Ambleside Village Centre

Approved by West Vancouver Council
March 18, 2013

Streetscape Standards

MARCH 1, 2013

Ambleside Village Centre

Streetscape Standards

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DISTRICT OF WEST VANCOUVER

West Vancouver Municipal Hall

750 - 17th Street, West Vancouver, BC V7V 3T3

In Association With:

PWL Partnership Landscape Architects - Landscape Architecture

Pechet Studio - Public Art

Intercad Consulting - Civil Engineering

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INTRODUCTION 1

PROJECT BACKGROUND

The Ambleside Village Centre Streetscape Standards project has been undertaken to provide a cohesive and unified framework for ongoing and long-term maintenance, renovation and development of the public realm within the Ambleside Village Centre Area.

The current streetscapes were designed and developed over 20 years ago. Over time, repair and renewal of the streets has been carried out in a piecemeal manner. A new standard will provide direction for future renovation and anticipated redevelopment in the area. The primary assumption of the project is that improving the quality of the public realm within the Village Centre will enhance liveability for residents and visitors, and assist local businesses to compete with other retail centres.

PROJECT HISTORY

The Ambleside Village Centre Strategy Project was initiated following the adoption of the OCP in 2004. The need for an Ambleside Streetscape Plan was a Strategic Initiative identified through the OCP and Zoning Bylaw amendment process in 2008.

Subsequently, the District hired PWL Partnership Landscape Architects to carry out the project commencing in 2011.

PUBLIC CONSULTATION

The project was introduced to the public through an open house in February 2012 prior to the development of initial design concepts. A second round of open houses was held in May 2012 to present conceptual design standards. The project was also presented to the Design Review Committee (DRC) at that time. In July 2012 the project was reviewed with executive members of the Ambleside Business Association (ABA). A second DRC review presentation was held in October 2012 to present the completed work. In late October 2012 the project was reviewed with members of the Advisory Committee on Disability Issues (ACDI).

Following a report to Council in November 2012, a final round of public consultation occurred. This included a public open house in early December 2012, and a meeting with the Ambleside Business Association in late January 2013.

PROJECT CONTEXT + EXISTING CONDITIONS

The project has included a review of background information related to the project and an assessment of the Village context. The project has also looked at the condition of the existing streetscapes including sidewalks, furnishings, trees, public artworks etc. A review of the existing street lighting was also added to the project.

PROJECT VISION + DESIGN PRINCIPLES

The design process commenced with the development of a Vision Statement for the Village Centre and the development of Design Principles, Opportunities and Constraints.

The Vision Statement anticipates the qualities and characteristics associated with Ambleside in future years with an emphasis on how the public realm would contribute to the character and appeal of the Village Centre.

Design Principles were developed to provide a guiding framework for the development and future implementation of the streetscape standards. More specific opportunities and constraints have been identified through the community process to help frame the parameters of the project.

STREETSCAPE DESIGN STANDARDS

The Streetscape Standards (see Section 2) are proposed as a series of design strategies that can be applied to streetscape development within the Village Centre over a period of time. The standards are described as primarily relating to the pedestrian public realm including sidewalks, boulevards, crosswalks, furnishings, street trees, street plantings, rain gardens, pedestrian lighting, signage and public art opportunities. The scope of the Streetscape Standards project was extended to look at opportunities involving development within the existing

streets, including corner bump outs, bus bump outs, street reconfiguration for Festival Streets and for Bellevue Avenue to accommodate bike paths.

A street-by-street summary of the proposed Design Strategies is provided to identify which strategies apply to which streets. Drawings included in the report illustrate the character of each of the proposed improvements and provide specific layout, materials, and product references.

SIDEWALK RENOVATION + REPLACEMENT

Initial work on the project identified that many sidewalks and boulevards were in poor condition and/or were inadequate in width in some locations. Furthermore, it was recognized that the replacement of sidewalks and boulevards would occur over a long period of time such that any new treatment would need to coexist with the existing condition for many years to come.

The existing red bricks, used primarily as boulevard treatments and curb edge bands, were identified as the most visually unique feature of the existing streetscape and yet the bricks were also perceived as problematic in terms of ongoing maintenance and slip resistance in sidewalk areas, especially when wet.

To address this scenario the proposed sidewalk standard aims to continue to use cast-in-place concrete as the main sidewalk surface and to re-use the existing red-bricks

Boundary of Ambleside Village Centre Streetscape Standards Project

as a narrower street edge band delineating the edge of the sidewalk. This strategy, which increases the width of the concrete portion of the sidewalk, removes the use of brick as a walking surface but retains the brick as a narrow decorative border, mixed with new basalt pavers, to provide some visual continuity and colour accent. Details are also provided for the use of basalt slabs, in random patterns, in conjunction with cast-in-place concrete for rear boulevards, where building set-backs occur through redevelopment.

A range of sidewalk details have been developed to suit each street and to suit complete replacement or renovation scenarios.

CORNER BUMP-OUTS

Analysis of the site and consultation with the public identified the inadequacy of space for pedestrian movement at street corners. In response to this, corner bump-outs are proposed at intersections along Marine Drive to enhance the pedestrian experience and mitigate the impact of cars on the streetscape. The bump-outs, which provide additional room for movement and waiting, reduce crosswalk lengths and provide additional space for street planting, seating, signage and art work. Corner bump-outs details can be implemented without loss of on-street parking.

BUS BUMP-OUTS

Prior to the commencement of this study the DWV had installed new bus shelters along Marine Drive and had begun to implement bus bump-outs at some bus stops. The Streetscape Standards supports this initiative and provides detailed designs for future bus bump-out areas. Bus bump-outs provide similar benefits to corner bump-outs with the added benefit of providing much needed additional space for bus shelters, loading and waiting areas for transit users.

STREETSCAPE ELEMENTS

The Standards provide illustrations and details of the palette of paving materials, furnishings, lighting, street trees and plantings proposed for use in the Standards.

Cast-in-place concrete is proposed as the main sidewalk surface. This is the most cost effective and practical solution and provides consistency with the current conditions. Red bricks and basalt pavers are proposed to form edge bands and paving panels where seating is provided. Larger basalt slabs are proposed in conjunction with concrete to define non-sidewalk areas such as rear boulevards and bus bump-outs. A custom designed crosswalk design is proposed utilizing a thermo-plastic

product that is applied on top of existing asphalt. Proprietary benches, bike racks and garbage/ recycling cans are proposed for use throughout the Village Centre.

A review of current street lighting was added to the scope of the project during the process of the design. New street lighting has been installed fairly recently along Marine Drive, Bellevue and Clyde Avenues. The Streetscape Standards include recommendations for additional street lights at intersections along Marine Drive and the north-south streets (except the Festival Streets). The new lights

will improve uniformity of treatment and improved light standards. In addition, new pedestrian scaled lights have been proposed along the two Festival Streets on 14th and 17th Streets. The lighting is intended to help distinguish the character of the festival streets, to improve lighting of the pedestrian realm and to strengthen the connection to the waterfront.

BELLEVUE AVENUE

The need to accommodate east-west bike movement through the Village Centre led to the development of preliminary recommendations for the reconfiguration of Bellevue Avenue to accommodate a separated bike facility. After consultation it was determined that further study would be required to investigate a range of possible design solutions.

TREE PLANTING

Most trees in the Village Centre date back to the planting in the early 1990 and vary in condition. Many of the trees are in poor health or have limited long-term potential. The Streetscape Standards makes recommendations for retention, removal and replacement of trees on a street-by-street basis and provides general requirements for tree size and planting details. Alternate details are provided for tree planting utilizing structural growing medium or soil cells. Similarly, a range of plant species is proposed for streetscape plantings and rain gardens and typical planting details are provided.

PUBLIC ART

Opportunities for future permanent and temporary public art installations are proposed in the context of current installations and in relation to the proposed festival streets. Recommendations include opportunities for sidewalk motifs that would be inscribed within basalt paving slabs and for larger scaled stand-alone art pieces located in the Festival Streets.

FESTIVAL STREETS + BELLEVUE AVENUE

The Streetscape Standards also includes conceptual designs (see Section 3), as opposed to detailed design standards, for the two proposed festival streets on 14th and 17th Streets.

The Festival Streets are designed to provide much improved pedestrian focused streets that provide more space and a higher quality of finish suitable to accommodate a wide range of uses such as seating areas, street vendors, performers, markets and festivals. For these events they would be temporarily closed from time to time. The concept designs anticipate complete reconfiguration of the streets between Marine and Bellevue, with a reduction in road width, and increased sidewalk and boulevard areas. The designs assume complete restoration of the streets including sidewalks, boulevards, curbs, road surfacing, tree planting, lighting, custom furnishings and artworks.

STREETSCAPE STANDARDS 2

STREETSCAPE STANDARDS

The following Vision Statement anticipates the future potential of the Ambleside Village Centre and suggests in particular, the role public realm improvements can play in achieving this vision. This anticipated future state cannot be achieved through public realm improvements alone, but they can play a critical role in signalling the District's commitment to set a new direction and to make real improvements in people's daily experience of the Village.

VISION STATEMENT

"Ambleside Village is known as a vibrant, high quality, seaside destination with a rich mixture of arts, cultural and retail amenities. Ambleside provides for all the daily needs of its residents and is a great destination to visit. It is known as one of the few places in the region where, in a short visit, one can enjoy a wide variety of small-scale local stores, cafes and restaurants as well as wonderful beaches, piers, parks and gardens. Businesses in Ambleside thrive and there is strong competition from landowners and retailers to own and operate here.

A visitor to Ambleside will be struck by the way the community celebrates its heritage and its strong connection to the local shoreline. Pubic art and other interpretive features are evident in the streetscapes as well as being an integral part of public and community buildings and local businesses.

Ambleside has distinctive high quality streetscapes that emphasise the rich cultural heritage of the community. It is known for its broad sidewalks, outdoor seating and lines of trees. It has a strong tradition of community festivals, markets, street vendors and local entertainers. "There's always something happening at Ambleside."

Ambleside's streets are easily distinguished by their consistent sidewalk treatments, unique high quality street furnishings and street tree plantings. Generous sidewalks allow ample room for pedestrians to move alongside outdoor retail displays, café and restaurant seating with good separation from vehicles.

Pedestrians in Ambleside can move around easily and comfortably without encountering awkward or dangerous situations. The intersections have been designed to maximize pedestrian safety. They are shorter in length, paved in high quality materials and properly controlled through signals and signage.

Ambleside's village character is emphasized by the extensive amount of streetscape planting that focuses on the use of drought tolerant and native plants and a variety of food plants within its streetscape. The natural history of the site, its streams and ecosystems are all recalled and celebrated in a variety of streetscape features.

North Shore recreational cyclists choose Ambleside as one of the best destinations to stop along their route, making purchases in local stores, cafes and restaurants. "

DESIGN PRINCIPLES

The development of the Streetscape Standards for Ambleside Village Centre has been guided by a clear set of Design Principles that have been established to help achieve the Vision Statement for the Village Centre. Design Principles will continue to provide a guiding framework as construction plans for the public realm improvements are developed and implemented over the years ahead.

DISTRICT IDENTITY

The Streetscape Standards will seek to reinforce the unique waterfront identity of the Village within well-defined boundaries. Streetscape designs for each street will be coordinated to create a unified character.

SUCCESSFUL BUSINESSES / MULTI-USE STREETS

Streetscapes will be developed to support successful businesses and allow for a variety of uses such as retail display, outdoor seating, street vendors, festivals, performances, etc.

PEDESTRIAN & TRANSIT FRIENDLY DESTINATION

The public realm design will give priority to the comfort, safety and accessibility of pedestrians, cyclists and transit users over the accommodation and convenience of private vehicles.

WATERFRONT CONNECTION

The public realm design will physically, visually and thematically reinforce the Village's relationship to the waterfront.

CIVIC CONNECTION

The development of 17th Street will reinforce the link between the Municipal Hall Complex and arts and cultural facilities along the waterfront.

CELEBRATION OF ARTS + CULTURE

The Standards will support the incorporation of public art and interpretive features that focus on celebrating Ambleside's cultural heritage.

SUSTAINABILITY

The design, implementation and maintenance of the public realm will be socially, economically and environmentally sustainable.

HIGH QUALITY / LONG LIFE

The Standards will promote design strategies and material choices that will result in easy-to-maintain, durable and high quality streetscapes.

FLEXIBLE IMPLEMENTATION

The Standards will allow for implementation through phased and incremental development.

OPPORTUNITIES + CHALLENGES

With input from the public, stakeholders and staff the following overall opportunities and challenges were identified for the project.

OVERALL OPPORTUNITIES

WATERFRONT ORIENTED VILLAGE

- Establish a coherent and authentic village character that promotes Ambleside Village Centre as a unique waterfront destination with local retailers and cultural attractions as a counterpoint to the 'franchise' shopping experience of Park Royal.
- Provide designated sites for existing cultural and community events, which take place in the area, in order to ensure that these on-going gatherings are well supported by infrastructure.
- Reinforce visual and physical connections to the waterfront. Widen north south sidewalks, especially south of Marine Drive and create places to rest and enjoy views.

COHESIVE STREETSCAPE CHARACTER

- Develop a distinctive and unified language of streetscape elements that can be implemented incrementally to strengthen and renew the "village" character.
- Provide new, higher quality, street furniture such as benches, trash cans, bike racks etc.
- Provide a more consistent treatment of high quality sidewalk finishes.
- Update and improve the design of bus stops and shelters.

IMPROVED PEDESTRIAN PRIORITY

- Focus on safety and accessibility for pedestrians, transit users and cyclists with an emphasis on safety for vulnerable users. Adopt improved and consistently used accessibility standards.
- Where possible, create wider sidewalks for better circulation, retail displays, food and beverage seating, street planting etc.
- Where possible, expand sidewalks at street corners to provide more room for waiting and circulation and develop shorter, well-defined crosswalks to reinforce pedestrian priority and improve safety.
- Provide more bike racks and improve safety for cyclists.

FLEXIBLE MULTI-USE STREETS

- Explore potential for flexible plaza space on some streets for a variety of uses such as vendors, markets, festivals, performance etc.
- Emphasize lanes as high quality, safe, pedestrian routes with commercial / retail activity. Retain

this concept as a unique West Vancouver characteristic.

MAJOR DEVELOPMENT SITES

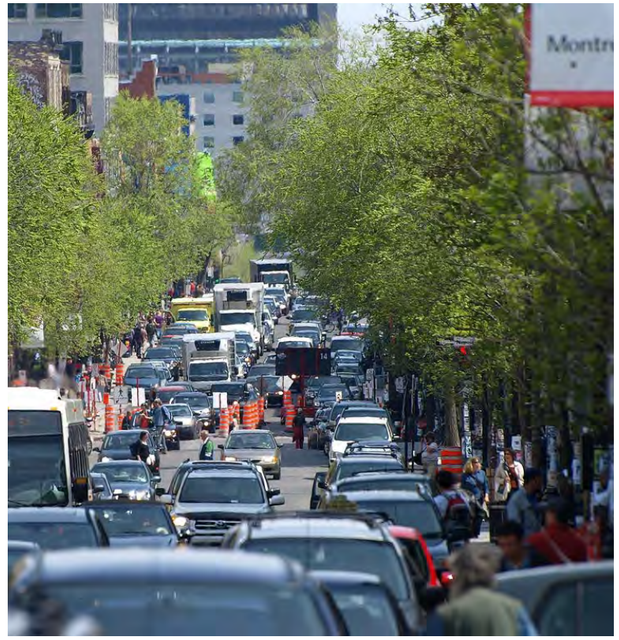
- Work with proponents of current comprehensive development sites to realize implementation of large sections of new streetscape design in the near future.

SUSTAINABLE STREETSCAPES

- Where possible, improve and demonstrate environmental sustainability within the Village Centre, such as:
  - » Reduce rainwater run-off from streets and improve run off quality through the use of rain-gardens and infiltration galleries.
  - » Provide improved air quality, shade and habitat through improved tree canopy.
  - » Provide habitat and reduce maintenance through the use of native, drought tolerant tree and plant species within the streetscape.
  - » Where possible, re-use existing materials and source locally available new materials and products.
  - » Improve long-term health and performance of street trees through improved tree planting methods.

OVERALL CHALLENGES

- Increasing retail competition from Park Royal weakens economic viability.
- Aging streetscape infrastructure in need of renewal. Last comprehensive renewal in the late 1980's.
- Lack of streetscape standards has led to inconsistent approaches to repair and replacement resulting gradual erosion of distinct identity.
- No established source of funding for significant streetscape restoration.
- Streetscape renovation mostly reliant on private sector redevelopment.
- Large traffic volumes and parking needs dominate Marine Drive corridor and divide Village Centre.
- Narrow sidewalks in many locations reinforce vehicle priority. Limited room available for retail activity, pedestrian movement or refuge from traffic.
- Variable quality of existing street trees. Many small trees in poor condition except for Marine Drive. No consistent tree-planting theme.
- Limited number of streetscape amenities such as benches and bike racks.
- The south side of Clyde Avenue provides on-street loading and access to rear of Marine Drive businesses.
- Lanes need to accommodate truck access for servicing.



STREETSCAPE STANDARDS

THE INTENT OF THE STANDARDS

The Ambleside Streetscape Standards provide detailed designs that are to be applied to all future renovation, redevelopment and maintenance of the pedestrian realm within the Village Centre. The drawings contained in this report are intended to illustrate the character of each of the proposed design strategies and to provide specific layout, material and product references, and typical dimensioning. Each typical design detail explains the intent of the proposed design strategies and the locations in which each of the details is applicable. It is intended that the Standards be used by District staff, landowners and developers who are responsible for improvements within the road right of way.

The Streetscape Standards focus primarily on the pedestrian public realm, i.e. the streetscape design between the road curb and the property line, or to the building face where buildings are setback. To this end the Standards apply primarily to:

- Sidewalk and boulevard surface treatments
- Street furniture such as benches, chairs, bike racks etc.
- Street planting including trees, boulevard plantings and rain gardens
- Pedestrian focused lighting
- Directional and interpretive signage concepts
- Public art opportunities
- Lane treatments

The Standards have been extended to include curb realignment and limited detailing within the street area including:

- Curb realignment for corner bump-outs and bus bump-outs
- Curb realignment for the proposed Festival Streets
- Curb realignment on Bellevue to facilitate cycling
- Surface finishes for crosswalks
- Roadway finishes for Festival Streets

The Streetscape Standards are not intended to address roadway design or engineering issues such as:

- Road design and street geometrics
- Transportation planning
- Roadway drainage (other than rain gardens)
- Street lighting and signalling
- Regulatory signage and pavement markings
- Pavement construction
- Utilities design

HOW TO USE THE STANDARDS

The following table summarizes the range of design strategies proposed in the Streetscape Standards and identifies which strategies apply to which streets. Users of the standards should first consult the tables to identify the applicable strategies to each location of interest and then refer to the detailed standards developed for each strategy.

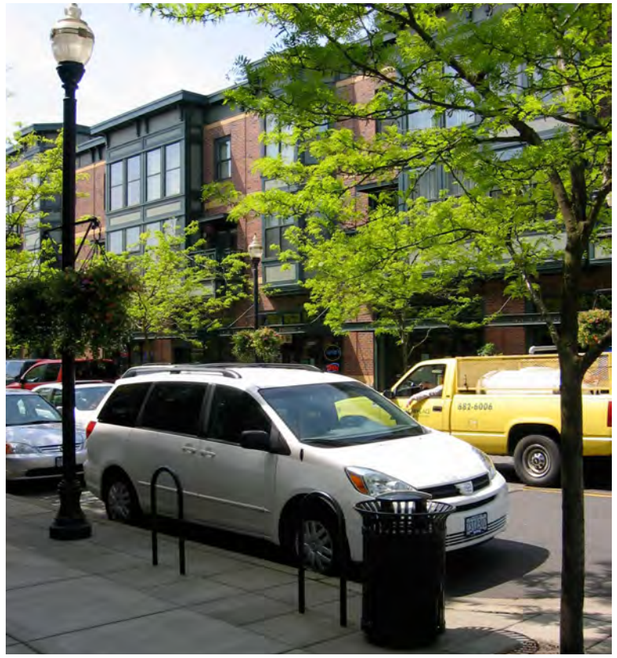
STREET BY STREET SUMMARY OF PROPOSED DESIGN STRATEGIES

PROPOSED DESIGN STRATEGIES	Page #	Marine Drive	Bellevue Avenue	Clyde Avenue	Lanes	13th St. South of Marine	13th St. North of Marine	14th St. South of Marine	14th St. North of Marine	15th St. South of Marine	15th St. North of Marine	
New Concrete Sidewalk	21-23			✓								
New Concrete Sidewalk w. Brick / Basalt Banding	21-23	✓	✓			✓	✓		✓	✓	✓	
Other Sidewalk Treatment	76-79							✓				
Corner Bump-Outs	24-27	✓	✓			✓	✓	✓	✓	✓	✓	where shown on plan
Bus Bump-Outs	28-29	✓										where shown on plan
Street Reconfiguration	66-79							✓				Festival Streets
Unit Paver Road Surface	67, 77		✓	✓	✓			✓				where shown on plan
Decorative Crosswalks	36	✓	✓			✓	✓	✓	✓	✓	✓	
New “Off the Shelf” Street Furniture	37-39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
New Custom Design Furniture	74-75							✓				
New Domus Street Lighting	40-41	✓			✓	✓	✓		✓	✓	✓	
New Pedestrian Scale Lighting	42-43							✓				
Retain Trees / Infill Tree Planting	46-51	✓	✓	✓		✓	✓		✓	✓	✓	
Tree Removal / Tree Replacement	46-51							✓				
Public Art Sidewalk in Ground Artwork	60-61	✓	✓									between 14th and 17th
Public Art Commissioned Artwork	61-63							✓				
Basalt Street Name Medallions	60-61	✓										

STREET BY STREET SUMMARY OF PROPOSED DESIGN STRATEGIES

PROPOSED DESIGN STRATEGIES	Page #	16th South of Marine	16th North of Marine	17th South of Marine	17th North of Marine to Lane	17th North of Lane	18th South of Marine	18th North of Marine	19th South of Marine	19th North of Marine	
New Concrete Sidewalk	21-23					✓					
New Concrete Sidewalk w. Brick / Basalt Banding	21-23	✓	✓		✓		✓	✓	✓	✓	
Other Sidewalk Treatment	76-79			✓							
Corner Bump-Outs	24-27	✓	✓	✓	✓			✓	✓		where shown on plan
Bus Bump-Outs	28-29										where shown on plan
Street Reconfiguration	66-79			✓							Festival Streets
Unit Paver Road Surface	67, 77			✓							
Decorative Crosswalks	36	✓	✓	✓	✓		✓	✓	✓	✓	
New “Off the Shelf” Street Furniture	37-39	✓	✓	✓	✓	✓	✓	✓	✓	✓	
New Custom Design Furniture	74-75			✓							
New Domus Street Lighting	40-41	✓	✓				✓	✓	✓	✓	
New Pedestrian Scale Lighting	42-43			✓	✓	✓					
Retain Trees / Infill Tree Planting	46-51	✓	✓		✓	✓	✓	✓	✓	✓	
Tree Removal / Tree Replacement	46-51			✓							
Public Art In Ground Artwork	60-61										
Public Art Commissioned Artwork	61-63			✓		✓					
Basalt Street Name Medallions	60-61										


Capilano U
IDEA
Valerie Gobert
Reflections
CHILLIWACK BC



TYPICAL DESIGN STANDARDS

This section of the report provides typical Streetscape Standards that are to be applied to the various locations and conditions that occur within the Ambleside Village Centre. The drawings are intended to illustrate the character of each of the proposed design strategies and to provide specific layout, material and product references, and typical dimensioning. Each typical design detail explains the intent of the proposed design strategies and the locations in which each of the details is applicable.

INTENT

Sidewalks and boulevards are to be improved over time throughout the Village area either as a result of redevelopment of private parcels or through municipally initiated projects.

It is anticipated that sidewalks and boulevards will be renovated or replaced over a long period of time either as a result of redevelopment of private parcels or through municipally funded streetscape projects.

In this scenario, existing sidewalk and boulevard treatments will coexist with new treatments. Accordingly, the design standards propose new sidewalk designs and material finishes that are complementary to the existing conditions.

The existing red bricks are the most visually unique feature of the existing streetscape. While the bricks have been identified as problematic as a sidewalk surface and are limited in terms of ongoing supply, the streetscape standards envision re-using the bricks, in lesser quantities in conjunction with new basalt pavers and cast concrete. This strategy provides visual continuity between the existing and the new surfaces and allows the area of the brick surfacing to be reduced. Where feasible, the existing bricks are to be recycled and re-used.

The following key plan identifies the anticipated extent of renovated /replacement sidewalks and widened sidewalks.


19 TH STREET
18 TH STREET
17 TH STREET
16 TH STREET
15 TH STREET
14 TH STREET
13 TH STREET
BELLEVUE AVENUE
ARGYLE AVENUE
KEITH ROAD
MARINE DRIVE
Potential Sidewalk Improvements
Renovated / Replacement
Existing Sidewalks
Widened Sidewalk Replacement
(Possible sidewalk widening due to road refiguration)
Widened Sidewalk Replacement
(Possible sidewalk widening due to road reconfiguration and / or building setbacks)

EXISTING SIDEWALK RENOVATION + REPLACEMENT

Where no road reconfiguration or building redevelopment is anticipated, sidewalks and boulevards could be renovated either through complete replacement or through renovation.

Complete replacement is the preferred strategy but where this is not possible, renovation of the boulevard zone achieves the two main objectives with the least disruption and cost, including:

- increasing the effective width of the concrete sidewalk
- partial removal of the red bricks which are perceived to be less accessible for more vulnerable users
- planting of new trees to infill gaps

In the renovation scenario, the existing streetscape would be modified as follows:

- existing concrete sidewalks would be restored by power washing
- the boulevard zone (red brick or other surfaces) would be removed and replaced with new cast in place concrete and a single row or double row of mixed red brick and grey basalt stones forming a curb edge band. Existing bricks may be recycled if feasible
- where necessary to infill gaps or replace weaker trees, new individual street trees would be installed during this renovation process

In the complete replacement scenario the existing streetscape would be modified as follows;

- the existing concrete sidewalk would be removed and replaced with new cast in place concrete
- the boulevard would be renovated as described above

The complete replacement scenario provides greater potential to improve the growing conditions for existing trees and to develop new larger tree pits for new tree planting. With the complete removal of sidewalks, the growing conditions of existing trees can be enhanced by installing soil cells or structural soil adjacent to existing tree pits. This would not be possible in the renovation scenario. For new tree planting, larger tree pits can be developed in conjunction with soil cells or structural soil.

In either scenario the improvements would result in a wider cast in place concrete sidewalk area and the area of red brick would be reduced to an accent band at the curb edge.

APPLICATION

Applicable to all sidewalk renovation or replacement where no road reconfiguration or development is anticipated, along Marine Drive, Bellevue Avenue and all north-south streets except 17th Street and 14th Street south of Marine Drive.

See Strategies Summary Table on pages 13 and 14, and Key Plan on page 17.

1. SIDEWALK EDGE BANDING
RECYCLED RED BRICKS AND GREY BASALT PAVERS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

2. CONCRETE BOULEVARD
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

3. CONCRETE SIDEWALK
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

4. EXISTING CURB AND GUTTER

5. EXISTING ASPHALT PAVEMENT

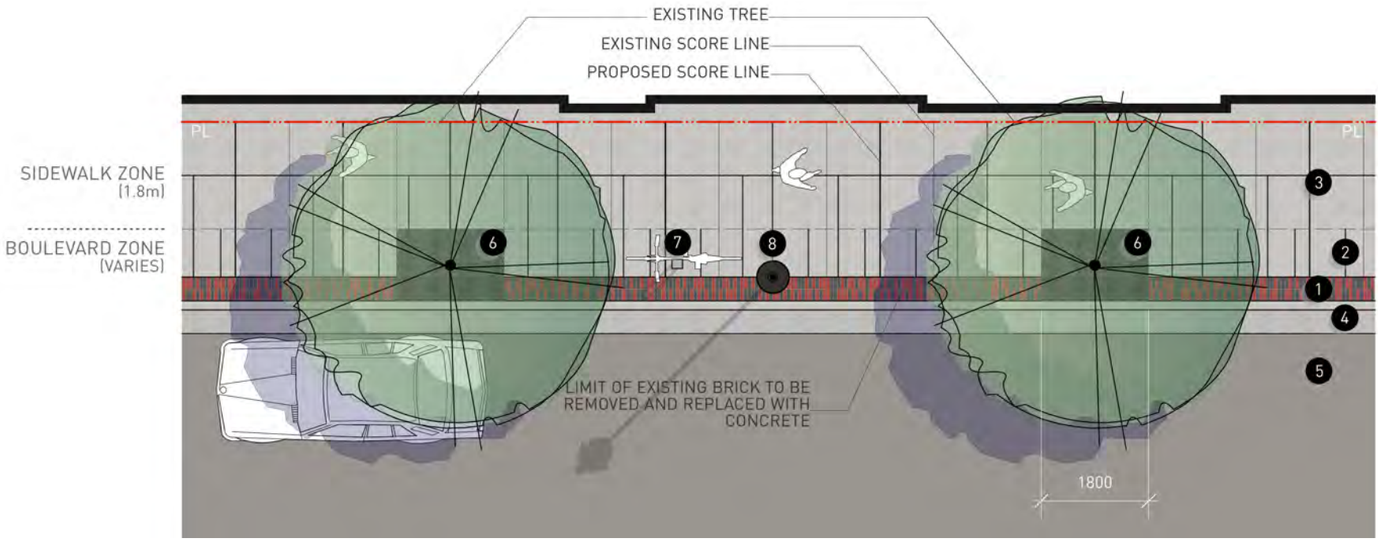
6. TREE PIT
50mm THICK LAYER CLEAR CRUSHED AGGREGATE FINISH
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

7. PROPOSED BIKE RACK
REFER TO PAGE 38 FOR ADDITIONAL INFO

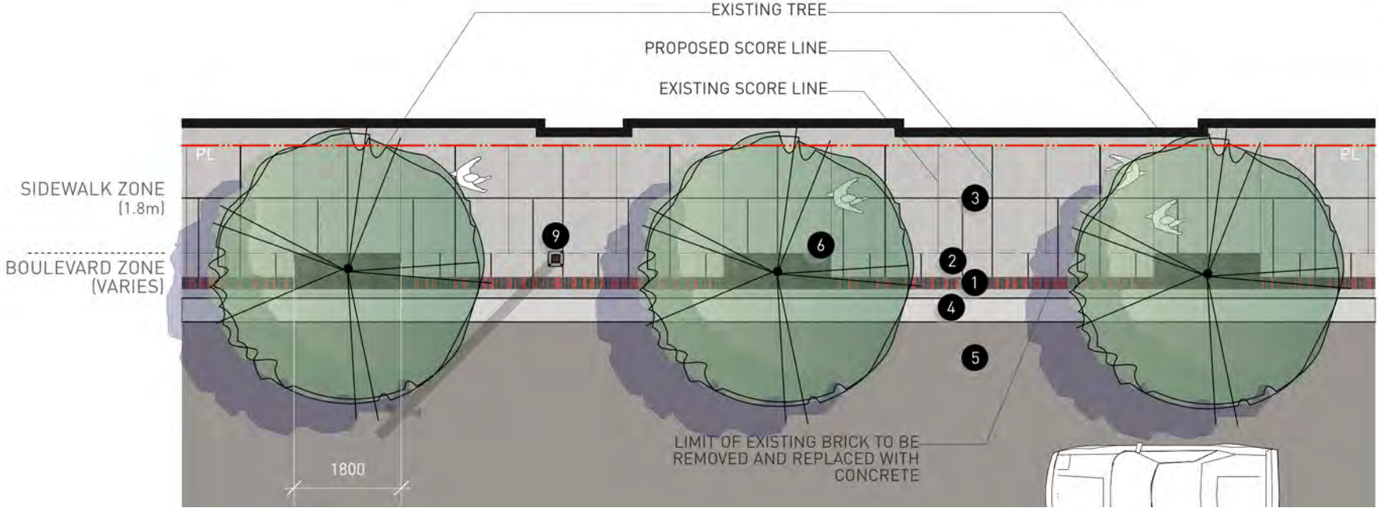
8. TYPICAL EXISTING STREET LIGHT

9. PROPOSED STREET LIGHT
REFER TO PAGE 43 FOR ADDITIONAL INFO

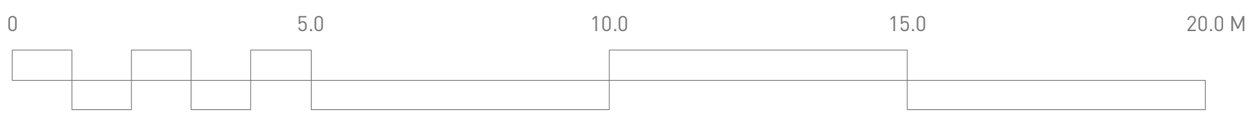
Note: Width of required tree pit is to be evaluated on site and may be wider than shown.



Plan: Typical Existing Sidewalk Renovation or Replacement: Marine Drive



Plan: Typical Existing Sidewalk Renovation or Replacement: North-South Streets



Typical View: Marine Drive Renovation or Replacement

Typical View: North-South Streets Renovation or Replacement

WIDENED SIDEWALK REPLACEMENT

INTENT

Where sidewalks are widened as a result of road reconfiguration or redevelopment of adjoining buildings, sidewalks would be renewed through complete removal and replacement. The new sidewalks configuration will:

- Increase the effective width of the concrete sidewalk
- Reduce the area of red bricks, which are perceived to be less accessible for more vulnerable users
- Provide a new edge band along the back of the curb
- Allow for the development of larger tree pits and rooting zone under adjoining paving
- Provide a new rear boulevard in the set-back zone that accommodates window shopping, food and beverage seating, signage, store displays etc.

In the complete replacement scenario the existing streetscape would be modified as follows;

- the existing concrete sidewalk would also be removed and replaced with new cast in place concrete
- the red brick boulevard zone would be removed and replaced with new cast in place concrete and a single row or double row of mixed red brick and grey basalt stones forming a curb edge band. Existing bricks may be recycled if feasible.
- new street trees would be installed where necessary to infill gaps or replace weaker trees.
- structural soil or soil cells would be installed under new paving around existing tree pits to improve growing conditions.
- a new rear boulevard comprising cast in place concrete and basalt slabs would be added.

This scenario provides greater potential to improve the growing conditions for existing trees and to develop new larger tree pits for new tree planting. With the complete removal of sidewalks, the growing conditions of existing tree can be enhanced by installing soil cells or structural soil adjacent to existing tree pits.

APPLICATION

Applicable to all sidewalk replacement where road reconfiguration and/or building development occurs and buildings are set back to provide a new rear boulevard. This standard applies to Marine Drive, Bellevue Avenue and all north south streets etc. 14th Street and 17 Street.

See Strategies Summary Table of page 13-14 and Key Plan on page 17.

1. SIDEWALK EDGE BANDING
RECYCLED RED BRICKS AND GREY BASALT PAVERS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

2. CONCRETE BOULEVARD
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

3. CONCRETE SIDEWALK
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

4. EXISTING CURB AND GUTTER

5. EXISTING ASPHALT PAVEMENT

6. FRONT AND REAR BOULEVARD
CAST IN PLACE CONCRETE WITH GREY BASALT SLABS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

7. TREE PIT
50mm THICK LAYER CLEAR CRUSHED AGGREGATE FINISH
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

8. PLANTER TREE PIT
900mm GROWING MEDIUM
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

9. PROPOSED BIKE RACK
REFER TO PAGE 38 FOR ADDITIONAL INFO

10. TYPICAL EXISTING STREET LIGHT

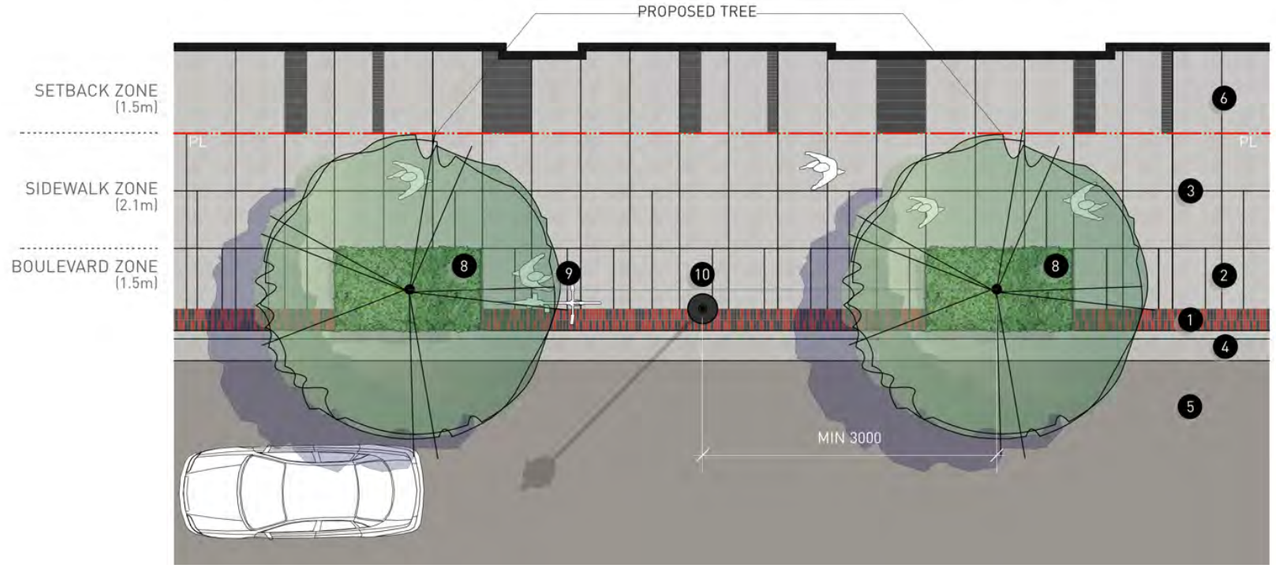
11. PROPOSED STREET LIGHT
REFER TO PAGE 43 FOR ADDITIONAL INFO

Note: Exact dimensioning and treatment of new tree pits are dependent on site conditions.

Tree pits are to be planted adjoining sidewalks of 2 m width or more.

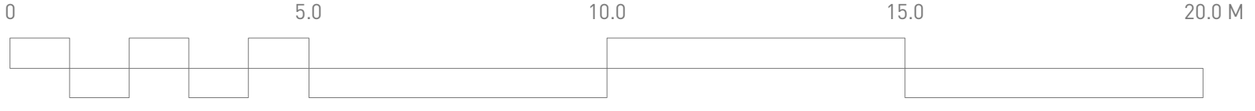
Tree pits are to be finished with gravel adjoining sidewalks of less than 2 m width.

Existing tree grates are to be removed as tree pits surrounds are reconstructed.



Plan: Typical Widened Sidewalk Replacement: Marine Drive | Scale 1:100

Plan: Typical Widened Sidewalk Replacement: North-South Streets | Scale 1:100



Typical View: Marine Drive Widened Sidewalk Replacement

Typical View: North-South Street Widened Sidewalk Replacement

CORNER BUMP-OUTS

INTENT

Where traffic movement and the arrangement of adjoining parcels permit, new street corner bump-outs would be developed to provide a range of benefits aimed at improving the pedestrian environment, including:

- increased room for waiting and circulation
- improved sense of pedestrian safety
- reduced length of crosswalks
- improved connectivity across Marine Drive
- increased opportunity to add streetscape plantings, seating and other streetscape elements

The introduction of corner bump-outs is a cost effective way of providing significant benefits to the pedestrian realm without impacting on-street parking or necessitating renovation of the remainder of the street or intersection.

APPLICATION

New bump-outs are proposed at all street corners along Marine Drive and Bellevue Avenue except in the following situations:

- where a bump-out already exists
- where bus stops occur in which case a bus bump-out would apply
- where conflicts arise with the arrangement and configuration of the adjoining parcel, such as where existing driveways are in conflict
- where conflicts arise with the current road configuration, such as where right turn lanes are in conflict
- where it is deemed impractical due to vehicle turning requirements
- where other circumstances are deemed in conflict

See Plan on page 25 for proposed location.

BUS BUMP-OUTS

INTENT

There are currently 10 bus stops along Marine Drive within the Village Centre Area. Currently bus stops are located on the sidewalk with limited space for waiting and circulation. More recently, new bus shelters have been added at bus stops and competition for space has increased. In some cases navigation of the sidewalks by strollers, wheelchairs and walking devices is very challenging.

In addition to these conditions, Translink are promoting the introduction of bus bump-outs rather than more traditional bus lay-bys to improve priority for transit. With bus bump-outs, buses stop within the curbside travel lane and pull directly forward once loading has been completed. This avoids the need for buses to pull out into busy moving traffic and improves transit efficiency. The pros and cons of bus bump-outs from a traffic management point of view are beyond the scope of this study.

Bus bump-outs are proposed to significantly increase the pedestrian realm at regular intervals along the street and provide room to accommodate:

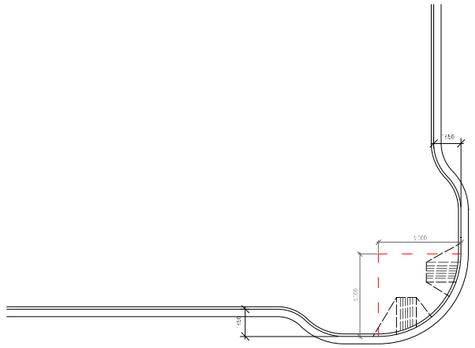
- waiting, loading and unloading for transit users,
- bus shelters,
- social seating areas,
- street furnishings such as garbage/recycling receptacles and signage
- street planting

In addition the added space reduces conflict with pedestrian circulation along the sidewalks and retail activity.

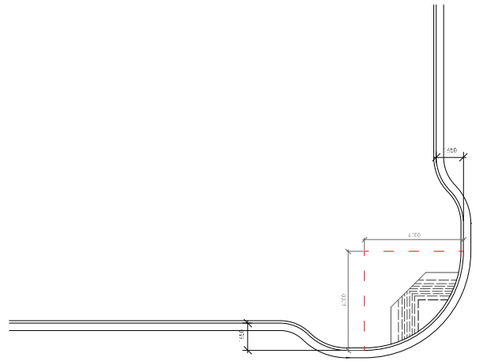
APPLICATION

For all bus stops along Marine Drive, except at 17th Street (west bound), where the bus stop is used as a transit waiting zone. See adjoining plan and Strategies Summary on pages 13 and 14.

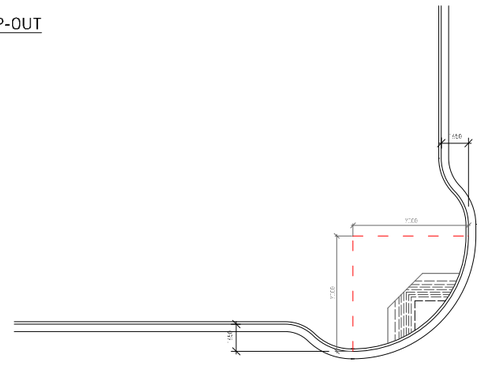

Bump-Outs and Crossings
Bus Stop Bump-Outs
Corner Bump-Outs
Existing Bump-Outs
19 TH STREET
18 TH STREET
18 TH STREET
17 TH STREET
16 TH STREET
15 TH STREET
14 TH STREET
DUCHESS AVENUE
CLYDE AVENUE
KEITH ROAD
BELLEVUE AVENUE
ARGYLE AVENUE
MARINE DRIVE



1 5m RADIUS CORNER BUMP-OUT
1:200



2 6m RADIUS CORNER BUMP-OUT
1:200



3 7m RADIUS CORNER BUMP-OUT
1:200

1. SIDEWALK EDGE BANDING
RECYCLED RED BRICKS AND GREY BASALT PAVERS
REFER TO PAGE 32-35FOR LAYOUT AND MATERIALS

2. RED BRICK / BASALT MOSAIC
RECYCLED RED BRICKS AND GREY BASALT PAVERS RANDOMLY MIXED
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

3. BASALT PAVING BAND
GREY BASALT SLABS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

4. CONCRETE BOULEVARD
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

5. CONCRETE SIDEWALK
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

6. CUSTOM CROSSWALK PATTERN
THERMOPLASTIC CROSSWALK MARKING
REFER TO PAGE 36 FOR LAYOUT AND MATERIALS

7. EXISTING CURB AND GUTTER

8. EXISTING ASPHALT PAVEMENT

9. MEDALLION
GREY BASALT SLABS WITH SANDBLAST STREET NAME
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

10. TREE PIT
50mm THICK LAYER CLEAR CRUSHED AGGREGATE FINISH
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

11. PLANTER TREE PIT
900mm GROWING MEDIUM
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

12. PROPOSED BENCH
REFER TO PAGE 37-38 FOR ADDITIONAL INFO

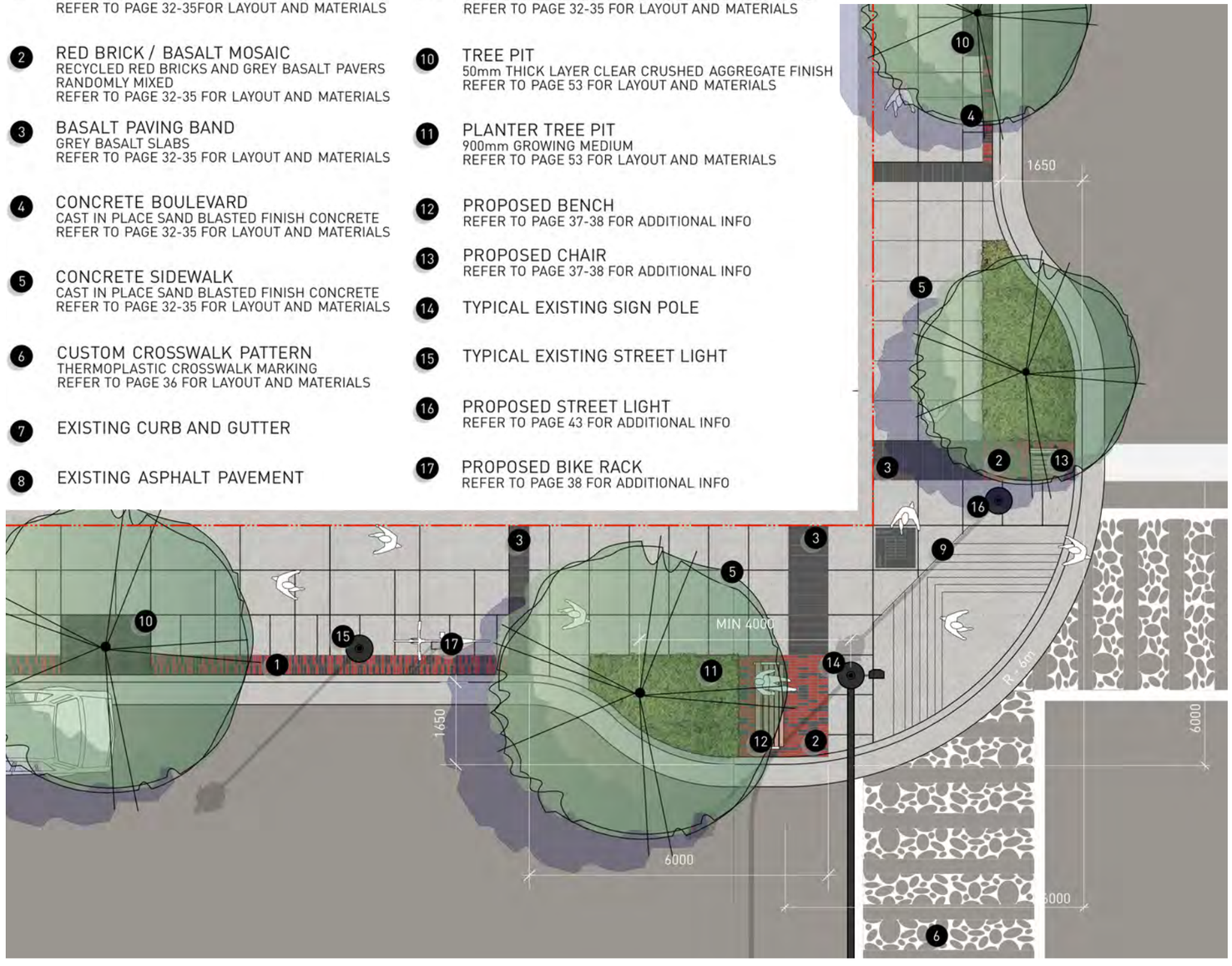
13. PROPOSED CHAIR
REFER TO PAGE 37-38 FOR ADDITIONAL INFO

14. TYPICAL EXISTING SIGN POLE

15. TYPICAL EXISTING STREET LIGHT

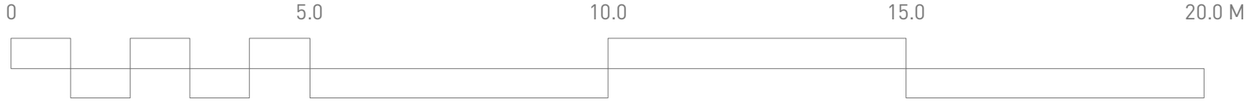
16. PROPOSED STREET LIGHT
REFER TO PAGE 43 FOR ADDITIONAL INFO

17. PROPOSED BIKE RACK
REFER TO PAGE 38 FOR ADDITIONAL INFO



Plan: Typical Corner Bump-Out | Scale 1:100

*The curb radius for each corner would be determined by technical review of the geometry of each intersection. The anticipated range in curb radius is between 5-7 m



Typical View: Corner Bump-Out

1. SIDEWALK EDGE BANDING
RECYCLED RED BRICKS AND GREY BASALT PAVERS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

2. RED BRICK / BASALT MOSAIC
RECYCLED RED BRICKS AND GREY BASALT PAVERS RANDOMLY MIXED
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

3. BASALT PAVING BAND
GREY BASALT SLABS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

4. CONCRETE SIDEWALK
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

5. CUSTOM CROSSWALK PATTERN
THERMOPLASTIC CROSSWALK MARKING
REFER TO PAGE 36 FOR LAYOUT AND MATERIALS

6. EXISTING ASPHALT PAVEMENT

7. BUS SHELTER
REFER TO DISTRICT OF WEST VANCOUVER FOR ADDITINOAL INFORMATION

8. BUS STOP
REFER TO DISTRICT OF WEST VANCOUVER FOR ADDITINOAL INFORMATION

9. MEDALLION
GREY BASALT SLABS WITH SANDBLAST STREET NAME
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

10. TREE PIT
50mm THICK LAYER CLEAR CRUSHED AGGREGATE FINISH
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

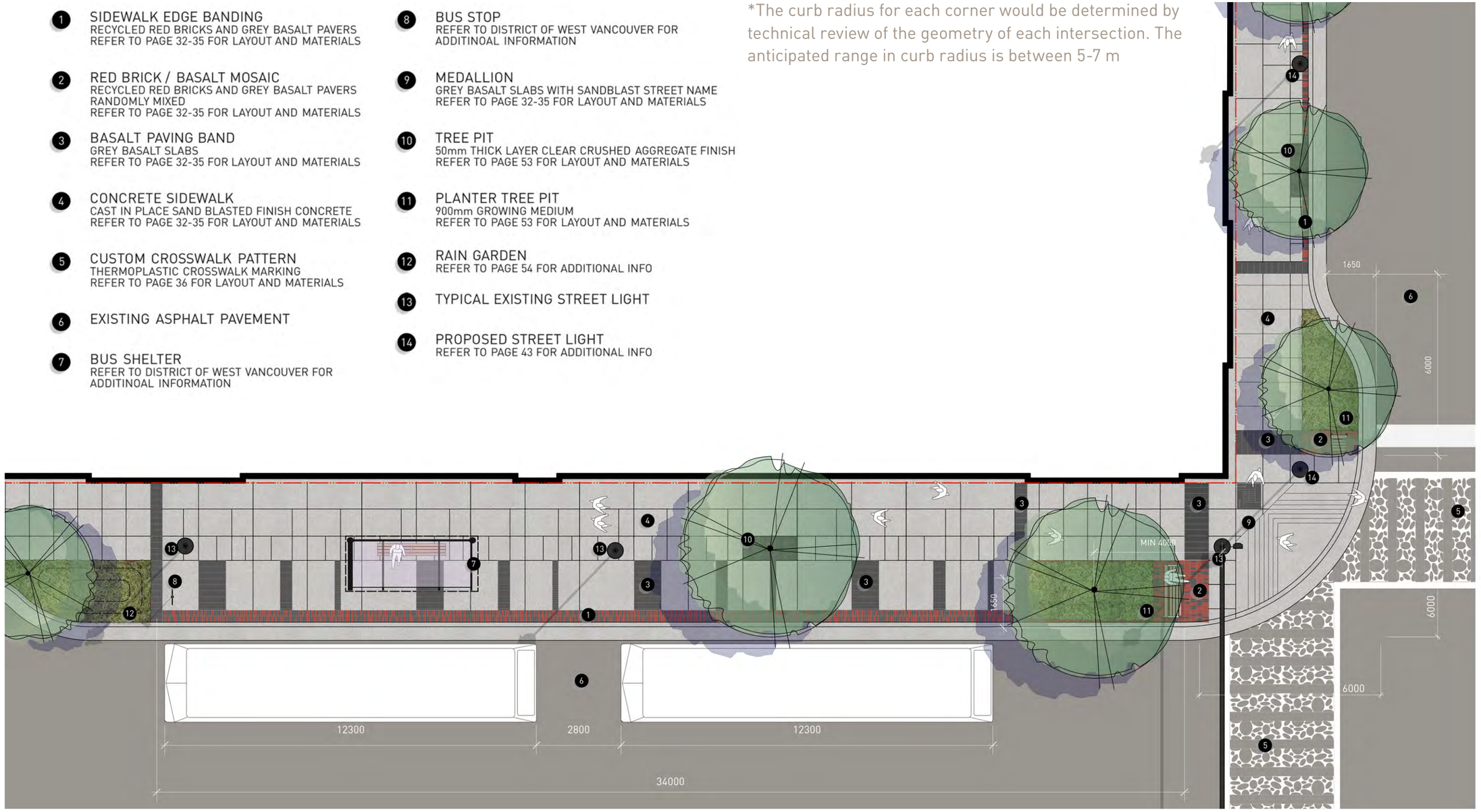
11. PLANTER TREE PIT
900mm GROWING MEDIUM
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

12. RAIN GARDEN
REFER TO PAGE 54 FOR ADDITIONAL INFO

13. TYPICAL EXISTING STREET LIGHT

14. PROPOSED STREET LIGHT
REFER TO PAGE 43 FOR ADDITIONAL INFO

*The curb radius for each corner would be determined by technical review of the geometry of each intersection. The anticipated range in curb radius is between 5-7 m



0 5.0 10.0 15.0 20.0 M

Typical Plan: Bus Bump-Out on Marine Drive | Scale 1:150

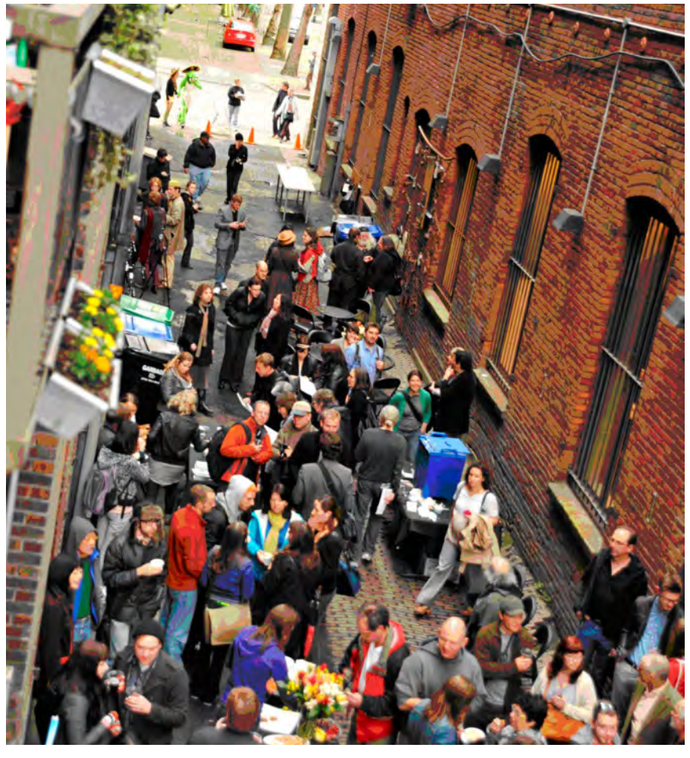
Typical View: Bus Bump-Out

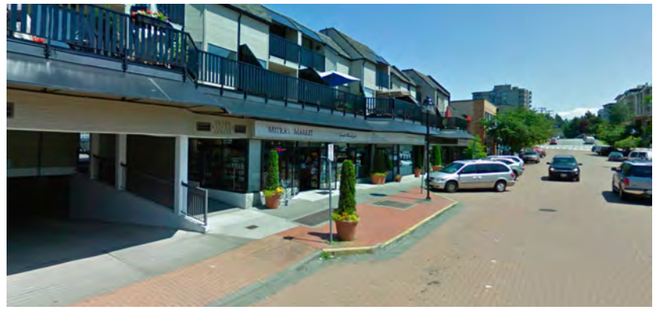
CLYDE AVENUE + LANEWAYS

INTENT

Clyde Avenue and the network of existing paved lanes form an important secondary network of public spaces within the Village Centre . This network of “streets” has the potential to enliven and expand commercial opportunities in the Village Centre and to enhance the character and diversity of the public realm. As “streetscape” works or redevelopment is anticpated, the following guidelines should be accommodated:

- existing conrete unit paving surfaces should be retained / repaired to maintain a higher quality of public realm, encourage slower traffic speeds and reinforce a more pedestrian character.
- opportunities should be taken to improve street lighting through the addition of additional ‘Domus’ lights and / or other lighting located within private properties.
- street trees should be added to Clyde Avenue where opportunties exist. Street trees with high open canopies should be selected to provide more open views to storefronts and signage.
- commercial / retail uses fronting onto lanes should be encouraged.
- development proposals for properties adjoining lanes should be assessed in terms of their impact on the pedestrian experience. Impact from loading operations, parking areas, garbage facilities etc. should be ameliorated.





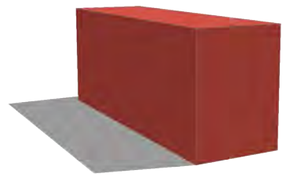
Map of Existing Lanes and Clyde Avenue

STREETSCAPE ELEMENTS

PAVING MATERIALS

- The streetscape standards propose a palette of paving materials including sand blasted cast-in-place concrete, recycled brick pavers, basalt slabs and pavers and concrete unit pavers. The following pages provide detail information concerning the typical layout and dimensioning of these materials within typical sidewalk conditions, the typical application of each paving material, and details of size, finish and installation.

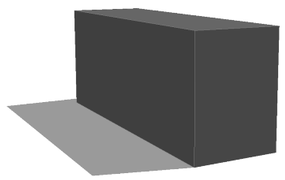
PAVING UNITS



AMBLESIDE RED BRICK

MATERIAL : RED BRICK PAVERS
DIMENSIONS : 200mm x 60mm x 80mm
INSTALLATION METHOD : MORTAR BEDDING AND JOINTING OVER CAST IN PLACE CONCRETE SLAB

(BRICK PAVERS COULD BE RECYCLED OR NEW SUBJECT TO COST AND AVAILABILITY)

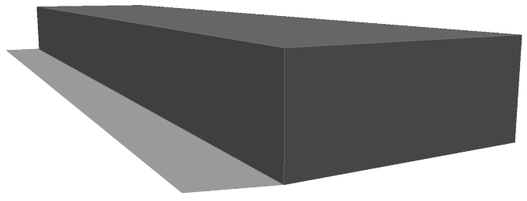


BASALT PAVER TYPE A

MATERIAL : GREY BASALT SLABS
DIMENSIONS : 200mm x 60mm x 80mm
INSTALLATION METHOD : MORTAR BEDDING AND JOINTING OVER CAST IN PLACE CONCRETE SLAB

BASALT PAVER TYPE B

MATERIAL : GREY BASALT SLABS
DIMENSIONS : 400mm x 200mm x 80mm
INSTALLATION METHOD : MORTAR BEDDING AND JOINTING OVER CAST IN PLACE CONCRETE SLAB



BASALT PAVER TYPE C

MATERIAL : GREY BASALT SLABS
DIMENSIONS : 400mm x 900mm x 80mm
INSTALLATION METHOD : MORTAR BEDDING AND JOINTING OVER CAST IN PLACE CONCRETE SLAB

CONCRETE

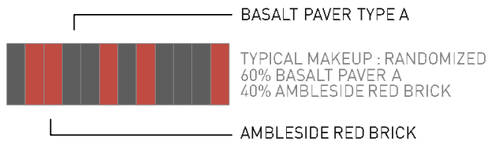
MATERIAL : CAST IN PLACE CONCRETE
DIMENSIONS : 100mm THICK
FINISH : SAND BLASTED WITH SAWCUT SCORE LINES
REFER TO PAGE 58 FOR SAW CUT PATTERN

PAVING APPLICATIONS

SIDEWALK BANDING

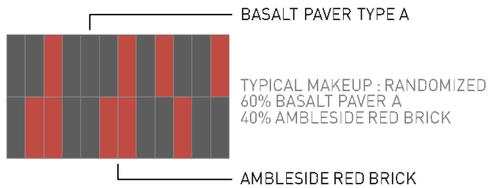
SIDEWALK EDGE BANDING TYPE A

TYPICAL ALONG : NORTH SOUTH STREETS (13TH - 19TH)
PATTERN : SINGLE SOLDIER COURSE



SIDEWALK EDGE BANDING TYPE B

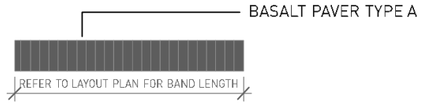
TYPICAL ALONG : MARINE DRIVE, BELLEVUE AVE
PATTERN : DOUBLE SOLDIER COURSE



BASALT BANDING

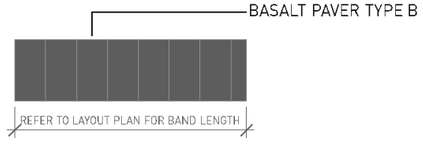
BASALT BANDING TYPE 1

PATTERN : SOLDIER COURSE



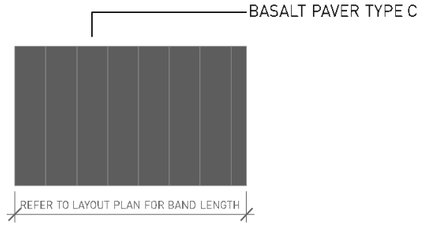
BASALT BANDING TYPE 2

PATTERN : SOLDIER COURSE



BASALT BANDING TYPE 3

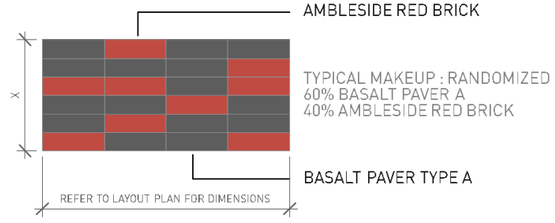
PATTERN : SOLDIER COURSE



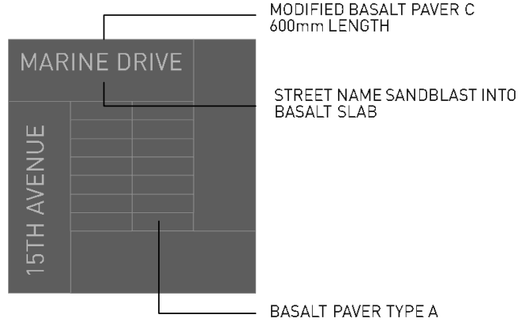
RED BRICK/BASALT MOSAIC (AT CORNERS)

BASALT BANDING TYPE 1

PATTERN : SOLDIER COURSE

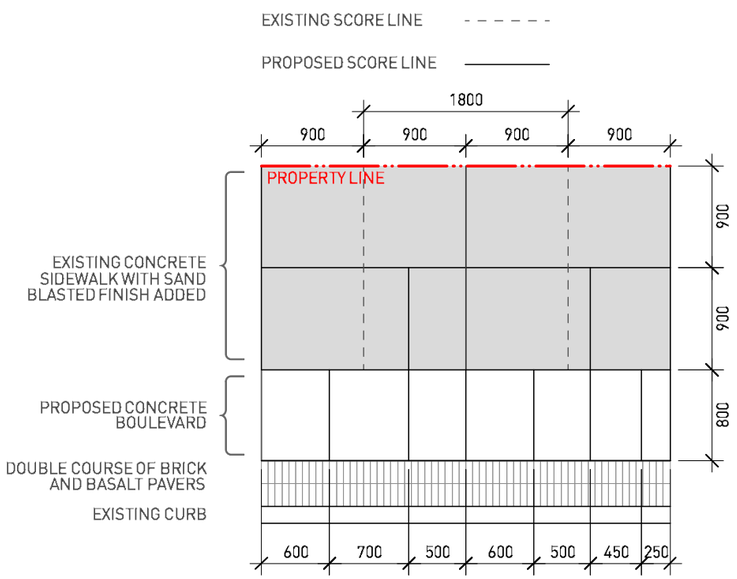


CORNER MEDALLION (STREET NAMES)

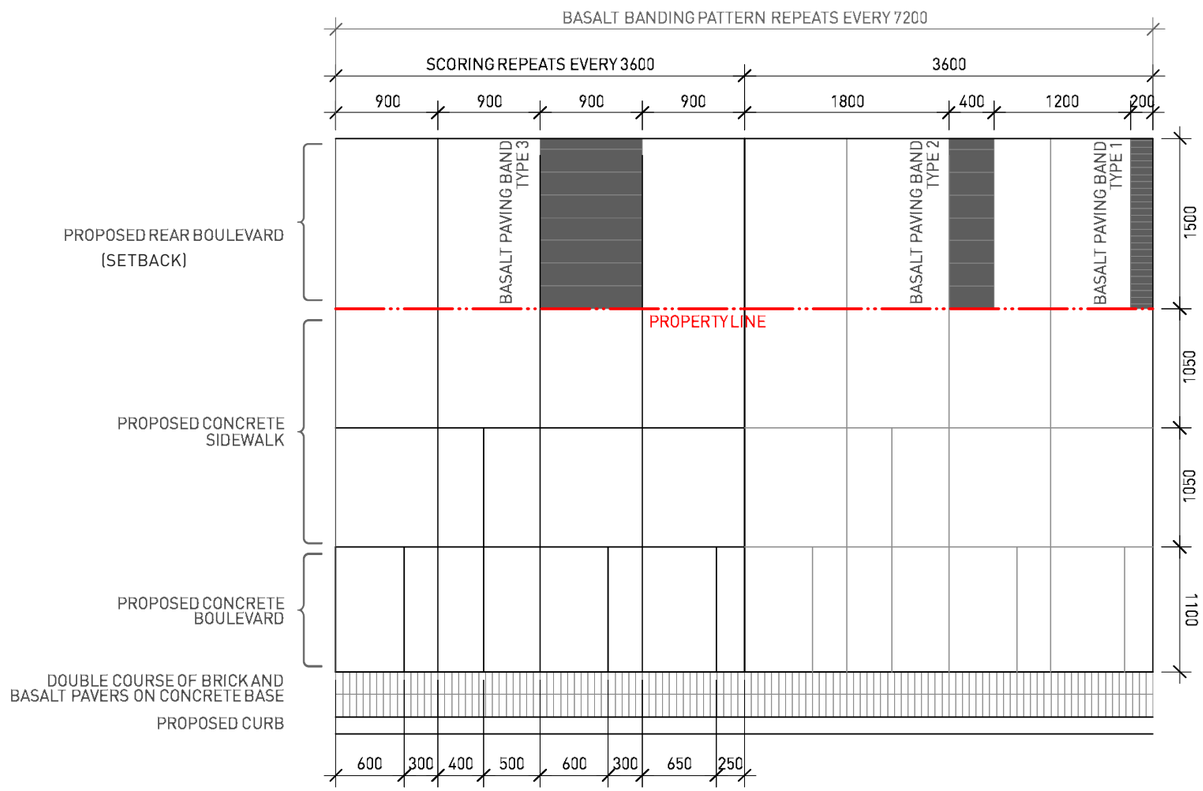


PAVING LAYOUT DETAILS - MARINE DRIVE AND BELLEVUE AVENUE

EXISTING SIDEWALK RENOVATION

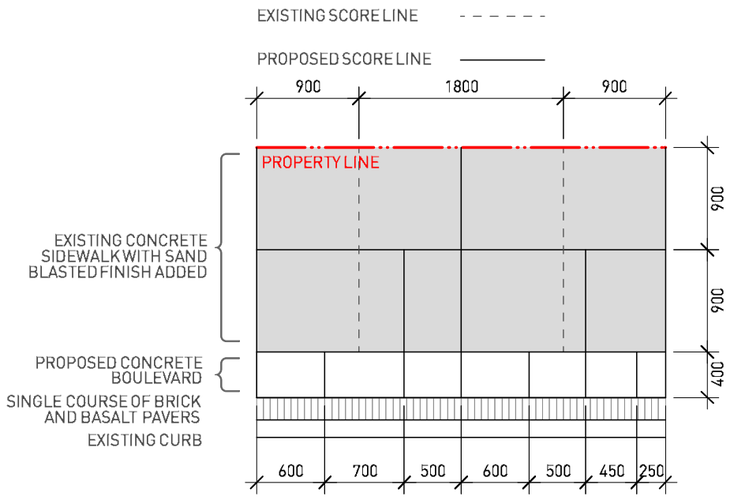


NEW SIDEWALK CONSTRUCTION

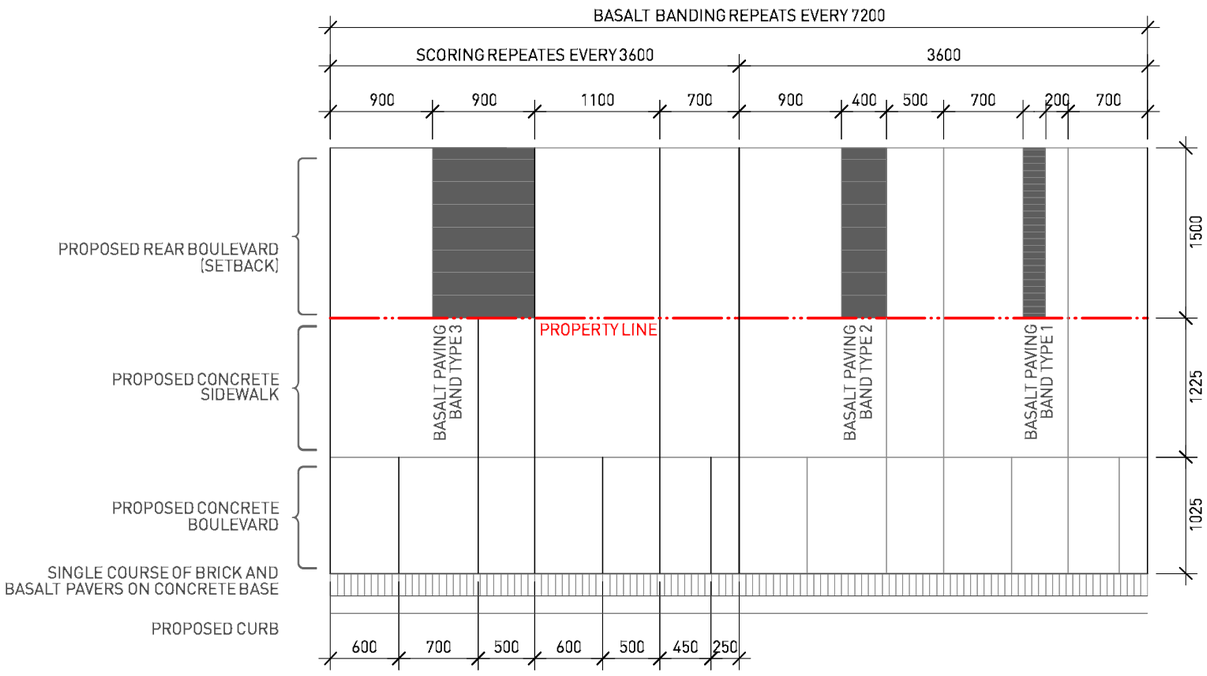


PAVING LAYOUT DETAILS - NORTH SOUTH STREETS SCORING AND LAYOUT

EXISTING SIDEWALK RENOVATION

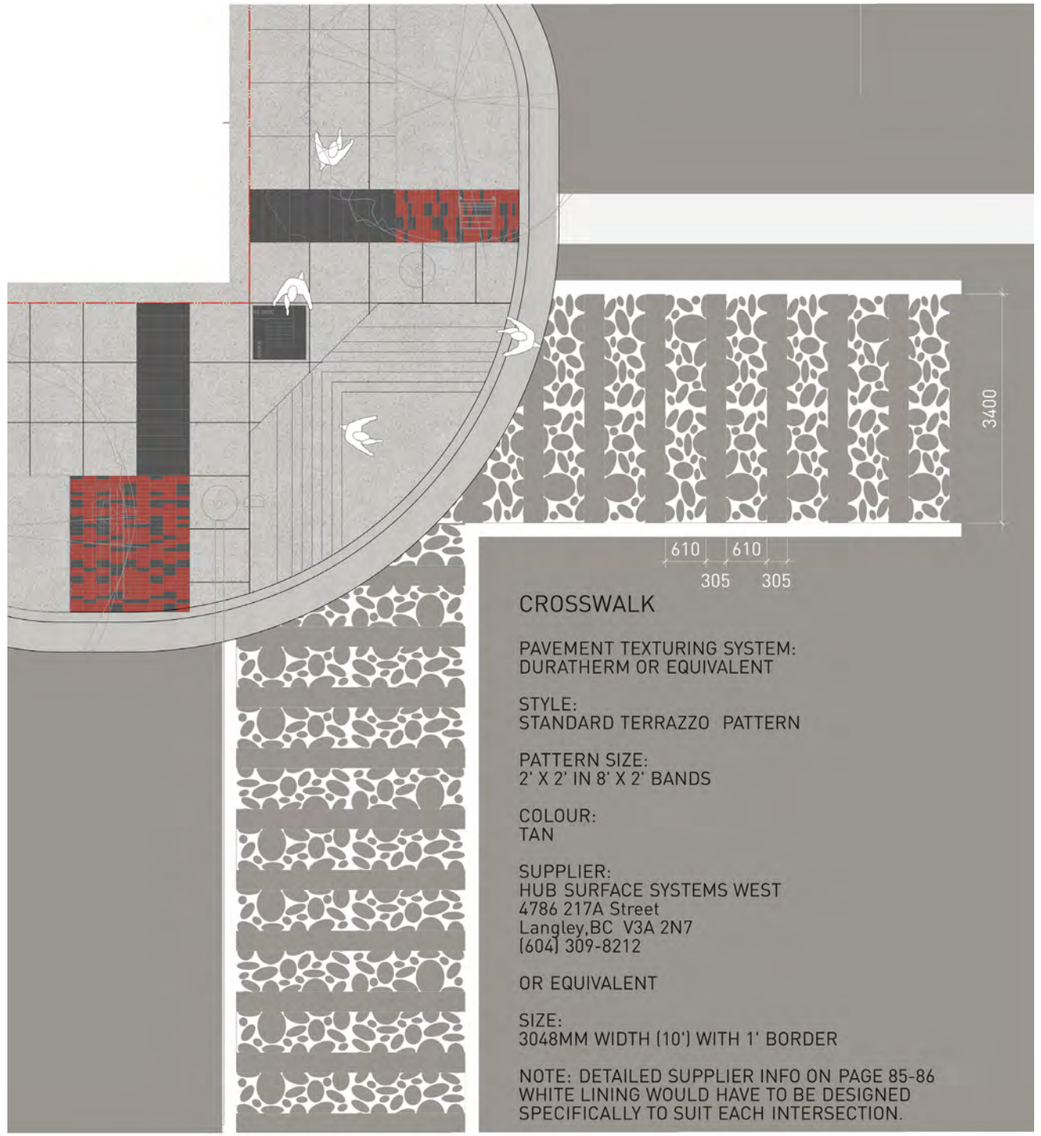


NEW SIDEWALK CONSTRUCTION



CROSSWALKS

- In order to emphasize pedestrian priority it is proposed to mark crosswalks with a custom designed patterning applied to the existing asphalt. The design of the crossing is derived from the shape of cobbles found on the nearby shoreline and is intended to provide a unique design feature within the Village Centre. The design proposed would need to be developed in consultation with a supplier to suit the manufacturing and application process.

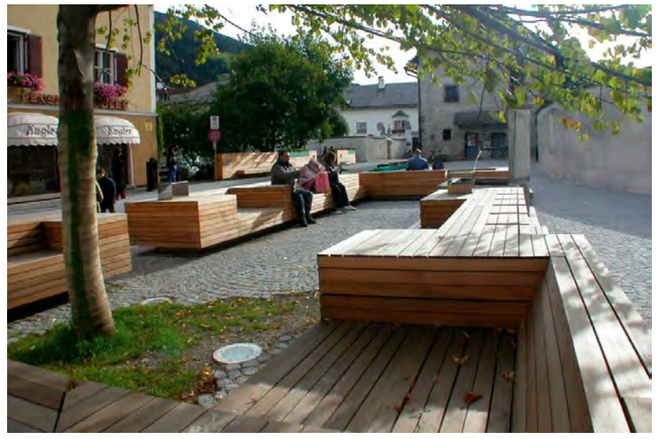


Crosswalk Details

STREET FURNISHINGS

INTENT

The Streetscape Standards propose a new suite of streetscape furnishings to replace the existing furnishings, which were mostly installed in the late 1980's. With the exceptions of a few newer furniture items in some locations, all existing benches, trash cans and bike racks would be replaced as streetscape renovations are completed. High quality durable furnishings are proposed to provide the best value over time and reduced maintenance. In addition to the proposed furnishings, it is proposed that newspaper-vending boxes be removed from the streetscape and local shopkeepers encouraged to dispense papers from stores. This approach would remove the clutter of newspaper vending boxes from the street and increase the number of visits to local stores. Existing bus shelters will also be relocated as required over a period of time as bus bump outs are developed.



BENCH + CHAIR

Seating is to be provided throughout the Village Centre by a combination of proprietary benches and chairs and custom designed seating elements within the Festival Streets on 14th Street and 17 Street. The custom designed furniture is outside of the scope of this study.

The proposed benches and chairs are products supplied by Landscape Forms. Both products utilize cast aluminum and Ipe hardwood providing a very high level of durability. These products have been designed to provide a simple, modern design language combined with the comfort of a traditional timber bench. Benches are proposed with backrests and armrests for comfort in most locations. Backed and backless benches are proposed within the festival streets where there is an opportunity to sit in either direction. Chairs provide the opportunity to locate seating where there is insufficient room for benches. Where possible benches and chairs would be arranged to encourage social interaction. All benches and chairs would be mechanically fastened to the concrete paving.

- Model: Neoliviano with back and armrests
- Mounting: embedded
- Size:24" for chair and 69" for bench
- Manufacturer: Landscape Forms
- Detailed Cut Sheet Page 82-83

Note: Benches and chairs will be located to allow full access to on-street parking.

TRASH + RECYCLING

New multi-purpose trash receptacles are proposed throughout the Village Centre to accommodate trash collection while providing the potential for recycling of paper, drink cans and bottles. The circular drum form of the selected product is slatted to provide a visual connection to the timber benches and chairs. Trash can would be mechanically fastened to the concrete paving.

- Model: Dispatch SLDIS 136
- Mounting: surface mount without concrete base
- Size: 36 gallons
- Manufacturer: Forms and Surfaces
- Detailed Cut Sheet Page 90-91

BIKE RACKS

Bike racks are proposed throughout the Village Centre to encourage and accommodate cyclists. The proposed bike rack has been selected to provide a simple modern design element that takes up a minimal amount of space. A plain aluminum finish is proposed to match the proposed benches and chairs.

- Model: Olympia
- Mounting: surface mount
- Size: 178 mm
- Manufacturer: Forms and Surfaces
- Detauled Cut Sheet Page 84

Street Furniture Images

STREET LIGHTING

INTENT

While most of the streetlights in the Village Centre area were comprehensively upgraded in 2009, there are still inconsistencies in the lighting design especially at intersections along Marine Drive and on the north south streets. The Streetscape Standards recommend that further improvements be carried out to achieve the following goals:

- Provide consistency of street light fixtures
- Retain the most recently installed fixtures wherever possible
- Ensure light levels meet required standards for safety
- Aim to use most compatible energy efficient light sources
- Replace older HPS luminaires (yellow light) with newer Metal Halide lights (white light) to match lighting effect with majority of new lighting

The current status of the lighting system can be summarized as follows:

- Marine Drive sidewalks: Newer 15 ft. height pedestrian scaled Domus lights
- Marine Drive Intersections (13th and 19th only): Newer 20ft height Domus lights
- Marine Drive Intersections (14th to 18thth): Older style HPS “cobra-head” lights at signals
- Bellevue and Clyde Avenue sidewalks and intersections: Newer 15 ft. height pedestrian scaled Domus lights
- North South streets (13th to 19th): Minimal lighting north and south of Marine Drive. Individual 15’ height Domus lights are located at lane entrances on some blocks. Occasional older style pedestrian lights remain from previous periods

RECOMMENDATIONS

MARINE DRIVE:

- Replace older “cobra head”lights at intersections along Marine Drive with 20’ height Domus lights to achieve a consistent street lighting theme
- No change to lighting along sidewalks
- Carry out an examination of light levels at Marine Drive intersections and north-south streets.

BELLEVUE AND CLYDE AVENUE:

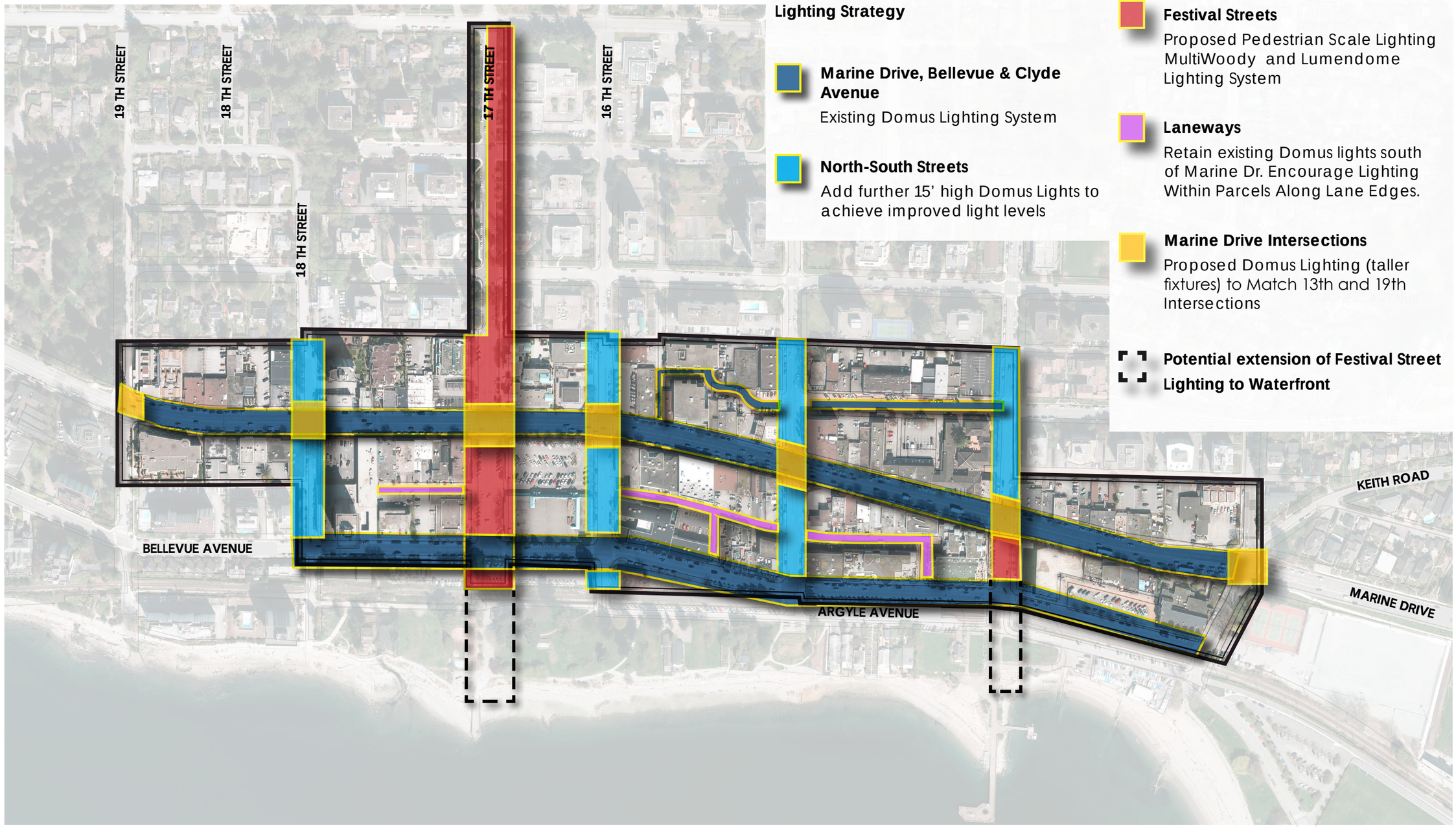
- No change to existing lighting

NORTH SOUTH STREETS (EXCL. FESTIVAL STREETS):

- Retain Domus lights at lane entrances
- Add additional 15’ high Domus Lights to improve light levels. Locate between every other tree. Spacing subject to more detailed study
- Remove any remaining older style lights

FESTIVAL STREETS 14TH AND 17TH STREETS:

- Add new pedestrian scaled Multi-Woody and coloured Lumendome Lighting System to reinforce connection to the waterfront and the Municipal Hall
- Remove any remaining older style lights or Domus lights



Lighting Strategy

Marine Drive, Bellevue & Clyde Avenue
Existing Domus Lighting System

North-South Streets
Add further 15' high Domus Lights to achieve improved light levels

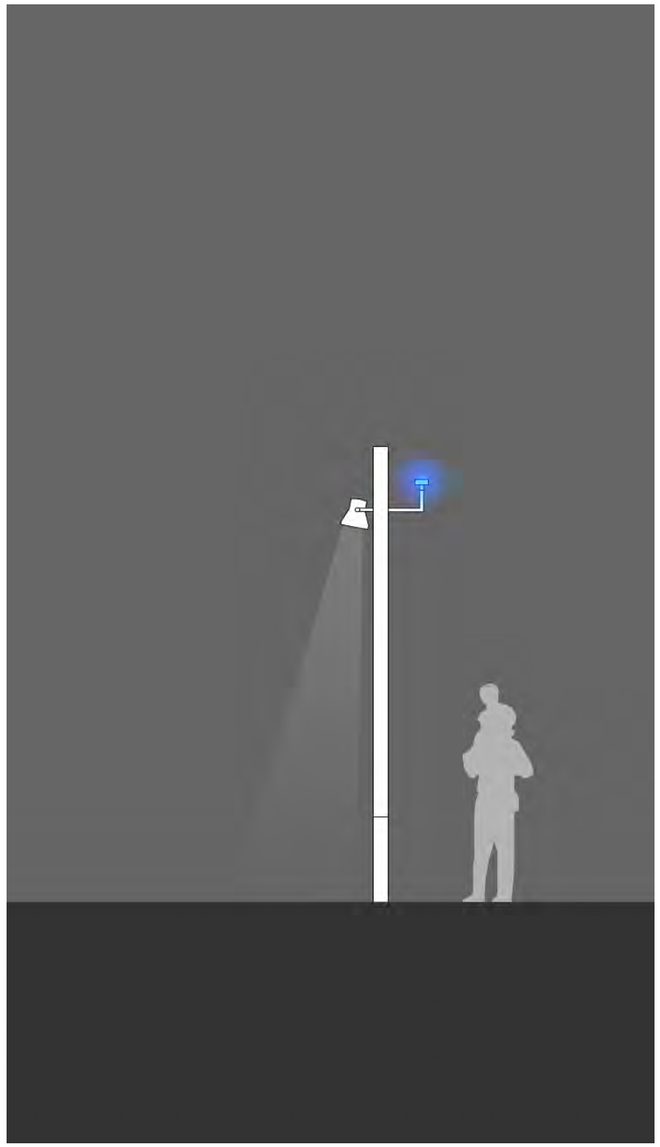
Festival Streets
Proposed Pedestrian Scale Lighting MultiWoody and Lumendome Lighting System

Laneways
Retain existing Domus lights south of Marine Dr. Encourage Lighting Within Parcels Along Lane Edges.

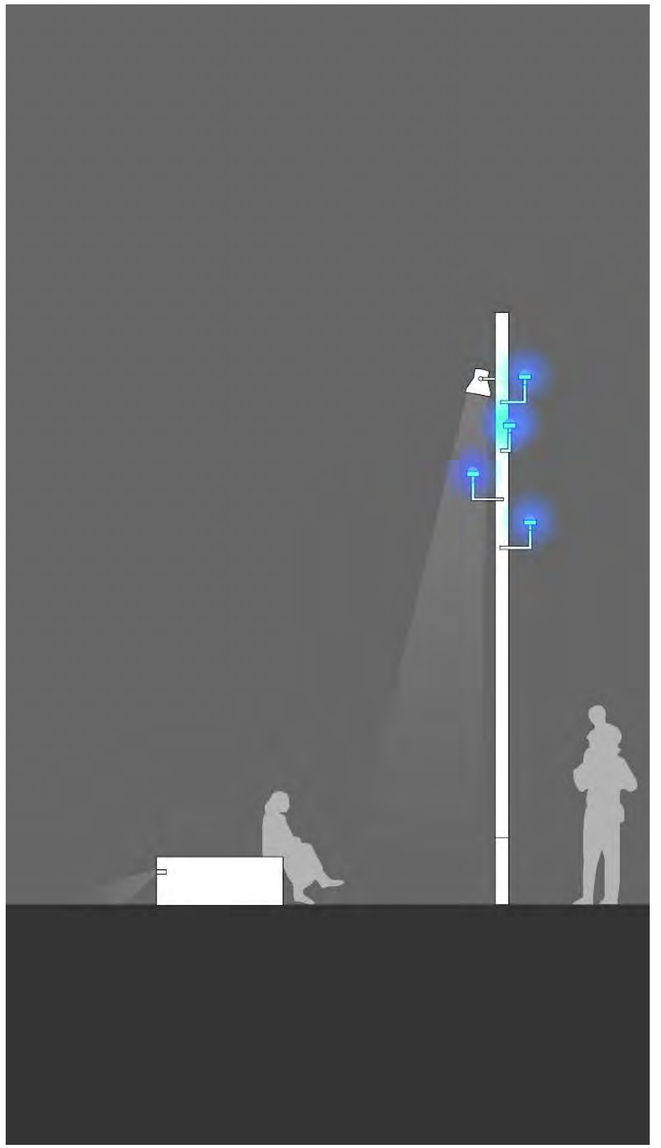
Marine Drive Intersections
Proposed Domus Lighting (taller fixtures) to Match 13th and 19th Intersections

Potential extension of Festival Street Lighting to Waterfront

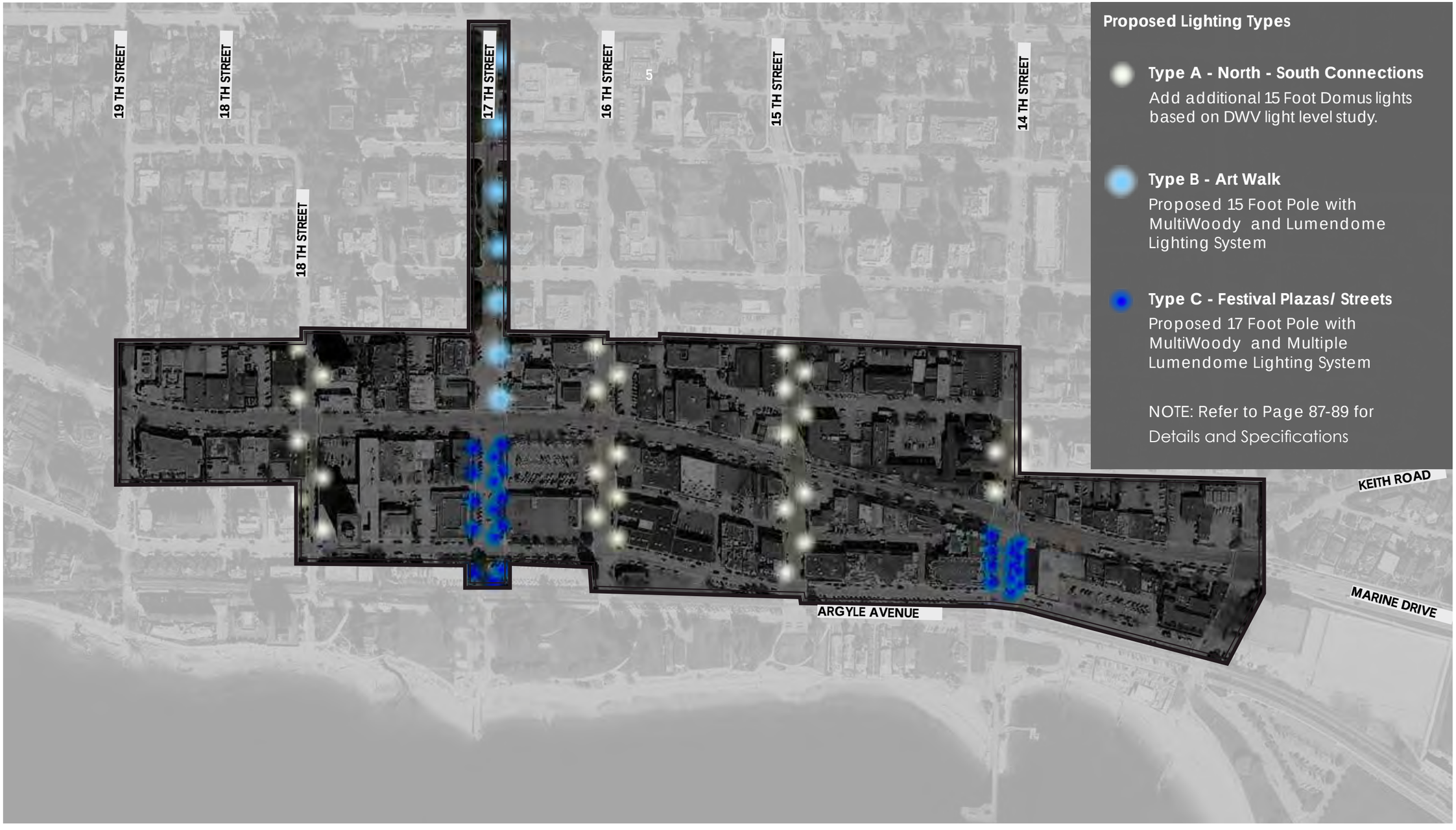
Pedestrian Light - Type A - 15’



Pedestrian Light - Type B - 15’



Pedestrian Light - Type C - 17’



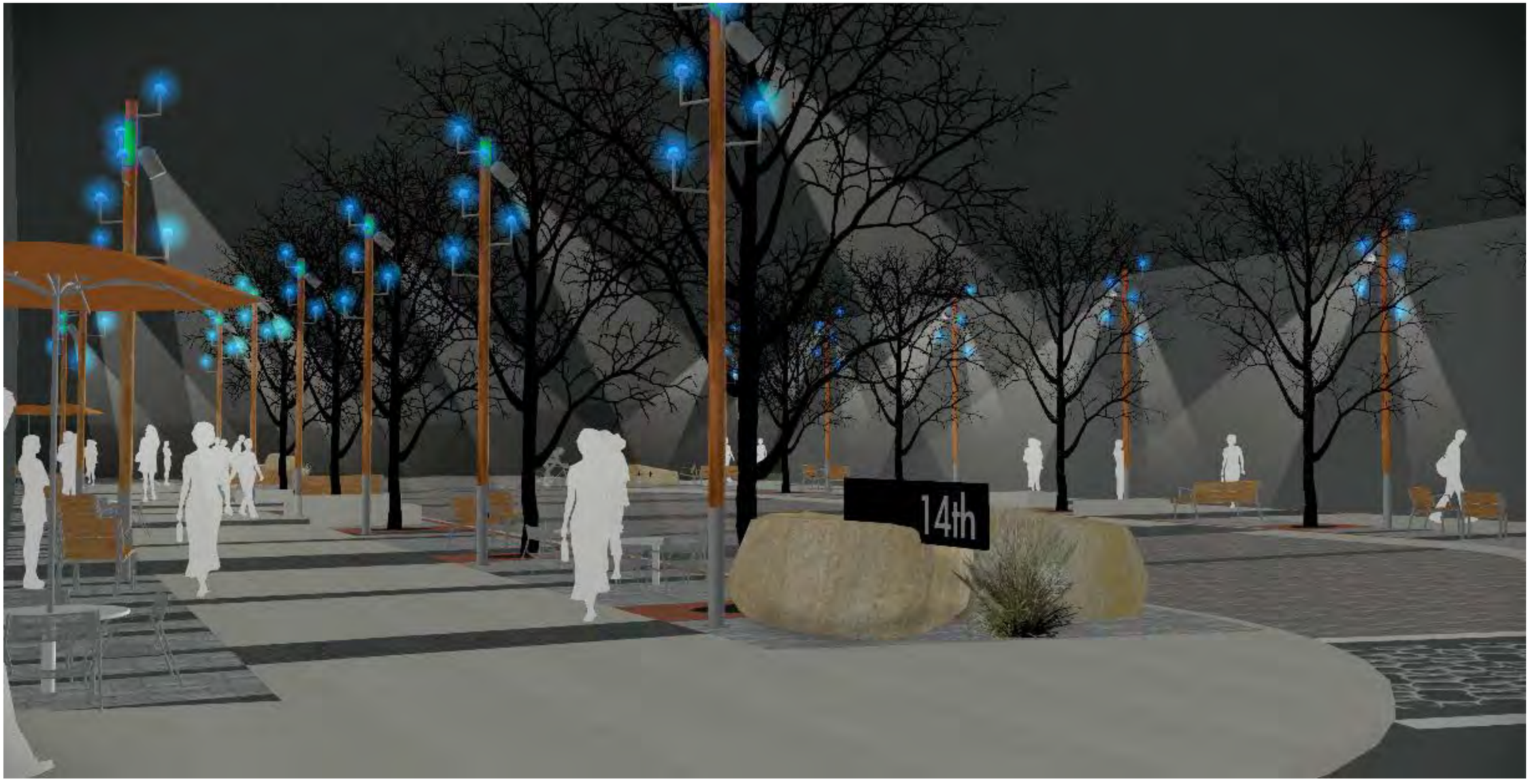
Proposed Lighting Types

Type A - North - South Connections
Add additional 15 Foot Domus lights based on DWV light level study.

Type B - Art Walk
Proposed 15 Foot Pole with MultiWoody and Lumendome Lighting System

Type C - Festival Plazas/ Streets
Proposed 17 Foot Pole with MultiWoody and Multiple Lumendome Lighting System

NOTE: Refer to Page 87-89 for Details and Specifications



Night View: 14th Street

Night View: 17th Street, North of Marine Drive

STREET PLANTING STRATEGY

TREE PLANTING:

Most of the existing street trees at Ambleside Village were planted in the late 1980's when the Village streetscapes were renovated. Over time, a number of trees have been removed and new trees have been planted in some locations. The remaining 1980's tree planting varies in condition from healthy to weak. The proposed streetscape standards will aim to improve the street trees in the Village by adding more trees and replacing trees that are weak or dying.

GENERAL RECOMMENDATIONS:

The general objectives of the street tree strategy are to:

- Increase the extent of the tree canopy within the Village area
- Increase the general health and long term success of tree planting
- Retain existing healthy trees where possible
- Improve growing conditions of existing trees where possible
- Provide the best growing conditions possible for new tree plantings
- Selectively remove and replace unhealthy or unsuitable trees

New tree planting is proposed to achieve the following urban design objectives:

- Achieve regularly spaced street trees along all streets to provide visual and environmental benefits
- Select tree types that are suited to their location
- Protect views towards the waterfront on north-south streets
- Select narrow trees or trees with high canopies to allow clear views of stores' signage

STREET TREE REQUIREMENTS

New street trees should conform to the following standard:

- Minimum 7 cm caliper
- Conforming to BCLNTA and BCSLA Standards
- Uniform in shape and form and of the highest quality
- Maximum 10 m on centre spacing

Selection and approval of street trees will be by the District staff.


19 TH STREET
18 TH STREET
18 TH STREET
17 TH STREET
16 TH STREET
15 TH STREET
14 TH STREET
KEITH ROAD
MARINE DRIVE
ARGYLE AVENUE
Tree Planting Strategy
Marine Drive
Festival Street: 17th &14th Street
Bellevue Avenue
19th, 18th, 16th, 15th, 13th Streets and 14th Street North
Clyde Avenue Recommendations

STREET-BY-STREET RECOMMENDATIONS

MARINE DRIVE

Field Maples (Acer campestre) were planted along the length of the street within the Village area. The trees are generally in good condition but many trees have been removed over time.

RECOMMENDATION:

- Retain existing healthy Field Maples
- Work towards continuous lines of Field Maple throughout the Village Centre
- Add more Field Maples where trees have been removed and space permits

17TH STREET FESTIVAL STREET

COMMERCIAL AREA SOUTH OF THE LANE (NORTH OF MARINE DRIVE):

South of Marine, cherry trees remain from the 1980s.

Between Marine and the lane, a variety of trees exist north of Marine including older Cherry Trees (west side) and newer Birch and Maples (east side).

RECOMMENDATION:

- Existing trees to be removed south of Marine Drive as a part of the proposed festival street reconfiguration
- South of Marine Drive, provide an informal arrangement of new street trees comprising Liquidambar styraciflua as the larger canopy tree with Sorbus aucuparia as the secondary, smaller ornamental tree. Trees would be planted in informal groupings.
- Mixed tree planting north of Marine to remain.
- Replace existing cherry trees on the west side (north of Marine) with Liquidambar styraciflua

RESIDENTIAL AREA NORTH OF THE LANE:

Heritage Horse Chestnuts extend from the lane north of Marine Drive to Inglewood Avenue.

Horse Chestnuts on west side of 17th are generally in good shape, however more recent replacement plantings have been carried out using Liquidambar styraciflua.

Horse Chestnuts east side of 17th have been heavily pruned under Hydro wires and are visually unappealing and structurally compromised.

Flowering Star Magnolias have been planted as a secondary row east of the Horse Chestnuts.

RECOMMENDATION:

- Retain the existing Horse Chestnuts and continue with current re-planting strategy.
- As Chestnuts fail, replace with smaller scale Magnolia stellata that can grow under the hydro wires.
- Retain Star Magnolias and fill in gaps with new trees.

14TH STREET FESTIVAL STREET

Cherry trees are planted along both sides the length of the street.

RECOMMENDATION:

- Retain existing Cherry Trees north of Marine Drive
- Remove existing trees between Marine Drive and Bellevue as part of the proposed Village Plaza street reconfiguration. New cherry trees adjoining the 1300 block site can be re-planted elsewhere
- Provide two new regularly planted rows of shade trees, Platanus x acerifolia "Bloodgood" within the proposed Village Plaza

BELLEVUE AVENUE

A variety of mostly smaller flowering tree types exist along Bellevue. Many of the trees are in poor condition.

RECOMMENDATION:

- Selectively remove unhealthy, stunted trees
- Add to the current planting and fill in gaps
- Allow a variety of smaller decorative tree types to exist on this street. Recommended species include Cornus (Dogwood) "Eddie's White Wonder", Acer (Maple) griseum, and Magnolia stellata

19TH STREET

Relatively new trees, for example Cornus var., have been planted along the east side of the street.

RECOMMENDATION:

- Retain existing street trees

18TH STREET

Very few original 1980's trees remain on the narrow street south of Marine.

RECOMMENDATION:

- Retain mature purple beech at south-east corner of Marine.
- North of Marine, retain Hornbeams on west side of the street, if feasible.
- North and South of Marine, seek opportunities to add more columnar trees where possible. Recommended tree is Acer platanoides "columnar".

16TH STREET

Cherry trees remain from the 1980s south of Marine Drive.

Newer Purple Beech and Liquidambar have been added, mostly north of Marine Drive.

Redevelopment of the old Safeway site may result in removal of trees south of Marine Drive.

RECOMMENDATION:

- Add more Liquidambar south of Marine Drive as replacement plantings to match newer trees

15TH STREET

Road widening has resulted in fewer trees on this street. Original trees have been replaced with columnar Norway Maple (Acer platanoides var.).

RECOMMENDATION:

- Retain existing columnar Norway Maple. Seek opportunities to add more matching columnar trees where possible.

13TH STREET

A line of mature Maple trees exists close to the curb on the east side of the street, south of Marine. There are no trees west of 13th Street.

RECOMMENDATION:

- Protect and retain the mature existing trees east of the street. Limit further road widening in this location
- Seek opportunities to add columnar street trees on the west side of the street through redevelopment of the 1300 block. Recommended tree species is Acer rubrum “Armstrong” (Red Maple).

CLYDE AVENUE

Tree planting on Clyde Avenue is limited to a few Cherry trees just west of 14th Street, some of which are dead. Adding street trees on Clyde would improve character and environment of the street. Larger scaled street trees with high open canopies would allow more open views to storefronts and signage. No trees within lanes.

RECOMMENDATION:

- Examine opportunities to add more, individual larger scaled deciduous shade trees.
- Recommended tree species are Fagus sylvatica, Quercus palustris and Platanus acerifolia.

TREES PLANT LIST

SCIENTIFIC NAME	COMMON NAME	SIZE
Acer campestre	Field Maple	7 cm Cal
Acer griseum	Paperback Maple	5 cm Cal
Acer platanoides ‘Culumnare’	Columnar Norway Maple	7 cm Cal
Acer rubrum ‘Armstrong’	Armstrong Red Maple	7 cm Cal
Acer rubrum ‘Franksred’	Red Sunset Maple	7 cm Cal
Fagus sylvatica	Beech	7 cm Cal
Cornus ‘Eddie’s White Wonder’	Eddies White Wonder Dogwood	5 cm Cal
Liquidambar styraciflua ‘Worplesdon’	Worplesdon Liquidambar	7 cm Cal
Magnolia ‘Galaxy’	Galaxy Magnolia	7 cm Cal
Magnolia stellata	Star Magnolia	5 cm Cal
Platanus x acerifolia ‘Bloodgood’	Bloodgood Plane Tree	7 cm Cal
Pyrus calleryana ‘Glen’s Form’	Chanticleer Ornamental Pear	7 cm Cal
Quercus palustris	Pin Oak	7 cm Cal
Sorbus aucuparia	Mountain Ash	5 cm Cal
Syringa reticulata ‘Ivory Silk’	Ivory Silk Tree Lilac	5 cm Cal

Sorbus aucuparia

Acer griseum

Acer platanoides ‘Columnare’

Acer rubrum ‘Armstrong’

Fagus sylvatica

Liquidambar styraciflua ‘Worplesdon’

Magnolia ‘Galaxy’

Magnolia stellata

Quercus palustris

TREE PLANTING DETAILS

STRUCTURAL SOILS, SOIL CELLS + GROWING MEDIUM

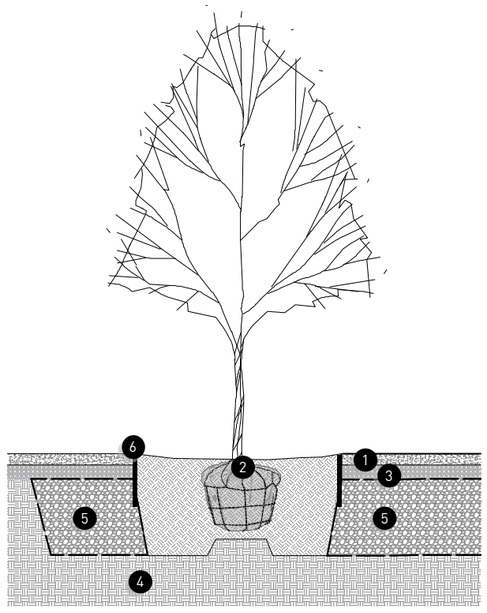
The performance and long-term survival of urban trees are heavily dependent upon an adequate provision of growing medium. This is particularly true for street plantings that grow in harsh urban environments with little maintenance.

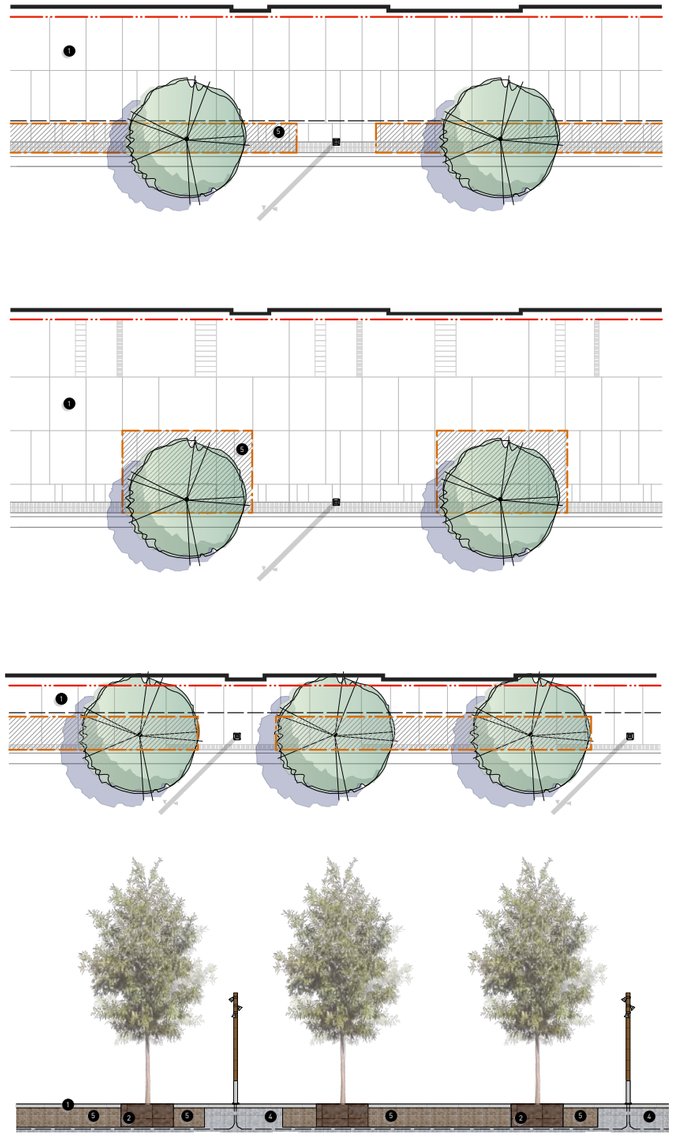
For street trees, conventional tree planting pits, such as existing in Ambleside, provide insufficient growing medium for the long-term healthy development of medium to large street trees. Insufficient growing medium reduces the long-term supply of nutrients, water and oxygen. Current research shows that urban trees require between 28-34 cubic metres of growing medium to develop to a size of 40-50 cm caliper, DBH. A conventional 1.2m x 1.2m tree pit provides approx. 2 cubic metres.

In a streetscape context there are two main solutions to improve the volume of growing medium provided:

- The use of soil cells under paved area adjoining tree pits
- The use of structural soil under paved area adjoining tree pits

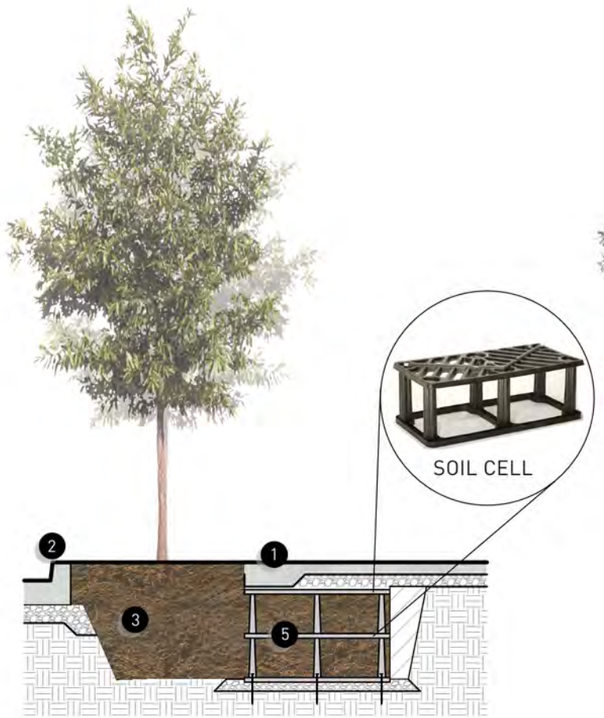
Typical tree pit detailing utilizing soil cells and structural soil are provided. Soil cells provide the most growing medium within a given volume but carry the highest construction costs. Structural soil is a cheaper and simpler solution but only provides approximately 30% growing medium by volume of structural soil installed. The remaining 70% is rock. Soil cells are preferred by the District. This approach would only be applied to major redevelopment.



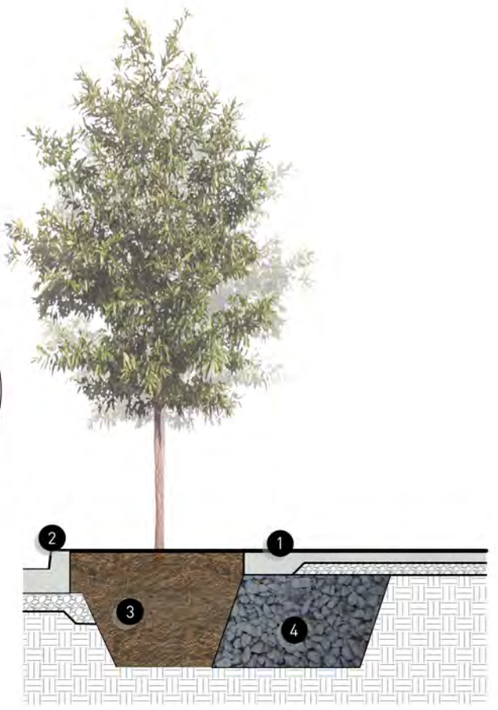


Typical Plan and Sections
Arrangement of Structural Soil or Soil Cells to Provide a 10m3 Tree Pit

1. CONCRETE SIDEWALK
   CAST IN PLACE SAND BLASTED CONCRETE
   REFER TO PAGE 58 FOR LAYOUT AND MATERIALS
2. CURB AND GUTTER
3. GROWING MEDIUM
   MINIMUM 900mm DEEP
4. STRUCTURAL GROWING MEDIUM
5. STRUCTURAL SOIL CELL



Typical Tree Pit Detail
Soil Cell Option



Typical Tree Pit Detail
Structural Soil Option

STREETSCAPE PLANTINGS

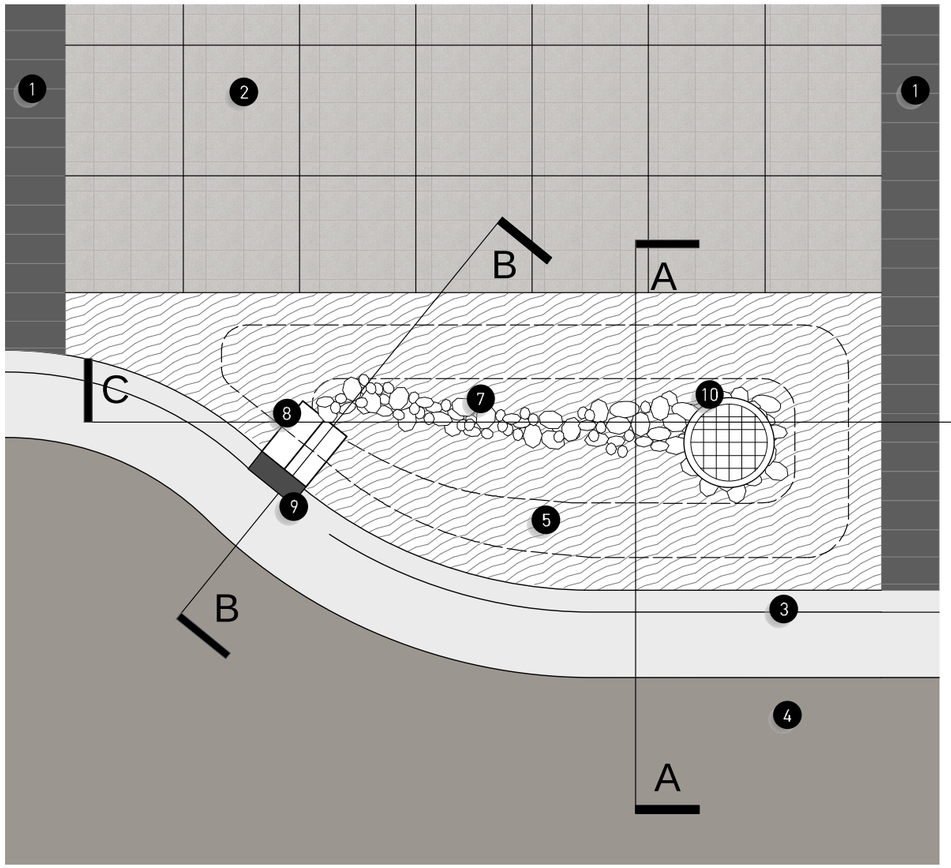
The proposed streetscape improvements provide opportunities for new areas of streetscape planting in a variety of locations. New planting will improve the street by:

- Cooling the urban environment
- Reducing run off from hard surfaces
- Creating visual interest and beauty
- Providing potential urban habitat
- Providing potential cover and food sources for birds

All streetscape plants should conform to the following requirements:

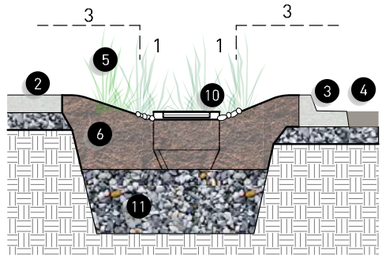
- Drought tolerant and / or native varieties
- Generally lower than 600 mm in height or lower to allow for sightlines and public safety
- Non invasive
- Non spreading to avoid encroachment on sidewalks and roads
- Tough and low maintenance suited for a public streetscape
- A mixture of evergreen and deciduous plants that provide year round interest

Where possible, proposed planting areas should act as rain gardens collecting, cleansing and infiltrating run-off from the adjoining streets.

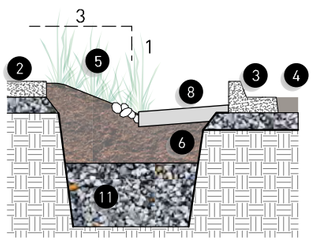


Typical Rain Garden Plan

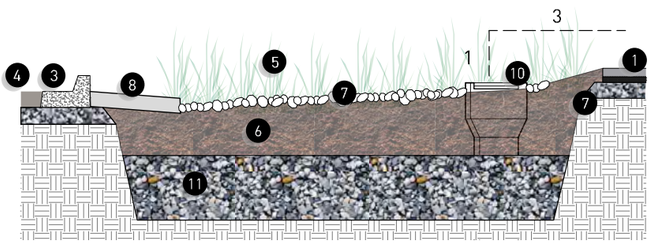
1. BASALT PAVING BAND
   GREY BASALT SLABS
   REFER TO PAGE 32-35
2. CONCRETE SIDEWALK
   CAST IN PLACE SAND BLASTED FINISH CONCRETE
   REFER TO PAGE 32-35
3. CURB AND GUTTER
4. ASPHALT PAVEMENT
5. RAIN GARDEN PLANTING
   MIN 450mm GROWING MEDIUM (900mm FOR TREES)
6. GROWING MEDIUM
7. RIVER ROCK
   1" - 3" DIAMETER
8. CONCRETE APRON
9. METAL CURB INLET
10. CATCH BASIN
11. DRAIN ROCK
    600mm DEEP



Section A



Section B



Section C

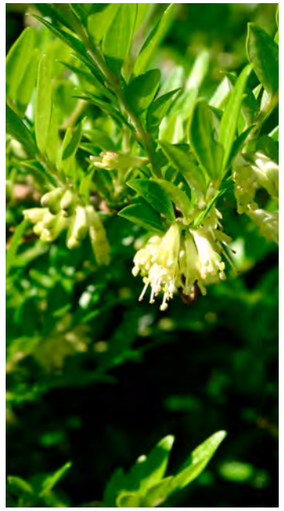
Typical Rain Garden Sections

SHRUBS LIST

SCIENTIFIC NAME	COMMON NAME		
Buxus microphylla ‘Winter Gem’	Winter Gem Boxwood	#2 pot	45 cm
Choisya ternata	Mexican Orange Blossom	#3 pot	90 cm
Cornus sericea ‘Kelseyii’	Kelsey Dogwood	#2 pot	60 cm
Ilex crenata ‘Hetzii’	Hetz Japanese Holly	#2 pot	60 cm
Lonicera pileata	Privet Honeysuckle	#2 pot	60 cm
Mahonia aquifolium	Oregon Grape	#1 pot	45 cm
Rosa ‘Meidiland White’	Meidiland White Rose	#2 pot	60 cm
Rosa rugosa ‘Frau Dagmar Hartopp’	Frau Dagmar Hartopp Rose	#2 pot	60 cm
Sarcococca hookeriana humilus	Sweet Box	#2 pot	45 cm
Senecio greyii	Senecio	#1 pot	45 cm
Spiraea bumalda ‘Goldflame’	Goldflame Spiraea	#2 pot	60 cm
Spiraea nipponica ‘Snowmound’	Snowmound Spirea	#2 pot	60 cm
Symphoricarpos chenaultii ‘Hancock’	Trailing Snowberry “Hancock”	#2 pot	60 cm
Vaccinium ovatum ‘Thunderbird’	Evergreen Huckleberry	#2 pot	45 cm

Sedum telephium ‘Autumn Joy’

Alchemilla Mollis

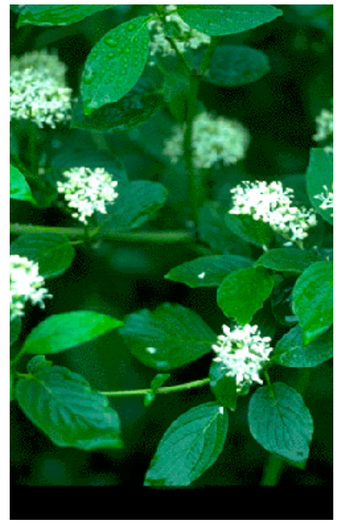


Lonicera pileata

GROUNDCOVER & HERBACEOUS

Alchemilla mollis	Lady’s Mantle		
Artemisia ‘Powis Castle’	‘Powis Castle’ Artemisia		
Erica carnea ‘Springwood Pink’	‘Springwood Pink’ Heath	15 cm pot	38 cm
Erica darleyensis ‘Kramer’s Red’	Kramers Red Heath	#1 pot	38 cm
Euonymus fortunei ‘Emerald Gaiety’	Emerald Gaiety Wintercreeper	#1 pot	38 cm
Euphorbia amygdaloides robbiae	Robbiaeword Sponge	#1 pot	38 cm
Euphorbia myrsinites	Myrtle Sponge	#1 pot	45 cm
Gaultheria shallon	Salal	#1 pot	45 cm
Geranium macrorrhizum		#1 pot	45 cm
Hemerocallis ‘Happy Returns’	“Happy Returns” Day Lily	#1 pot	30 cm
Iris siberica	Siberian Iris	#1 pot	30 cm
Lavandula angustifolia ‘Hidcote’	Lavender	#2 pot	60 cm
Mahonia repens	Creeping Mahonia	#1 pot	30 cm

Iris siberica



Cornus sericea ‘Kelseyii’

Polystichum munitum

Polystichum munitum	Western Sword Fern	#2 pot	75 cm
Potentilla fruticosa	Potentilla	#2 pot	45 cm
Rudbeckia fulgida ‘Goldsturm’	Goldsturm Rudbeckia	#1 pot	40 cm
Sedum telephium ‘Autumn Joy’	Autumn Joy Stonecrop	#1 pot	30 cm
Stachys byzantia	Stachys Silver Carpet	4” pot	30 cm
Stipa tenuissima			

GRASSES & SEDGES

Carex morowii ‘Ice Dance’	Variegated Sedge	4” pot	30 cm
Calamagrostis x acutiflora ‘Karl Foerster’	Feather Reed Grass	#1 pot	80 cm
Festuca glauca ‘Elijah Blue’	Elijah’s Blue Fescue	#1 pot	30 cm
Helictotrichon sempervirens	Blue Oat Grass	#1 pot	60 cm
Luzula nivea			
Pennisetum alopecuroides ‘Hameln’	Dwarf Fountain Grass	#1 pot	30 cm

RAINGARDEN PLANTS

Carex pendula	Drooping Sedge	#1 pot	45 cm
Carex stipata	Owl Fruit Sedge	4” pot	30 cm
Carex testacea	Orange Sedge	4” pot	30 cm
Carex obnupta	Slough Sedge	4” pot	30 cm
Cornus sericea ‘Kelseyii’	Dwarf Red Twig	#1 pot	45 cm
Iris douglasiana	Douglas Iris	4” pot	30 cm
Iris missouriensis	Rocky Mountain Iris	4” pot	30 cm
Iris siberica	Siberian Iris	#1 pot	30 cm
Juncus effusus ‘Quartz Creek’	Quartz Creek Juncus	4”pot	30 cm
Scirpus microcarpus	Small Fruited Bullrush	4” pot	30 cm
Polystichum munitum	Sword Ferm	#2 pot	45 cm
Vaccinium ovatum ‘Thunderbird’	Evergreen Huckleberry	#2 pot	45 cm

Carex morowii ‘Ice Dance’

Cornus sericea ‘Kelseyii’

Luzula nivea

Pennisetum alopecuroides

Carez pendula

Helictotrichon sempervirens

2

PUBLIC ART

EXISTING CULTURAL FACILITIES + PUBLIC ART WORKS

Ambleside Village Centre and the adjacent Waterfront is home to a growing number of public art projects. Only two of the art installations fall within the study area and the rest are located mostly along the waterfront.

The Recommendations for future Public Art integration can be divided into two separate, but connected projects.

These are:

- Sidewalk patterning along Marine Drive and Bellevue Avenue
- Stand alone works of art along major Festival Streets (14th and 17th).

Existing Public Art Within or Adjacent to Study Area

1. **17th and Marine "The eye of the Mountain Bear" Don Vaughn, 1991**
2. **near 18th and Marine -Sidewalk Mural over 'piped section of Lawson Creek, artist unknown**
3. **19th on seawalk "random acts of mosaic art" artist unknown , ongoing project**
4. **19th on seawalk "Wind Sock" Art work and Irwin Park Grade 6 class 1994**
5. **18th on seawalk "Big Chairs" Bill Pechet 1991**
6. **park on 18th near seawalk "Friends Forever" James Koester 1995**
7. **park on 18th "Birdbath" Bill Pechet 1995**
8. **interior Lawson Creek Studio "Canada 1" Arie Alexander Galles , date unknown**
9. **Lawson Creek and Argyle "Fish Run" Coolfires, date unknown**
10. **Silk Purse Art Centre –exterior "Mural 1" Richard Tetrault , 2011**
11. **Silk Purse Art Centre –exterior "Mural 2" Richard Tetrault , 2011**
12. **Music Box Art Centre –exterior "Chimney Mural" Richard Tetrault , 2011**
13. **14th on seawalk at Ambleside Landing "Granite Assemblage" Don Vaughan, 1989**
14. **14th at Bellevue –temporary artwork**
15. **14th at Marine –temporary artwork**
16. **Ambleside park, foot of 13th "Sna7m Smanit (Spirit of the Mountain)" Xwa lak tun, (Rick Henry), 2007**
17. **Mural by Richard Tetrault**

Existing and Future Cultural Facilities

18. **District Hall (Exhibition space)**
19. **West Vancouver Museum**
20. **Navvy Jack House (historic site)**
21. **Lawson Creek Studios**
22. **Silk Purse Arts centre**
23. **Music Box/ Harmony Arts Festival Office**
24. **2 houses (potential future cultural use) –owned by District of West Vancouver**
25. **Ferry Building Art Gallery (historic site)**


19 TH STREET
18 TH STREET
18 TH STREET
17 TH STREET
16 TH STREET
15 TH STREET
14 TH STREET
CLYDE AVENUE
KEITH ROAD
MARINE DRIVE
ARGYLE AVENUE
Public Art
Public Art Temporary
Seasonal Outdoor Art Shows
Existing Cultural Facility
Potential Future Sites For Arts and Culture Uses

PUBLIC ART CONCEPTS

SIDEWALK PATTERNING

PROPOSAL

To install a series of engraved basalt slabs within the sidewalk primarily along Marine Drive and Bellevue Avenue.

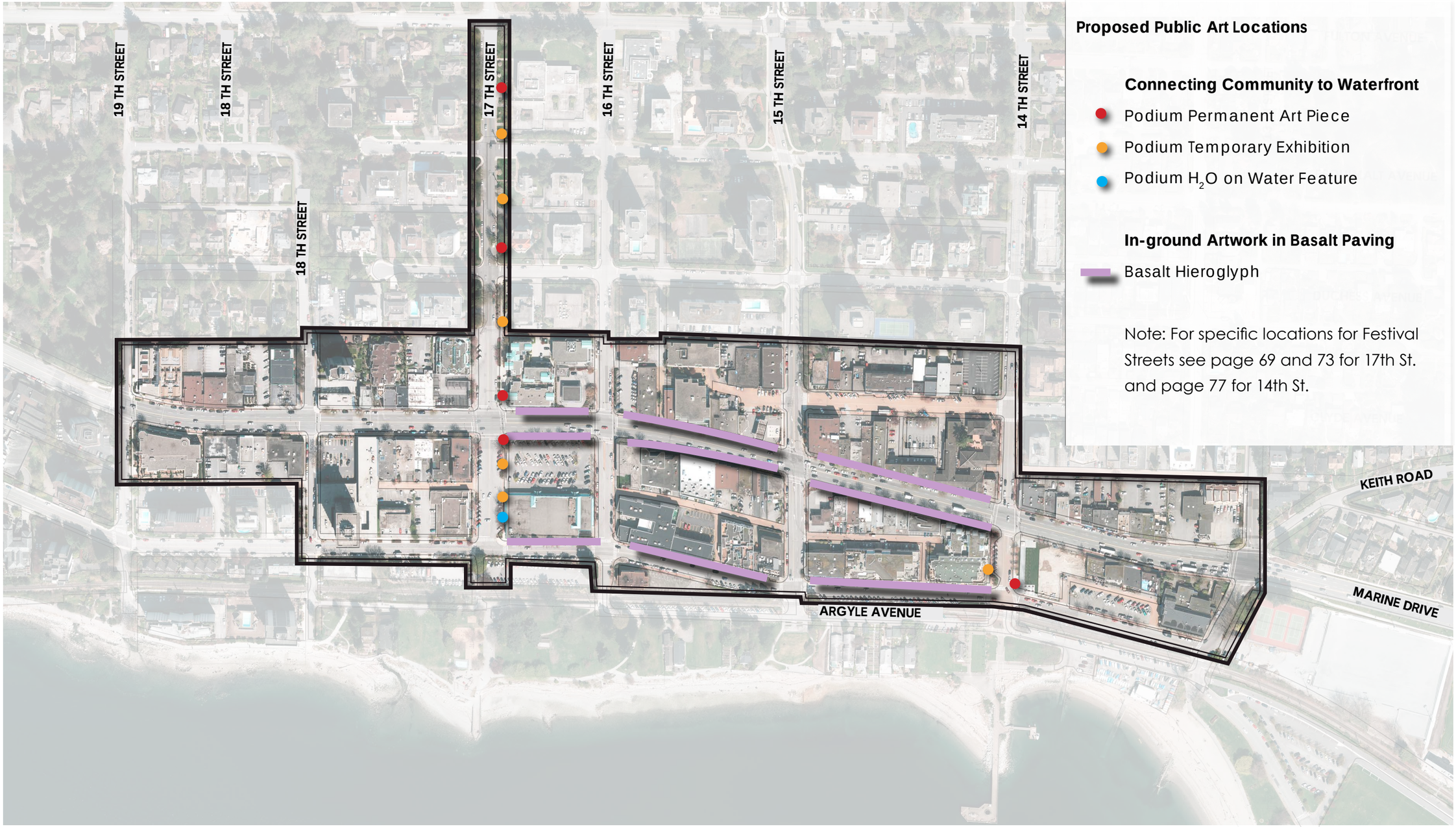
INTENT

Inscribed basalt slabs located in the sidewalks along Marine and Bellevue would create a repeating or connected motif forming a necklace of artwork connecting the two festival streets.

At each corner along Marine Drive and Bellevue Avenue, there would be basalt slabs inlaid with the north-south street name inscribed within its surface. In the mid block areas, other motifs, texts or patterns would be inscribed within the surface of the basalt slabs positioned randomly along the concrete sidewalk.

The selected works could be garnered by a competition to choose one or more artists. This approach would be simple to install and could be implemented over time.

The idea behind this is to help link the neighbourhood with iconic 'drawings in stone', in such a way that they do not overtake the material palette of the sidewalks but rather compliment it, in a quiet and localized way, the material choices of the environment.



Proposed Public Art Locations

Connecting Community to Waterfront

- Podium Permanent Art Piece
- Podium Temporary Exhibition
- Podium H_2O on Water Feature

In-ground Artwork in Basalt Paving

- Basalt Hieroglyph

Note: For specific locations for Festival Streets see page 69 and 73 for 17th St. and page 77 for 14th St.

STAND ALONE WORKS OF ART ALONG MAJOR FESTIVAL STREETS

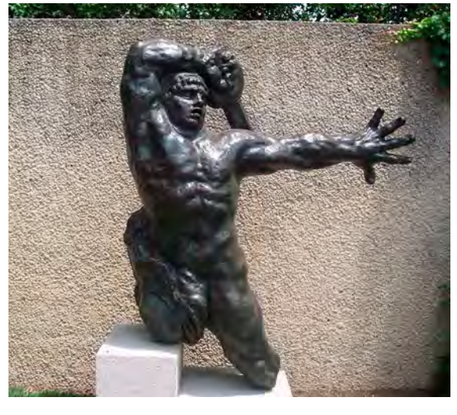
PROPOSAL

To install a series of stand-alone art pieces located on insitu concrete plinths located along the length of the 14th Street Plaza, south of Marine Drive and along the length of 17th Street to Fulton.

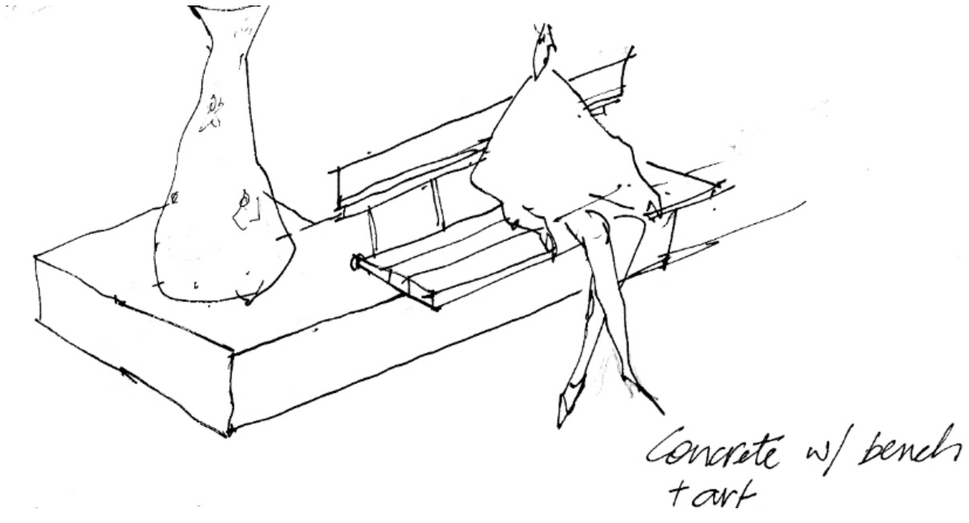
INTENT

The artworks can be acquired through both competition and bequeathing processes. Managed through a committee representing appropriate stakeholders and District departments the selection and approval of these works can be an ongoing and multi-year program to enliven these important “cultural bookend’ streets with periodic and engaging works of art. The works can be mounted to the low plinths planned for the streets and lit from the spot-poles, as suggested in the report.

- Village plan show locations of potential features, show existing features
- Describe public art themes
- Suggest potential forms, types of installation, relationship to streetscape
- Provide Sketches / Images



Examples of Urban Public Art Pieces



STREETSCAPE DESIGN CONCEPTS

STREETSCAPE DESIGN CONCEPTS

17TH STREET FESTIVAL STREET

17th Street has been proposed as a "Festival Street" connecting District Hall to John Lawson Park and the pier at the waterfront. At 100' in width, it is the widest street right-of-way in the Ambleside Village Centre and provides the greatest potential to create a special ceremonial corridor connecting to the waterfront.

SOUTH OF MARINE DRIVE

INTENT

South of Marine Drive, the street provides the potential for a new multi-purpose urban plaza that can provide a more spacious pedestrian friendly environment within the Village Centre and be used as an event space for the community through occasional street closures.

The plaza would accommodate a variety of activities such as processions, festivals, weekend events and markets as well as providing smaller scaled seating areas, gathering spaces and improved street planting.

The proposed plaza would involve complete reconfiguration of the street between Marine and Bellevue with a reduced road width and angled parking being replaced by parallel parking on both sides of the street. Larger sidewalks and paved boulevards would be established with more room for pedestrian circulation, and with streetscape amenities such as social seating areas, public art, street plantings, bike racks, signage etc.

The concept design for the streetscape includes:

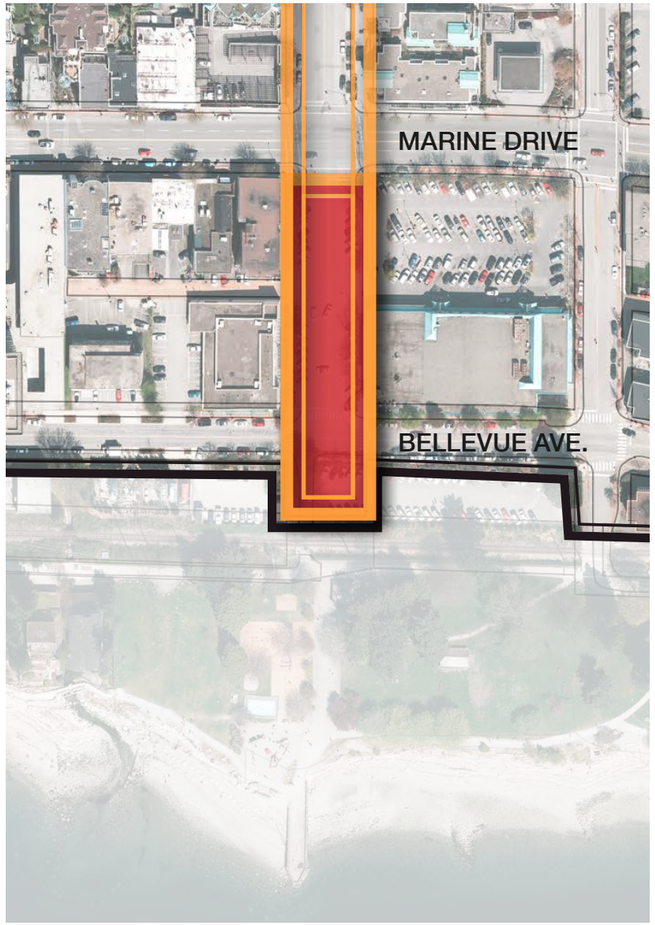
- cast-in-place concrete sidewalks with scored jointing for visual consistency with the adjoining streets
- coloured concrete pavers for front and rear boulevards
- basalt banding extending from the building faces to the curbs
- coloured concrete unit pavers for the road surfacing with coloured paver banding to align with basalt bands in the sidewalk
- custom thermoplastic crossing patterning on asphalt

The sloping street provides the opportunity for a series of low plinth features to be sited along the east side of the street that provide base structures for custom designed seating, water features, public art installations and low level lighting. The plinths would be located along the length of the street from Bellevue to District Hall. See Public Art at page 75.

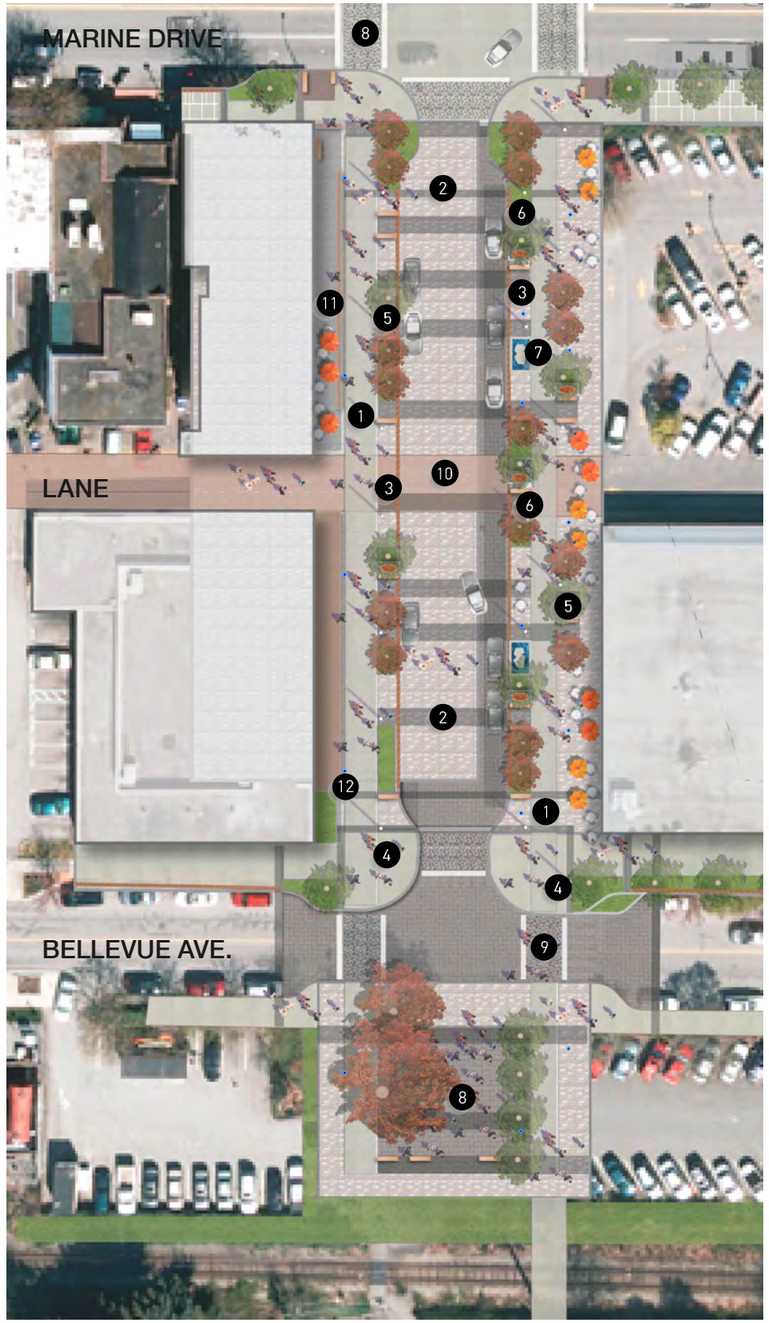
Potential development of a new Arts Centre at the foot of 17th Street (at 1600 block of Bellevue) would potentially provide the opportunity to extend the plaza southward across Bellevue Avenue and significantly reinforce the sense of connection to John Lawson Park and the waterfront.

In addition potential redevelopment of the former Safeway site may also provide opportunities for more usable public open space.

New pedestrian scaled lighting is proposed along the length of 17th Street. See Lighting page 43.



The proposed designs for the festival streets are conceptual and may be amended to suit conditions at the time of development.



0 5 15 25 m N

Conceptual Master Plan - 17th Plaza

1 WIDER SIDEWALKS

SCORED CONCRETE WITH BASALT STONE BANDS

2 NARROWER ROAD WAY WITH PARALLEL PARKING

FEATURE PERMABLE CONCRETE UNIT PAVER SURFACING

3 BOULEVARD ZONE

WIDENED BOULEVARD AREA WITH ROOM FOR CHAIRS, TWO SIDED BENCHES, SEATING WALLS AND PUBLIC ART.
CONCRETE UNIT PAVERS WITH BASALT BANDS WITH SEATING ZONE

4 CORNER PLAZA

17TH STREET SIDEWALK DESIGN EXTENDS ACROSS BELLEVUE AVENUE TO EMPHASIZE THE CONNECTION TO THE WATERFRONT. SOUTH FACING CORNERS ARE IDEAL FOR PUBLIC GATHERING AND OUTDOOR SEATING

5 TREE PLANTING

TREES PLANTED IN GROUPS CREATING A SERIES OF OPEN SUNNY SPACES, INCLUDING TALLER COLUMNAR SPECIES AND SMALLER DECORATIVE TYPES LOCATED ADJOINING SEATING AREAS TO CREATE A MORE INTIMATE EXPERIENCE.

6 A SERIES OF PUBLIC ART FEATURES

INTEGRATED WITH SEATING, PLANTING AND LIGHTING ARE PROPOSED ALONG THE LENGTH OF THE STREET AND EXTEND NORTHWARD TO DISTRICT HALL

7 WATER FEATURE ELEMENTS

IN BOULEVARD ZONE. SMALL, PLAYFUL BUT NATURAL WATER BOULDERS IN BOULEVARD ZONE. TO PROVIDE INTEREST AND REST AREAS. RAIN WATER COMPONENT SHOULD BE CONSIDERED FOR INTEGRATION WITH WATER FEATURES

8 SOUTHERN PLAZA / SEATING ZONE

PROPOSED NEW PLAZA SPACE REINFORCES CONNECTION TO WATERFRONT. SPACE AVAILABLE FOR COMMUNITY EVENTS AND PERFORMANCES. PLAZA DESIGN TO RELATE TO POTENTIAL FUTURE DEVELOPMENT. POTENTIAL REALIGNMENT OF RAIL CROSSING TO IMPROVE CONNECTION TO PARK

9 FEATURE PAVING AT PEDESTRIAN CROSSING AND INTERSECTION

10 FEATURE LANE PAVING
RED/BROWN (EXISTING) CONCRETE UNIT PAVERS

11 EXISTING STRUCTURES / PATIOS RETAINED

12 SPECIAL LIGHTING

SIDEWALK EDGE BANDING
RECYCLED RED BRICKS AND GREY BASALT PAVERS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

BASALT PAVING BAND
GREY BASALT SLABS
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

CONCRETE PAVING
CONCRETE UNIT PAVERS
REFER TO PAGE 32-35

CONCRETE SIDEWALK
CAST IN PLACE SAND BLASTED FINISH CONCRETE
REFER TO PAGE 32-35 FOR LAYOUT AND MATERIALS

EXISTING ASPHALT PAVEMENT

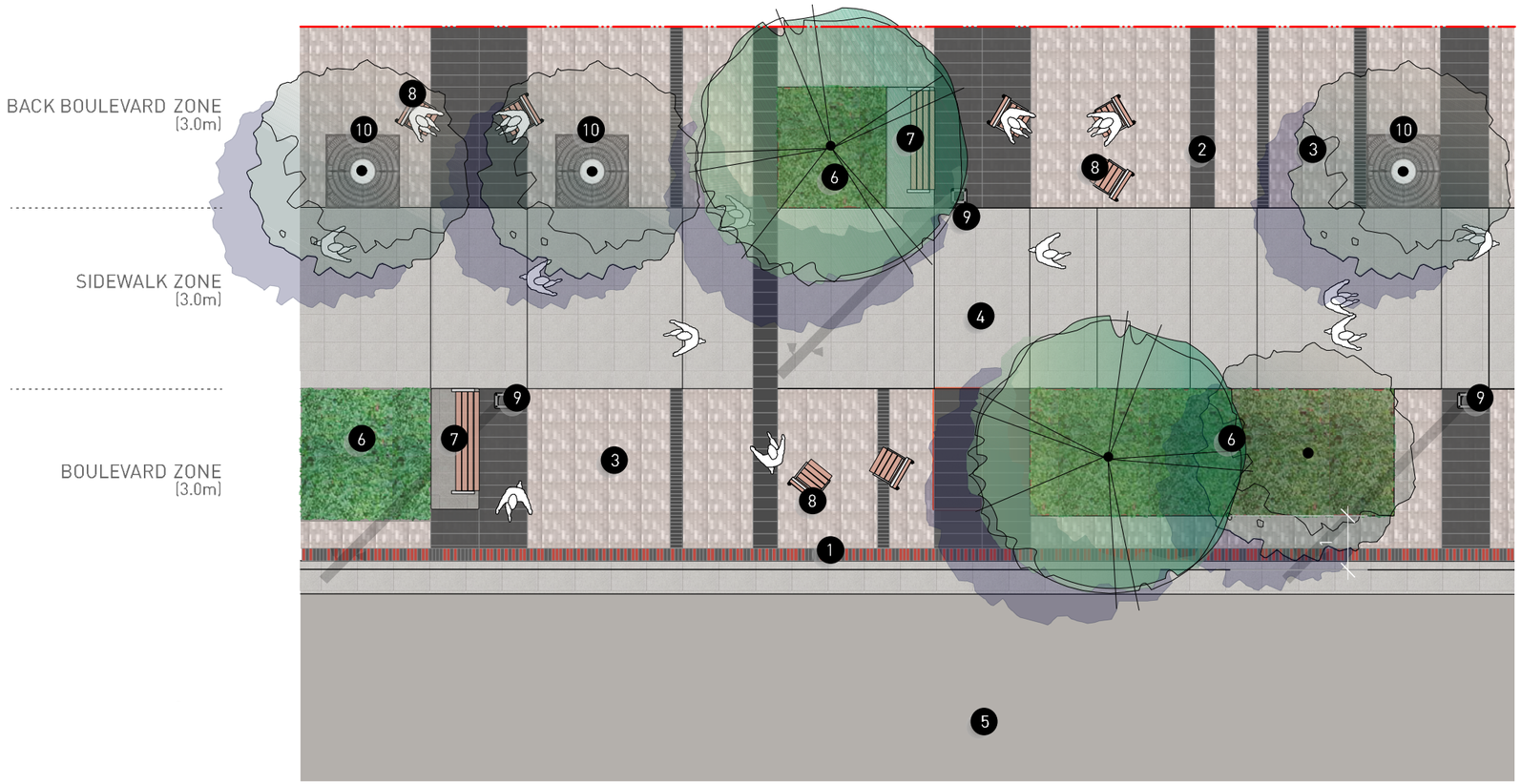
PLANTER TREE PIT
900mm GROWING MEDIUM
REFER TO PAGE 53 FOR LAYOUT AND MATERIALS

PROPOSED BENCH
REFER TO PAGE 37-38 FOR ADDITIONAL INFO

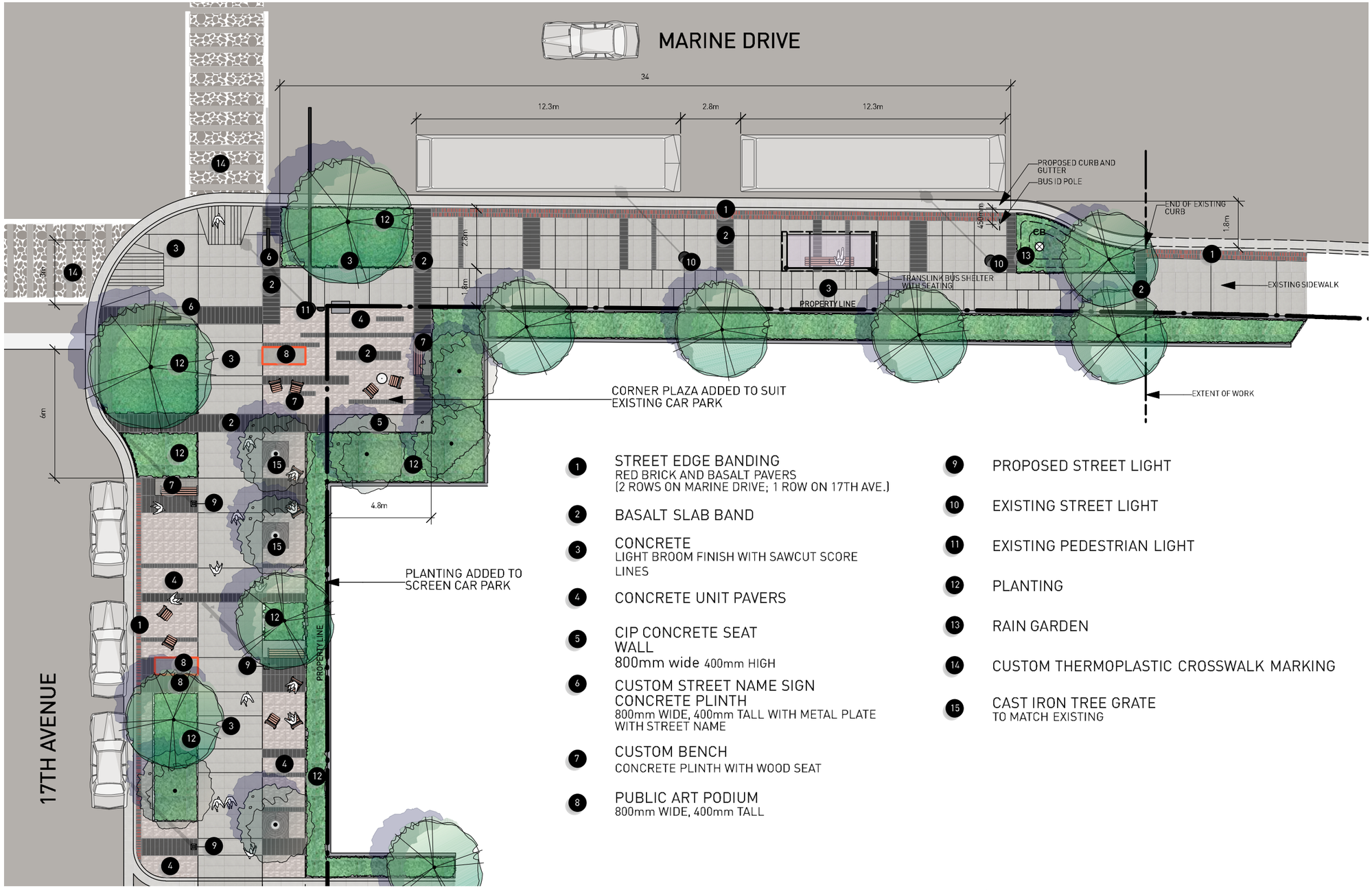
PROPOSED CHAIR
REFER TO PAGE 37-38 FOR ADDITIONAL INFO

PROPOSED STREET LIGHT
REFER TO PAGE 43 FOR ADDITIONAL INFO

PROPOSED TREE GRATE
USE CURRENT AMBLESIDE STANDARD TREE GRATE



Plan: Typical Sidewalk/ Plaza (East Side of 17th Street)



1. STREET EDGE BANDING
   RED BRICK AND BASALT PAVERS
   (2 ROWS ON MARINE DRIVE; 1 ROW ON 17TH AVE.)
2. BASALT SLAB BAND
3. CONCRETE
   LIGHT BROOM FINISH WITH SAWCUT SCORE LINES
4. CONCRETE UNIT PAVERS
5. CIP CONCRETE SEAT WALL
   800mm wide 400mm HIGH
6. CUSTOM STREET NAME SIGN CONCRETE PLINTH
   800mm WIDE, 400mm TALL WITH METAL PLATE WITH STREET NAME
7. CUSTOM BENCH
   CONCRETE PLINTH WITH WOOD SEAT
8. PUBLIC ART PODIUM
   800mm WIDE, 400mm TALL
9. PROPOSED STREET LIGHT
10. EXISTING STREET LIGHT
11. EXISTING PEDESTRIAN LIGHT
12. PLANTING
13. RAIN GARDEN
14. CUSTOM THERMOPLASTIC CROSSWALK MARKING
15. CAST IRON TREE GRATE
    TO MATCH EXISTING

Design Adaptation at Marine Drive and 17th Avenue
Note: Plan shows proposed interim treatment to suit existing adjoining site conditions.
The standards would apply in the event of future major redevelopment.

View: 17th Street South of Marine Drive | Looking South

Typical View: 17th Street South of Marine Drive | Looking North on East Side)

Precedent Images

NORTH OF MARINE DRIVE

INTENT

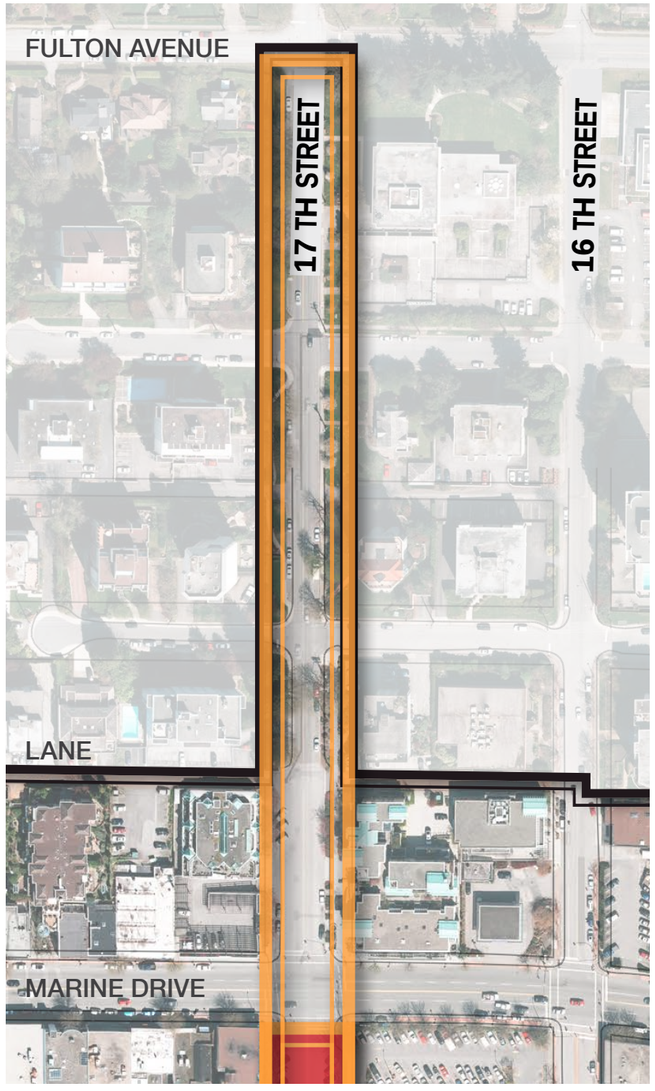
North of Marine Drive improvements would be limited mostly to the east side of the street reinforcing the connection to District Hall. The existing sidewalk would be removed and replaced with a wider sidewalk located further from the curb to create a wider grassed/landscaped boulevard along the street edge. The new widened sidewalk would provide a more formal and generous pedestrian route connecting the Municipal complex with the Village Centre and waterfront.

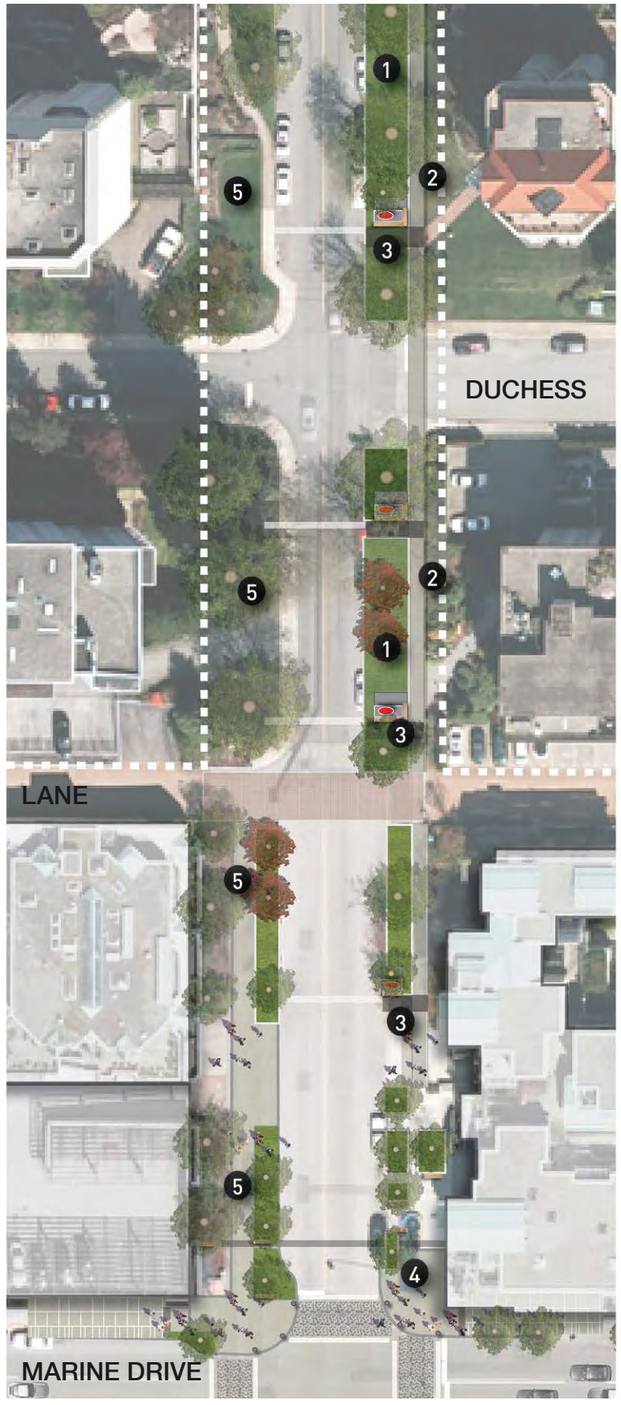
Public art plinths would be located within the widened boulevard along the length of the improved sidewalk to create an “art walk” extending to the waterfront. Basalt paving with concrete plinth/seating units would highlight these locations. The plinths would provide a base structure for the installation of permanent or temporary art pieces along the length of the street. Each art venue would include seating, plantings and low-level lighting.

A retaining wall or stabilized slope would be required in order to retain the steeply sloped grass boulevard east of 17th adjacent to private development north of Duchess Avenue.

Mature heritage Horse Chestnut trees form an avenue along the length of 17th Avenue. In addition, Magnolia trees are planted in the boulevard along the east side of the street. The Horse Chestnuts on the east side of the street have been severely pruned to avoid conflict with overhead hydro cables. Detailed recommendations for tree retention, removal and replacement are outlined at page 46, Street Tree Planting Strategy.

The proposed designs for the festival streets are conceptual and may be amended to suit conditions at the time of development.





Conceptual Master Plan

1. BOULEVARD ZONE

   LOW PLANTING AND TREES IN GROUPS

2. RELOCATED SIDEWALK

   CONCRETE SIDEWALK RELOCATED TO THE EAST SIDE OF TREES

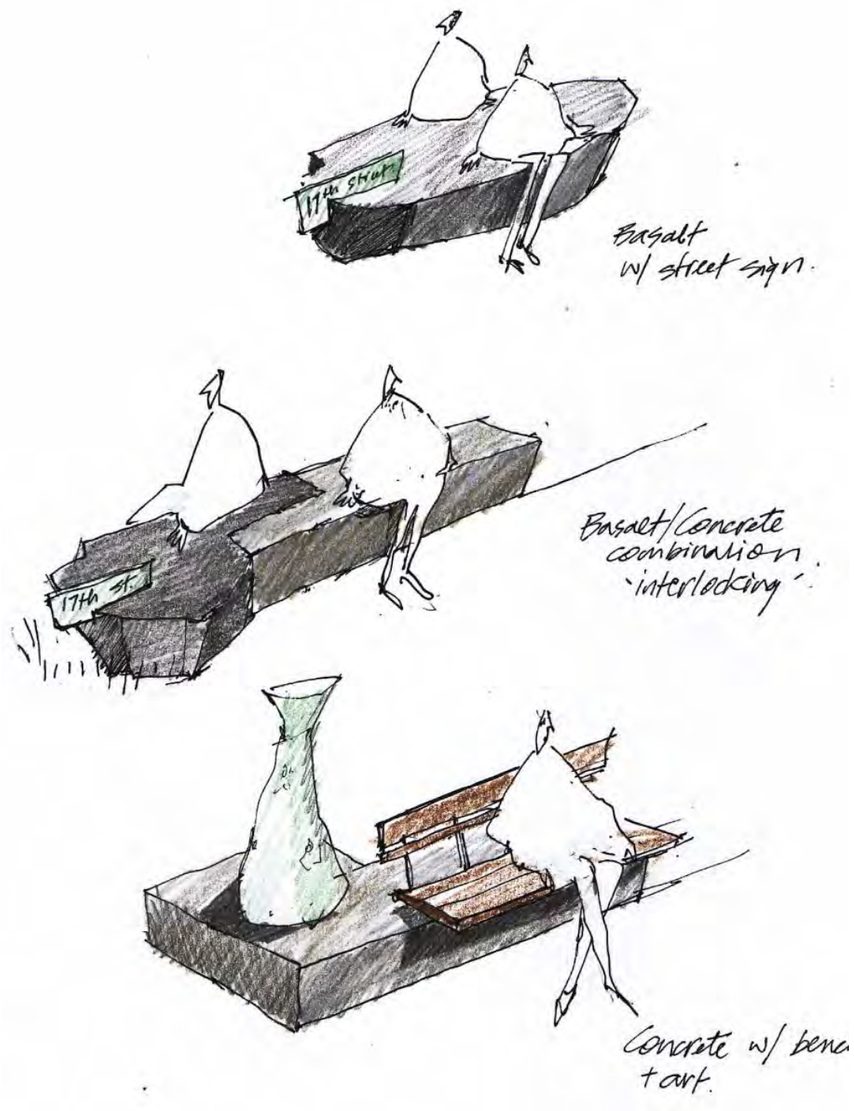
3. ART WALK

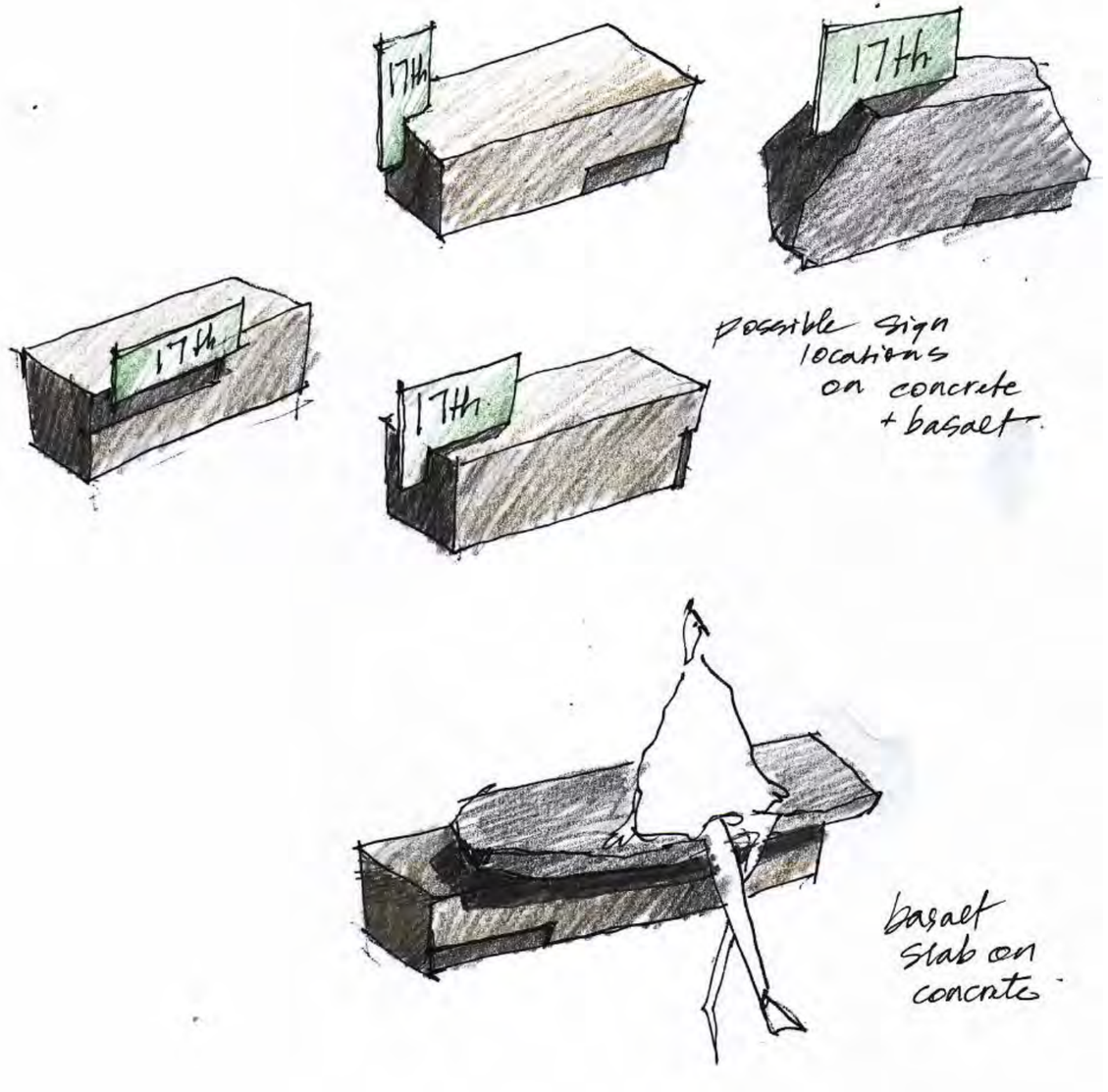
   SERIES OF ELEVATED PLATFORMS FORMING INFORMAL SEATING AND PODIUMS FOR ART DISPLAYS

4. EXISTING PUBLIC ART TO REMAIN

5. EXISTING TREE PLANTING TO REMAIN

View: 17th Street North of Marine Drive





Custom Furniture and Art Plinth Form Study

14TH STREET NEIGHBOURHOOD PLAZA

14th Street, south of Marine Drive, has been proposed as a "Festival Plaza" connecting the pier at the Ferry Building Gallery to Marine Drive.

INTENT

South of Marine Drive, 14th Street provides the potential for a new multi-purpose urban plaza that can provide a more spacious pedestrian friendly environment within the Village Centre and be used as an event space for the community through occasional street closures.

The plaza would accommodate a variety of activities such as festivals, weekend events and markets as well as providing smaller scaled seating areas, gathering spaces and improved street planting.

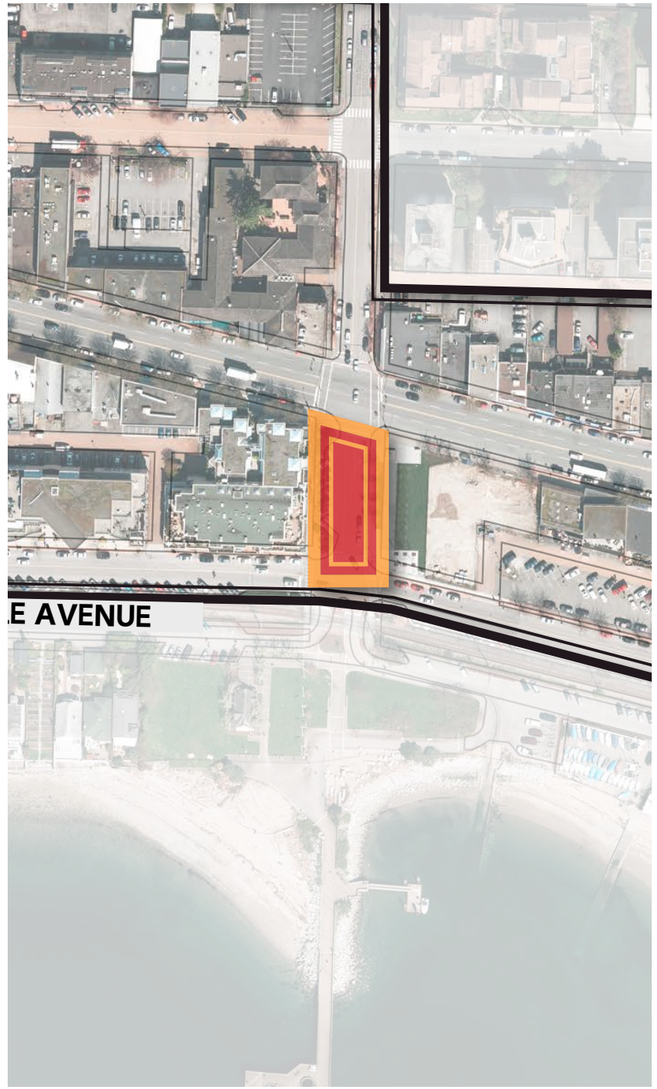
The proposed plaza would involve complete reconfiguration of the street between Marine and Bellevue with a reduced road width and angled parking being replaced by parallel parking on both sides of the street. Larger sidewalks and paved boulevards would be established with more room for pedestrian circulation, and additional streetscape amenities such as social seating areas, public art, street plantings, bike racks, signage etc.

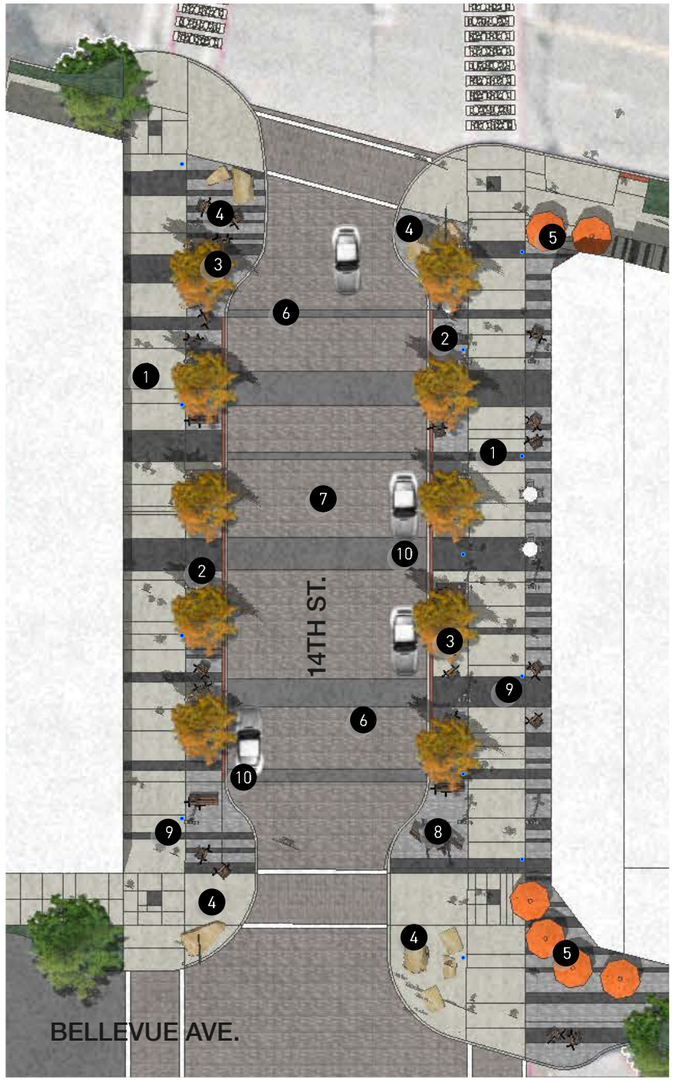
The concept design for the streetscape includes:

- cast-in-place concrete sidewalks with scored jointing for visual consistency with the adjoining streets
- coloured concrete pavers for front and rear boulevards
- basalt banding extending from the building faces to the curbs
- coloured concrete unit pavers for the road surfacing with coloured paver banding to align with basalt bands in the sidewalk
- custom thermoplastic crossing patterning on asphalt

As with the 17th Street Festival Street, low plinth features would be sited along the street to provide base structures for custom designed seating, water features, public art installations and low level lighting.

New pedestrian scaled lighting is proposed on 14th Street between Marine Drive and Bellevue. See Lighting page 43 and 44.





14th StreetConceptual Master Plan

1. WIDENED SIDEWALKS

   SCORED CONCRETE WITH BASALT BANDS

2. BOULEVARD ZONE

   CONCRETE UNIT PAVERS WITH BASALT BANDS WITH SEATING ZONE (ARRANGEMENT OF SINGLE SEATS, SEATING WALLS, TWO SIDED BENCHES, FLEXIBLE AND INFORMAL)

3. TREE PLANTING

   ONE SPECIES OF TREE SYMMETRICALLY PLANTED ON BOTH SIDES OF THE STREET TO EMPHASIZE THE URBAN AND SIMPLE GEOMETRY OF THE SPACE

4. CHARACTER ELEMENTS

   BOULDERS, ROCKS, GRASSES - WATERFRONT CHARACTER

5. CORNER PLAZAS

   14TH STREET PAVING PATTERN EXTENDS ACROSS BELLEVUE AVENUE TO VISUALLY EMPHASIZE CONNECTION TO THE WATERFRONT. SOUTH FACING CORNERS PROVIDE EXCELLENT LOCATIONS FOR PUBLIC GATHERING AND SEATING

6. ON-STREET BIKE ROUTE (SHARED ON-ROAD CONDITION)

7. NARROWER ROAD WAY WITH PARALLEL PARKING

   FEATURE PERMEABLE CONCRETE UNIT PAVER SURFACING

8. PERMANENT PUBLIC ART LOCATION
   SPECIFIC LOCATION TO BE DETERMINED AT TIME OF DEVELOPMENT

9. SPECIAL LIGHTING (DOUBLE ROW ON EAST SIDE)

10. PARALLEL PARKING

View: 14th Street South of Marine Drive | Looking South

Views: 14th Street

APPENDIX 4

Neoliviano

May 2012

With our roots in the landscape and a stated purpose to "Enrich Outdoor Spaces," Landscape Forms has a special relationship to the natural environment. We have always been mindful that as we design and manufacture products that are acted upon by the environment, we act upon it in turn. Environmental sustainability is completely consistent with our purpose, our goals, our values and our principles. We make stewardship of the environment a vital part of our business.

To learn more about our sustainability initiatives, refer to our Environmental Statement.

NEOLIVIANO IS MANUFACTURED USING THE FOLLOWING MATERIALS:

Material	Parts	Recyclable
aluminum	bench supports	100%
wood	seat/back panels	100%

Finishing
Supports are treated with Alodine® to provide corrosion protection.

Landscape Forms wood furniture for outdoor use is manufactured from wood species that weather naturally in outdoor settings to a beautiful pewter gray. We do not apply paints or finishes to these products and do not recommend the use of finishes which would require ongoing maintenance programs as the wood weathers. Our wood furniture for indoor use is finished with LF 80, a clear, catalyzed low-VOC acrylic finish.

Packaging Materials	Parts	Recyclable
biodegradeable plastic	product bagged to protect finish	100%
recycled skid		100%
cardboard with 35% recycled content		100%

To find local recyclers visit: for steel: www.recycle-steel.org; for cardboard: www.corrugated.org.

LEED®

This product may help achieve the following points under the LEED 2009 Rating System. For specifics regarding rules for the inclusion of furniture, please consult the rating system and reference guide that applies to your project.

IEQ Prerequisite 2: Environmental Tobacco Smoke (ETS) Control

Intent
To prevent or minimize exposure of building occupants, indoor surfaces and ventilation air distribution systems to environmental tobacco smoke (ETS).

Benches, tables, chairs and ash urns help create a designated smoking area 25 feet or more from entries, outdoor air intakes and operable windows to support the intent of this prerequisite.

Materials and Resources

MR Credit 4, Recycled Content

Intent
To increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

Recycled Content

Style	Total	Post Consumer	Pre Consumer
bench	6	3	3

MR Credit 5, Regional Materials

Intent
To increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

This product is categorized as Furniture and Furnishings, Division 12. MR Credit 5 is to include only products in Division 2 – 10 of the (CSI) MasterFormat. At the option of the project, Division 12 may be included, but then must also be included consistently in MR Credits 3 through 7.

This product is manufactured in our Kalamazoo, MI facility, zip code 49048. Many of our suppliers are located within a 500 mile radius of this facility, but they may source raw materials from multiple sources. If the project is within 500 miles of Kalamazoo and you wish to consider this product for MR Credit 5, please contact Landscape Forms prior to order placement to explore the possibility of specifying regionally sourced raw materials.

CARE AND MAINTENANCE

Neoliviano is designed and engineered to live a long, useful life in outdoor spaces without the use of chemical cleaners to maintain the finish. The durability, longevity and low maintenance of our products contribute to responsible stewardship of the earth's resources.

Metal: Clean surface as needed using a soft cloth or brush with a mild detergent. Avoid steam cleaning, abrasive cleansers, carbon steel brushes/wools and cleaners containing chlorine.

Wood: Exterior woods require no maintenance. If desired, the surface may be scrubbed with warm soapy water and soft bristle brush. Pressure washing, steel wool/wire brushes are not recommended. Heavily ingrained stains may be sanded away with fine grade sandpaper worked in the direction of the grain. Sanded wood will weather to a gray patina. Interior woods require only dusting or occasional cleaning with a good-quality furniture polish.

neoliviano

IMPORTANT NOTE: Standard choices are shown; colors are approximate. To make final color selections, please call for material samples.

wood

Exterior woods weather to a warm, pewter gray; no finish is applied so no maintenance is required. Options: black locust, purpleheart may be specified as FSC® certified (may extend lead times). Special stain may be specified for interior woods. Pricing for standard woods and options varies, see Price Book. (P) = Premium Woods

exterior
no finish

jarrah (P)

black locust (P)

purpleheart (P)

interior
LF-80 finish

jarrah (P)

aluminum

aluminum

Instructions

Assembly
Installation
Operation

Recommended procedure for embedded mounting:

Each embedded bench is shipped with two M10 threaded rods per support casting. For mounting to existing concrete, we recommend using an adhesive anchoring system (Hilti HIT RE 500 or Powers Fasteners AC100 PLUS™). These products may be used in wet or dry conditions. Gel and cure times vary with temperature. Each bench support requires approximately 1-1/2 ounces of adhesive. Although the anchoring procedure is the responsibility of the installer, we suggest the following:

1. Place bench upside down on non-marring material.
2. Locate and install two M10 threaded rods in each support. Leave 4” of threaded rod sticking out of the support. DO NOT thread rods in until they bottom out.
3. Place the bench in the desired position.
4. Mark hole locations around rods.
5. Move the bench to allow access for drilling holes.
6. Hammer drill 5/8” holes, 4-1/2” deep.
7. Clean holes carefully using a 1” diameter nylon brush and compressed air. For best results use a nozzle that reaches the bottom of the hole. Holes must be free of standing water or ice.
8. Follow the manufacturer’s instructions for dispensing adhesive. Fill the holes from the bottom up to avoid air pockets. Fill to a level 1” from the top of each hole. (The adhesive level should rise to the top of the hole as the bench is set in place.)
9. Set the bench in the installed position. Do not disturb the bench during the cure time.
10. Wipe away any spilled adhesive before it gels.

431 Lawndale Avenue, Kalamazoo, MI 49048
PH: 800.521.2546, PH: 269.381.0396, FX: 269.381.3455

OLYMPIA™ BIKE RACK

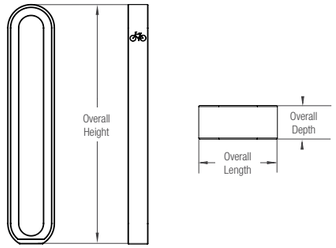
The **Olympia Bike Rack's** smooth, fluid curves combined with the strength that comes with solid corrosion-resistant cast aluminum construction make this rack a perfect choice for parks, corporate campuses and more. Its stand-alone, space-saving design allows for an unlimited number of configuration options for ultimate design flexibility.

MATERIAL & FINISHES

INSTALLATION & MAINTENANCE

MATERIAL	FINISHES	INSTALLATION	MAINTENANCE
• Body is made of corrosion-resistant cast aluminum with powdercoat finish.	• Standard colors are Aluminum Texture and Slate Texture; optional colors from the F+S color chart and custom RAL colors are available for an upcharge. • Bike logo comes standard without color. Custom colors are available for an upcharge. • Due to the inherent nature of metal castings, gloss powdercoats are not offered for cast components.	• Olympia Bike Racks must be surface mounted. Anchors and stainless steel screws are included.	• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

NOMINAL DIMENSIONS



OVERALL LENGTH	OVERALL DEPTH	OVERALL HEIGHT	WEIGHT
7" (178 mm)	3" (76 mm)	35.6" (903 mm)	22.2 lbs (10.1 kg)

ENVIRONMENTAL CONSIDERATIONS

- Please refer to the Olympia Bike Rack Environmental Data Sheets for detailed environmental impact information.
- Olympia's aluminum casting has up to 95% recycled content and is fully recyclable.
- Standard powdercoat finishes are no-VOC; non-standard powdercoat finishes are no- or low-VOC, depending on color.
- Low maintenance.

NET PRICING AND ORDERING INFORMATION (pricing does not include freight)

MODEL	DESCRIPTION	NET PRICE
SKOLY	Olympia Bike Rack	$375
	Optional powdercoat color from Forms+Surfaces standard color chart	+ $200 per color/per order
	Custom RAL powdercoat color	+ min. $500 per color/per order

TO ORDER SPECIFY: quantity, model, powdercoat color for body casting and bike logo color if desired

LEAD TIME: 6 to 8 weeks. Shorter lead times may be available upon request. Please contact us to discuss your specific timing requirements.

T 1.800.451.0410 | F 412.781.7840 | www.forms-surfaces.com

FORMS+SURFACES®

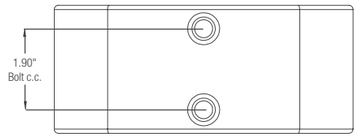
OLYMPIA™ BIKE RACK

PRODUCT DATA

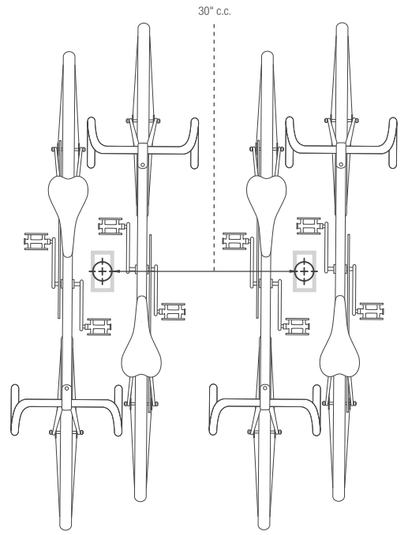
CONFIGURATION OPTIONS

The Olympia Bike Rack was designed to allow for a multitude of configuration options to meet your individual needs. Please note that for optimal performance, Forms+Surfaces recommends a 30" center to center placement (see diagrams below for more details).

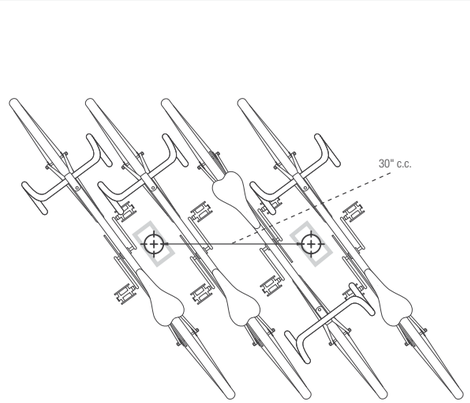
SIDE DETAIL



MOUNTING / HARDWARE DETAIL



CONFIGURATION OPTION A



CONFIGURATION OPTION B

T 1.800.451.0410 | F 412.781.7840 | www.forms-surfaces.com

FORMS+SURFACES®

Member of the USGBC | Member of the EGBC | LEED® Accredited Professional on Staff | FSC Certified Supplier | SCS-COC-001461 | ©1996 Forest Stewardship Council A.C.
Offices Worldwide | © 2011 Forms+Surfaces® All dimensions are nominal. Specifications and pricing subject to change without notice.
For the most current version of this document, please refer to our website at www.forms-surfaces.com.

MAX 3"
MIN 1/2"

TrafficPatterns®

A TrafficScapes™ Solution BY FLINT

CROSSWALKS • STREETSCAPES • MEDIANS • ROUNDABOUTS

TrafficPatterns® is the durable surface-applied pavement surfacing solution designed to:

- Improve traffic safety especially at intersections and multi-use paths
- Enhance visibility for motorists, cyclists and pedestrians
- Promote and/or revitalize community image and pride; attract new business
- Create attractive walkways in pedestrian and parking areas
- Create low-cost median or island effect without the need for raised curbs

HIGH SKID/SLIP RESISTANT FOR SAFETY

Skid resistance is maximized because anti-skid elements are added to surface and intermix of the material at time of manufacturing. As the marking wears, new anti-skid properties are exposed.

ENHANCED DURABILITY

- Engineered as heavy-duty intersection grade pavement marking material
- Can last 6 to 8 times longer than painted or epoxy-coated surfaces
- Eliminates the maintenance and safety concerns of loose pavers

ACCESSIBILITY & MAINTENANCE

- TrafficPatterns® has the same surface characteristics as the pavement. Therefore, there is no additional vibration level or rigid bumpy effect as with pavers and imprints.
- Although virtually maintenance free, it's easy and quick to repair with minimal traffic disruption. Remove damage, apply sealer, replace with new material, and heat.

MANUFACTURING CONTROL

All TrafficPatterns® preformed thermoplastic materials are made at Flint's manufacturing facility which is ISO 9001:2008 certified for design, development and manufacturing. Quality, value and long-term performance are built into the material.

New Patterns/Borders & Colors in 2'x2' Format

STANDARD PATTERNS

RUNNING BOND, HERRINGBONE, PLAIN WEAVE, DIAGONAL, STACKED TILE

HONEYCOMB, COURTYARD, ASHLAR, QUARTER, TERRAZZO

STANDARD BORDERS

TP36, TP37, TP38, TP39, TP40, TP41, TP42

STANDARD COLORS

BLACK, WHITE, SAND, TAN, BRICK RED, COLONIAL BRICK

HERITAGE RED, FIELD GRAY, SONOMA SAND, CINNAMON, SANTA FE CLAY, CHESTNUT

GREY, DARK BRICK RED, KHAKI, SIENNA, COCOA, SALMON

PREMIUM COLORS

NATURAL, DUO-TONE COMBINATION, TRI-TONE (TERRAZZO ONLY)

Flint TRADING INC.®
Flint Trading, Inc. • 115 Todd Ct. Thomasville, NC • 336.475.6600
trafficscapes@flinttrading.com • www.flinttrading.com

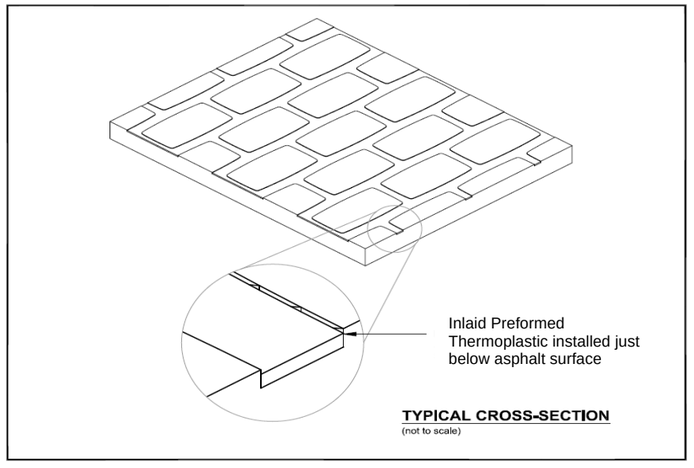
DT

SPECIFICATION
Inlaid Preformed Thermoplastic Asphalt Pavement Marking System

1. **Use:** A durable preformed thermoplastic asphalt pavement marking system, inlaid just below the asphalt pavement surface to create colorized patterns within the asphalt for streetscape and traffic calming purposes on public roads and private property. The inlaid preformed thermoplastic asphalt pavement marking system is typically used on public roadway crosswalks between white crosswalk lines and on residential and commercial areas open to pedestrian and vehicular traffic.

1.1. The preformed thermoplastic is inlaid into asphalt pavement using proprietary infrared heating equipment designed specifically to elevate the temperature of the asphalt without it being adversely affected. A specialized template is imprinted into the heated asphalt pavement to create depressions to match the desired pattern. The preformed thermoplastic, precut by the material manufacturer to match the imprinted pattern, is laid to fit within the depressions and melted in place using the proprietary infrared heater.

1.2. As shown below in the typical cross-section, the top of the inlaid preformed thermoplastic lies slightly below the surface level of the surrounding asphalt pavement allowing the pavement to absorb the physical effects of the traffic:



TYPICAL CROSS-SECTION
(not to scale)

1.3. When applied in accordance with the manufacturer's application guidelines by an applicator certified by the manufacturer, the inlaid preformed thermoplastic will wear at a similar rate as the surrounding asphalt pavement. Therefore, the life of the inlaid preformed thermoplastic is dependent upon using a long lasting, durable and stable asphalt pavement to prevent premature wear.

1.4. The inlaid preformed thermoplastic is available in a variety of standard patterns and colors. The primary pattern shall be created using precut preformed thermoplastic sheets that are 24 in. (.6 m) x 24 in. (.6 m). The precut patterned border pieces shall measure either 8 in. (.2 m) or 12 in. (.3 m) wide x 24 in. (.6 m) long. These sizes ensure the specified patterns are created with a minimal number of seams between the preformed thermoplastic sheets. The use of individual preformed thermoplastic strips inlaid into standard imprinted patterns to create the design shall not be allowed.

1.5. The inlaid preformed thermoplastic is manufactured without glass beads. The inlaid preformed thermoplastic material must be a resilient preformed thermoplastic product, which contains intermixed anti-skid/anti-slip elements with a minimum hardness of 6 (Mohs scale), and where the top surface contains factory applied anti-skid/anti-slip elements with a minimum hardness of 8 (Mohs scale).

SPECIFICATION
Inlaid Preformed Thermoplastic Asphalt Pavement Marking System

2. **MANUFACTURING CONTROL AND ISO CERTIFICATION:** The manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of preformed thermoplastic, and provide proof of current certification.

3. **PREFORMED THERMOPLASTIC MATERIAL:** Must be composed of an ester-modified rosin impervious to degradation by motor fuels, lubricants, etc. in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements. Pigments and anti-skid/anti-slip elements must be uniformly distributed throughout the material. The thermoplastic material conforms to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and potentially being of a color different from white or yellow.

3.1. Pigments:

3.1.1. White: The material shall be manufactured with sufficient titanium dioxide pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected.

3.1.2. Other Colors: The pigment system must not contain heavy metals, nor any carcinogen as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

3.2. Skid Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.

3.3. Slip Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum static friction of coefficient of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

3.4. Thickness: The material must be supplied at a minimum thickness of 90 mil (2.3 mm).

3.5. Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

3.6. Storage Life: The material may be stored for 12 months, if stored indoors and protected from the elements.

3.7. Transverse Lines for Inlaid Preformed Thermoplastic Crosswalk Application: Supplied as white, retroreflective preformed thermoplastic linear striping material in 90 mil (2.3 mm) or 125 mil (3.2 mm) thickness, material is available in 6 in. (.15 m), 8 in. (.20 m) or 12 in. (.30 m) widths. This material may be supplied and applied by the certified applicator in conjunction with the inlaid preformed thermoplastic system and is available from the inlaid preformed thermoplastic manufacturer. (Consult the manufacturer's published application instructions for the preformed thermoplastic linear striping material selected for proper application methods.)

4. SPECIALIZED APPLICATION EQUIPMENT:

4.1. Stamping Templates: Designed and constructed for imprinting the specified pattern into the asphalt pavement, templates are supplied by the inlaid preformed thermoplastic manufacturer in 150 mil (3.81 mm) thickness. Standard patterned templates are designed to create crosswalks ranging from 6 ft. (1.8 m) to 20 ft. (6.1 m) wide, in 2 ft. (.6 m) width increments. Template layout drawings shall be supplied by the inlaid preformed thermoplastic manufacturer to illustrate proper template placement to create the specified pattern. Certain templates may be field assembled as needed using the manufacturer supplied template assembly kit. For crosswalk widths less than 6 ft. (1.8 m) or more than 20 ft. (6.1 m), custom templates may be designed and constructed in 2 ft. (.6 m) width increments.

DT

SPECIFICATION
Inlaid Preformed Thermoplastic Asphalt Pavement Marking System

4.2. Heating Equipment: The inlaid preformed thermoplastic manufacturer shall distribute reciprocating infrared heating equipment designed specifically to elevate the temperature of the asphalt pavement without adversely affecting it, as well as the inlaid preformed thermoplastic material. The primary asphalt heating unit must employ a bank of propane-fired infrared heaters, mounted on a track device that allows the heater bank to reciprocate back and forth over a designated area, thereby allowing the operator to monitor the temperature of the asphalt pavement and the inlaid preformed thermoplastic at all times during the pavement heating process.

4.2.1. A smaller, mobile infrared heater distributed by the inlaid preformed thermoplastic manufacturer is designed specifically to heat areas such as borders and narrow areas that are inaccessible to the primary heater. This secondary heater also allows the operator to monitor the temperature of the asphalt pavement and the inlaid preformed thermoplastic at all times during the heating process.

4.2.2. An approved hand-held propane heat torch distributed by the inlaid preformed thermoplastic manufacturer shall be used to heat isolated areas of the asphalt pavement or inlaid preformed thermoplastic.

4.3. Hand Held Finishing Tool: Enables the applicator to complete the imprinting of the asphalt pavement in areas around permanent structures, such as curbs and manholes covers, which may be inaccessible to the stamping template. The hand held finishing tools are distributed by the inlaid preformed thermoplastic manufacturer.

4.4. Vibratory Plate Compactor (700-900 lb. / 318-408 kg): Shall be used for pressing the stamping template into the heated asphalt to create the specified pattern. The inlaid preformed thermoplastic manufacturer does not supply vibratory plate compactors.

5. APPLICATION (Asphalt Substrate Only):

5.1. Manufacturer Certified Applicator Requirement: The material shall be supplied and applied only by an applicator certified by the manufacturer. The applicator shall provide proof of current certification before commencing work. The Certified Applicator shall follow the manufacturer's current published application guidelines.

5.2. Substrate Condition: The material must only be applied to a stable, high quality asphalt pavement substrate over a stable base, that is free of defects, as per the manufacturer published substrate guide. The asphalt pavement surface shall be dry and free from all foreign matter, including but not limited to dirt, dust, de-icing materials, and chemical residue.

5.3. Procedure: The asphalt pavement surface is heated with the primary reciprocating infrared heater to the appropriate temperature range to allow for surface imprinting. The stamping template in the specified pattern is imprinted into the heated asphalt pavement using the 700-900 lb. vibratory plate compactor. The preformed thermoplastic sheets, precut at the factory by the material manufacturer to match the template pattern, are laid into the pattern created by the stamping template, and heated until thoroughly molten with the primary reciprocating infrared heater. The mobile infrared heater or approved propane heat torch may be used in areas inaccessible to the primary reciprocating infrared heater. The material is then allowed to cool thoroughly before being opened to vehicle or pedestrian traffic. (Consult the manufacturer's published application procedures for complete information.)

5.4. The inlaid preformed thermoplastic asphalt pavement marking system shall not be applied to Portland Cement Concrete.

5. PACKAGING: The preformed thermoplastic material shall be vacuum sealed in protective plastic film with cardboard stiffeners to prevent damage in transit. The cartons in which standard preformed thermoplastic patterned sheets are packed shall be non-returnable and shall not exceed 25 in. in length and 25 in. in width. The cartons shall be labeled for ease of identification. The weight of an individual carton must not exceed fifty (50) pounds. The carton must be wrapped with a protective film to protect the material from rain or premature aging.

6. **TECHNICAL SERVICES:** The successful bidder shall provide technical services as required.

lumendome™ nano

2-INCH DIRECT-VIEW LED PIXEL

The Lumendome Nano is the 2-inch member of a family of direct-view pixel luminaires designed for creative urban concepts such as media facades, low-density video displays and environmental graphics. In contrast to LED strings and mesh systems, Lumendomes can be arranged in any formation, enabling flexibility and closer integration with architecture. Pixels are available in white or RGB for full video applications.

- **Fully flexible**
  Addresses large scale architectural challenges without being restricted by strings or meshes
- **Wide viewing angle**
  240° domed optic enables pixel formations to be perceived from any direction
- **Durable design**
  Made from architectural-grade materials; 120,000-hour lumen maintenance (L70 at 25°C); 5-year warranty
- **Remote drivers**
  Remote, replaceable drivers enable easier access and service
- **Long range**
  48V DC power enables runs up to 370 ft (112.8m) with 32 fixtures on a single output

Optics

Direct view

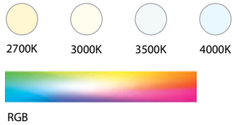
Mounting

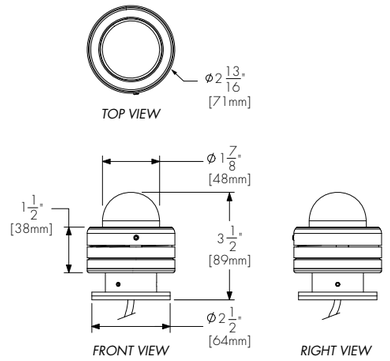
Surface

Technical data

2W	48V DC	IP 66	DMX
Watts	Power	IP Rating	Control

Colors



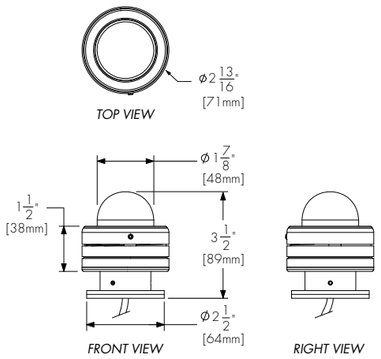


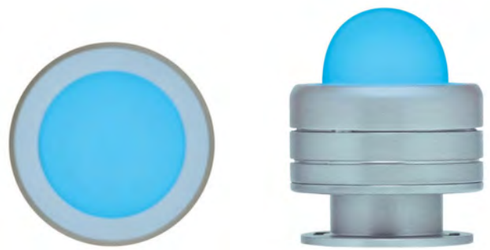
Specifications

Output*	Luminous Flux (Delivered lumens)	**2700K 3000K 3500K 4000K** Pending. Please refer to our website for ies files.
	Luminance (cd/m² @ 0°)	Pending. Please refer to our website for ies files.
	Lumen Maintenance†	120,000 hrs [L70 @ 25°C] / 90,000 hrs [L70 @ 50°C]
Electrical	Power Consumption / Voltage input	2 watts DC power (total consumption varies according to remote power supply efficiency) / 48V DC
	Control methods	DMX dimming
Physical	Dimensions (diameter x height)	⌀ 2 13/16" x 3 1/2" / ⌀ 71mm x 89mm
	Weight	0.50 kg / 1.10 lbs
	Housing	Aluminum housing
	Lens	Impact resistant UV protected polycarbonate dome lens
	Connectors	Liquidtight cable connector / 3ft (1m) power and data cable #18
	Driver	120V-277V AC remote driver (order separately, refer to control boxes specification sheets for details)
	Mounting	Wall mounting or canopy cover mounting options
	Operating Temperatures	-25° C to 50° C / -13F to 122F
	Ingress Protection	IP66
	Environment	Dry / damp / wet location - corrosion-resistant option for marine environments.

* Please consult website for tested ies files.
† Lumen maintenance data is based on LM80 data from the LED manufacturer.

UL cUL CE RoHS





Specifications

Output*	Luminous Flux (Delivered lumens)	Pending. Please refer to our website for ies files.
	Luminance (cd/m² @ 0°)	Pending. Please refer to our website for ies files.
	Lumen Maintenance†	120,000 hrs [L70 @ 25°C] / 90,000 hrs [L70 @ 50°C]
Electrical	Power Consumption / Voltage input	2 watts DC power (total consumption varies according to remote power supply efficiency) / 48V DC
	Control methods	DMX 512 ready
Physical	Dimensions (diameter x height)	⌀ 2$^{13/16}$" x 3$^{1/2}$" / ⌀ 71mm x 89mm
	Weight	0.50 kg / 1.10 lbs
	Housing	Aluminum housing
	Lens	Impact resistant UV protected polycarbonate dome lens
	Connectors	Liquidtight cable connector / 3ft (1m) power and data cable #18
	Driver	120V-277V AC remote driver (order separately, refer to control boxes specification sheets for details)
	Mounting	Wall mounting or canopy cover mounting options
	Operating Temperatures	-25° C to 50° C / -13F to 122F
	Ingress Protection	IP66
	Environment	Dry / damp / wet location - corrosion-resistant option for marine environments.

*Please consult website for tested ies files.

† Lumen maintenance data is based on LM80 data from the LED manufacturer.

UL cUL CE RoHS

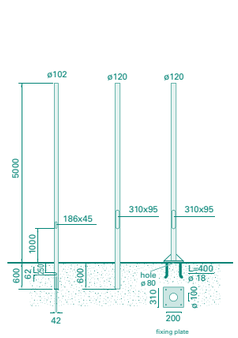
MultiWoody

design Mario Cucinella — iGuzzini

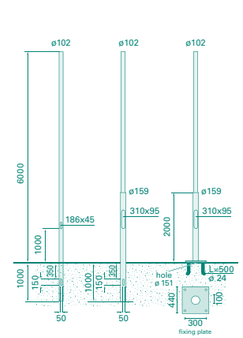
Registered Design

LIGHTING PROJECTOR SYSTEMS FOR URBAN AREAS
WALL SYSTEMS FOR URBAN AREAS

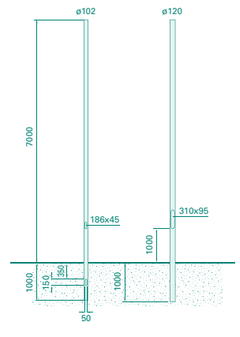
15



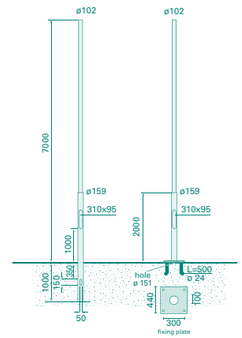
	code	ø	length	colour
⏚	**1205**	102	5600	15
⏚	**1291**	120	5600	
⏚	**1292**		5000	



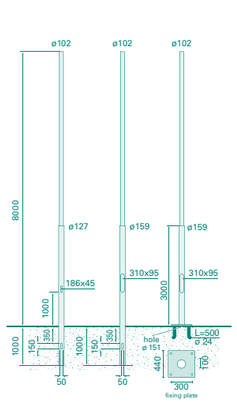
	code	ø	length	colour
⏚	**1542**	102	6800	15
⏚	**1561**	102 159	6800	
⏚	**1597**		6000	



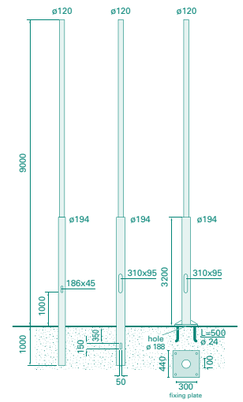
	code	ø	length	colour
⏚	**1543**	102	8000	15
⏚	**1287**	120	8000	



	code	ø	length	colour
⏚	**1562**	102 159	8000	15
⏚	**1598**		7000	



	code	ø	length	colour
⏚	**1544**	102-127	9000	15
⏚	**1565**	102 159	9000	
⏚	**1599**		8000	



	code	ø	length	colour
⏚	**1288**	120 194	10000	15
⏚	**1545**		10000	
⏚	**1547**		9000	

The terminal blocks have four polarities with three ways for pole and are fitted for bridge wiring. They are made with class II insulation
Code **1862** is equipped with a fuse holder for dim. 8,5x31,5 - 380 V - max 20 A. Suitable for power cables with cross-section 16 mm² on input and 2.5 mm² on output to hook up with the light source.
Code **1863** is equipped with two fuse holders for dim. 10,3x38 - 380 V - max 20A. Suitable for power cables with cross-section 16 mm² on input and 2.5 mm² on output to hook up with the light source.
Code **1865** is equipped with two fuse holders for dim. 8,5 x 31,5 - 380 V - max 20 A. Suitable for power cables with cross-section 16 mm² on input and 2.5 mm² on output to hook up with the light source.

terminal box			door key	
code	colour	poles	code	colour
1862 1865	00	**1205 1542 1561 1543 1544**	**0227**	00
1862 1865	00	**1597 1562 1598 1565 1599 1545 1547**	**0246**	
1863	00	**1291 1292 1597 1287 1598 1599 1288 1545 1547**	**0246**	

Branch box for multiple wiring fitted on a pole	
	code
	1880

fixing plate with anchoring bolts		
code	poles	colour
1168	**1292**	00
1165	**1597-1598 1599-1547**	

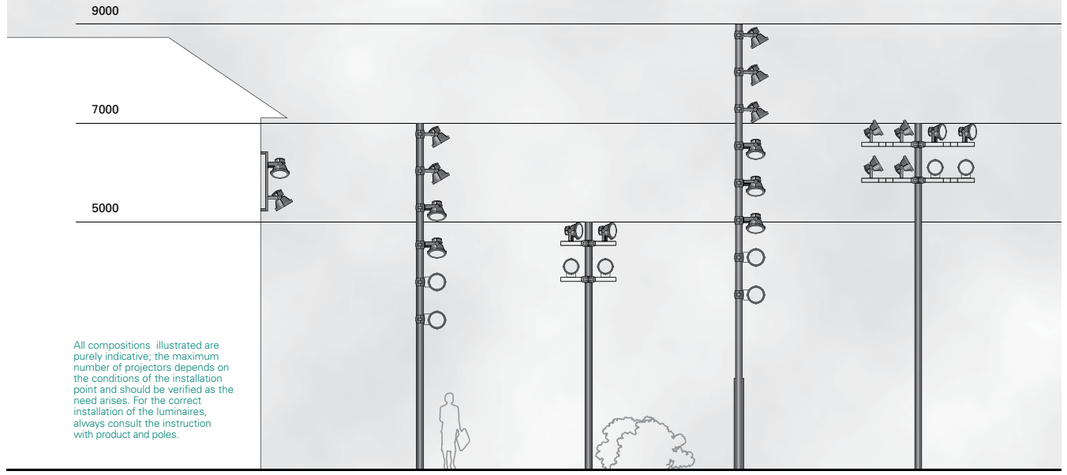
Poles with plate are suitable for the **F** and **E** markets

accessories for terminal block		
	code	poles
D - CH	**B943**	**1542-1543-1544-1545 1547-1561-1562-1565 1597-1598-1599**

accessories for terminal block		
	code	poles
UK	**B944**	**1542-1543-1544-1561-1562 1565-1597-1598-1599**
	B972	**1545-1547**

The poles featured in the tables are suitable for fixing on **I**, **F** and **E**.
For other countries, add the specific fixing systems featured in the table.

* DIN guide for **D** and **CH**
Marine grade plywood support for terminal board for **GB

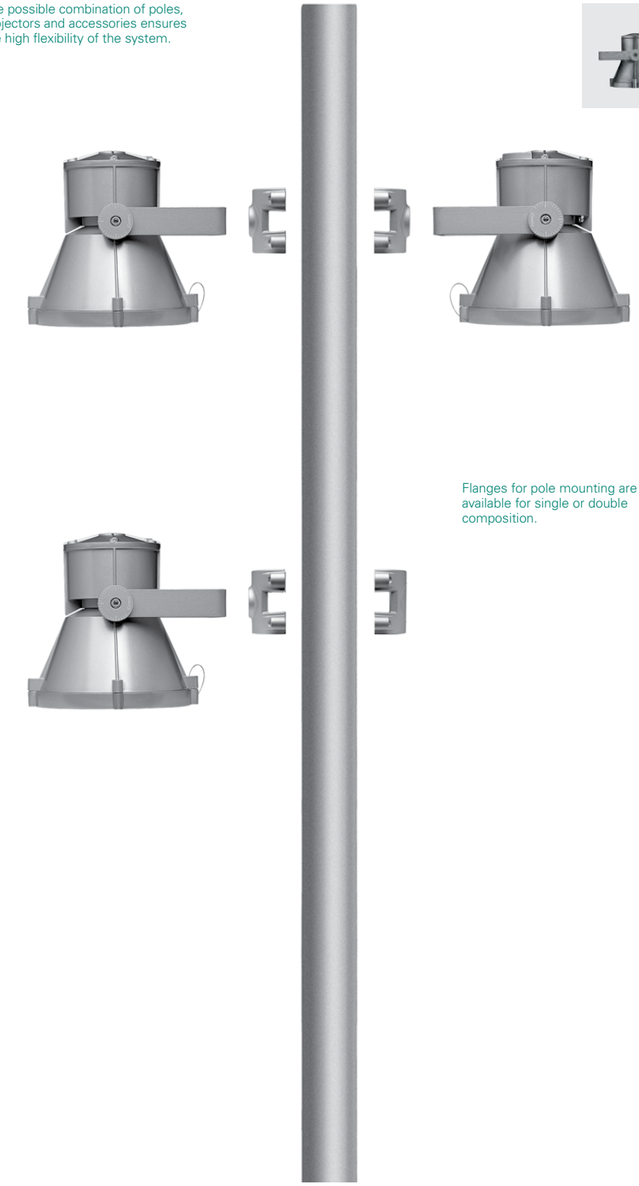


scale 1:100

MultiWoody flanges

design Mario Cucinella — iGuzzini

The possible combination of poles, projectors and accessories ensures the high flexibility of the system.

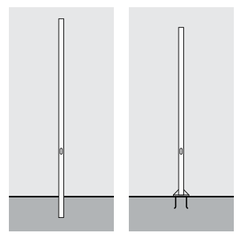


Compact body | Small body | Medium body

The system is available in three different sizes for the floodlight.

Flanges for pole mounting are available for single or double composition.

The pole is available in two versions, with fixing plate or for burying.



MultiWoody System can install the optical assemblies with compact, small and medium body. Can also house iPro large body (page 240). In case of installation of iPro floodlight on horizontal arms the number of floodlights can be doubled.
(The system is compatible with MaxiWoody LED floodlights (compact and small body) presented on page 299

Horizontal arm	ø pole	code
for 1 floodlight	120	**6113** L=400
	102	**6116** L=390
for 2 floodlights	120	**6114** L=795
	102	**6117** L=785
counter flange	120	**6115** L=178
	102	**6118** L=160
adapter disk ø 60	-	**6119***

* Allows for complete rotation of floodlight on horizontal arm

Flanges	ø pole	code
for 1 floodlight	120	**6012** 149x180
	102	**6111** 119x165
for 2 floodlights	120	**6013** 156x180
	102	**6112** 126x165

Multiple support for two floodlights	code
	6014

Multiple support for three floodlights	code
	6015

Directional flap	Elliptical light flow refractor	Coloured filters	Visor	Circular louvre

Accessory retention cable

Accessory codes are shown on page 176.

W-Saving: maximum nominal power of the lamp up to 250 W. The components that are necessary for the operation of the fittings must be ordered separately. They are presented on page 262.

lamp	W	ø pole	W-Saving 220 V
HST-DE	70/150	194	**BG42 + BZG1**
HST	70/100		
HSE	70		

base for poles			
code	size	poles	colour
1841	ø 420	**1292**	15

base for poles			
code	size	poles	colour
1842	ø 620	**1597 1598 1599**	15
1843		**1547**	

DISPATCH™ LITTER & RECYCLING RECEPTACLE

PRODUCT DATA

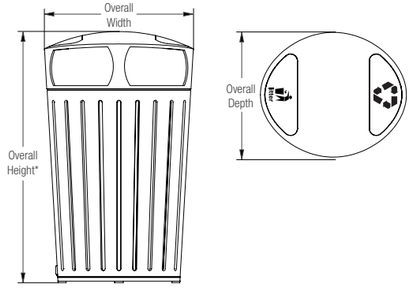
Dispatch combines distinctive design, robust materials and a versatile array of waste stream management options. Receptacles are made of heavy cast aluminum with a hinged side-access door for easy servicing. Available with 36 and 45 gallon capacities in single-stream and split-stream versions, openings can be configured for litter-only, bottles & cans-only, paper-only or for combined litter and recycling. Attractive, durable and highly adaptable, Dispatch is an ideal litter and recycling solution for any public space.

MATERIAL & CONSTRUCTION DETAILS

INSTALLATION & MAINTENANCE

BODY AND LID	CONFIGURATION OPTIONS	LID GRAPHICS	INSTALLATION
• Body and lid are made of solid cast aluminum with a powdercoat finish. • Standard powdercoat colors are Aluminum Texture and Slate Texture; F+S optional colors and custom RAL colors are available for an upcharge. • Due to the inherent nature of metal castings, gloss powdercoats are not offered for cast components.	• Receptacles are available in 36 and 45 gallon configurations. • Single-stream receptacles use a single 36 or 45 gallon liner. • Split-stream configurations are divided by an internal baffle plate to create two separate litter and/or recycling streams. 36 gallon receptacles use two 16 gallon half liners; 45 gallon receptacles use two 20 gallon half liners.	• Instructional graphics are applied to two sign plates, which are mechanically fastened to the top of each lid. • Sign plates are stainless steel with a Satin finish; instructional graphics are Black vinyl.	• Receptacles can be used freestanding with a concrete base or surface mounted with or without a concrete base. • Anchors and stainless steel mounting screws are provided for surface mounting.
RECYCLING OPENINGS	**SIDE ACCESS DOOR AND LATCH**	**LINERS**	**MAINTENANCE**
• Openings can be limited to a particular type of recyclable. Along with the standard full litter opening, round bottles & cans and slotted paper openings are available. See details on page 2.	• Receptacle opens in a clamshell fashion with half of the cast body serving as a swing-out door. • Two stainless steel latch options are available: lift lever or screwdriver-operated recessed access.	• Both single-stream and split-stream receptacles use independent, replaceable internal liners designed to be used with or without plastic litter bags. • Liners are molded from durable black polyethylene with UL94HB fire rating.	• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

NOMINAL DIMENSIONS (36 GALLON)



MODEL	OVERALL HEIGHT*	OVERALL WIDTH	OVERALL DEPTH	WEIGHT	INTERNAL CAPACITY
SLDIS-136	43.0" (1092 mm)	25.5" (648 mm)	21.8" (554 mm)	112 lbs (50 kg)	36 gallons (136 liters)
SLDIS-216	43.0" (1092 mm)	25.5" (648 mm)	21.8" (554 mm)	112 lbs (50 kg)	32 (2 x 16) gallons (121 liters)

*NOTE: Concrete base adds 2.75" to overall height

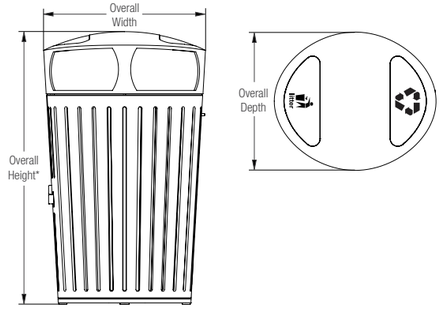
T 1.800.451.0410 | F 412.781.7840 | www.forms-surfaces.com

FORMS+SURFACES®

DISPATCH™ LITTER & RECYCLING RECEPTACLE

PRODUCT DATA

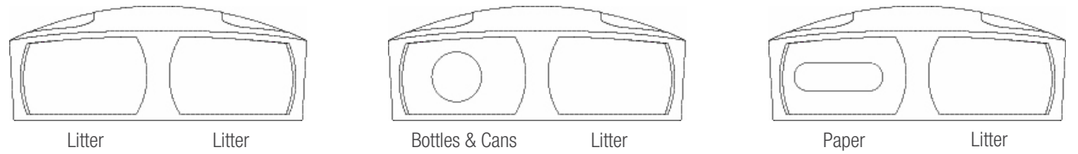
NOMINAL DIMENSIONS (45 GALLON)



MODEL	OVERALL HEIGHT*	OVERALL WIDTH	OVERALL DEPTH	WEIGHT	INTERNAL CAPACITY
SLDIS-145	45.8" (1162 mm)	27" (686 mm)	23" (584 mm)	125 lbs (57 kg)	45 gallons (170 liters)
SLDIS-220	45.8" (1162 mm)	27" (686 mm)	23" (584 mm)	125 lbs (57 kg)	40 (2 x 20) gallons (150 liters)

*NOTE: Concrete base adds 2.75" to overall height

LID OPENING OPTIONS



OPENING	DIMENSIONS (36 GALLON)	DIMENSIONS (45 GALLON)
Litter	9.9" (251 mm) x 6.3" (160 mm)	11.5" (292 mm) x 70" (178 mm)
Bottles & Cans	4.5" (114 mm) x 4.5" (114 mm)	4.5" (114 mm) x 4.5" (114 mm)
Paper	8.0" (203 mm) x 2.5" (63 mm)	8.0" (203 mm) x 2.5" (63 mm)

STANDARD GRAPHICS

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For the most current version of this document, please refer to our website at www.forms-surfaces.com.

DISPATCH™ LITTER & RECYCLING RECEPTACLE

PRODUCT DATA

ENVIRONMENTAL CONSIDERATIONS

- Please refer to the Dispatch Environmental Data Sheets for detailed environmental impact information.
- Dispatch Receptacle has up to 90% recycled content.
- All components are fully recyclable.
- Rustproof cast aluminum construction ensures a long product life cycle.
- Standard powdercoat finishes are no-VOC; non-standard powdercoat finishes are no- or low-VOC, depending on color.
- Low maintenance and easy to disassemble.

NET PRICING AND ORDERING INFORMATION (pricing does not include freight)

MODEL	DESCRIPTION	NET PRICE
SLDIS-136	Dispatch Receptacle, 36 gallon, single-stream, one 36 gallon liner	$1,550
SLDIS-216	Dispatch Receptacle, 36 gallon, split-stream, two 16 gallon half liners	$1,650
SLDIS-145	Dispatch Receptacle, 45 gallon, single-stream, one 45 gallon liner	$1,750
SLDIS-220	Dispatch Receptacle, 45 gallon, split-stream, two 20 gallon half liners	$1,850
	Optional powdercoat color from Forms+Surfaces standard color chart	+ $200 per color/per order
	Custom RAL powdercoat color	+ minimum $500 per color/per order
	Add concrete base	+ $149 per receptacle
	Add recycling openings	+ $25 per side/per receptacle

TO ORDER SPECIFY: quantity, model, powdercoat color(s), lid graphics, recycle openings (optional), latch option, freestanding or surface mount with or without concrete base

LEAD TIME: 6 to 8 weeks. Shorter lead times may be available upon request. Please contact us to discuss your specific timing requirements.

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