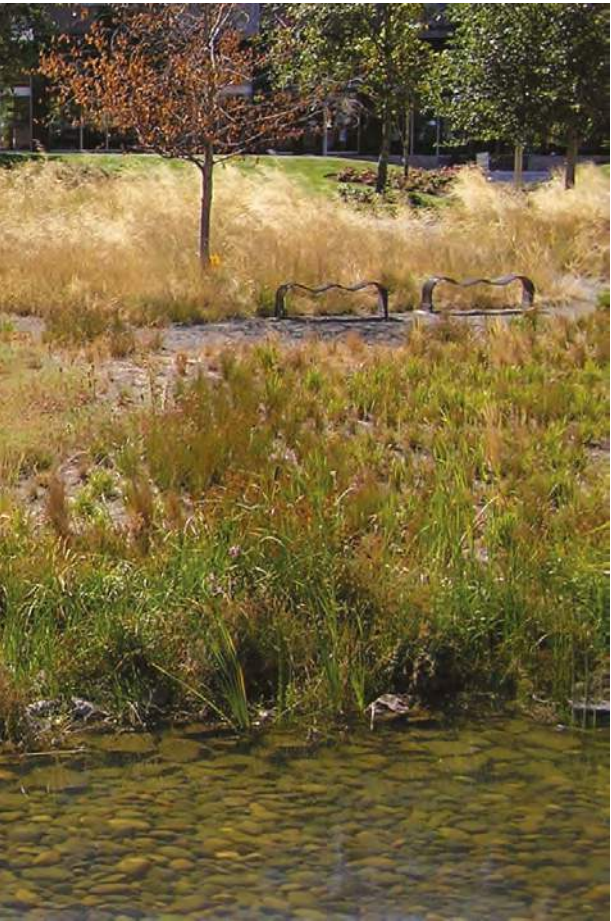


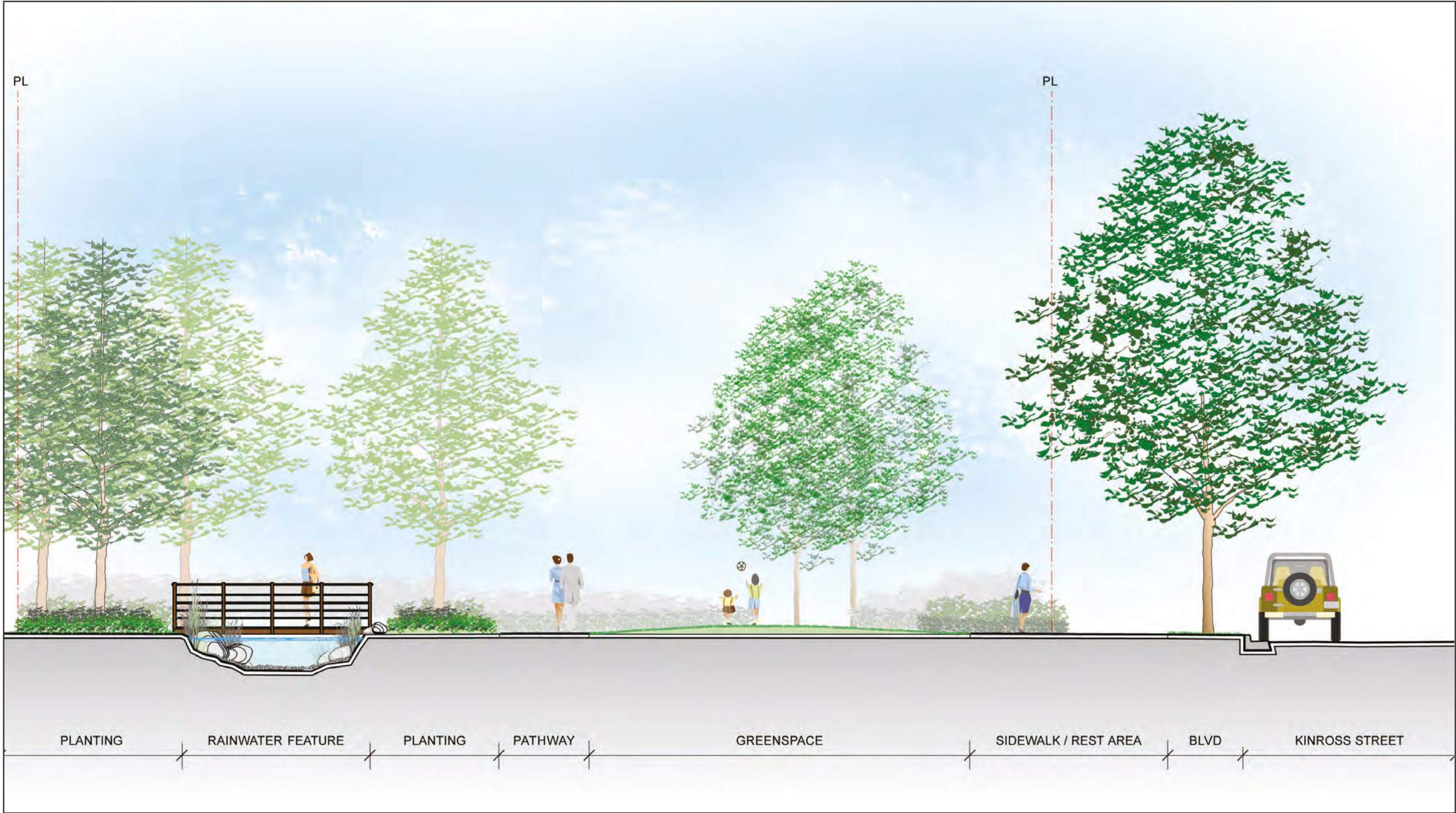
4.2 KINROSS PARK

4.2.1 Kinross Park North

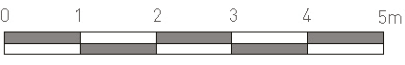
Kinross Park North is located at the corner of Kinross Park and Marine Way and slopes downhill to the corner of Kinross Street and Kent Avenue North.

The rainwater feature winds its way through the park and flows by gravity to the lower end of the park at Kent Avenue. An open sloping lawn area next to the street providing room for casual recreation. At the east side of the lawn, rest areas will be provided, accessed from the sidewalk. The rainwater feature will consist of a naturalistic channel and ponds lined with native riparian plantings. A footpath connection is proposed to the adjoining parcel.





Section II - Kinross Park North
1:100





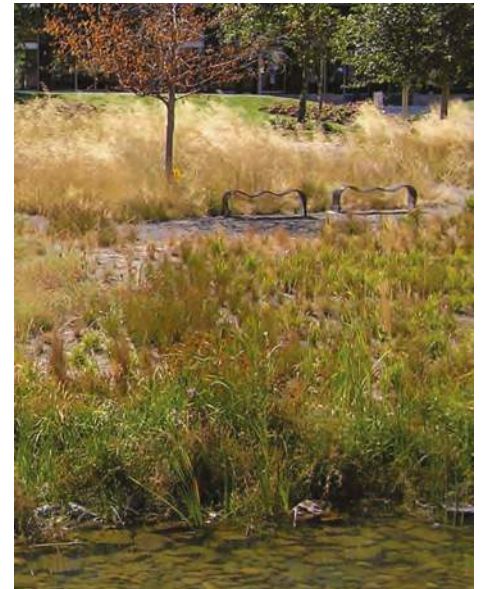
Kinross South Concept Plan

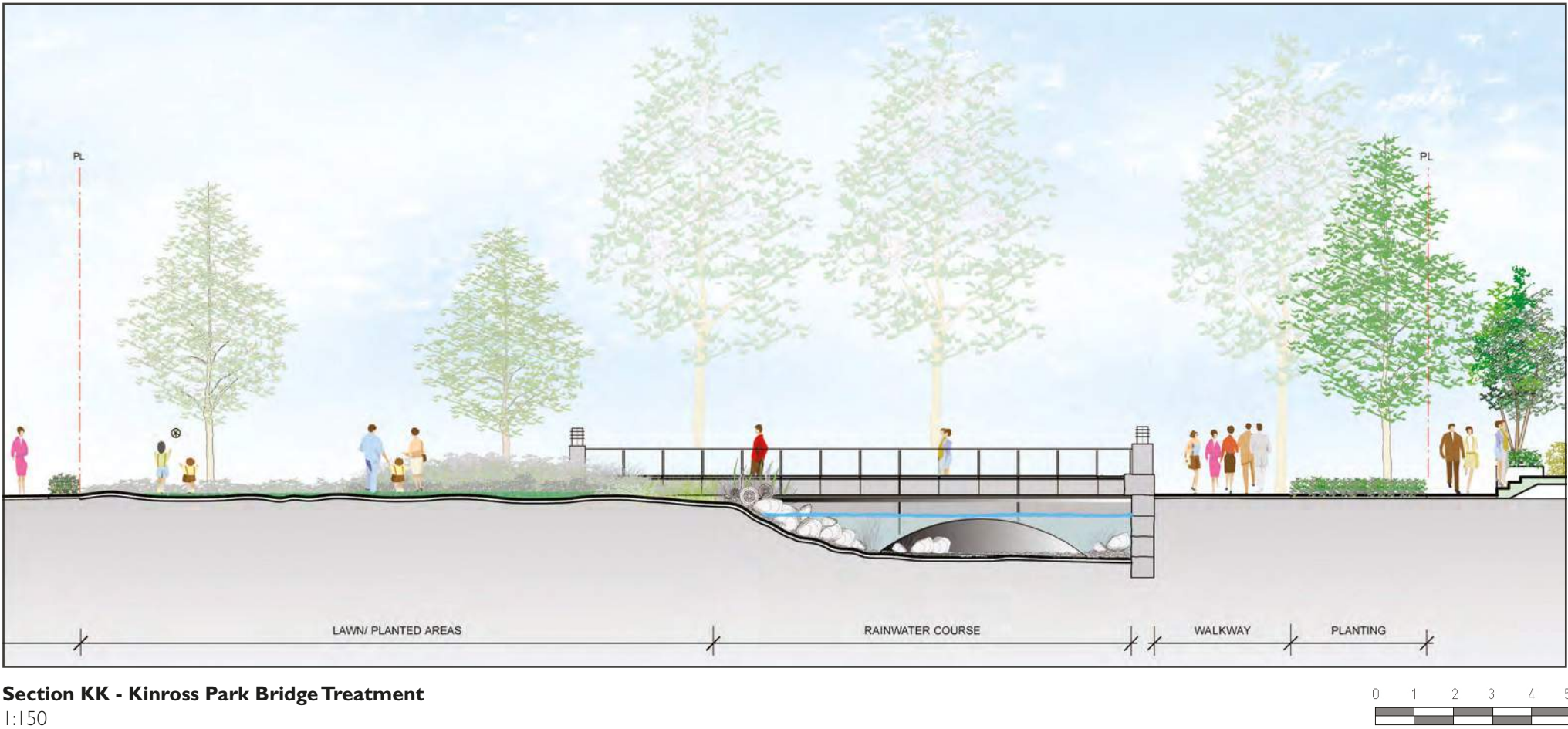
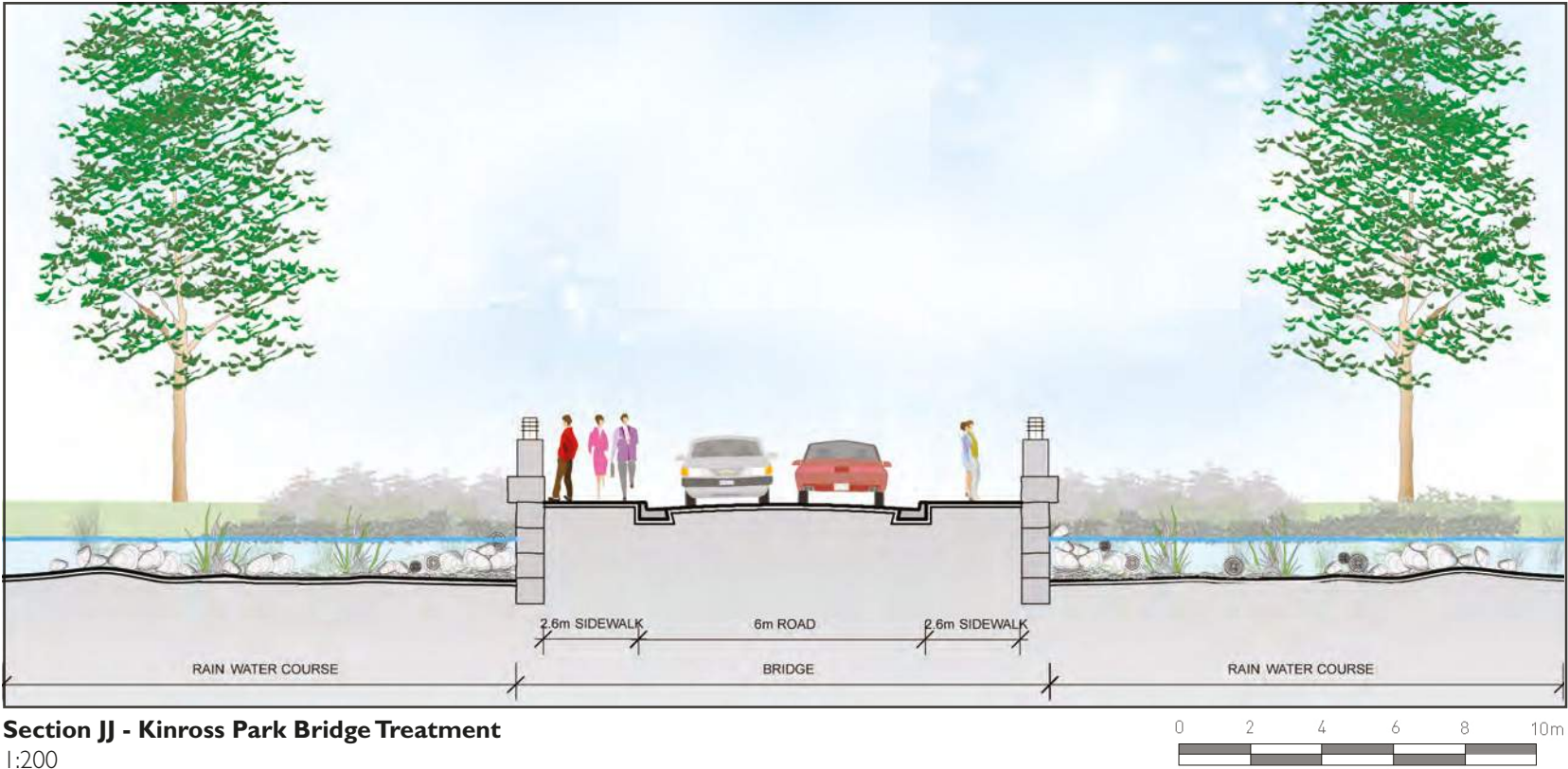
1:750

4.2.2 Kinross Park South

Kinross Park South extends from the CPR Railway, across Road H and extends down to the riverfront at Foreshore Park. The park provides for a variety of park features including the continuation of the watercourse, seating spaces, children's play and informal recreation. Rainwater from the adjoining sites will feed into the naturalistic watercourse that meanders through the park and terminates in a perched, seasonal, freshwater wetland to the west and north of sanctuary island.

At Road H, a bridge feature reinforces the continuity of the watercourse between the two parks and brings the park environment into the streetscape. Riparian and other native plantings add to the richness of the park environment. The larger southern park area flows into Foreshore Park and provides larger open areas suitable for a variety of informal uses.

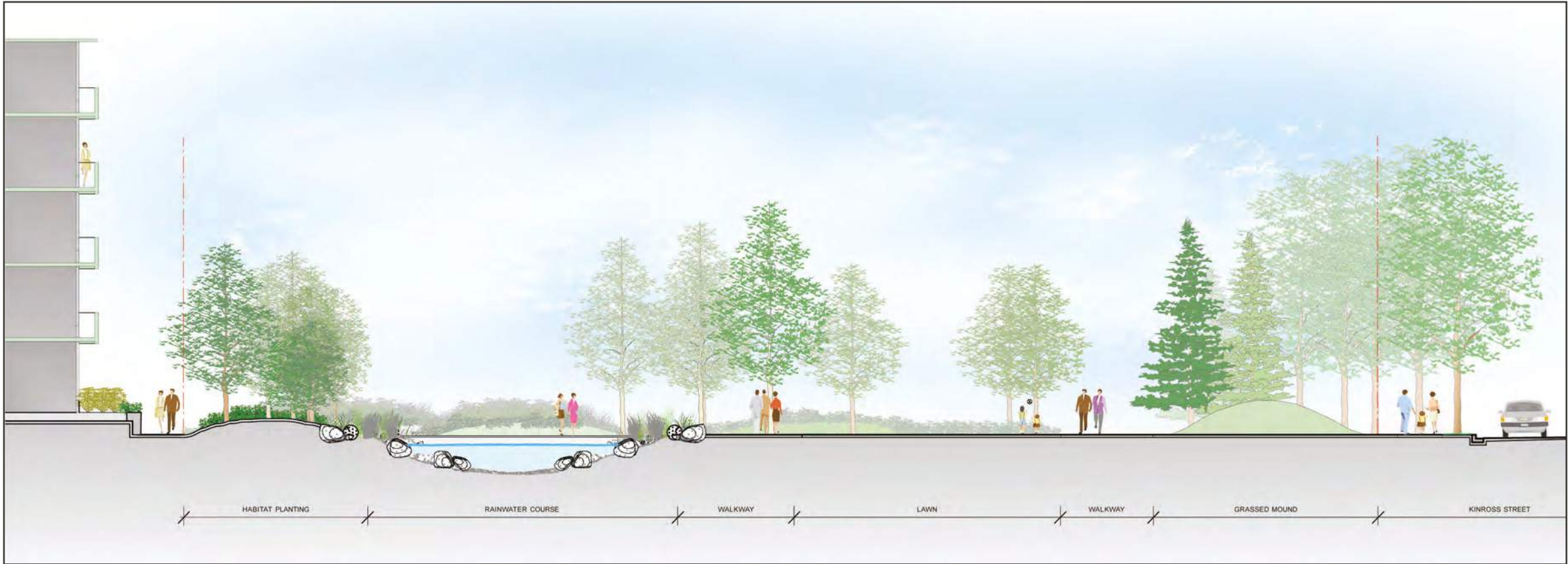






Kinross South Concept Plan
1:750





Section LL - Kinross Park South
1:200

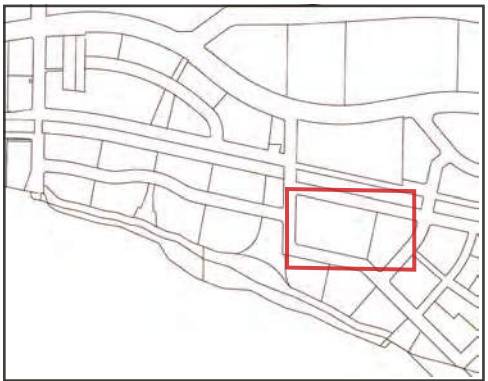


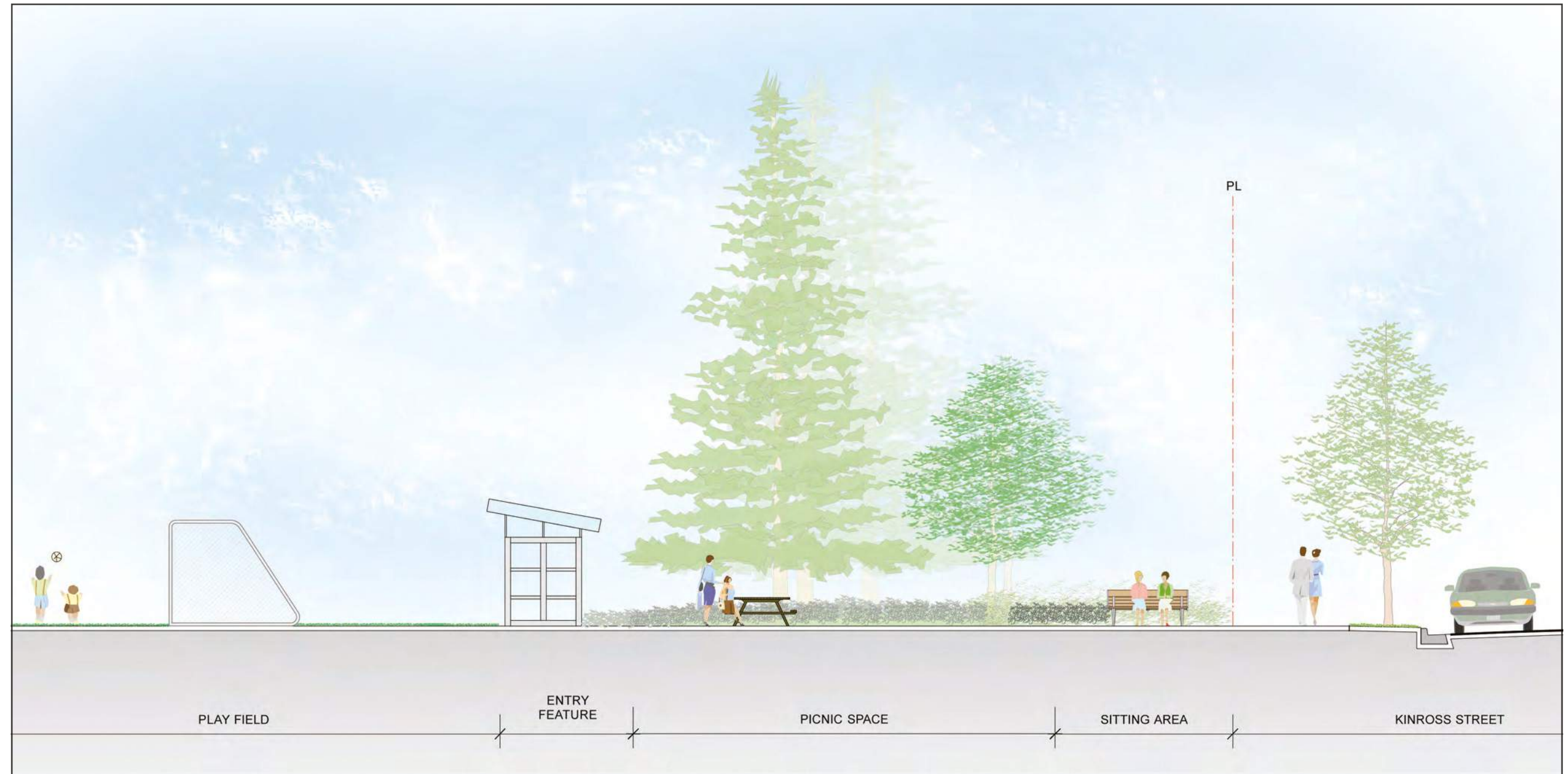
4.3 PLAYFIELD PARK

Playfield Park is located adjoining the proposed elementary school and child care facility. The park includes a fenced, full size grass play field with some additional passive recreation areas along Kinross Street. At the west end of the field a stand of mixed coniferous and deciduous trees provides a visual buffer that terminates eastward views along Road H, assists in defining the Kinross Park corridor and provides a visually solid edge behind the western goal area. Plantings would be designed to provide song bird habitat.



Playfield Park Concept Plan
1:750





Section TT - Playfield Park
1:100





4.4

FORESHORE PARK

The Foreshore Park will be naturalistic in character in keeping with the riverside setting. Programming would emphasize casual, informal activities such as strolling, viewing of the river, bird watching, and ecological education. Access to the water's edge is intentionally limited, in order to establish and protect a continuous belt of native riparian plantings. More direct visual access to the river is provided in a controlled manner with a series of look-out decks and boardwalks strategically located along the eastern portion of the shoreline.

A sanctuary island is one of the main features of the park and provides inaccessible wildlife habitat separated from the rest of the park by a tidal marsh/slough. Sanctuary Island sits at the base of the Kinross Park corridor. A water course flowing through Kinross Park terminates in a perched, seasonal, fresh-water wetland just north-west of the island. The Sanctuary Island, perched wetland and riparian plantings are a part of the shoreline treatment approved by FREMP.



Foreshore Park (West)

1:1000



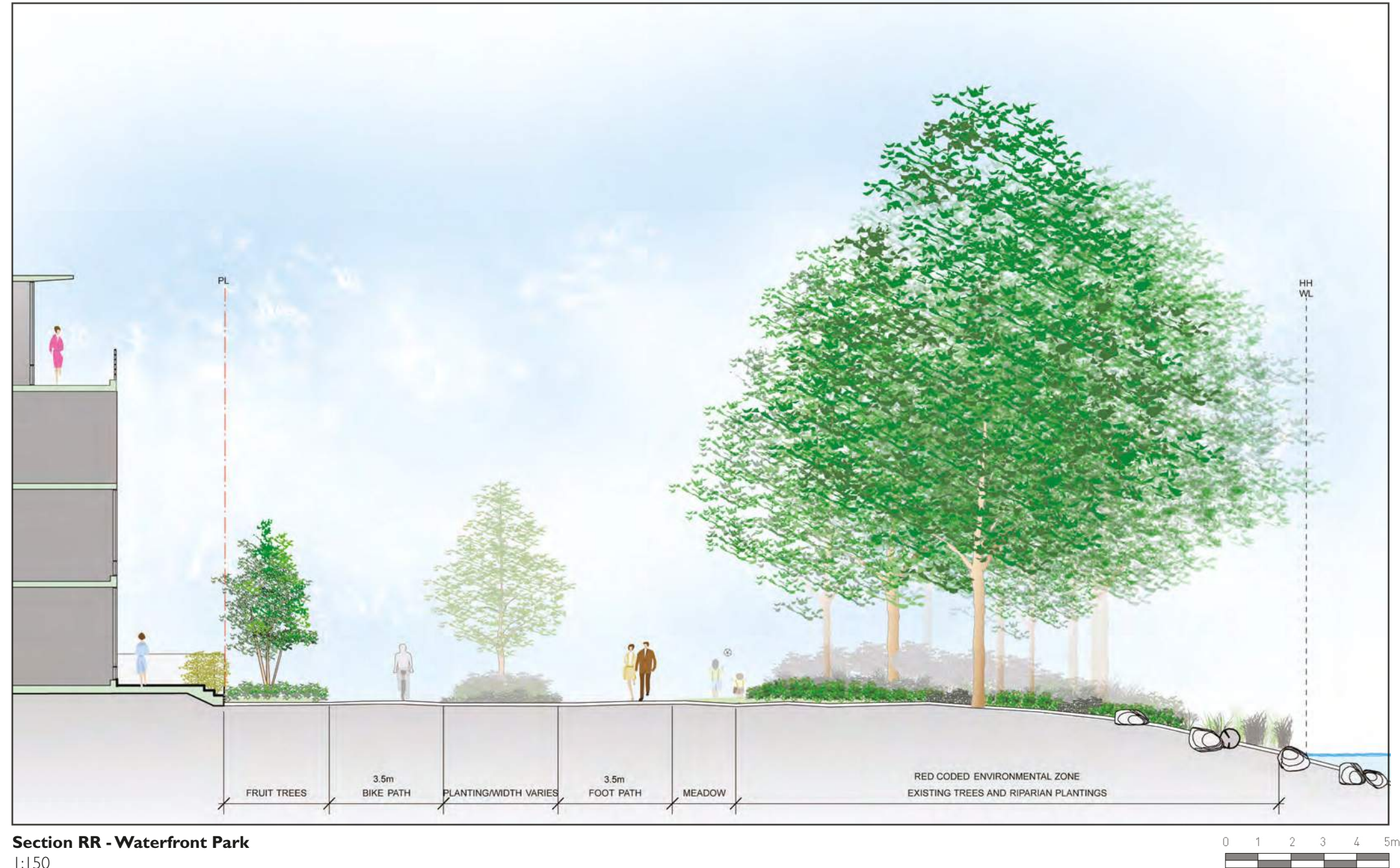
Between Kerr Street and the Sanctuary Island the existing shoreline supports existing trees and associated scrub under-storey. This is a red coded shoreline and must be maintained under environmental legislation. Landscape treatments involve preservation of existing vegetation, removal of invasive exotics and planting of new native riparian species. Inland of the water's edge, the park is envisaged as a naturalistic informal landscape with the proposed bike and pedestrian pathways meandering through a riverside meadow.

Neighbourhood Park South and a series of proposed mews terminate at the waterfront and provide access north and south to the waterfront. These open space intersections provide

the context for a series of informal sitting or rest areas located along the riverfront. An off leash dog area may be located adjacent to one of these open space nodes.

Foreshore Park extends east of the Sanctuary Island along the reconstructed riverbank from the Kinross Park corridor to the Area 1 waterfront.

The separated riverside walkway and bikeway run along the entire length of the park and provide access to future development sites, the Kinross Park corridor; Neighbourhood Park South, Kerr Street Landing and via mews to the proposed road network.



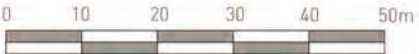
Small scale fruit trees and other low level plantings may be appropriate along the south frontage of the adjoining parcels to provide a buffer between the park and residential parcels. Informally planted fruit trees provide the opportunity for casual fruit gathering and as a food source for wildlife.

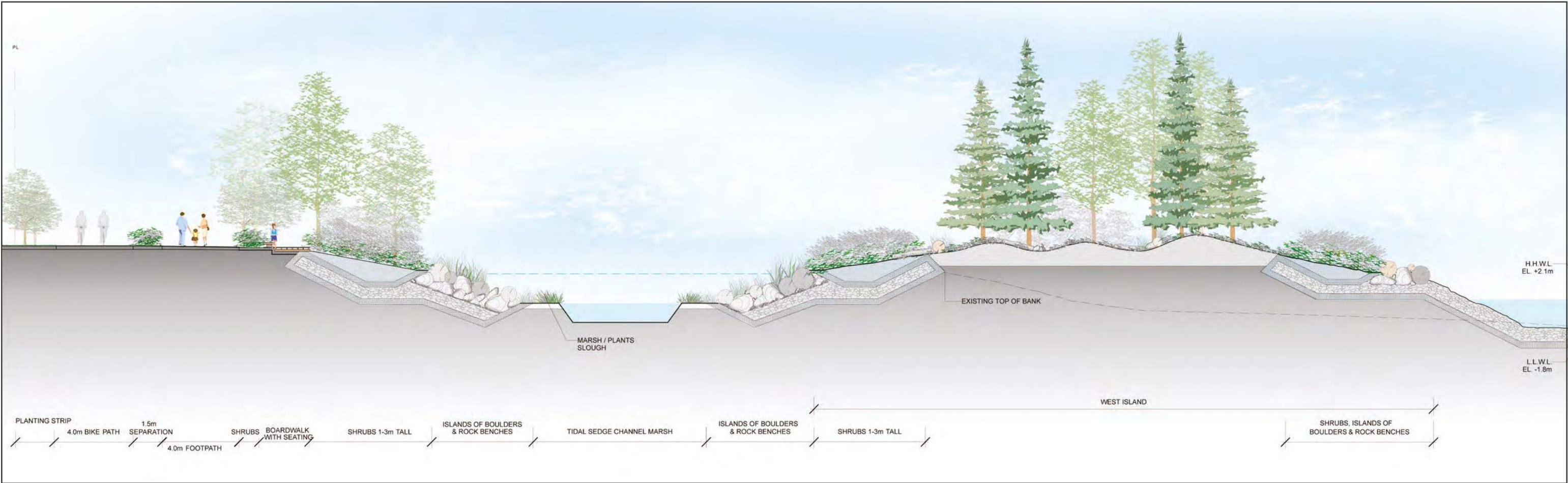
Riparian plantings are proposed along the length of the river bank with more ornamental shrub and tree plantings proposed in the upland areas. Foreshore Park plays an important role in the providing song bird habitat with a mixture of appropriate trees and shrub species, possibly including fruit trees, to support urban agriculture. Contemplative lookout decks are proposed at the water's edge to provide views to the river and Sanctuary Island.



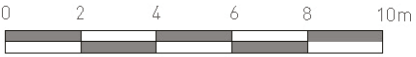
Foreshore Park (East)

1:1000





Section YY - Foreshore Park at Island
1:200



5.0

PUBLIC REALM COMPONENTS

Introduction

This section of the document describes the approach to the planning, design and detailing of the variety of landscape based components that contribute to establishing a sense of character for EFL.

The components described in this section are organized as follows:

Hard Landscape Components:

- Paving materials
- Site furnishings

Soft Landscape Components:

- Street trees
- Bioswale and rain garden plants
- Native and urban adaptive plants

Sustainability Components:

- Song bird strategy components
- Urban agriculture components
- Landscape based rainwater features

It is intended that the public realm character for East Fraserlands will be defined by a coordinated system of public realm components that contribute to creating a distinct sense of place for the project. The character of the public realm is defined by the scale, juxtaposition and character of the various buildings and by the scale, layout and detailing of the various streets and open spaces they define.

Site furnishings will be selected to unify the public realm character of East Fraserlands while providing contrast and variety in some locations to reflect the range of public spaces that exist within the overall plan.

The design vocabulary used in the West Fraserlands will be considered in determining appropriate detailing of elements along the waterfront.

5.1

LANDSCAPE COMPONENTS

5.1.1 Hard Landscape Components

Paving Materials

Paving materials play an important role in influencing the character of public spaces and will be carefully considered in terms of aesthetics, functionality, cost and maintenance. In addition paving material selection plays an important role in the proposed rain water management plan.

Each of the streets that make up the development has a unique role in the road network and contribute to the character of the precincts within which they are located. With some exceptions paving materials proposed for each street will be consistent along the entire length of the street. The character of each street is dictated by a combination of factors such as scale and proportion, character of adjoining buildings, layout and organization, and finally, materials, furnishings, tree and other soft landscaping.

Paving materials for streets have been proposed to suit the intended level of use, aesthetics, functionality, cost and durability maintenance. Asphalt will be used in many cases.

Permeable pre cast concrete pavers are proposed for the road surfaces and parking bays in Kerr Street Landing where appearance is most critical and traffic volumes and speeds are intended to be lowest.

Permeable hard surfaces will assist in meeting the projects goals for rain-water infiltration.



Concrete is proposed for sidewalks, to create pedestrian crossings, let-downs, paving bands and special areas of paving.

Permeable asphalt will be considered as a potential surface for the bike route proposed along Foreshore Park.

Paving materials for parks may include a wide potential range of materials including cast concrete, stone, concrete pavers and gravel. Material selections would relate to the detailed design and programming for the parks.

Note: Material selections are proposed to guide detailed design and are subject to change. A life cycle analysis will be required for any non-standard treatments.

Site Furnishings

Site furnishings coordinated with paving materials and lighting help define the character of public places. The design intent for East Fraserlands is to develop a coordinated family of site furnishings that are appropriate to the various character precincts of the development. Site furnishings for East Fraserlands will include lights, benches, trash cans, bike racks, signage and miscellaneous hardscape elements such as detailing for rain gardens.

Distinct and visually cohesive families of site furnishings are proposed for each of the character precincts and the foreshore. Final designs and product selections will be made based on aesthetics, availability, durability and cost.











Furnishings should be manufactured by an established outdoor furniture manufacturer, with a proven track record of providing site furnishings for public realm settings. The manufacturer must demonstrate that products are manufactured using sustainable manufacturing including the use of recycled materials and responsibly harvested timber. Long term durability and on-going customer service should be demonstrated by successful past projects and positive client references.



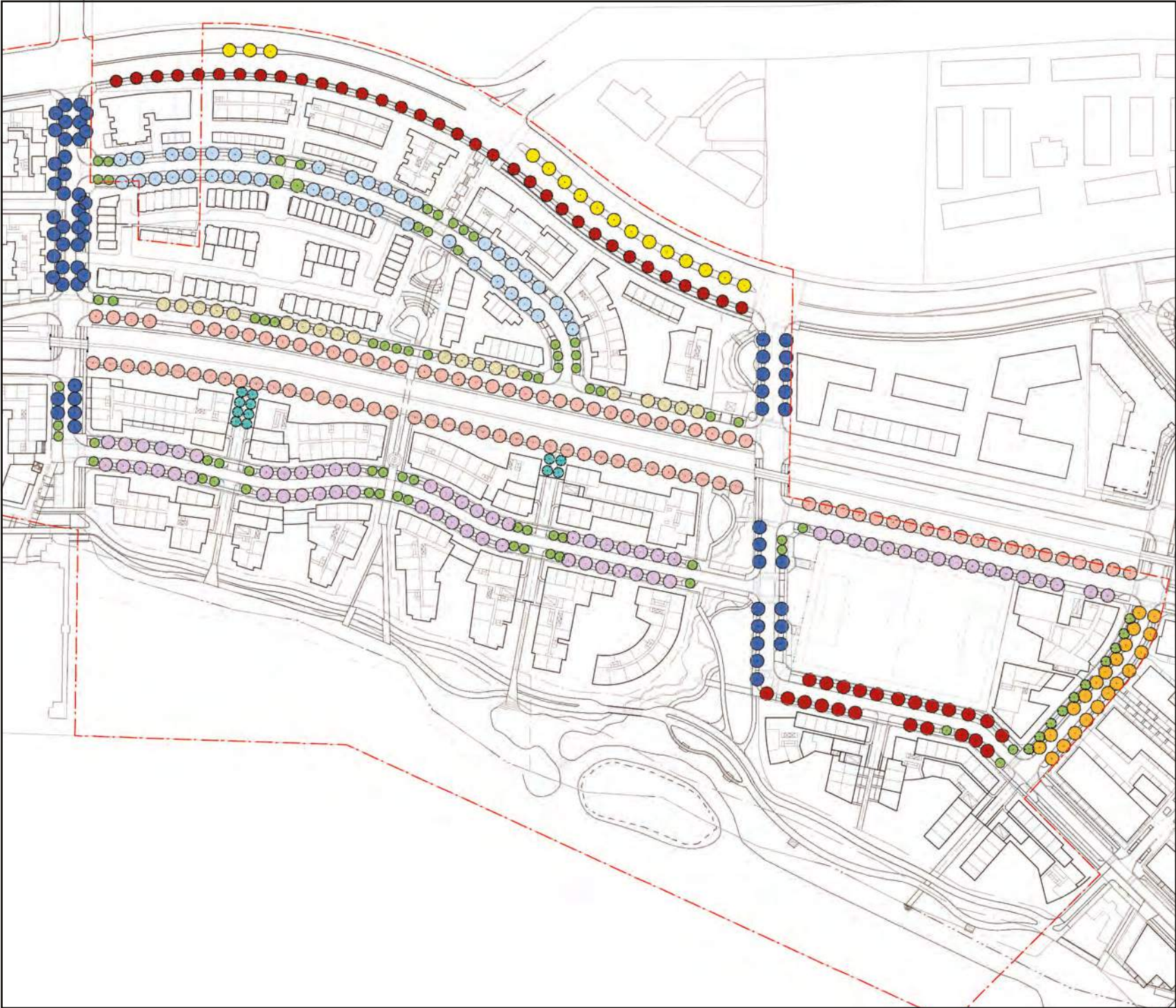


5.1.2 STREET TREE MASTER PLAN

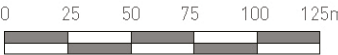
Street tree species have been proposed for all street tree plantings. Species have been selected for suitability to urban street conditions and in relation to the scale of each street. They have also been proposed for their contribution to songbird habitat. All street trees should be a minimum of 6cm caliper at the time of planting.

TREE LEGEND			
SYMBOL	TREE SPECIES & SIZE	SYMBOL	TREE SPECIES & SIZE
	Acer platanoides 'Emerald Queen', 50'x40' Emerald Queen Norway Maple		Fagus sylvatica, 55' x 50' European Beech Size: 8 cm caliper Total: 64
	Acer rubrum 'Franks Red', 45'x 35' Red Sunset Maple Size: 8 cm caliper Total: 45		Ginkgo biloba 'Princeton's Sentry', 40' x 15' Princeton Sentry Ginkgo Size: 8 cm caliper Total: 29
	Acer rubrum 'Armstrong', 40'x 15' Bowhall Red Maple Size: 8 cm caliper Total: 64		Platanus acerifolia 'Bloodgood', 50' x 40' London Plane Tree Size: 6 cm caliper Total: 54
	Ametanther x grandiflora 'Princess Diana' Princess Diana Apple Serviceberry Size: 6 cm caliper		Quercus acutissima, 45'x 40' Sawtooth Oak Size: 6 cm caliper Total: 46
	Carpinus caroliniana, 25'x 25' American Hornbeam		Quercus palustris, 45'x 40' Pin Oak Size: 8 cm caliper Total: 110
	Cornus florida, 15' x 15' Flowering Dogwood		Zelkova serrata 'Green Vase', 40'x 35' Green Vase Size: 8 cm caliper Total: 60
	Crataegus x laevifolia Laxleaf Hawthorn		
	Crataegus phaeocorymum, 25' x 20' Washington Hawthorn		

Kerr Street Landing trees to be selected at time of street design.



Street Tree Master Plan
1:3000





Acer rubrum 'Franks Red', 45'x35'
Red Sunset Maple



Acer rubrum 'Armstrong', 40'x15'
Armstrong Red Maple



Acer platanoides "Emerald Queen", 25' x 20'
Norway Maple



Amelanchier x *grandifolia* 'Princess Diana', 50'x40'
Princess Diana Apple Serviceberry



Carpinus caroliniana, 25'x25'
American Hornbeam



Cornus florida, 15'x15'
Flowering Dogwood



Crataegus x *lavallei*
Lavalle Hawthorn



Crataegus phaenopyrum, 25' x 20'
Washington Hawthorn



Fagus sylvatica 55'x50'
Beech Tree



Ginkgo biloba 'Princeton's Sentry' 40'x15'
Princeton Sentry Ginkgo



Platanus acerifolia 'Bloodgood', 50'x40'
London Plane Tree



Quercus acutissima, 45'x40'
Sawtooth Oak



Quercus palustris, 45'x40'
Pin Oak



Zelkova serrata 'Green Vase', 40'x35'
Green Vase Japanese Zelkova

5.1.3

BIO-SWALE AND RAIN GARDEN PLANTS

Bioswales and rain gardens will form important components of an integrated approach to site drainage and rainwater management at East Fraserlands. These features will be designed to slow runoff and filter rainwater while hosting combinations of plants that thrive in periodically flooded soils. There will be a range of species, with those that will experience flooding located in the centre of each garden or swale. Many of the plants are proposed to be native species, such as ninebark, sedges, and willows in the centre currants, mock orange, and huckleberry in the intermediate zones, and yarrow, goldenrod, salal and creeping Mahonia near the edges. Plants selected for rain gardens are typically deep rooted, allowing them to survive periodic drought. Many of the species also attract a range of pollinators to the site. The ability of a given species to assimilate pollutants such as heavy metals and hydrocarbons is as important as its appearance, and its individual cultural requirements. Mulch will be specified for its effectiveness in filtering runoff, and supporting microorganisms that break down oil based compounds before they reach the soil. The rain gardens in East Fraserlands will be strategically placed throughout the residential neighbourhoods and urban areas, and bio-swales are proposed in the parks, beach areas, and along the foreshore.



Rosa gymnocarpa



Physocarpus opulifolius



Cornus sericea 'Flaviramea'



Viburnum tinus



Eupatorium



Helictotrichon sempervirens



Pennisetum alopecuroides



Miscanthus sinensis



Salix purpurea 'Nana'

5.1.4 NATIVE AND URBAN ADAPTIVE PLANTINGS

Native and adaptive species will be prominent in the planting design for the parks, open spaces and residential neighbourhoods at East Fraserlands. In this context, adaptive species are defined as those that provide habitat and biodiversity, and which do not require irrigation or fertilizers to flourish. Native and adaptive species will include trees, woody and herbaceous perennials, and riparian plants.

Extensive use of plants such as kinnikinnick, roses, evergreen huckleberry and salal, where appropriate, will reflect the regional landscape. The individual development parcels will create opportunities to feature combinations of native species that are adapted to site conditions both aesthetically, and from a biological standpoint. These will include riparian species proposed where appropriate.



Symphoricarpos albus



Rosa rugosa



Arctostaphylos uva-ursi



Lonicera involucrata



Gaultheria shallon



Vaccinium ovatum



Rosa nutkana



Ribes sanguineum



Spiraea betulifolia



Mahonia repens

5.1.5

SONGBIRDS

Songbird Strategy

East Fraserlands is located on the important Pacific Flyway for migrating birds along the west coast of North American. EFL is the first neighbourhood in the region to propose a strategy to protect existing bird habitat along the edge of the river and to develop a comprehensive strategy to integrate urban songbird habitat elements into the community landscape.

The songbird habitat guidelines are intended to be a design tool for landscape architects as well as to be a tool for the regulatory review of landscape designs in the development permit and building permit stages. These guidelines are intended to inform approaches to landscape design, recognizing that open space in a dense community such as EFL has multiple programming and design issues to consider:

The EFL songbird strategy was developed by addressing the key elements of natural songbird habitat (particular foraging areas) and adapting them to a range of urban spaces where similar ecological structure and function could be achieved. It is important to note that the habitats created are “urban” in nature and do not offer the full range of characteristics of pristine bird habitat. However, in the context or extensive urbanization of bird habitat in the Lower Mainland, it is believed that this attention to habitat characteristics in the open space of EFL will enhance songbird population health.



Foraging guilds of birds (in no particular order)	Natural habitat types (in no particular order)	Urban habitat space opportunities (in no particular order)
Insect Gleaners Hawkers Probing Chiseling	Deciduous forest Mixed forest Park Wetland	Kinross / avalon / promontory parks Kinross / avalon / promontory parks Parks Kinross / avalon / promontory parks / Road ROWs
Leaf tossers Diving Swooping Dabbling Wading	Old field Meadow Hedgerows Riparian Interstitial	Kinross park / sanctuary island Parks / Road ROWs Road & Rail ROWs/ Parks Kinross / avalon / promontory parks Kinross / avalon / promontory parks / Road ROWs

EFL Habitat Spaces

The following outlines the urban habitat space opportunities, where natural habitat patterns have been revised and fit into the urban spaces, with effort to retain as much ecological bird habitat structure and function as possible.

Foreshore Park

The Foreshore Park can offer modified wetland, riparian, hedgerow, park and mixed forest environments. The park will provide habitat in the protected areas along the river; a perched wetland / intertidal marsh area, as well as islands of trees, shrubs and meadows along the proposed waterfront promenade. The provision of a naturalized island along the river's edge that inaccessible by humans and pets can also provide significant habitat value.

Kinross Park

The larger park areas (such as Avalon and Kinross Parks) can offer modified riparian, wetland, park, old field, hedgerow, deciduous and mixed forest habitat patterns. They can provide significant urban habitat value along the rainwater runoff channels in the parks, along with the forest and shrub corridors and islands throughout the park area.

Neighbourhood Parks

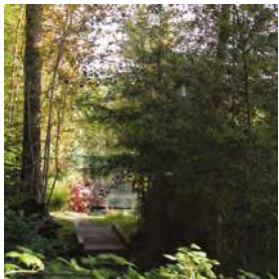
The neighbourhood park areas can offer modified park, hedgerow and deciduous forest habitat patterns. These parks will provide habitat through shrub and tree clusters in these open spaces, as well as rain-gardens in selected areas.

Rights of way / Greenways

The rights-of-way can serve the ecological function of providing habitat continuity connecting other significant habitat spaces such as Kinross and Avalon Parks.

Boulevards and Streets

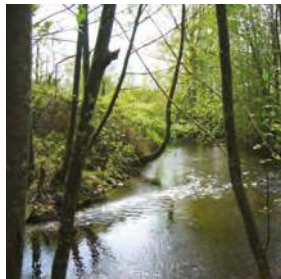
Boulevards and streets can offer modified park, modified wetland and hedgerow habitats. Streets will be planted with a diversity of tree species of high habitat value, and these can be envisioned from a habitat point of view to be in conjunction with the private land adjacent the street. Habitat may be further enhanced with rain gardens, bioswales and a diverse shrub layer in appropriate areas beneath the street trees, where applicable.



mixed forest



hedgerow



riparian



meadow



park



old field



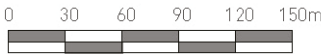
deciduous tree groves



wetland



Songbird Habitat Map
1:4000



5.1.6

URBAN AGRICULTURE

Urban Agriculture and the Productive Landscape in East FraserLands

Introduction

Urban agriculture is one of the many facets of developing a sustainable urban community at East Fraserlands. Urban agriculture encompasses a wide range of activities and elements that support growing plants for food and other related uses within urban centres. Integration of urban agriculture uses into public parks and street rights-of-way will be considered to increase the presence and opportunity for growing food in this high density neighbourhood. Urban agriculture policy in the City is evolving and should be further investigated at the time of development.

Approach

The approach to urban agriculture at East Fraserlands proposes a variety of elements located in both the public and private realms to achieve a productive landscape.

The public realm components could include:

- 1. Site for occasional produce sales
- 2. Communal Gardening for food production
- 3. Edible Landscape Design including:
 - Fruit Trees on streets, parks and open spaces
 - Fruit bearing shrubs and groundcovers plants
 - Fruit bearing vines used on walls, fences, trellises etc.
 - Culinary herbs

Communal Gardening

Communal gardening is proposed to provide access to food- growing opportunities for residents. These could be organized with shared garden areas or possibly arranged as individual garden plots. Communal garden opportunities can be integrated into public park spaces and some road rights-of-way, where they do not displace other uses and are supported by the community.

Orchards

Fruit trees planted en-masse, such as an orchard, allow for more convenient maintenance, improved pollination and efficient harvesting. They also provide a strong recognizable visual element in the landscape that communicates the concept of urban food production. Opportunities for smaller groupings of fruit and nut trees allow for easy access for maintenance. Fruit and nut tree species would be selected with input from the community for appropriateness to the locale, involve community input and in relation to minimizing potential negative impacts from fruit or nuts dropping from trees and other issues.

Edible Landscape

Edible landscaping means using plants that produce food or can be eaten as well as performing a wide range of other functions such as shading, screening, separating etc.. East Fraserlands will place specific focus on the food value of plants for humans and wildlife through edible landscaping. Species may include evergreen huckleberry, raspberry, salmonberry, gooseberry, rosemary, rhubarb, grape, kiwi, etc.

Productive Landscape Approach: Public Realm

A variety of approaches are proposed at East Fraserlands to establish a robust urban agriculture.

Design and Public Process

When consulting with the public in the planning and detailed design of all parks at East FraserLands, locations and types of productive landscape elements such as orchards, community gardens, herb gardens etc. should be considered.

Edible landscaping

Planting design for the public realm landscape should consider the potential for edible plants in planters or planting beds. Plants to consider include fruit bearing trees, shrubs, vines and edible plants or culinary herbs in conjunction with other native or exotic ornamental plantings.

Public art and ornamental structures

Fruit bearing vines or plants may be integrated with or as public art or other ornamental structures in parks and street rights-of-way.

Herb gardens

Potential herb garden sites and the inclusion of herbs in planted areas should be considered at detailed park design.

Espalier fruit/nut trees

Small espaliered fruit trees can be grown where space is limited, such as along railings or on arbours, trellises, or other structures.

Living/green wall, railing or fence

“Living walls” may occur either against the side of a park building, on a railing or as free standing fences or walls. Herbs and other productive plants should be given preference.

Small greenhouses

Where appropriate, small greenhouse structures and potting sheds may be considered in parks and other public realm areas.



LEGEND



Proposed Produce Market Site



Potential Orchard Plantings in Parks



Edible Landscapes within Parks



Potential Fruit Trees in Streets or Mews



Urban Agriculture Components
Public Realm
N.T.S.

5.2

LIGHTING DESIGN

5.2.1 General Lighting Concepts

Hierarchy of Light

East Fraserlands Area 2 will have lighting that will generate a clear visual hierarchy and provide a 'structure' to the area at night. Important factors such as visual comfort, legibility, feelings of safety, pride of place, and the highest and best use of technology and sustainable system viability, will be emphasized. Necessary to achieving these goals is the establishment of a Hierarchy of Light throughout the project.

Lighting for Area 2 of East Fraserlands will visually connect with the development of Area 1 yet have its own personality, sharing the vocabulary and the aesthetic of the architecture. Area 2 lighting will focus on and promote safe pedestrian uses. This hierarchy of street lighting, low level pathway light, precision roadway lighting and carefully applied accents, public art and environmental graphics, will unify and complement each precinct.

Design Standards

'White light' sources (3000K - 4000K); metal halide, fluorescent, inductive fluorescent (QL), and LED. White light provides superior visual acuity under mesopic and scotopic lighting conditions: low and mid-level outdoor night time light levels. The use of white light may also enable lower light level targets as perception is enhanced, particularly in the peripheral viewing range. Selected sources will have a high CRI (Color Rendering Index); a minimum of 75CRI is recommended.



Minimize 'visual noise'. Provide lighting that minimizes glare, spill light, light trespass and light pollution. Glare makes the task of seeing more difficult, produces momentary discomfort or disability and moves the focus from the environment to the bright luminaire.

Lighting fixture types will show a similar design motif. Physical design should exhibit a family of unified components, finishes and lamp types. Light fixtures will follow the aesthetics of the architecture in Area 2, promoting the intimate and community based atmosphere. The main roads connecting Areas 1 and 2 will maintain a common vocabulary, while the smaller roads, mews, plazas and parks will speak to the residential and more private nature of the development.

The light fixtures will speak to the nature of the Fraser River site and the significance of the logging industry in the area. The mainly residential architecture calls for the warmth and natural beauty of wood. Many of the pole mounted and bollard fixtures will utilize wood elements in their construction. The poles will be fabricated from Glulam structural wood – glued laminated timber. This durable wood product is strong, and resistant to insects, weather and vandalism. Timber used in the manufacturing of the Glulam poles is sustainably harvested and takes advantage of smaller diameter trees.

Technical Standards

Lighting at East Fraserlands will be guided by current best design and technical practices and will be informed by recommended practices established by the Chartered Institution of Building Services Engineers (CIBSE), the International Commission on Illumination (CIE), and the Illuminating Engineering Society (IES). All products will be approved by the Canadian Standards Association (CSA).

Target exterior illumination levels will emphasize visibility at near and far distances. Using 'vertical' illuminance (lux) standards as a principal design metric will enhance individual interaction within the area. Vertical illuminance (v/lux) is more relevant for many outdoor lighting tasks than basic horizontal illuminance measures. Vertical illuminance best reveals surface details such as pedestrian faces, potential vehicle conflicts such as bicyclists, and it provides enhanced visual information that reveals activity and enhances pedestrian orientation and sense of safety.

A limited palette of luminaires and lamps will be selected with considerations for high photometric performance, ease of installation and maintenance, and visual consistency with the architecture and landscape.

Dark Skies

Minimize potential negative impacts of light at night by using 'best practices' design to minimize light pollution, glare, light trespass, visual clutter, and wasted energy.

Technology

Use lowest lamp wattage available to achieve lighting goals.

Establish energy 'effectiveness' as design metric, as a balanced approach to design.

Create a limited 'palette' of standard luminaires, lamps and control equipment to facilitate long term maintenance of the system.

Note: these design guidelines illustrate the intent of the public realm lighting concepts. All fixtures need to be acceptable to the City at detailed design.

5.2.2 Marine Way, SE Marine Drive & Kent Avenue North

Lighting for the large roads in the Area 2 development will present a safe environment for the use of multiple modes of transportation coming to or passing through the development. Interaction between pedestrians, bikes, cars and the train will be enhanced with the appropriate application of illumination.

The main roads through Area 2 connect the neighbourhood with the commercial district of Area 1. The character and style of the lighting will provide a consistent link between phases of work.

In addition to the municipal poles provided by the city, pole mounted light standards will support wayfinding for vehicular and pedestrian traffic through the neighbourhood.

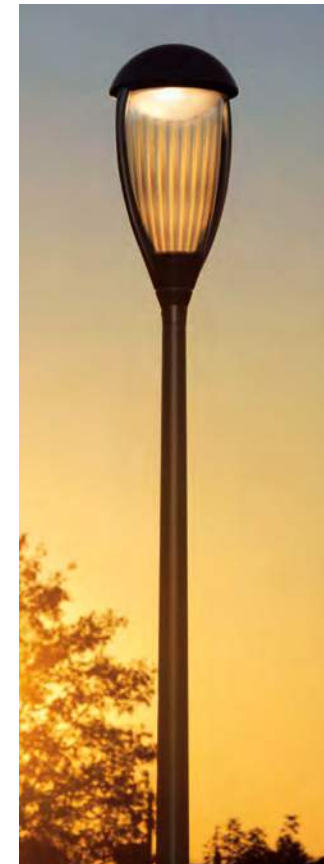
Steplights will illuminate the sidewalk for pedestrians, supplying additional light in crossing areas.

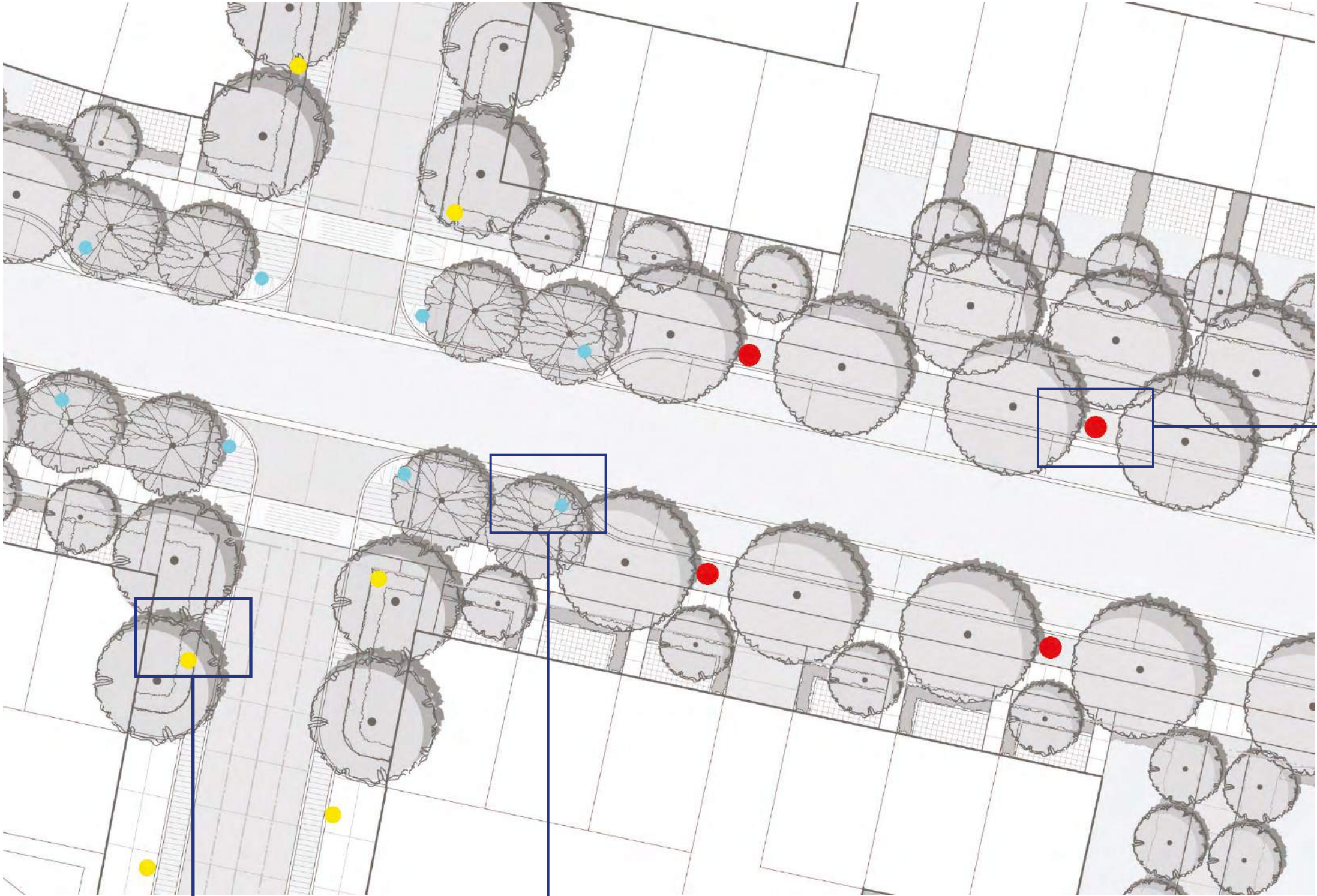


Section HH - Marine Way



Section CC - Kent Avenue North





Plan View - Road "H"



6 meter tall wood pole with full cut-off fixture for roadway illumination



vandal and impact resistant, low wattage bollard demarking pedestrian crossings along the street



4 meter tall wood pole with full cut-off fixture for pedestrian pathway illumination

5.2.3 Road “E”, Road “H”, Kinross Street & Mount Baker Way

A lower level of lighting will be provided for the secondary roads in response to the surrounding residential location.

Full cutoff street lights provide illumination along neighbourhood residential streets without light trespassing into residences.

Low wattage bollards will be used to highlight the locations where the street narrows for pedestrian crossing.

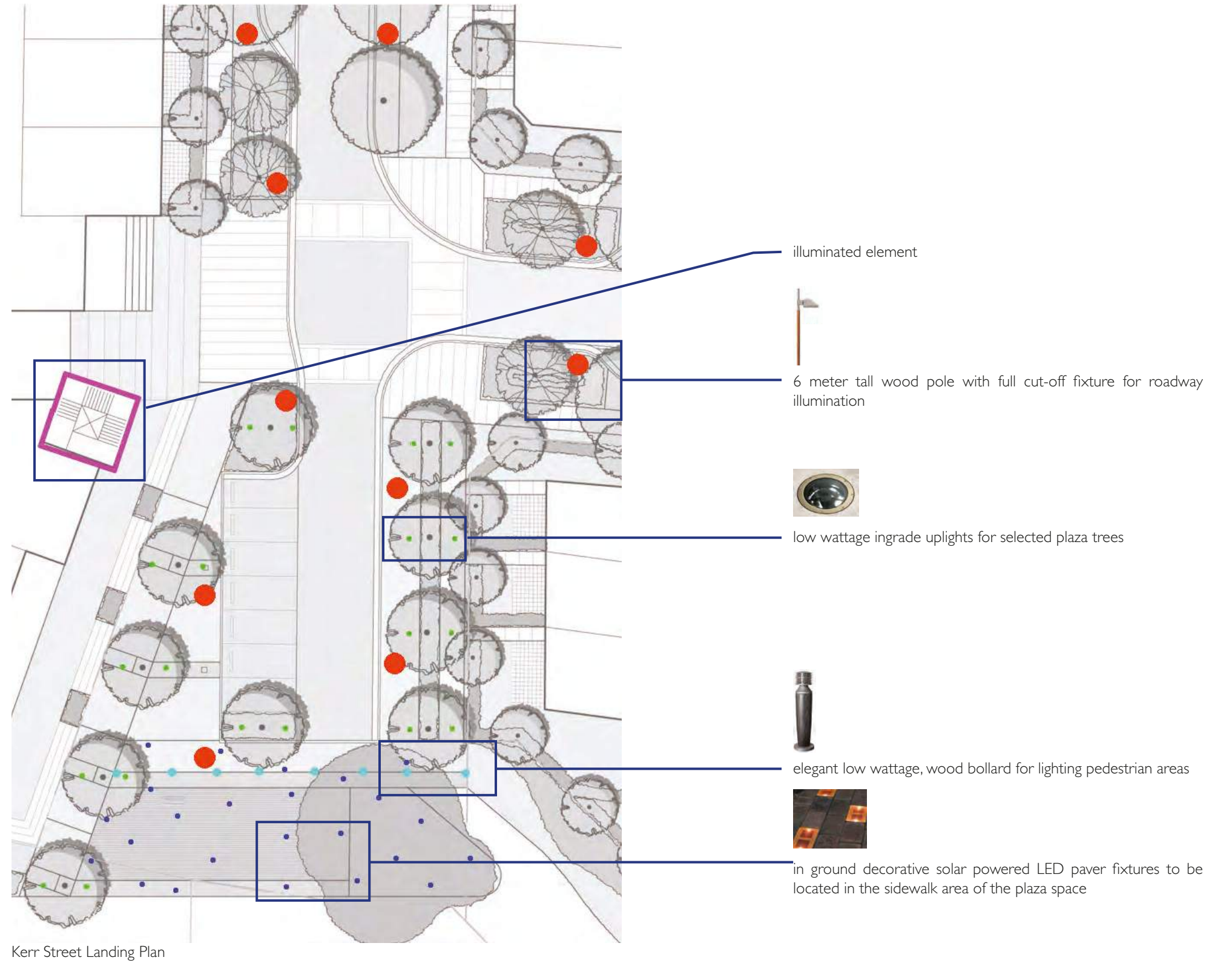
Pedestrian scale illumination will add interest and intimacy to the general lighting provided by the pole mounted luminaires along these streets.

The lighting for the secondary roads in the Area 2 will correspond to the architecture and history of the site. The use of wood in the structure of the light fixtures recalls the heritage of the site and the former existence of the forestry industry. The exact style of the fixture will be determined during the next phase of work.



Section OO - Road “E”





5.2.4 Kerr Street and Kerr Street Landing

Kerr Street Landing is a key destination within Area 2. Full cutoff street lights will provide illumination along Kerr Street leading the way to the plaza area.

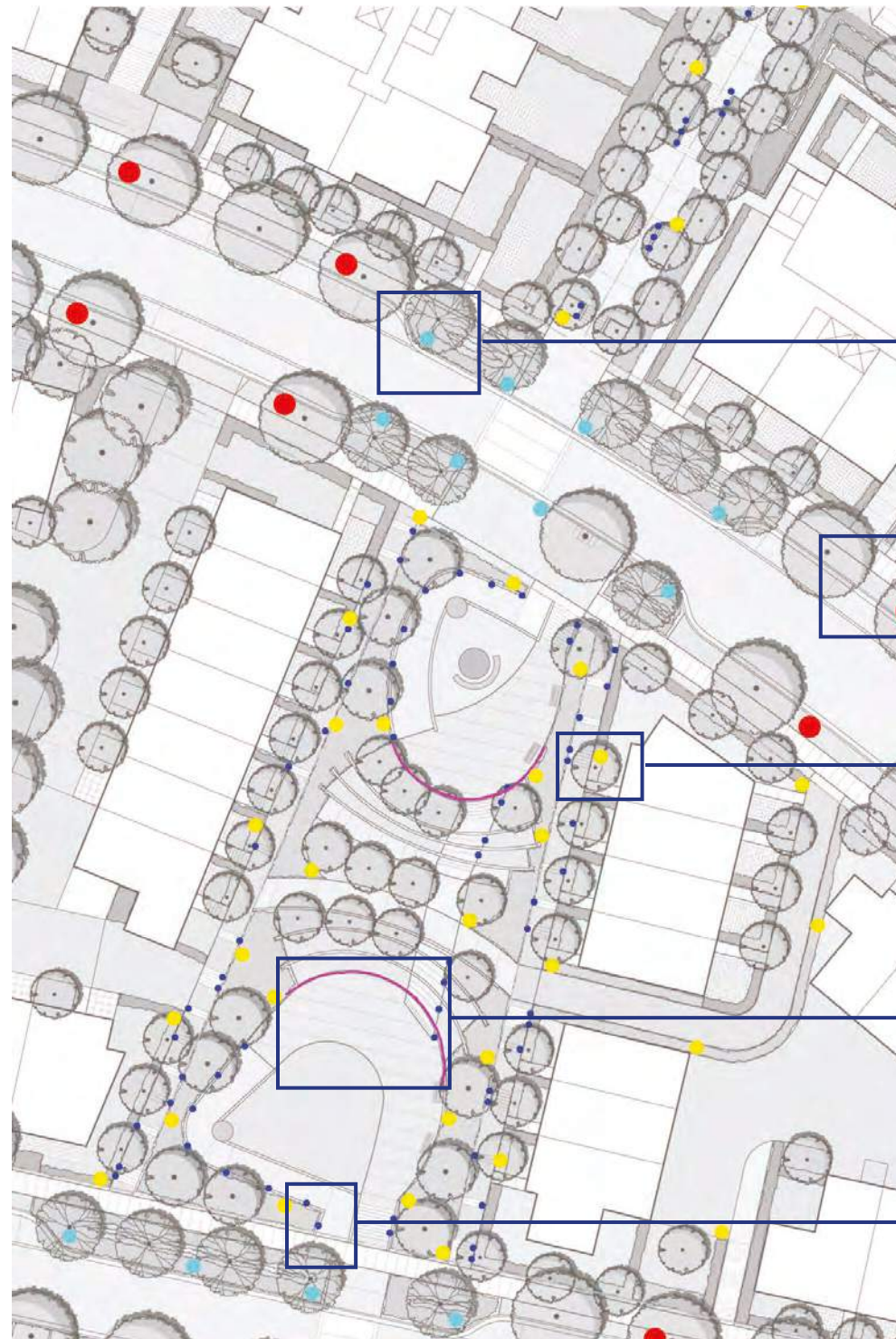
The lighting of the plaza at Kerr Street Landing will aid in creating an inviting, playful and social atmosphere. Ingrade LED elements will draw attention and establish a lively setting. Uplighting selected trees and sculpture will add interest to the site.

Bollards will mark the perimeter of the plaza, providing a sense of destination.



Kerr Plaza view





vandal and impact resistant, low wattage bollard demarking pedestrian crossings along the street



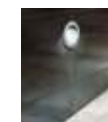
6 meter tall wood pole with full cut-off, fixture for roadway illumination



4 meter tall wood pole with full cut-off, fixture for pedestrian pathway illumination



flexible, linear LED fixture for outdoor use, integrated under bench elements to glow around the gathering areas



low-glare steplights integrated into stairways and ramps providing illumination of the pedestrian path

Neighbourhood Park North

5.2.5 Mews & Neighbourhood Park

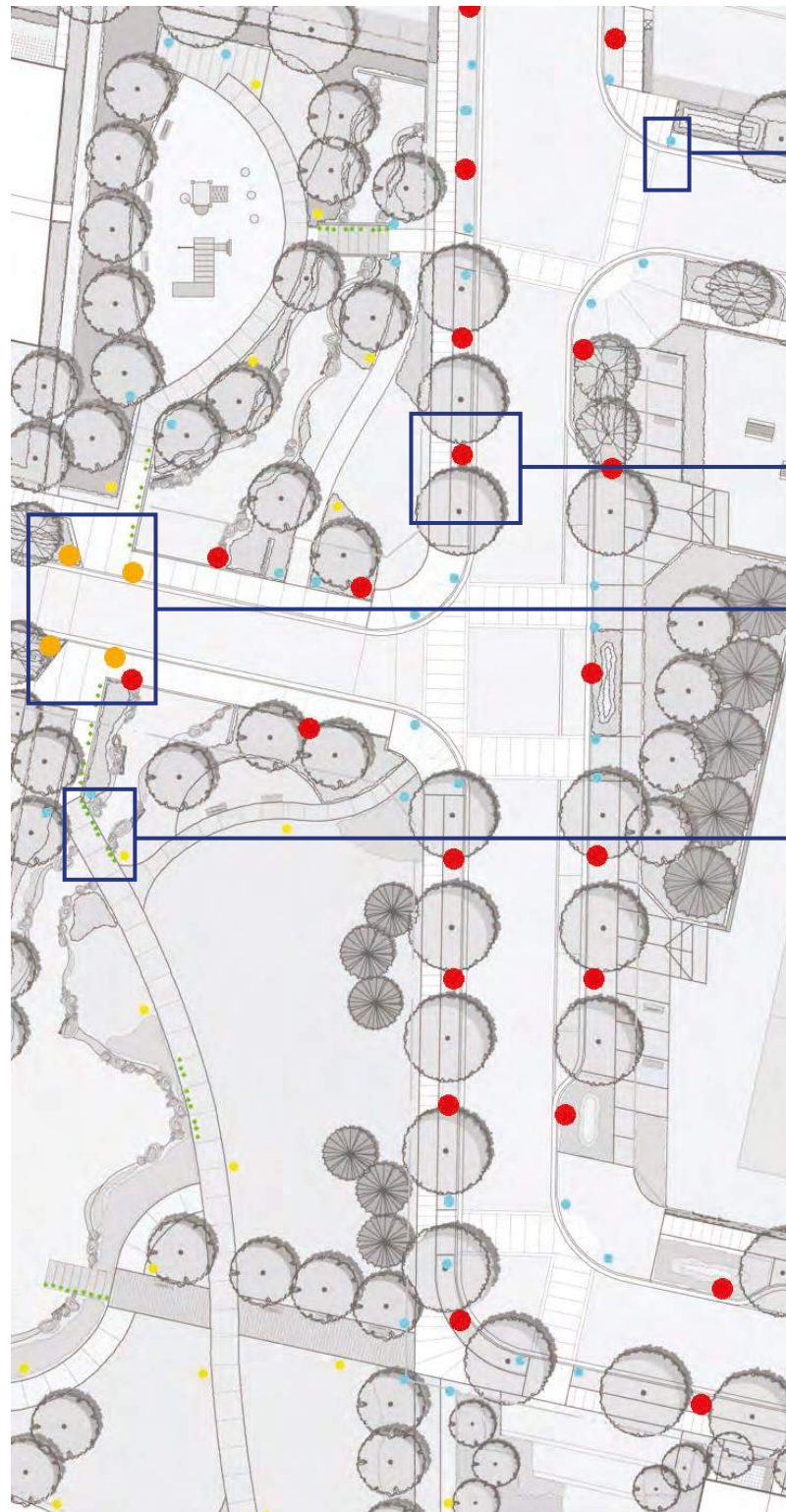
The quiet and intimate nature of the mews will be reflected in the lighting approach. General illumination will be provided by no-glare, low wattage pedestrian scale poles.

In Neighbourhood Park North, the lighting will be integrated into the landscape and architectural elements. Bollards will be used to indicate the entrance to paths through the park. Safety will be emphasized with the use of steplights in stairs and ramp sections. Gathering areas will be indicated by a gentle glowing light under benches. These lighting solutions will unify the passage way through the park while also indicating the individual elements.



Section VV - Mews





elegant low wattage, wood bollard for lighting pedestrian paths



6 meter tall wood pole with full cut-off, fixture for roadway illumination

opportunity for decorative lighting to mark water crossing



low level light fixtures integrated into pedestrian water crossing with Kinross Park

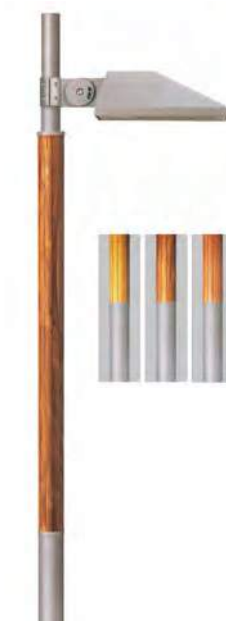
Kinross Park South Plan

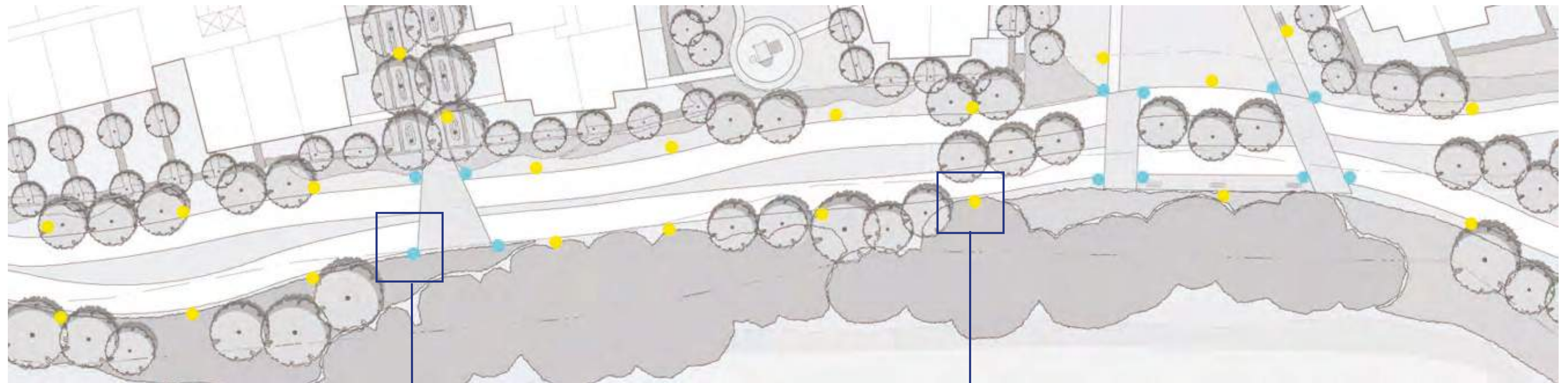
5.2.6 Kinross Park

Kinross Park celebrates the experience of water as the neighbourhood approaches the river front. Lighting will address the interaction with water; highlighting the bridges that cross it. Bollards will be used to indicate the paths. Pedestrian scale poles will provide additional illumination in transition areas.



View of Kinross Park





Foreshore Park Plan

elegant low level, low wattage, wood
bollard for lighting pedestrian paths



4 meter tall wood pole with full cut-
off fixture for pedestrian pathway
illumination



5.2.7 Foreshore Park

The tranquil quality of the Foreshore Park will be emphasized through the quiet delineation of the paths. Pedestrian level standards will be used to light the routes through the park. Additional low wattage bollards will be used to denote the entrance to pedestrian paths into the neighbourhood.



View of Waterfront Park



5.3

UNIVERSAL DESIGN, ACCESSIBILITY AND WAYFINDING

Universal Design

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized 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 East Fraserlands 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 preferences and abilities.
- 3/ Simple and intuitive use: Use of the 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 or the user's sensory abilities.
- 5/ Tolerance for error: The design minimizes hazards and the adverse consequences of accidental or unit intended actions.
- 6/ Low physical effort: The design can be used efficiently and comfortably and with a minimum of fatigue.
- 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.

Wayfinding

Wayfinding is a related and increasingly important consideration in site design. There are two key aspects to wayfinding:

1. Understanding where you are in the environment; and
2. Finding your way to where you want to go specific wayfinding principles include:

a. Establish a sense of place

b. Divide large spaces into distinct small parts

c. Provide frequent directional cues

d. Understand different people have different perspectives of the same space

e. Provide three types of expectations for space:

• without prior knowledge of the space

• with prior knowledge of the space

• searching where there is no target (browsing)
- Strong visual cues are preferred over signage, allowing users to navigate through the community more intuitively.
- EFL

6.0 SITEWIDE SUSTAINABILITY STRATEGIES

6.1 Rainwater Management

Background:
A rainwater management strategy for the East Fraserlands (EFL) has evolved through the collaborative efforts of an interdisciplinary project team, coupled with a workshop involving the project team, City representatives and a prominent consultant who provided case histories of various significant examples throughout North America, followed by a more pragmatic exchange of views with City staff. The focus of this process to date has been on assessing the feasibility of potential plan elements, with emphasis on what may be practical to implement within the Area 2 area. As the project progresses and details of the development plan are solidified, it will be possible to establish the specifics of a rainwater management plan for the entire site.

Three considerations are influencing the approach to strategy and plan development:
1/ The regulatory framework.
2/ The guiding philosophy for rainwater management in the Greater Vancouver region.
3/ The location of the EFL site adjacent to the Fraser River:

Location has a major bearing on the approach. The potential volume of rainwater runoff from the EFL site is literally a drop in the bucket when compared to the flow in the Fraser River, which drains the heartland of British Columbia. Consequently, the rainwater management strategy aims to address the quality aspect more so than the quantity aspect.

Project Objective:
Since the site was formerly put to intensive industrial use, redevelopment of the East Fraserlands for residential purposes provides an opportunity for Parklane to implement a rainwater management strategy that helps to reinstate natural groundwater regimes and also supports community livability outcomes.

Guiding Principles:
The following principles provide a conceptual framework for development of the EFL rainwater management strategy:

- Focus on water quality as the primary beneficial outcome of rainwater management systems;
- Emphasize systems that achieve rainwater runoff capture within roadways;
- Integrate rainwater management functions into landscape features within development parcels;
- Allow surface flows from private land to public open space, where necessary to augment rainwater capture;
- Incorporate rainwater management facilities as civic amenities, where practical.

Rainwater Management Strategy
The following points summarize the strategy that will be applied in development of the actual rainwater management plan and related details as the project progresses:

- Make roadways 'self-mitigating' by managing rainwater runoff within road rights-of-way, to the extent feasible;
- Capture rainwater runoff close to where it falls (at source).
- Prevent roadway runoff from flowing directly into the piped conveyance system (ie: provide

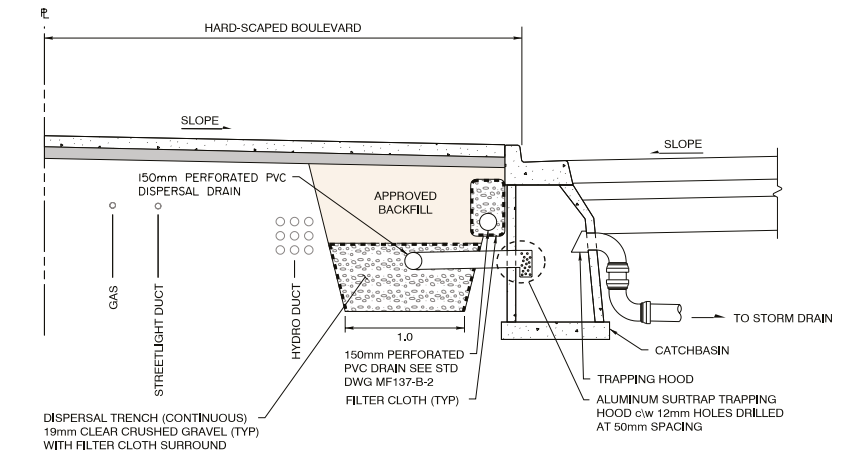
- hydraulic disconnect by routing through rainwater management facilities), except during extreme events and extended wet periods;
- Incorporate rain gardens where possible to maximize at-surface facilities for rainwater capture and treatment;
- Target the 'first flush' as the primary objective for rainfall capture;
- Create a "pervious fingers network" to maximize runoff infiltration into the ground (note: "pervious fingers" refers to the construction of interconnected, pervious zones of granular material under rain gardens and/or roadways in order to create continuous flow paths for sub-surface water movement toward the Fraser River);
- Design the system to minimize maintenance;
- Provide a piped system for conveyance of overflows during periods of extreme wet weather; and
- Require parcel developers to provide rainfall capture on-site prior to overflowing runoff into the roadway conveyance system.

Plan Elements:
Potential elements of a rainwater management plan that are being considered for use in Area 2 of the East Fraserlands development include:

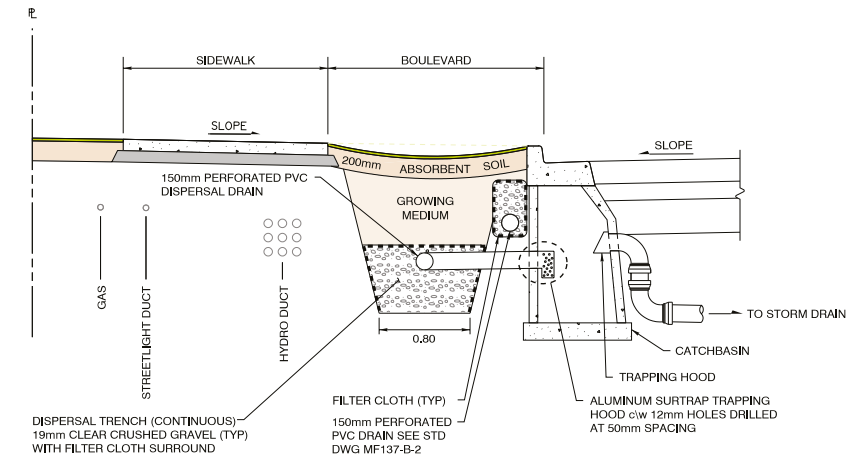
- Vegetated roadside swales lined with absorbent soil over a porous granular layer are proposed for both Kent Avenue North and Kent Avenue South adjacent to the existing CP Rail line. Roadway drainage will be directed into the swale and permitted to absorb into the soil and fill the subsurface granular layer where it can seep into the surrounding ground over time. The swales will be constructed with a decant pipe system that will direct overflow drainage into the storm sewer during heavy rainfall events and during wet seasons when the ground may be saturated.
- Rain gardens/planters are proposed for boulevards, where possible, and it is intended that they function similarly to the roadside swales. It is expected that the rain gardens/planters will consist of absorbent soil over a porous granular layer. Roadway drainage will be directed into the depressed landscaped area and permitted to absorb into the soil and fill the subsurface granular layer where it can seep into the surrounding ground over time. The rain gardens/planters will be constructed with a decant pipe system that will direct overflow drainage into the storm sewer during heavy rainfall events and during wet seasons when the ground may be saturated.
- Subsurface infiltration trenches are proposed for areas where it is not possible to construct raingarden/planters or swales. Infiltration trenches will consist of a low flow outlet from roadway catchbasins that will direct all low flow and first flush drainage into a linear subsurface porous gravel zone constructed within the boulevard areas. Rainwater will enter the gravel zone and be allowed to seep into surrounding soils over time. The catchbasins will also be provided with an overflow outlet connected directly to the storm sewer system so that, once the gravel zone is full, rainwater can overflow to the storm sewer.
- Permeable surface treatments are proposed for several locations in the Area 2 area in order to reduce to amount of impervious surface created by the development. Permeable paver systems are planned for low volume roadways, pedestrian walkways and also for some on-street parking areas.

It is anticipated that details of these systems will be evolved throughout the early stages of the Area 2 detailed design process, and reviewed with City staff, to arrive at a mutually acceptable rainwater management plan for the entire site.

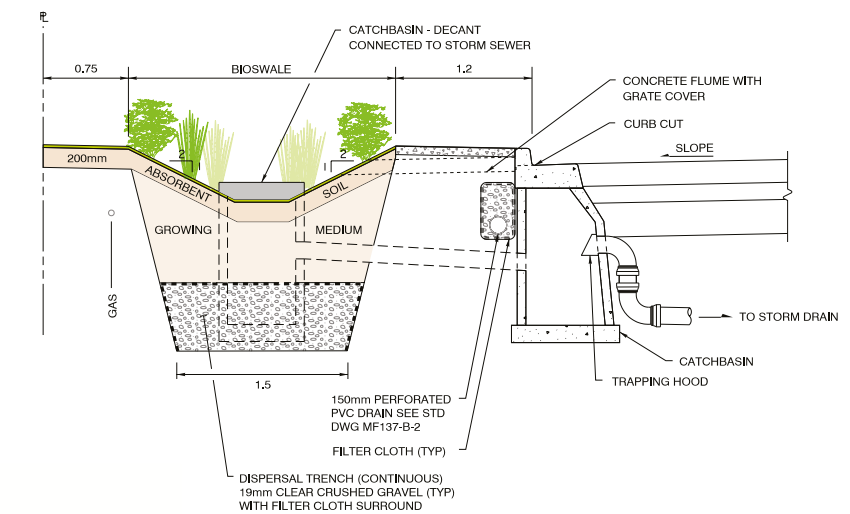




Section
Subsurface Infiltration Trench (Closed)

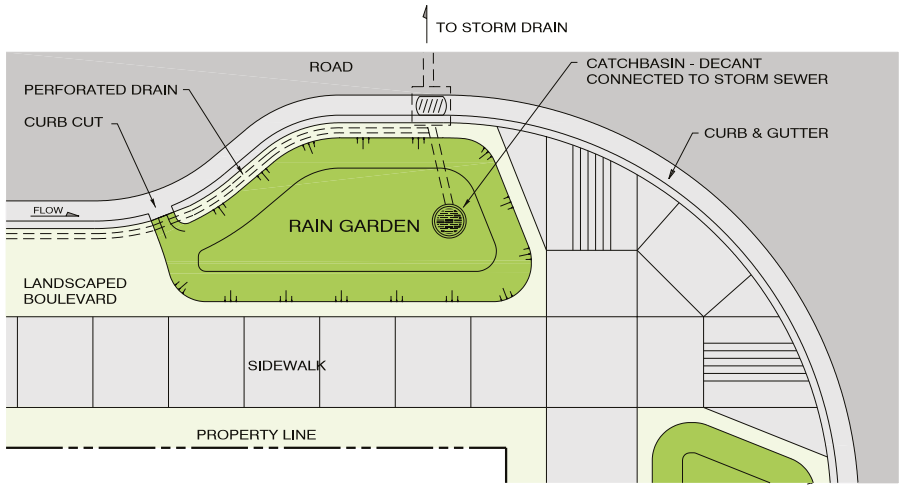


Section
Subsurface Infiltration Trench (Open)

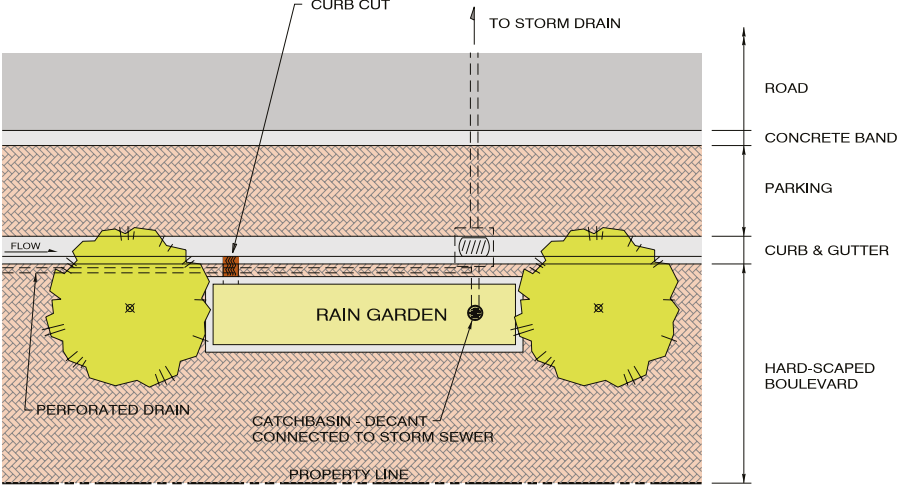


Section
Vegetated Roadside Swale

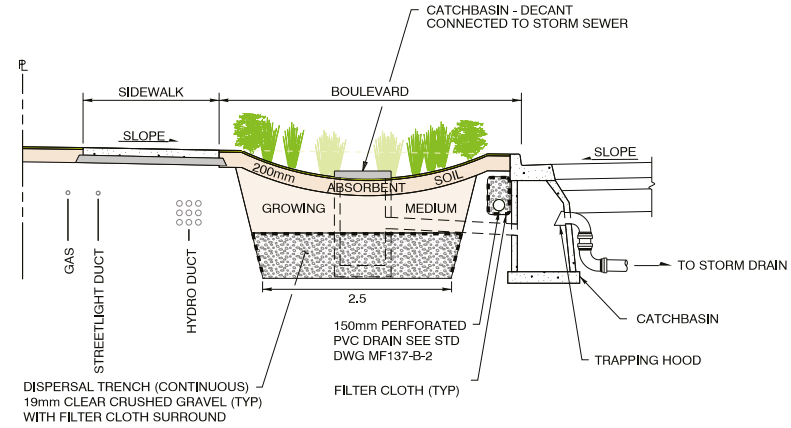
ALL DRAWINGS ARE CONCEPTUAL



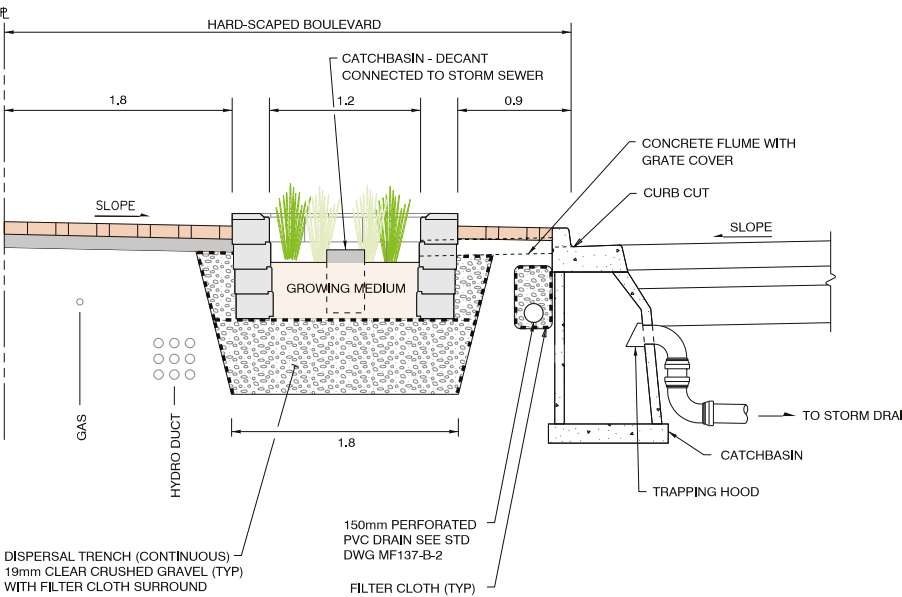
Plan
Rain Garden / Planter - Curb Bump-Out



Plan
Rain Garden / Planter - Hardscaped Boulevard



Section
Rain Garden / Planter at Curb Bump-Out



Section
Rain Garden / Planter - in Hardscaped Boulevard



LEGEND

Rainwater Elements :
in Public Lands

All locations shown are indicative and
will be subject to final design.

Landscape Based Rainwater System Conceptual Plan

N.T.S.

6.2

ECOLOGY, HABITAT AND THE FRASER RIVER
AND KINROSS BIOLOGY STRATEGY
(FREMP APPROVAL LETTER)

Shoreline Ecological Summary

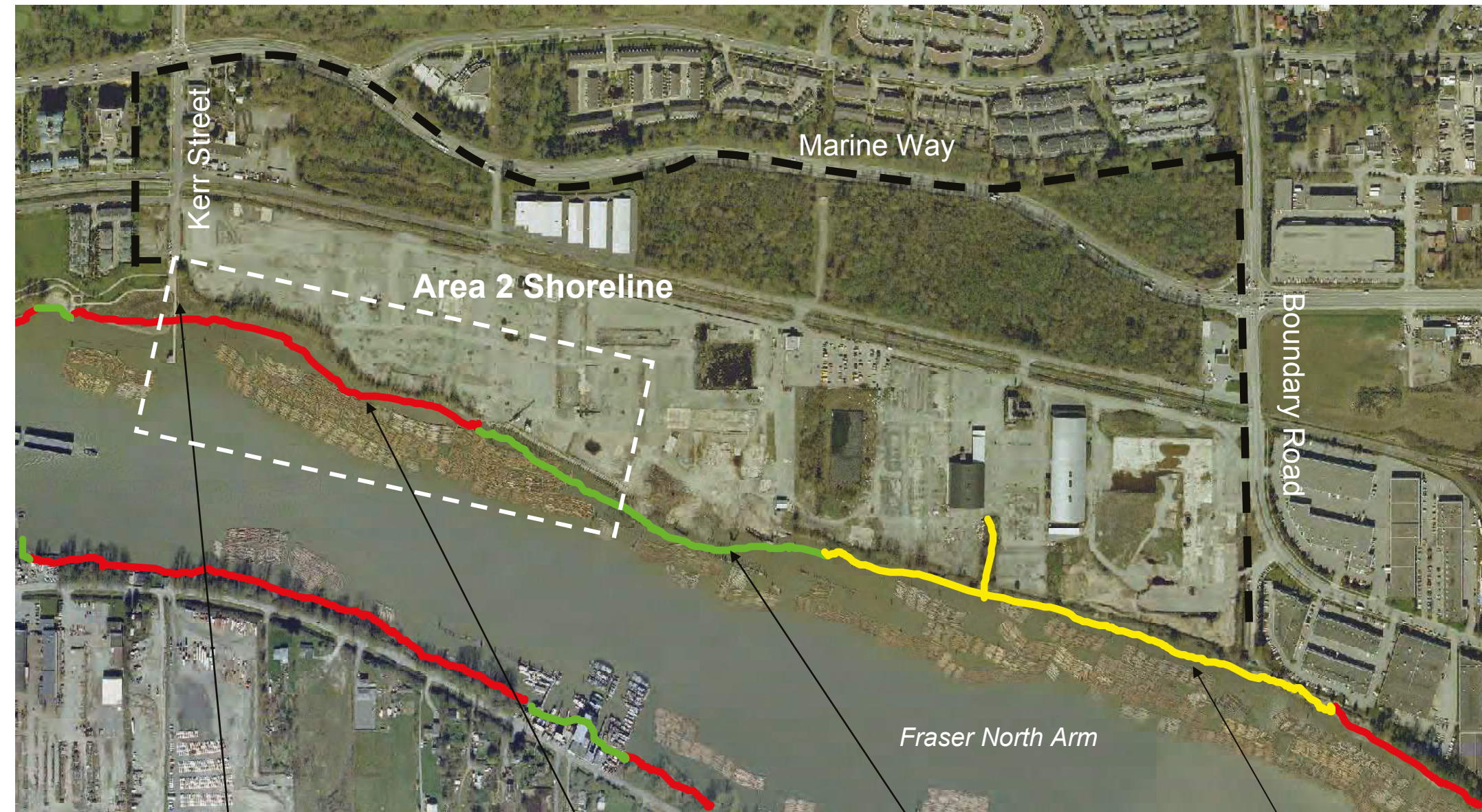
The proposed overall East Fraserlands shoreline treatment results in a net gain of fish and wildlife habitat, through the creation of large areas of intertidal marsh, a unique off-river tidal channel and sanctuary island habitat, and enhanced riparian areas. Total intertidal habitat gains are over 1000 m2 and increased habitat value, largely from the construction of intertidal marshes. Riparian area is increased by over 2000 m2 and features native plantings that provide food and cover for fish and wildlife.

Armour Stone is required to protect much of the banks and maintain the shoreline integrity. However, innovative measures have been incorporated to promote fish habitat, including burying the armour stone, and creating riparian benches above high water; adding soil to encourage natural colonization of herbaceous vegetation and greening of the rock; and installing rocks and root wads to increase habitat diversity.

In Area 2, the existing highly productive shoreline habitat, including broad intertidal mudflat, intertidal sedge marsh and riparian trees and shrubs will be preserved. The riparian zone will be enhanced by removal of blackberry and other invasive plants, and native plant species providing bird habitat will be planted. The creation of the new perched wetland and ponds and watercourses complimented by planting of native plant species in the Kinross corridor are designed to meet the objectives of the songbird strategy and improvement of wildlife habitat.

FREMP Review & DFO Authorization

The East Fraserlands project was reviewed by the Environmental Review Committee of the Fraser River Estuary Management Program (FREMP) and their approval letter was received by Parklane in June 2008. The shoreline habitat design and habitat compensation, restoration and enhancement measures were accepted and approved by the Department of Fisheries and Oceans (DFO) and a Fisheries Act Authorization signed between DFO and Parklane Homes in 2008.



FREMP Shoreline Habitat Classification

Red-Coded Shoreline

High productivity habitat consisting of productive and diverse habitat features that support critical fish and wildlife functions onsite or as part of a more regional context.

At East Fraserlands red-coded shoreline includes intertidal sedge marsh and mudflat that provides feeding and refuge areas for fish, waterfowl and shorebirds, as well as small mammals. The existing riparian trees provide cover and shade for fish rearing and feeding, nesting and perching sites for birds, and cover for wildlife.

Yellow-Coded Shoreline

Moderate productivity habitat consisting of reduced or limited productive and diverse habitat features that support important fish and wildlife functions onsite or as part of a more regional context.

At East Fraserlands yellow-coded habitat includes patches of riparian trees and shrubs and a narrow intertidal mudflat with small, isolated patches of marsh.

Green-Coded Shoreline

Low productivity habitat where habitat features and functions are limited due to former Canadian White Pine mill and log handling operations.



Intertidal marsh and mudflat.



Highly productive (red) habitat zone.



Low productivity (green) habitat zone.



Moderately productive (yellow) zone.

Figure 1
East Fraserlands site showing Area 2 shoreline location and FREMP habitat classification zones.

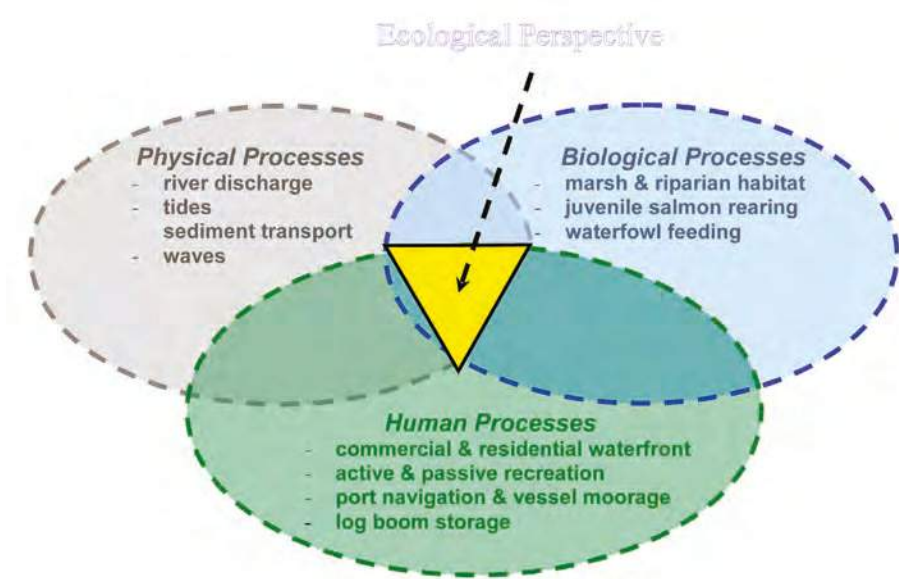


Figure 2
An ecological perspective, is one of the approaches utilized to achieve sustainable shoreline design.

Shoreline

The design treatment of the Fraser North Arm shoreline (Figure 2) is an important component of the East Fraserlands sustainable community. Enhancing and improving the shoreline habitats of the North Arm within the East Fraserlands site was one of the central planning principles toward creating a sustainable community. A multi-disciplinary approach has been adopted for the planning and design of the shoreline to ensure that the end result benefits the fish and wildlife that utilize the aquatic and riparian habitats as well as the East Fraserlands community that will reside next to it. Creating a sustainable shoreline design required preserving the highly productive intertidal and riparian habitats existing at the site, enhancing riparian habitats to benefit birds and wildlife, and implementing a waterfront park system to support human uses, that will be required as part of the East Fraserlands community in the future.

An ecological perspective (Figure 1) incorporates a thorough understanding of the interaction between physical, biological, and human processes operating at the site, recognizing that the actions at East Fraserlands may affect or be affected by off-site influences (spatial effects) and are dynamic, with short term and long term responses (temporal effects).



Figure 3
Mudflat, sedge marsh, and riparian trees and shrubs shown at low tide.



Figure 4
Shoreline showing cottonwood and alder trees at high tide.

Shoreline Fish and Wildlife Habitats

The Area 2 shoreline is entirely located within the FREMP red-coded or highly productive classification shown in Figure 2). To the west is the red-coded intertidal marsh habitat bank developed by the Port Metro Vancouver and to the east is the green-coded or low productivity classified shoreline that will be redeveloped in Area 1 into high productivity habitat consisting of tidal channel, intertidal marsh, riparian plantings, and wildlife sanctuary island. The FREMP shoreline habitat colour-coded classification is used by environmental management agencies to facilitate development in the Living Working River, as the Fraser River is known. Development in red-coded areas is restrictive to avoid impacting the habitat features and functions of the area, while in green-coded areas, enhancement is encouraged to increase habitat features and functions.

Although the former industrial uses at the Fraserlands site severely impacted much of the property, shoreline habitats still remain and are important to sustaining fish, birds and wildlife. Highly productive intertidal habitats in along the shoreline include intertidal mudflat and sedge marsh (Figure 3), and upland riparian areas (Figure 4). Riparian habitat consists of mature black cottonwood and red alder trees and a diverse number of understory shrub species including black hawthorn, Indian plum, salmonberry, Nootka rose, snowberry, red-osier dogwood, willow, cascara, and Pacific ninebark. The riparian trees and shrubs provide fish and wildlife habitat but invasive species such as blackberry limit productivity.

The Fraser River is one of the world's most important Pacific salmon rivers and supports over 50 fish species, including millions of juvenile salmon (Figure 5). The Fraser estuary is a critical link in the Pacific Flyway, that is used by approximately 1.4 million migratory birds annually and supports about 0.5 million wintering birds (Figure 6). The river also supports numerous species of wildlife as well.

The shoreline habitats serve as critical feeding and refuge areas for juvenile salmon (Figure 7). The large intertidal mudflats east of Kerr Street contain large numbers of worms, insect larvae and other small animals that are preyed upon by juvenile salmon and other resident and migratory fish when the area is flooded during high tide. The intertidal sedge marshes that line the shoreline provide a refuge for salmon fry migrating downstream from upriver spawning beds, and also provide productive feeding areas when the high tides inundate the marsh.

Numerous species of birds frequent the East Fraserlands site, including waterfowl and shorebirds in the intertidal habitats, songbirds in the upland areas, and birds of prey in the trees lining the shoreline. Although feeding is the main avian activity, where vegetation cover is denser nesting may occur. The large trees provide roosting sites for raptors such as bald eagle and red-tailed hawks, great blue herons, and perching sites for numerous species of songbirds. Waterfowl are often observed roosting on the mudflat/marsh edge during low tides. Local naturalists have recorded over 30 bird species using the shoreline habitats within Area 2.

Wildlife includes several species of mammals, including muskrat, raccoon, beaver, otter, coyote, voles, etc. Use of the site is more transitory, usually at night, and often associated with shoreline or wetland habitats. The main activities are searching for food and seeking cover in the vegetation.



Figure 5
Juvenile salmon use Area 2 shoreline habitats to feed.



Figure 6
Wintering waterfowl feeding in intertidal mudflats and marshes at the foot of Kerr.

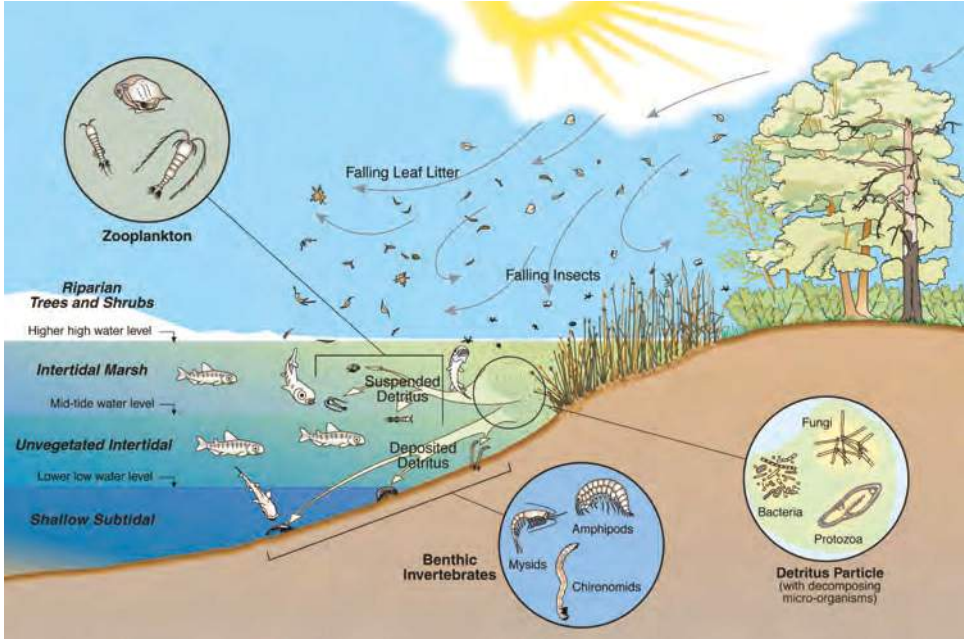


Figure 7
Ecological processes and functions along the East Fraserlands Phase 2 shoreline support intertidal and riparian habitats used by juvenile salmon for feeding.

East Fraserlands Shoreline Design Features

To implement a sustainable shoreline design, four approaches were used to maximize fish and wildlife habitat at the East Fraserlands community:

- preserve high productive habitat
- create new or unique habitat features (tidal channel, sanctuary island, wetland complex consisting of ponds and drainages)
- enhance habitat productivity (marsh benches, riparian plantings)
- use innovative design for infrastructure (concealed armour stone with riparian plantings, soil addition to rip rap to promote natural vegetation, addition of habitat features such as root wads)

The shoreline design includes preservation of the Fraser North Arm mudflat, marsh and riparian habitats between Kerr Street and the inlet.

Preserved Fraser North Arm Intertidal and Riparian

The Fraser North Arm mudflat, marsh and riparian habitats, extending from Kerr Street to the tidal channel and island, will be preserved and enhanced (Figure 8). Since there is a broad mudflat and fringes of sedge marsh, it is not anticipated that there will the need for extensive shoreline armouring and bank protection along the shoreline.

Upland there is a good stand of black cottonwood and red alder. Enhancement will include removal of the extensive blackberry growth and other invasives such as broom and English Ivy, and planting of native shrubs to create a diverse understory to improve the productivity of the riparian for fish and wildlife and create an attractive landscaping along the public walkway.

Foreshore Park

The Kinross Corridor waterfront consists of a sanctuary island created for birds and wildlife, which will be planted with native species to create productive riparian zone for supporting fish rearing. There will be no public access to the island. A tidal marsh will be created on the north side of Kinross Park.

The tidal channel will be transplanted with sedge, while the sanctuary island will be planted with native trees and shrubs to provide food and cover for fish and wildlife.

The banks will be dressed with armour stone to protect the slopes from erosion due to wave action, but several innovative measures will be implemented to create a softer and greener treatment. The upper portion will be buried (concealed armour stone) to create shrub planting benches and soil will be added stone to encourage establishment of herbaceous vegetation. Root wads, boulders and other habitat enhancement features will also be added to increase the fish and wildlife value of the slope protection.

A perched freshwater wetland will be created to provide habitat for amphibians. Habitat features will include emergent marsh vegetation, riparian shrubs and in-pond logs and wood cover. The wetland will be fed by rainwater supplemented by the Fraser River.



Wetland Ponds

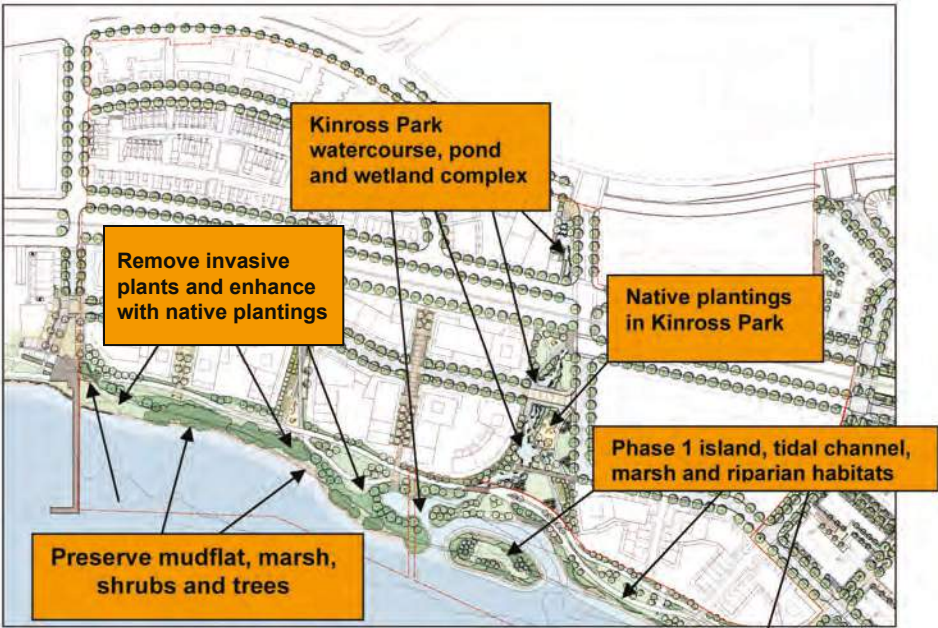


Figure 8
Looking north from Kerr Pier.



Wetland Ponds



Excavated tidal channel transplanted with sedge between planted riparian area and trees island (shown at low tide)



Kerr Street sedge marsh



Shrub plantings above marsh channel

The shoreline treatment will consist of armour stone with shrub benches. Planting in the riparian benches will be dense to provide cover for fish and create a woody border along the high water line. Only native species will be planted along the shoreline to ensure the shrubs and trees provide maximize benefits to fish and wildlife. Vertical walls will be installed along this section of shoreline to reduce habitat impacts and provide for park areas adjacent the public walkway.

The addition of soil pockets to the armour stone and installation of boulder clusters and root wads will increase the habitat value for fish and wildlife, and provide a greener appearance to the rock shoreline protection.

Riparian plantings along the shore will also include park landscaping. Native trees and shrubs will be planted along the riverside of the public walkway to provide shade and fish and wildlife habitat, while more upland a mix of native and non-native plants will be used to enhance park landscaping. To ensure connectivity with the water along public park areas, plantings will be planted in clusters to allow views of the river:



Riparian bench in concealed armour stone



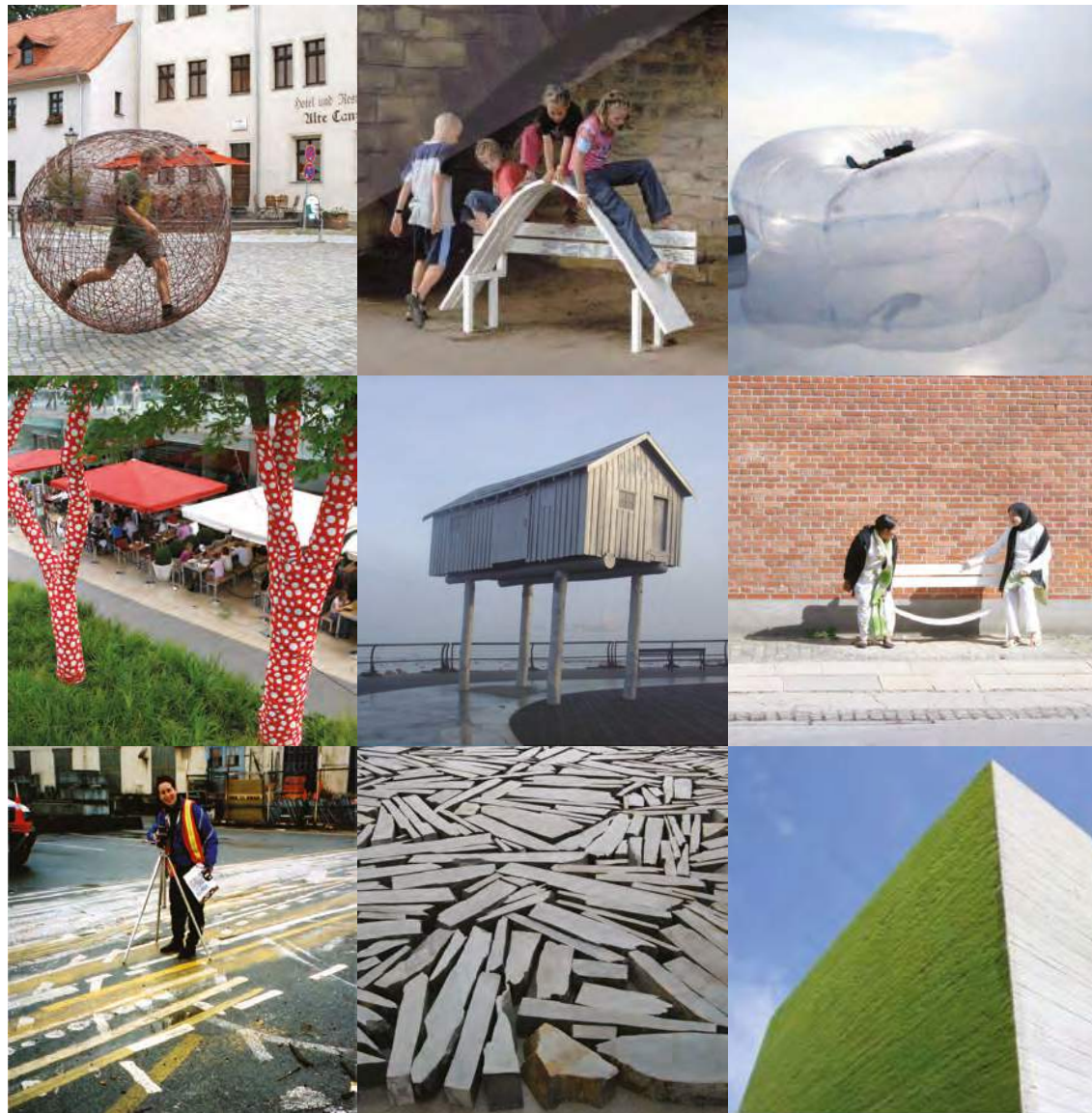
Open riparian plantings along public walkway



Intertidal marsh bench with public walkway

7.0

PUBLIC ART STRATEGY



East Fraserland's Public Art Program

An essential element of great communities, public art is a recognized aspect of many of Vancouver's communities. At East Fraserlands, public art will play a strong role in establishing the development's unique character. The EFL Public Art Program will feature an exciting range of artists' projects inspired by the community, the Fraser River location and the local environment. Public art will unfold over a period of at least twenty years and will activate sites throughout the entire EFL development.

The EFL Public Art Program has three areas of focus for Artists-in-Residence:

1. Artists on Design Teams: EFL Planning

Artists' input will be sought early in planning processes to work with the design team to engage in creative problem solving, identify and prioritize art and design opportunities, and offer critical input. For example, artists may contribute to design strategies for making visible the story of storm water management throughout the site; create design vocabularies for site furniture, and offer insight into the creation of templates or platforms conducive to future artist interventions.

2. Long-term, Integrated, Signature Artworks

As anchors to the Public Art Program and to the ecology of EFL, a number of large-scale artworks will be integrated into key areas of the development. These are meant to be long-term artist-in-residence projects that take time to evolve and grow. In Area Two, potential sites include the Fraser River foreshore and Kinross Park corridor; including the Kinross Bridge.

3. Changing Program

The EFL Public Art Centre will oversee a dynamic changing program of socially engaged and site-specific artworks. The Public Art Centre will promote research, production and presentation of an exciting range of artists' projects of varying durations. In cooperation with the City, Park Board and local community organizations, the Centre will ensure that public art has an ongoing presence at EFL.

Goals and objectives for public art at EFL:

- Support and promote excellence in public art, artistic inspiration, creativity and culture
- Provide space for selected artists to live, visit, work and engage with project participants
- Offer a wide variety of public art programming intended for diverse audiences
- Provide opportunities to bring together local art practitioners, interested publics, and internationally acclaimed art professionals
- Create partnerships with Vancouver arts organizations and educational institutions to provide opportunities for meaningful exchanges between students, artists and audiences about contemporary issues
- Contribute to the sustainability performance of the community, including integration of public art in the energy, water, and ecosystem strategies
- Promote appreciation and understanding of the site's unique ecosystem
- Address the significance and power of the Fraser River

Area Two locations that have been identified as high priority for public art include:

- Fraser River foreshore and wetlands
- Kinross Park corridor
- Kinross Bridge
- Kerr Street landing
- Pedestrian mews
- Pedestrian and cycling routes
- Public park areas
- Children's playgrounds
- Ecosystem areas: rainwater management
- Rain gardens, orchards, urban agriculture spaces
- Songbird habitat: links between Everett Crowley Park to the Pacific Flyway

