

Quayside Infrastructure and Public Realm (QIPR) including Queens Quay East from Bonnycastle Street to Street A

60% Design | October 2023

Project Background

Quayside Infrastructure and Public Realm
including QQE from Bonnycastle to Street A
Proponent: Waterfront Toronto
Design Team: WSP / West 8 + DTAH
Review Stage: Stage 3 - Detailed Design

Project Background

- **Quayside Infrastructure and Public Realm (QIPR):**
 - Presented to the WDRP at Schematic Design in **May 2023**. The project received a vote of Full Support.
- **Waterfront East LRT Area 2A:**
 - Presented to the WDRP Stage 2-Schematic Design in March 2021. The project received a vote of Full Support.
 - Currently working towards 60% Design Development of QQE from Bonnycastle east to Street A as part of QIPR project

Project Description

- The **Quayside Infrastructure and Public Realm** project consists of all the infrastructure, internal streets, Parliament Street, Parliament Plaza and Water's Edge Promenade components of the larger Quayside project. (Map to follow)
- Also includes **Queens Quay East from Bonnycastle to Street A** (previously a segment of the Waterfront East LRT Project)
- Waterfront Toronto will lead the design and construction of this project as master developer and delivery agent to the City of Toronto and in coordination with the preferred development partner for Quayside (QILP).
- Waterfront Toronto has undertaken a public procurement and retained WSP (with West 8+DTAH) to lead the design of the active scopes, and West 8 + DTAH (with WSP) for the Queens Quay East portion of the project.
- Other consultants have been retained (or will be retained in the future) for other segments of Queens Quay, Silo Park, Parliament Slip Lakefill and Parliament Slip Activation.
- The Quayside Impact (QILP) team will deliver the design and construction of the Privately owned Publicly accessible open spaces within the interior of Blocks 1-3 at Quayside.

Project Timeline

Quayside Infrastructure and Public Realm
including QQE from Bonnycastle to Street A

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QIPR (Quayside Infrastructure and Public Realm) Milestone Schedule

- June 2022 – Stage 1 Issues ID
- May 2023 – 30% Design DRP
- October 2023 – 60% Design DRP
- April 2024 – Servicing + Infrastructure Design Complete
- September 2024 – Public Realm Design Complete
- 2024 and Beyond – Construction
 - Individual projects may be completed in a phased manner in coordination with adjacent projects.

Parliament Plaza

- Currently on hold to enable coordination with Quayside Impact Block 4 building footprint and ground floor design
- Will return to DRP for Schematic Design and Detailed Design at a later date.

Silo Park

- Future design process

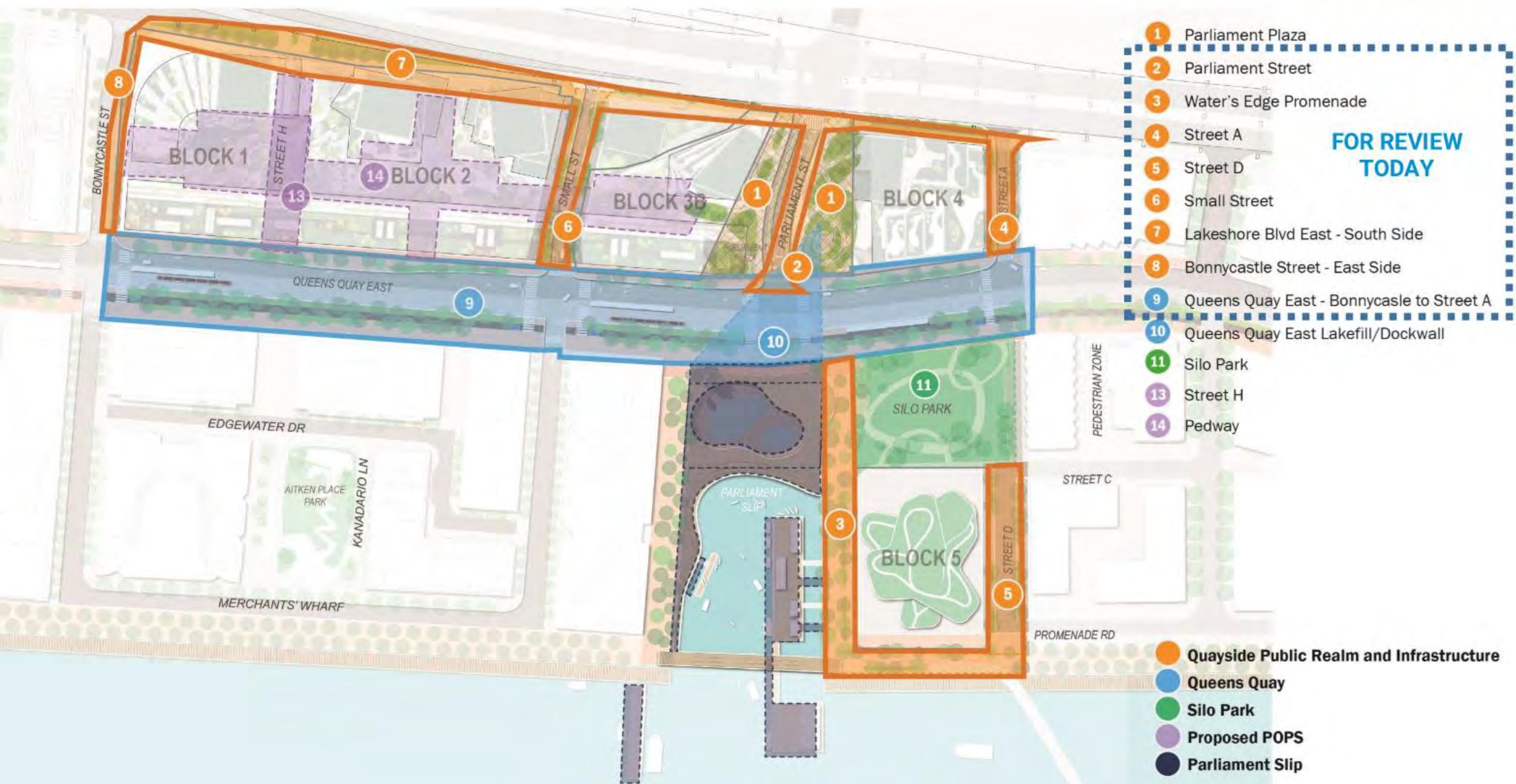
Ongoing Coordination with City of Toronto

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Working with the City of Toronto through a Plan of Subdivision Approval process to coordinate on the following design issues:

- **General:**
 - Developing a Lighting Standard for the Waterfront
 - Coordination on location of Inner Harbour West Tunnel and Shaft
 - Ownership of Internal Streets and Right-of-Way Widths
 - Emergency Vehicle Access Requirements
- **Queens Quay:**
 - Establish extents of transit infrastructure to be “roughed-in” on Queens Quay to minimize throw away costs when LRT is constructed
 - Interim treatment of LRT corridor as a potential overflow for construction traffic
 - Detailed transportation design elements including street signalization, interim connections and transit stop locations
- **Green Infrastructure and Maintenance:**
 - Reduced dependency on silva cells and increased area of open planting and resulting additional maintenance requirements

Quayside Public Realm Program



Queens Quay East

Full Vision vs Quayside Scope

Quayside Infrastructure and Public Realm
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FOR REVIEW TODAY



Full Queens Quay East Vision



Transit Enabling Interim Condition
Constructed as part of Quayside

Team Structure & Project Status

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FOR REVIEW TODAY

QUAYSIDE PUBLIC REALM AND INFRASTRUCTURE

Professional Services for the design of the public realm and infrastructure to be delivered by WT, currently at 60% design

WSP
(WEST 8+DTAH)

QUEENS QUAY & TRANSIT

Professional Services for the design of Queens Quay and the future LRT inclusive of any additional infrastructure

WEST 8+DTAH

COMMUNITY FOREST

Professional Services for the design of the POPs to be delivered by Quayside Impact. Design is ongoing.

QUAYSIDE IMPACT
SLA/PMA

SILO PARK

Professional Services for the design of the future park. To be subject to a future design competition process

TBD
(FUTURE PROCUREMENT)

PARLIAMENT SLIP

Professional Services for the design of the future Parliament Slip Activation. Currently at 10% design.

WEST 8+DTAH
(MOFFAT & NICHOL)

TODAY'S PRESENTATION FOR STAGE 3: DETAILED DESIGN

PRESENTED ON JUNE 2020 for ISSUES ID AND MARCH, JUNE 2022 FOR SD. WILL RETURN FOR STAGE 3 DRP FOR THE FULL SCOPE

PRESENTED IN JAN. 2023, RETURNING IN 2024 FOR SCHEMATIC DESIGN

TO BE PRESENTED TO DRP ONCE CONSULTANT IS RETAINED

PRESENTED ON APRIL 21, 2022 FOR ISSUES ID, TO RETURN TO DRP FOR SD. DATE TBD.

Project Objectives

Quayside Infrastructure and Public Realm
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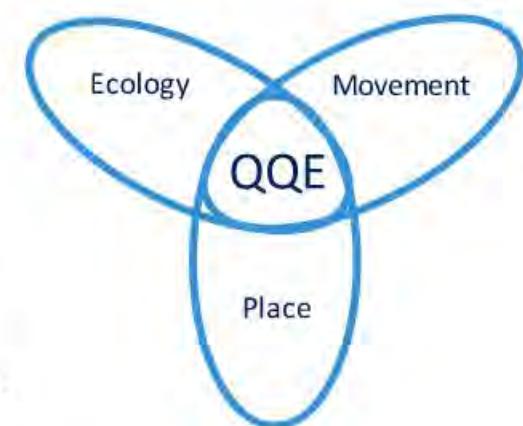
Quayside Infrastructure and Public Realm Project Goals:

- **Equity** – Celebrate the diversity of Toronto and welcome all people of all backgrounds to Quayside
- **Accessibility** – Provide inviting and barrier free experiences for users of all abilities and ages
- **Sustainability** – Create a cohesive network of green spaces with green infrastructure to improve performance
- **Health and Wellbeing** – Create a connection between people and naturalized green spaces which are integrated with development
- **Activation and Engagement** – Embrace seasonality with public spaces that perform as a vibrant urban space that's programable
- **Continuity** – Act as a gateway to the eastern waterfront, and integrate seamlessly with the larger waterfront
- **Design Excellence** - Strive to maintain the standard of design excellence, quality of place, and attention to detail that has been delivered on the waterfront.

Queens Quay East Project Objectives:

A primary lakefront boulevard that connects existing and emerging precincts, parks, and public spaces and establishes a strong cohesive character across the waterfront

- **Active Transportation:** improve clarity and safety at intersections, improve cycle conditions
- **Urban Ecology:** integrate GI, expand tree canopy, and create an eco-corridor to provide habitat for biodiversity
- **Place-Making:** continuity with QQW, durable materials and high craftsmanship, flexible for closures and programming, encourage social interaction



On-going Research that continues to Inform the project

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Green Streets Infrastructure Tour with City Staff (August 2023):

- Incorporating lessons learned from existing City Green Infrastructure projects including adjustments to detailing/maintenance considerations/planting plans

Queens Quay West Planting Pilot:

- Has gone through first growing season; adjusting our planting plans based on observations

Lake Shore Boulevard Streetscape Pilot:

- Has gone through two growing seasons (after two rounds of replanting); adjusting our planting plans based on observations

On-going research on tree health along the existing Water's Edge Promenade:

- Improving tree planting details
- Shallow groundwater monitoring confirmed groundwater level fluctuates according to lake level
- Adding slight raise to tree planters on QQE
- Looking into possible techniques for topdressing trees to improve growing conditions

Adjacent Project Context

Quayside Impact Design Proposal

Quayside Infrastructure and Public Realm
including QQE from Bonnycastle to Street A

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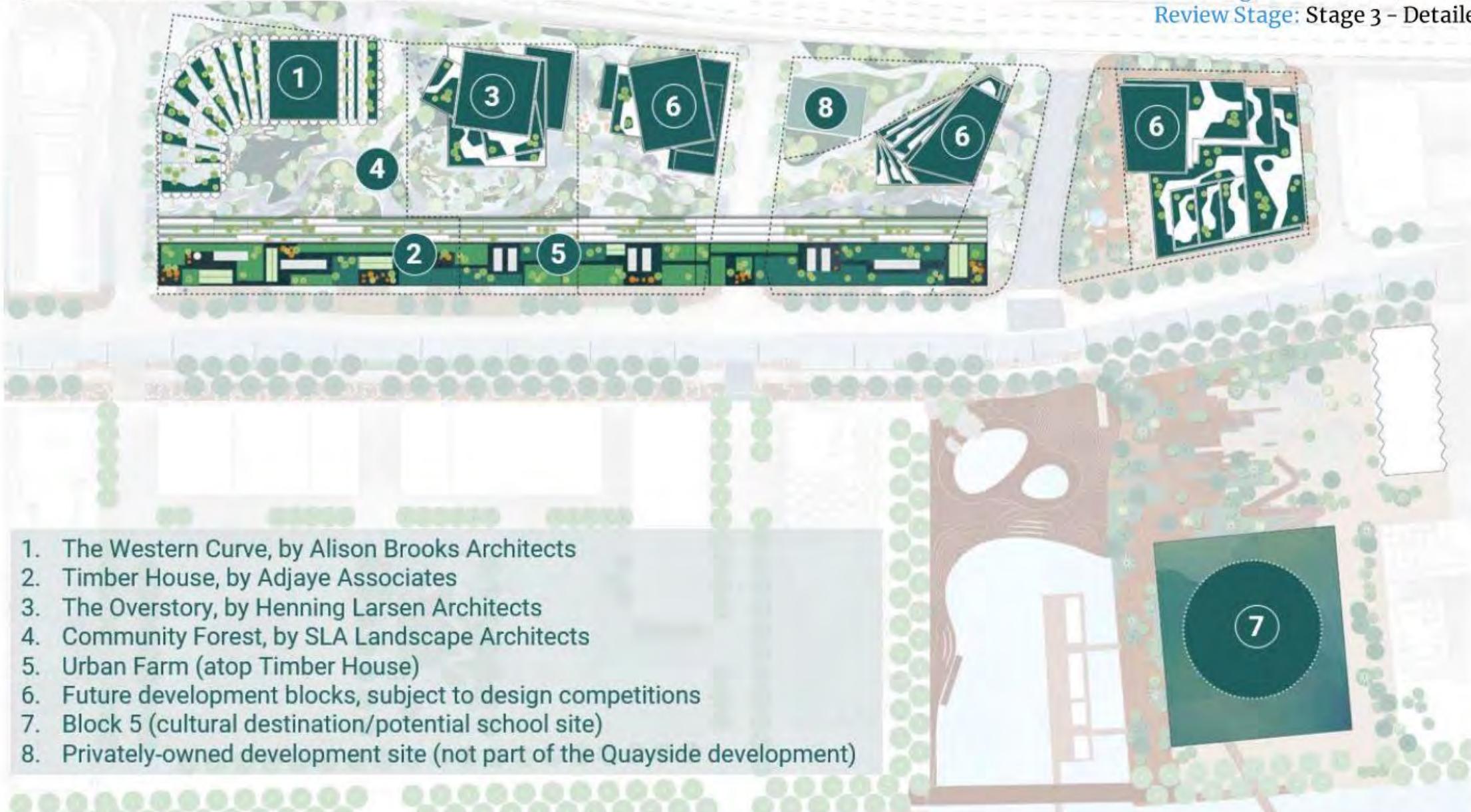


Adjacent Project Context

Quayside Impact Proposed Site Plan

Quayside Infrastructure and Public Realm
including QQE from Bonnycastle to Street A

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Review Stage: Stage 3 - Detailed Design



Adjacent Project Context

Quayside Impact Proposed Landscape Plan

Quayside Infrastructure and Public Realm
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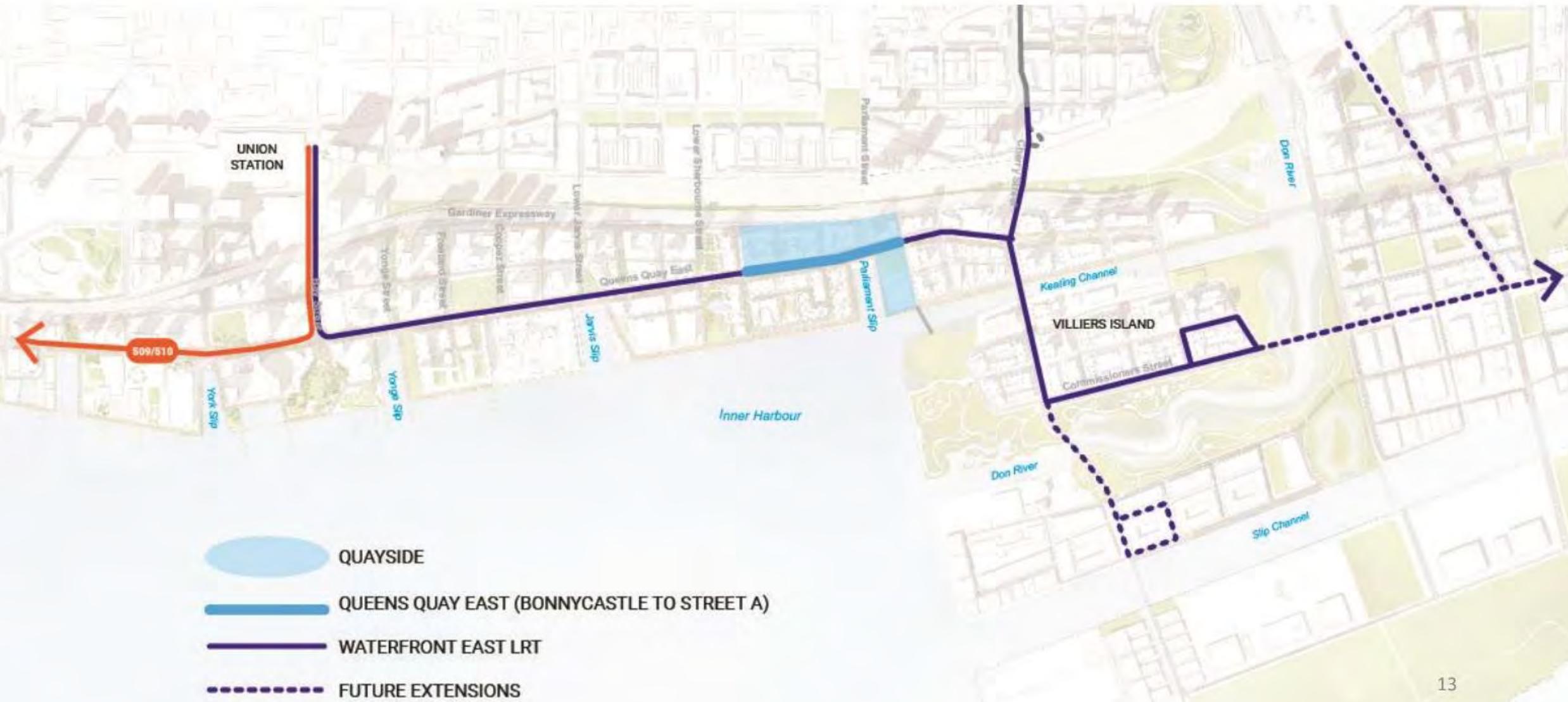


Site Context

Waterfront East LRT

Quayside Infrastructure and Public Realm
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Adjacent Project Context

Parliament Slip

Quayside Infrastructure and Public Realm
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Adjacent Project Context

Keating Channel Pedestrian Bridge

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Site Context

Waterfront Internal Streets – Bonnycastle Street West Side

Quayside Infrastructure and Public Realm
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Site Context

Lake Shore Public Realm Implementation

- Lake Shore Public Realm
- Quick Start Projects
- Pilot Project
- Development Frontages

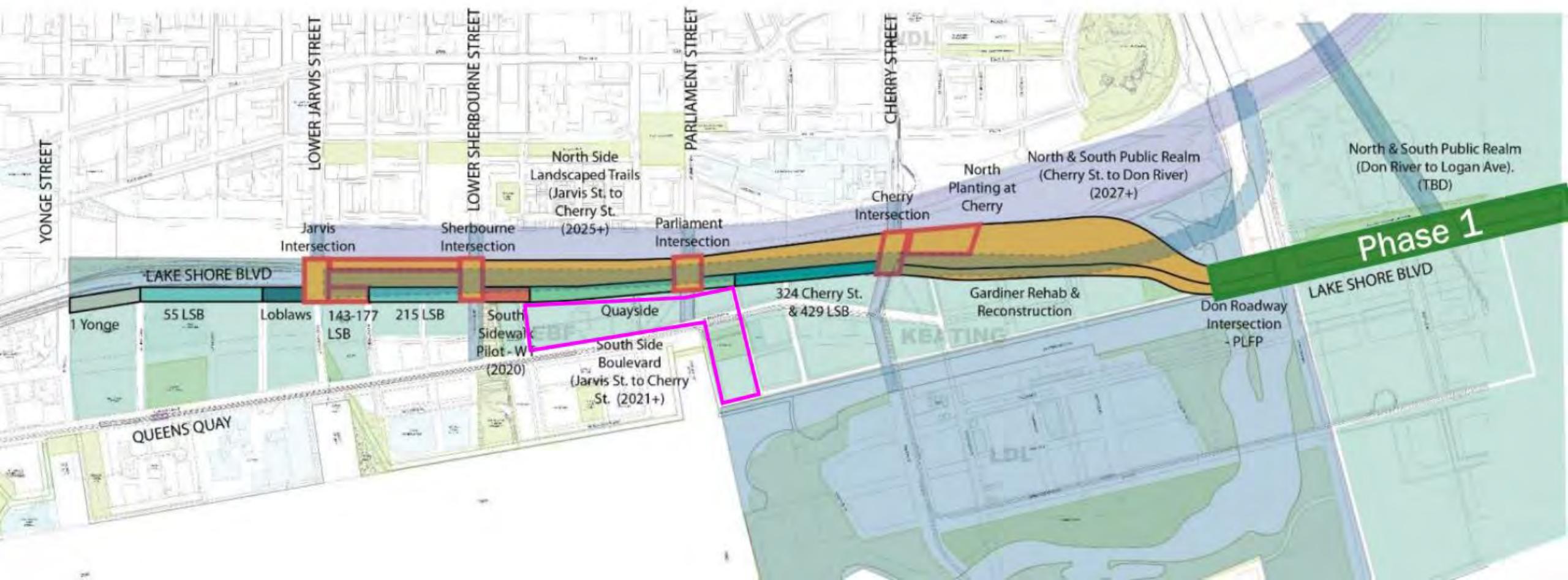
- Metrolinx Projects
- City / WT Infrastructure Projects
- Private Development

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Design Context

Lake Shore Public Realm Implementation

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Illustration of the south side Lower Jarvis-Sherbourne Street



Illustration south side of Lake Shore Boulevard



Illustration of the vision for Lakeshore Boulevard

DRP Stream 2: Public land – Agency Approval

Project Approval Stage

Quayside Infrastructure and Public Realm
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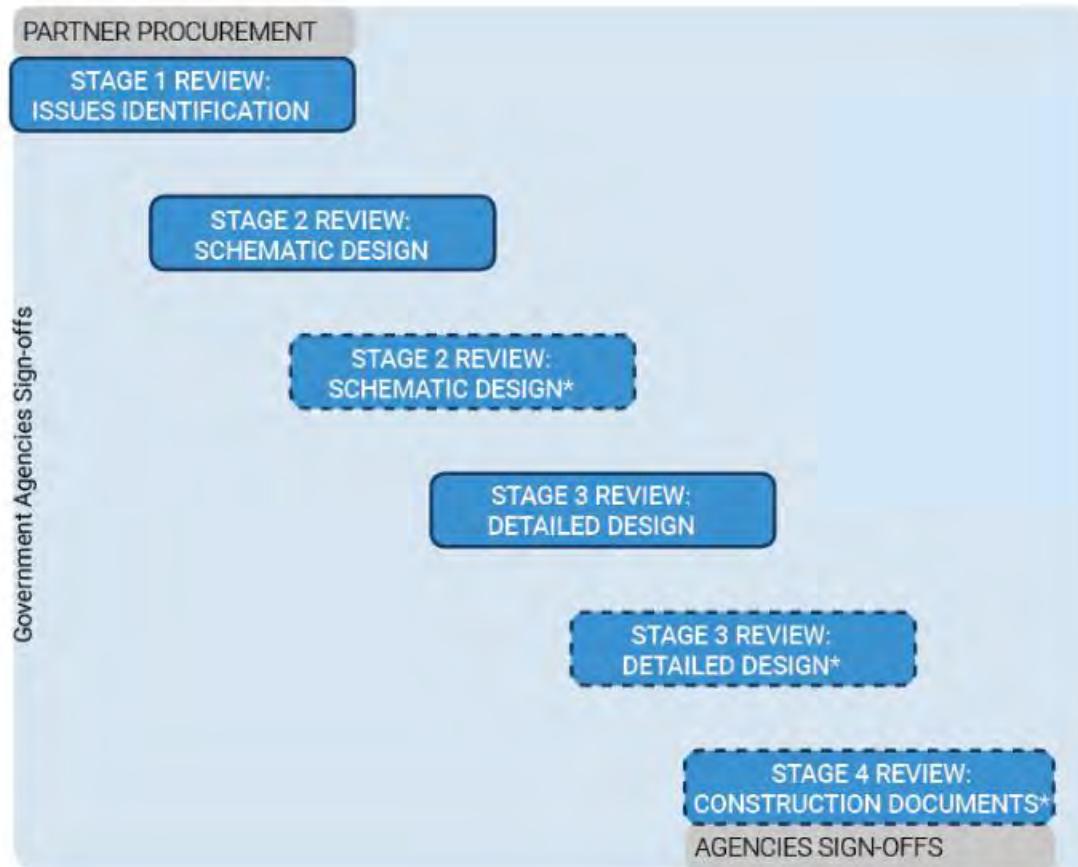
Review Stage: Stage 3 - Detailed Design

June 2020 Queens Quay East Revitalization	July 2022 Quayside Infrastructure and Public Realm
March 2021 Queens Quay East + WELRT Area 2A June 2021 Queens Quay East + WELRT 2B	May 2023 Quayside Infrastructure and Public Realm

WE ARE HERE



October 2023



*This review will only be required if the project has changed significantly since the previous review, or the Panel, Waterfront Toronto, or City staff have significant outstanding concerns.

Quayside Infrastructure and Public Realm

May 2023 Schematic Design Consensus Comments

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- Overall strong support for the work presented today, appreciated the high level of design at Schematic Design – some technical issues to be resolved as the design advances.
- The presentation scope **did not include the design for Parliament Plaza**, the team will return with that scope for review.
- Appreciated that the project is advancing the standards for street design. **Appreciated the urban forest narrative and encouraged to see the soil depths and volumes meeting the highest standards** for plant health.
- Strong support for the **north-south street designs** that enhance the connections to the waterfront.
- The design appears to be **missing a layer of programmatic ideas**, consider bringing another layer to the design that addresses street life with **novel programs**, such as ecological art, bird boxes, movable furniture, etc., to **emphasize the didactic notion of the project and the importance of sharing experience**.
- Consider **an Indigenous narrative**, such as craft and/or Indigenous planting approach, to help the design advance and solve urban challenges.
- Work with Parks, Forestry & Recreation (PF&R) to **develop a clear maintenance and operations strategy** to ensure the implementation of succession planting. Specifically provide more details for managing pets at the planters to ensure long term success of the landscapes, i.e. plant rails.

General

- Appreciation for design team's deep knowledge of the project and continuing the relationship with the design team many years after the competition.
- Appreciated the complete "big picture" presentation of the project from Bay to Cherry, Gardiner to the lake, and the heads of slips.
- Commended the research on the changing lake level, high water table, and planning **urban ecological resilience** for an unpredictable future, i.e. selection of diverse species of trees.
- Consider further development on the heads of slips. It is important for the heads of slips to have a common design language as special places related to the cottage country and Georgian Bay concept developed in the competition.
- Consider the **slips as "windows" to the lake** as they are key vista opportunities for pedestrians and ensure the designs strongly support this idea.
- Provide **views** down the key slips for review.
- Ensure the mandate of "**leading with landscape**" is at the forefront of the design.
- The **winter experience** of the street is important, ensure specific design elements such as the heated bike trails are thoroughly considered, and the cost benefits are carefully evaluated.

**Other comments on Yonge, Jarvis, and Parliament Slips, are not shown and will be addressed when the project returns with those areas for review.*

Areas for Panel Consideration

Waterfront Toronto

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Quayside Infrastructure and Public Realm

- Does the Panel support the overall design concept and the level of ambition around the public realm principles?
- Does the Panel support the design vision of the streetscapes?

Relationship with Context/Integration

- Do the streetscapes integrate well with the adjacent context of Quayside and major design projects?
- Does the intersection of Parliament Street and Queens Quay create a welcoming arrival to the Waterfront?
- Does the Panel support the strategies in achieving the ecological objectives of the design? Are there other opportunities to ensure long-term success?
- Does the introduction of cultural elements such as storytelling stones and furnishings promote street life?

Areas for Panel Consideration

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Queens Quay East

- Integration between QQE with the rest of the QIPR project
- Balance between continuity from Queens Quay West and appropriate design evolution based on learning from past projects
- Transition from closed soil cells to open soil areas
- Slight raise in grade along the MGT
- Opportunities to further enhance the use of green infrastructure or improve ecological performance
- How can we further improve the pre-LRT condition along QQE with minimal throwaway costs?
- Safety + delineation between pedestrian/cyclists/transit/vehicles
- Arrival experience for pedestrians at intersections and Parliament head of slip



Quayside Infrastructure and Public Realm & Queens Quay East (Quayside Portion)

Design Review Panel - Design Development Final Draft

October 18, 2023



WATERFRONTORONTO



WEST 8 + dtah



MULVEY&BANANI

DPM
Energy

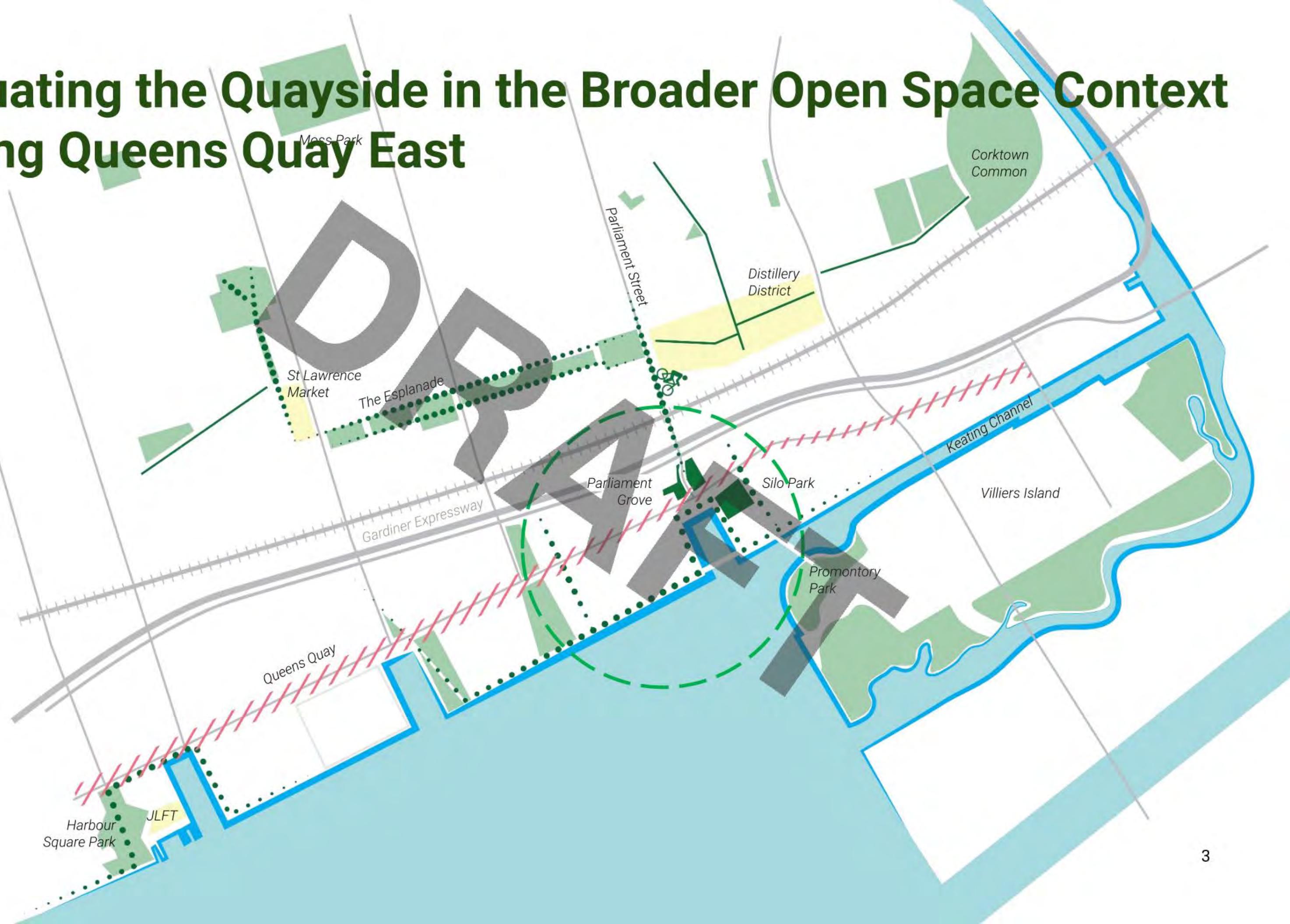
SHOREPLAN

phyto
STUDIO

Contents

- 1. Recap: Design Narrative and Context**
- 2. Detailed Design Approaches**
- 3. Walk through by project area**
 - Spatial Design
 - Key Details
 - Materials and Planting Palettes
 - Soil Volume
- 4. Strategies**
 - Programming
 - Maintenance
 - Grading
 - Lighting
 - Indigenous Design

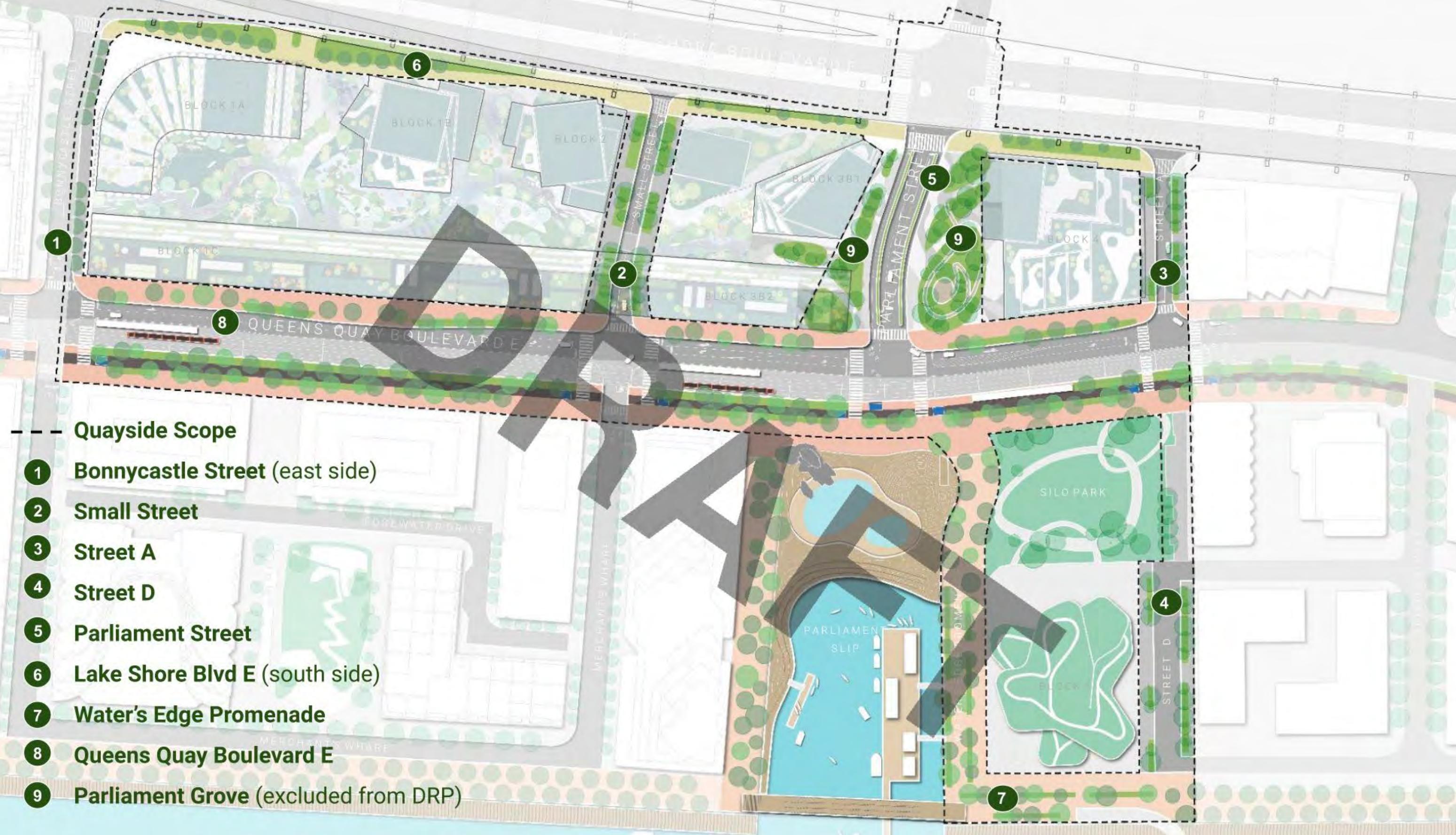
Situating the Quayside in the Broader Open Space Context along Queens Quay East







Regenerative Urban Pocket Forest Rooted in Place and Indigeneity

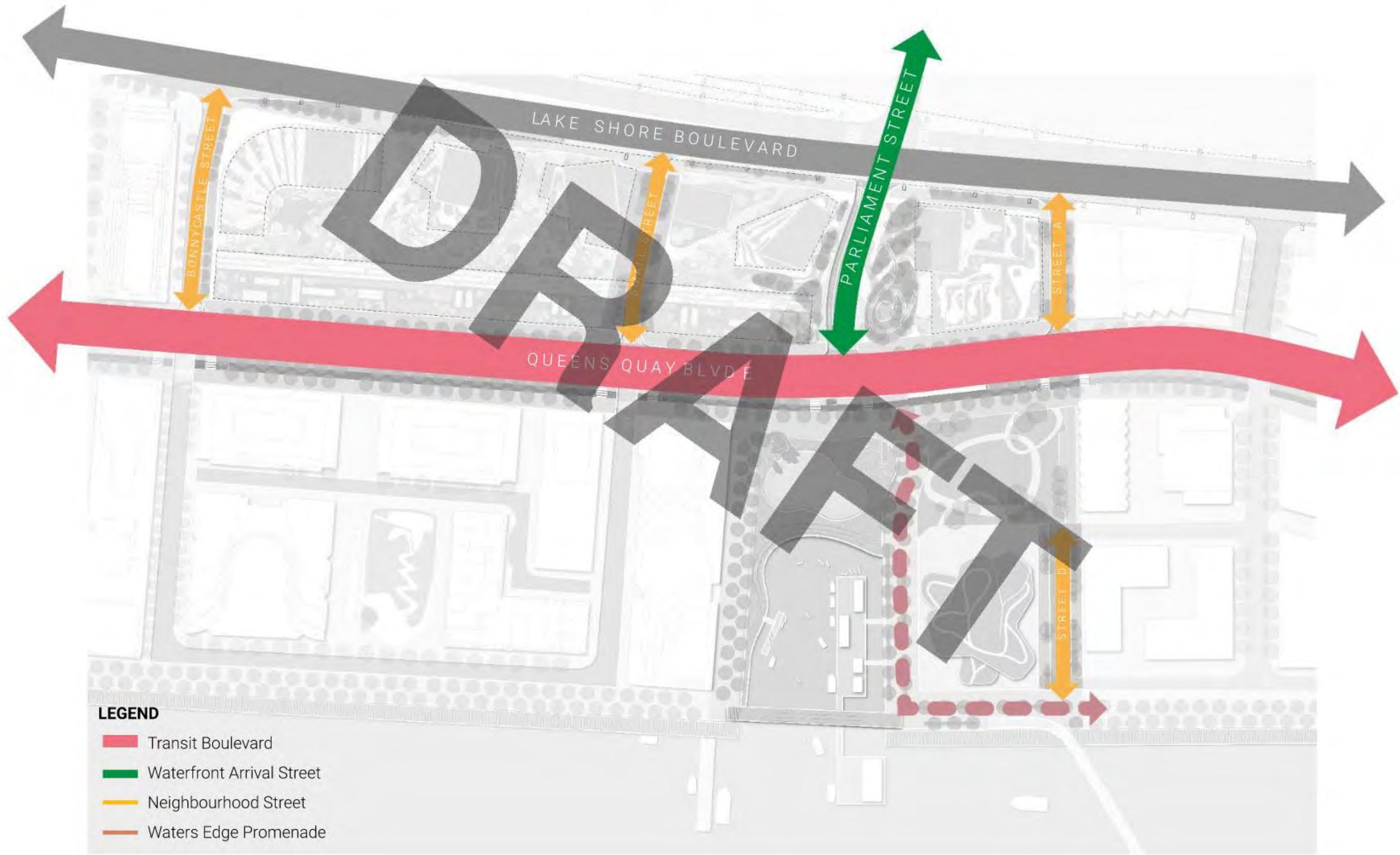


Vision: Consistent Inner Streets, Green Lungs, and a Continuous Primary and Secondary Waterfront



Scope under review today

Public Realm & Street Hierarchy



Detailed Design Approaches

2

Placemaking Integration

Integrate planting approaches, Indigenous design, and program elements across both projects while maintaining their distinct identities

1

Research Based Design

Apply lessons learned from City green infrastructure projects and waterfront living laboratory

5

Future Proofing

Anticipate and plan for phased approaches and adjacent future projects

3

Quayside Impact Coordination

Based on development rezoning application

4

Win-Win Solutions

Reduce cost while maintaining project goals of continuity and healthy urban forest

1

Research Based Design

Apply lessons learned from City green infrastructure projects and waterfront living laboratory



Green Streets Tour with City Staff August 2023 →
Adjustments to maintenance, planting plans & detailing¹



Queens Quay West Optimizations Pilot →
Adjustments to planting plans and confirmation of intersection improvements



Edge Detail Precedent Research → Adjustments to edge detail



Shallow Groundwater Monitoring confirmed groundwater level fluctuates according to lake level → raised tree planters on QQE for resiliency

¹ Sites visited:

Morningside & Steeles: Tree trenches for stormwater management, large scale bioswales without trees, inlet details

Kelvin & Danforth: small scale bioswale with tree, inlet details

West Donlands: planting design, edge detail, tree trenches

LSB Pilot: permeable paving, planting design

East Bayfront Streets: trench drain detail

QQW Pilot: planting design, maintenance

Harbour Street: planting design, edge detail, drainage detail

2

Placemaking Integration

Integrate planting approaches, Indigenous design, and program elements across both projects while maintaining their distinct identities



Promenade Allée



Savannas are characterized by a balance of legibility, visibility, and species diversity as a result of stewardship



Tommy
Thompson
Park

Lake edges were more likely to be in savanna as Indigenous populations used fire to make these landscapes easier to navigate, hunt, and cultivate



Downtown
Seattle



Otomachi
Urban Forest

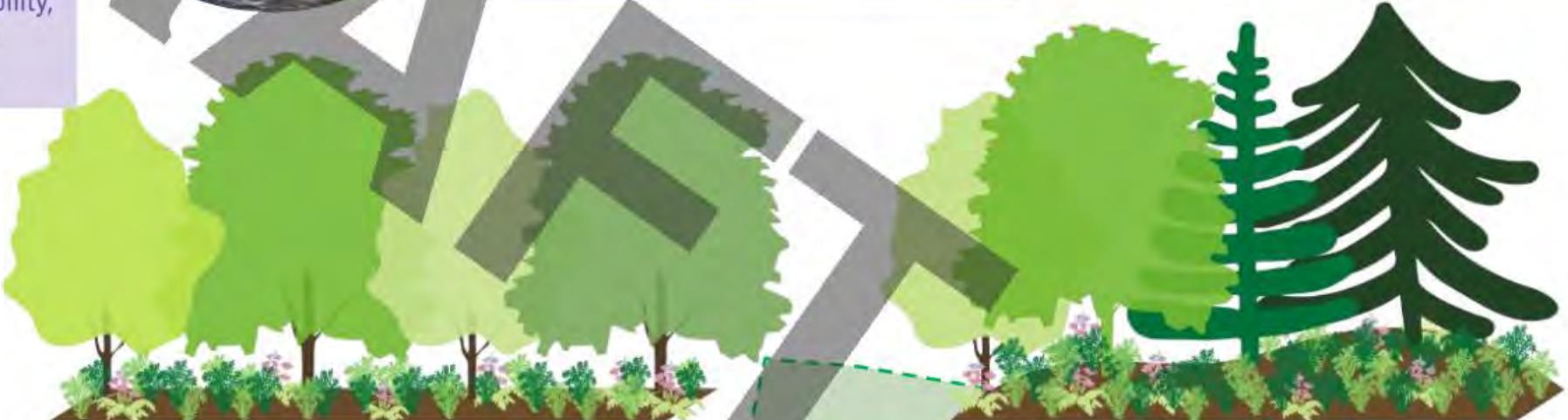
Forests are characterized by multiple layers of canopy, mid-canopy, and understory, and shade



QQW

ICONIC ALLÉE

Urban Core: Bathurst → Yonge



QQE

URBAN SAVANNA

Urban Core Extension: Yonge → Silo

QQE to Don

RIVERINE

Keating Channel:
Residential Neighbourhood

Continuing the geologic and forest narrative

DRP suggestions: Ecological Art, bird houses, moveable furniture...



Integrated geologic and biological processes with potential for artistic interpretation



Dead wood

Biodiversity hotbed
Mycelium feeder



Woody shrubs and hedges

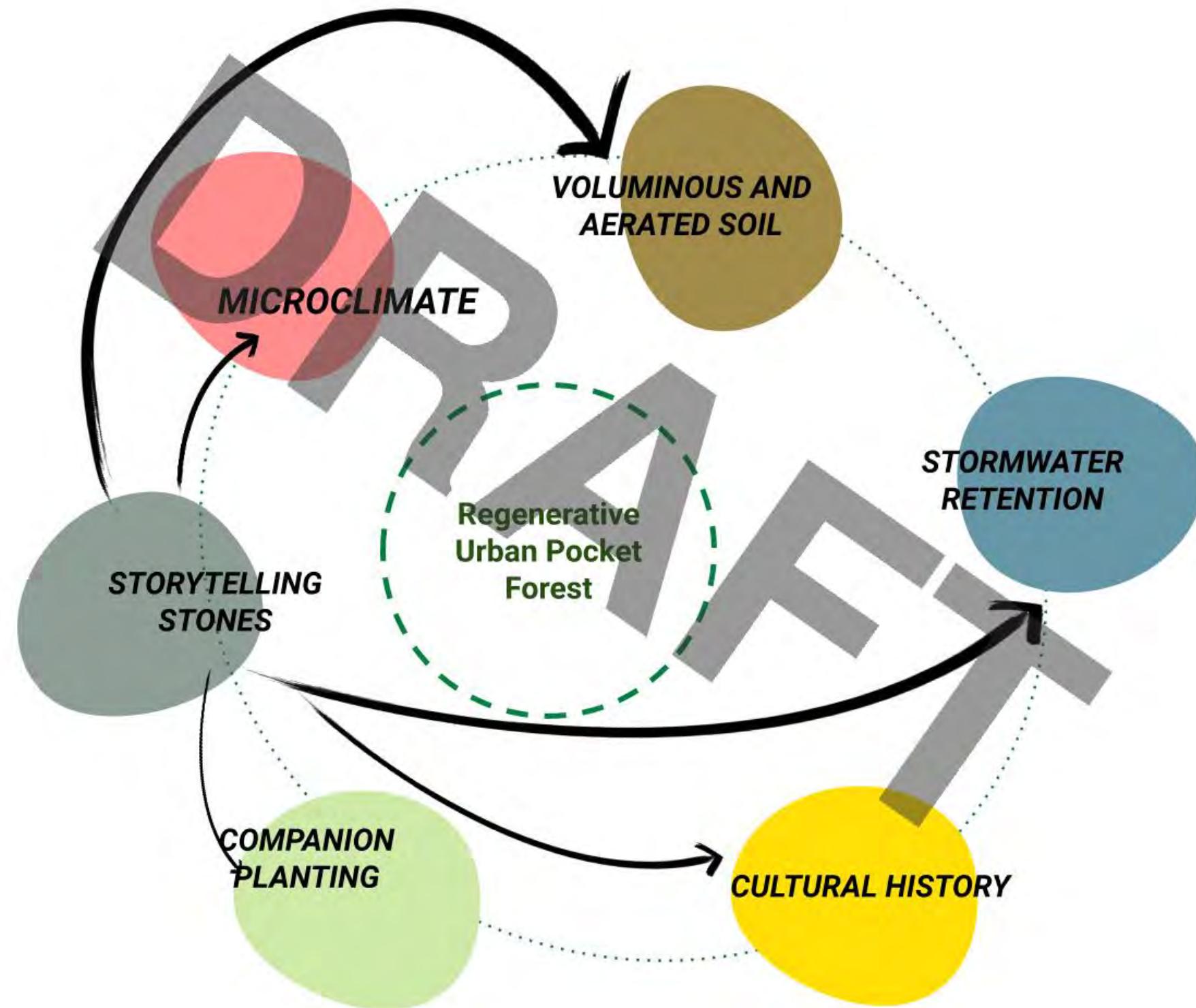
With berries and hiding places for songbirds



Rehomed orphaned "erratics"

Informal seating and play elements

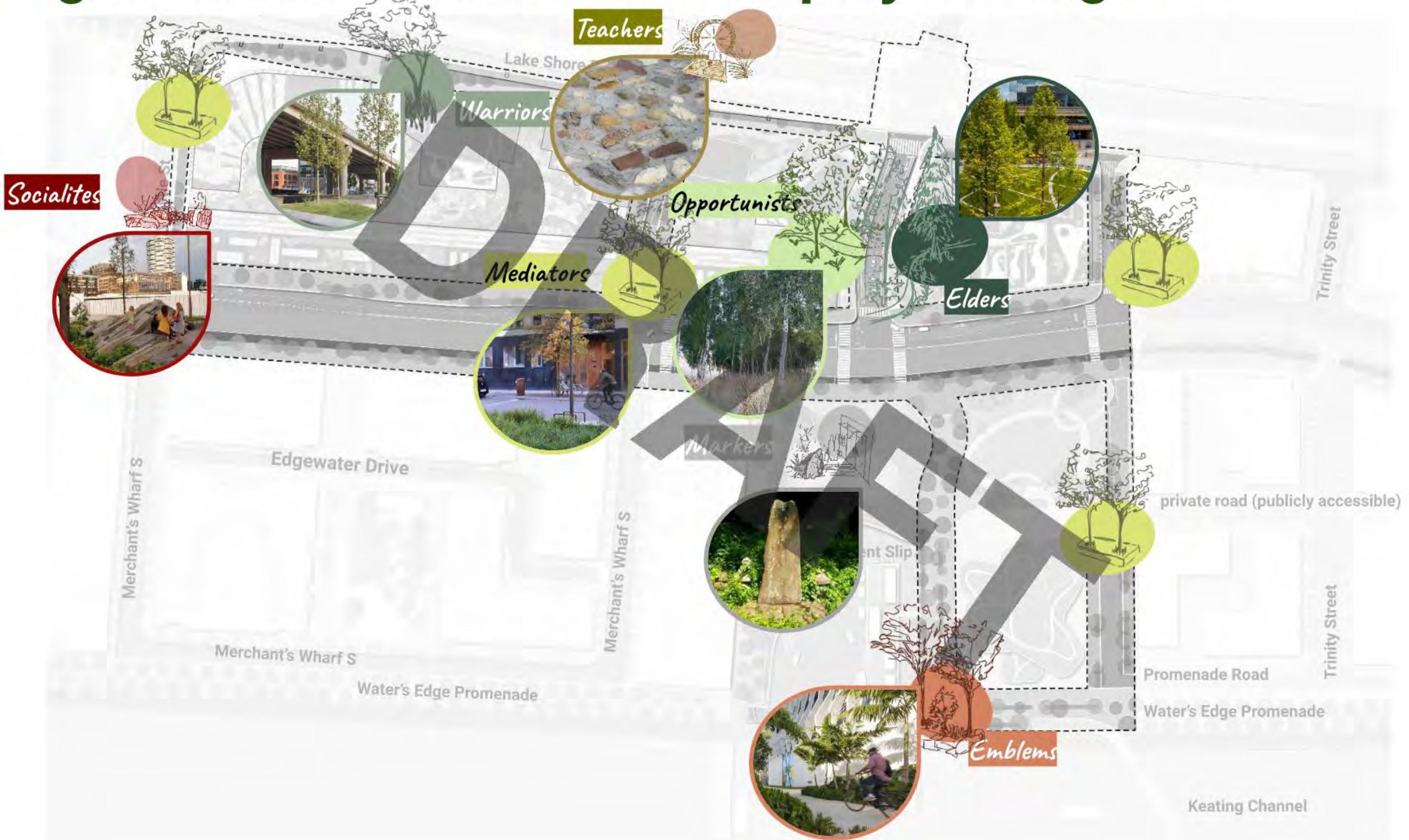
Local natural elements tell the story of Quayside



Concept: Quayside Regenerative Urban Pocket Forest



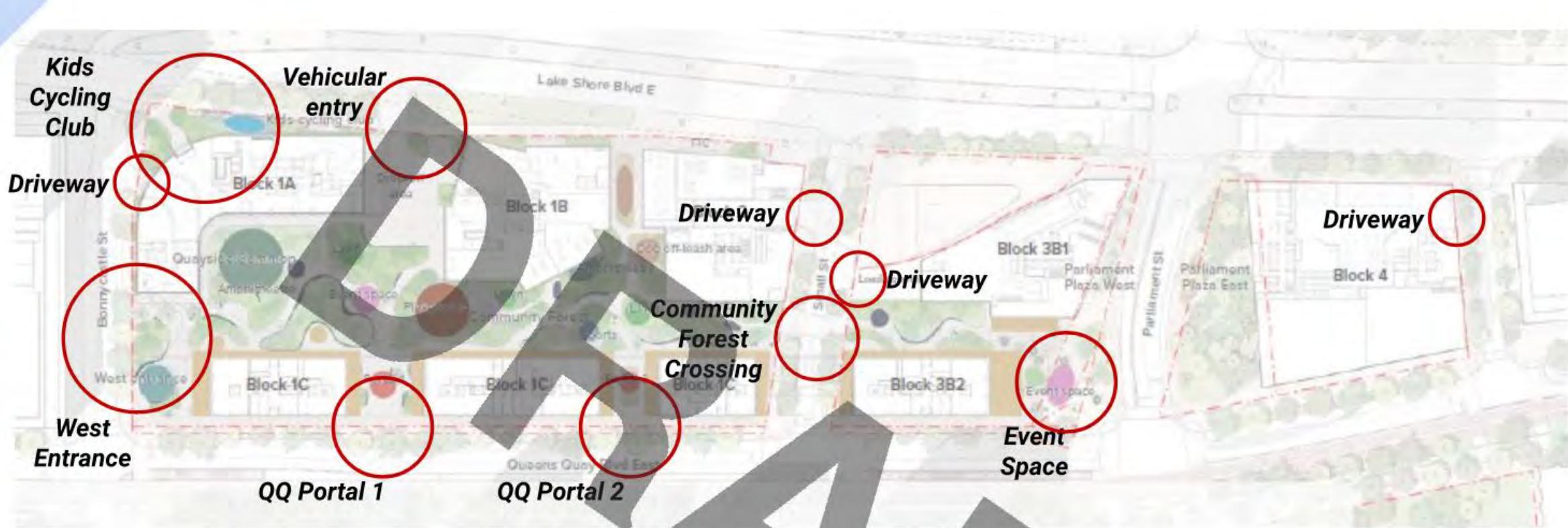
Programmatic elements tie two projects together



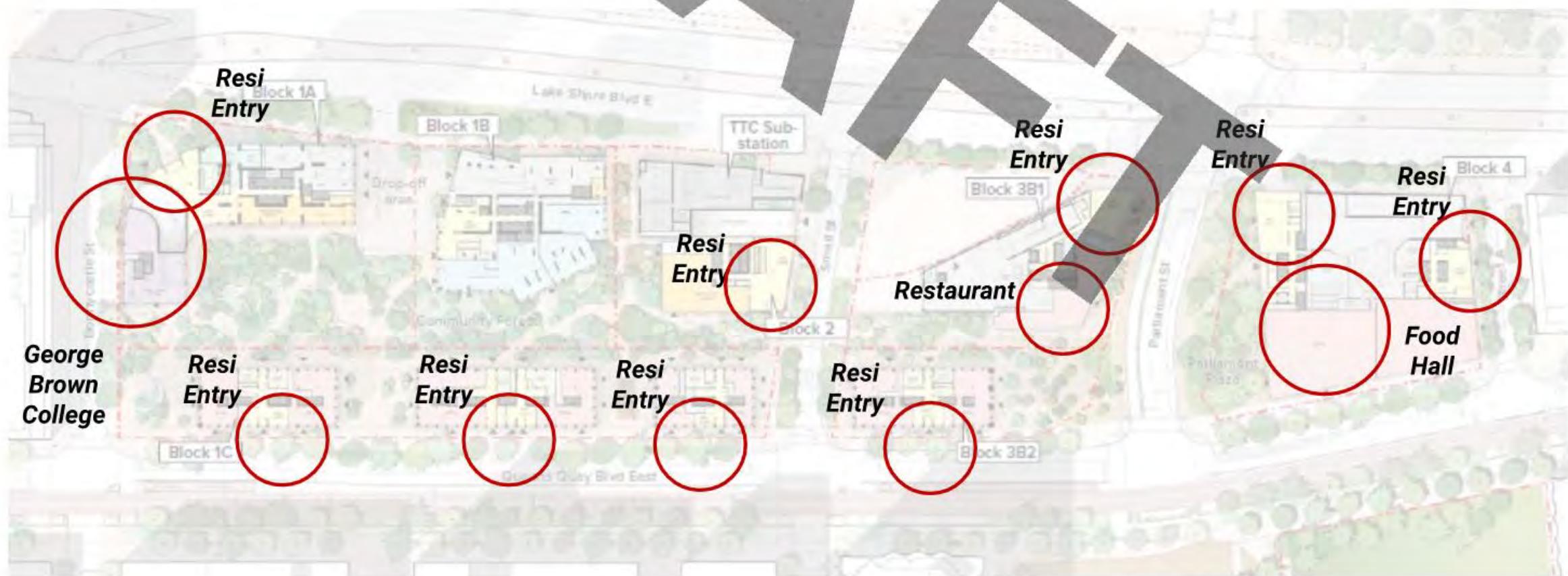
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Quayside Impact Coordination Based on development rezoning application

Ground floor outdoor uses



Ground floor indoor uses

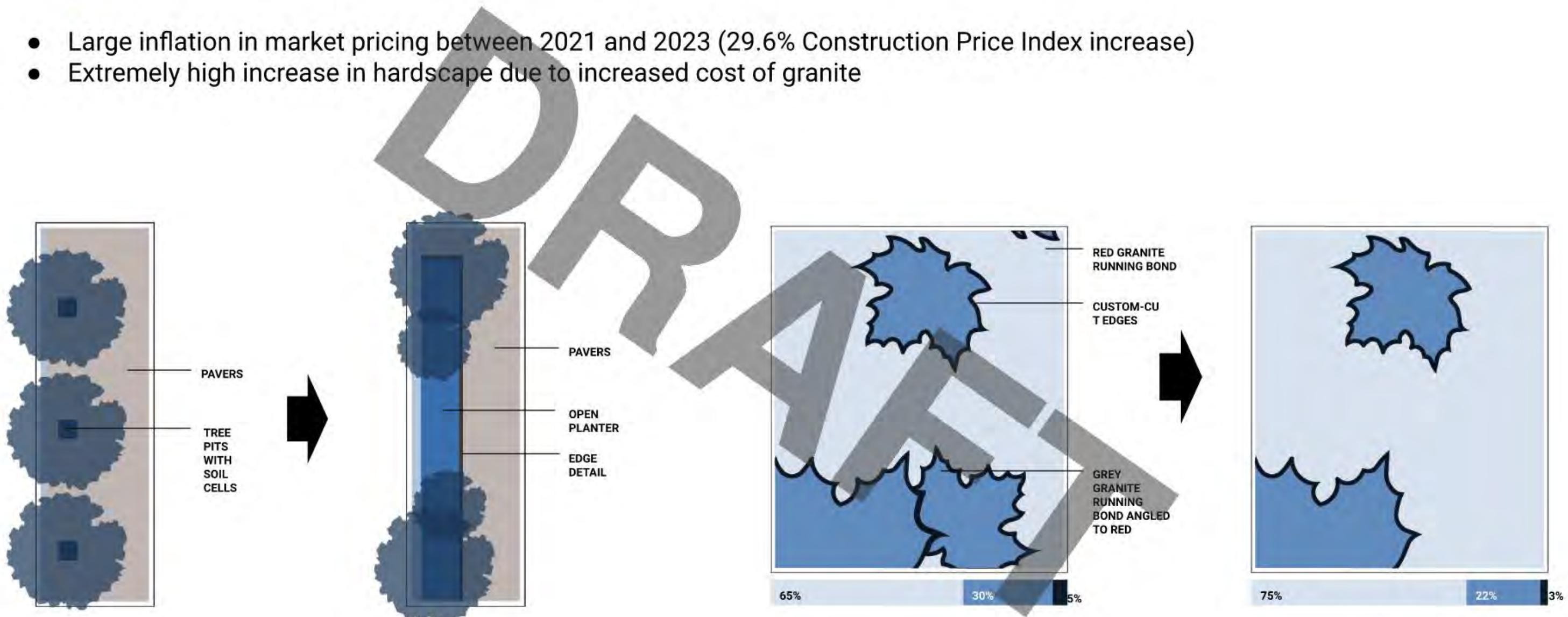


4

Win-Win Solutions

Reduce cost while maintaining project goals of continuity and healthy urban forest

- Large inflation in market pricing between 2021 and 2023 (29.6% Construction Price Index increase)
- Extremely high increase in hardscape due to increased cost of granite



Spatial optimizations

Eg. Less soil cells and more open planters

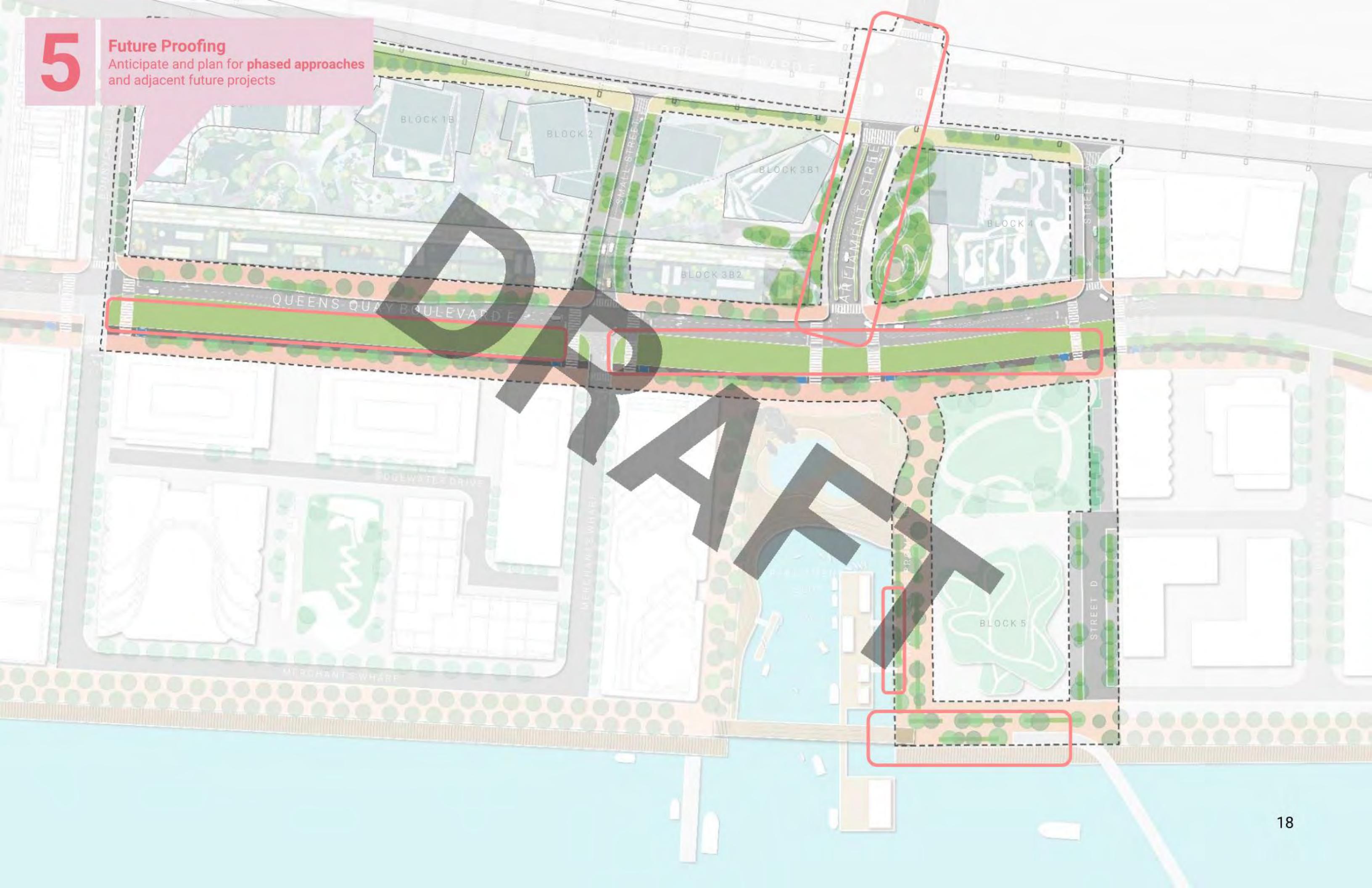
Detailed optimizations

Eg. detailing, bulk sourcing

5

Future Proofing

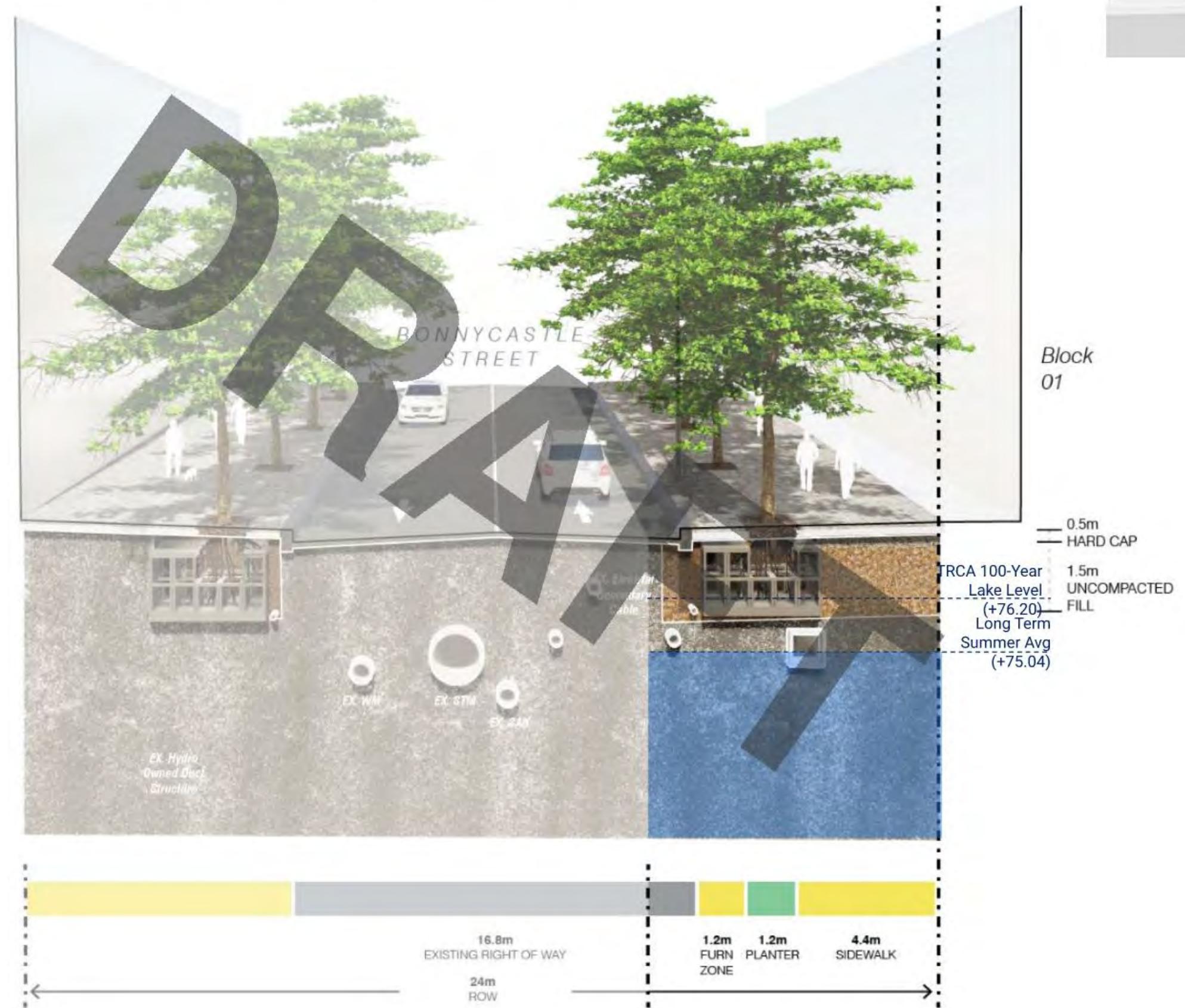
Anticipate and plan for phased approaches and adjacent future projects





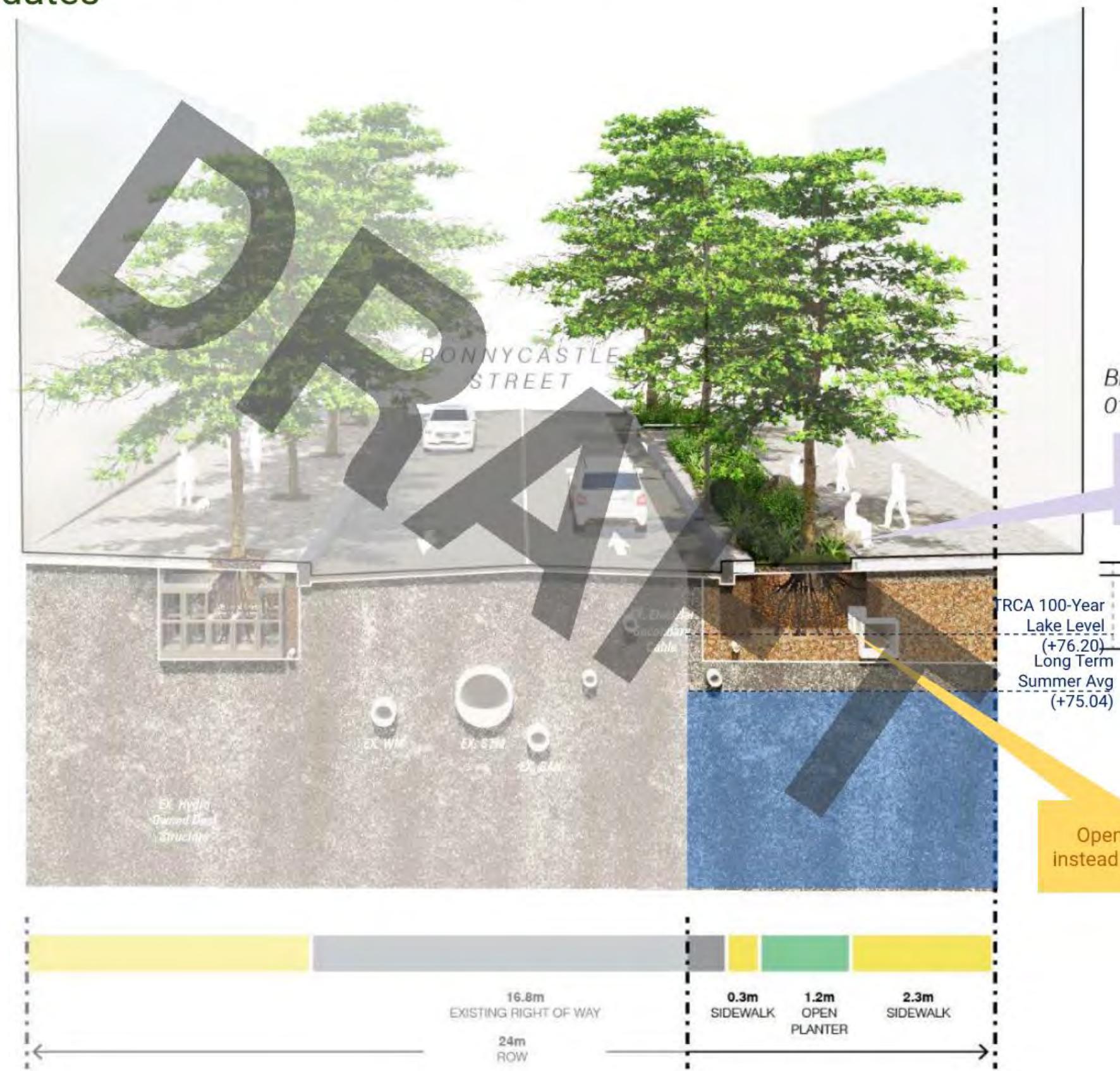
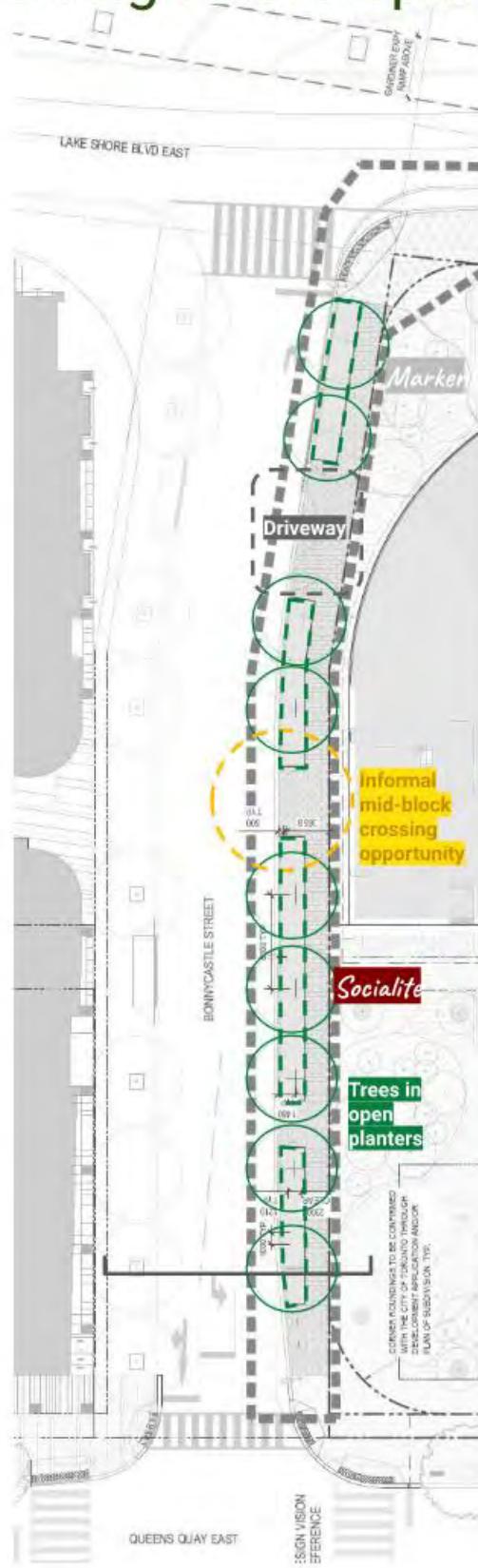
1 Bonnycastle Street (east side)

Schematic Design



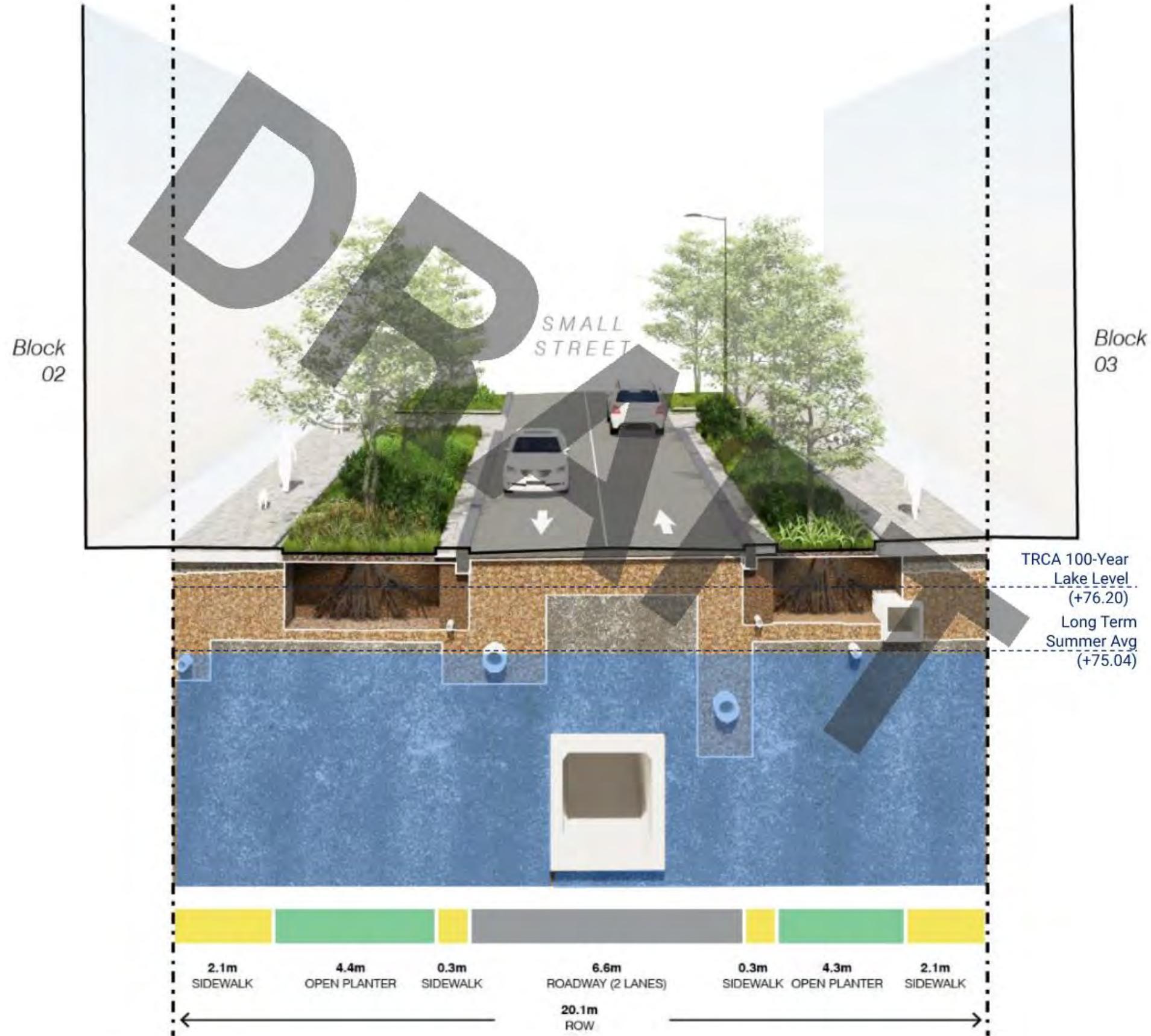
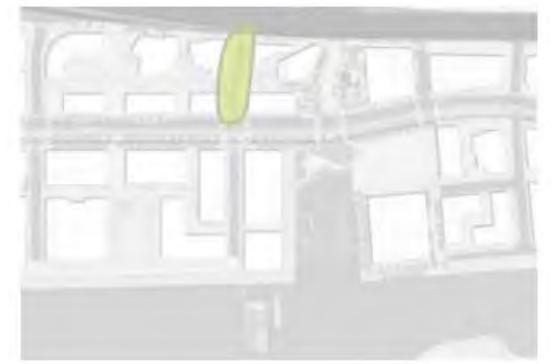
1 Bonnycastle Street (east side)

Design Development Updates



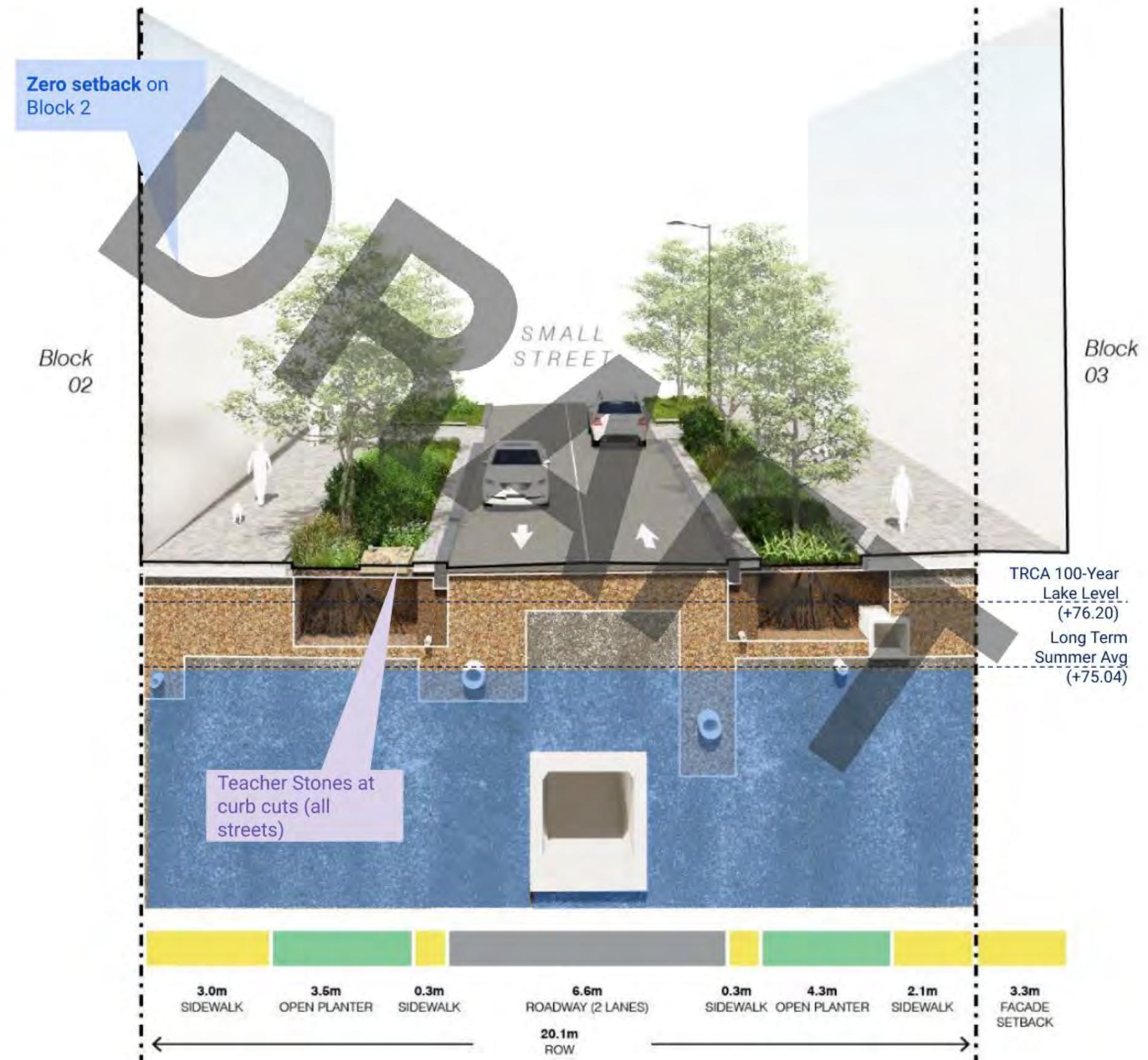
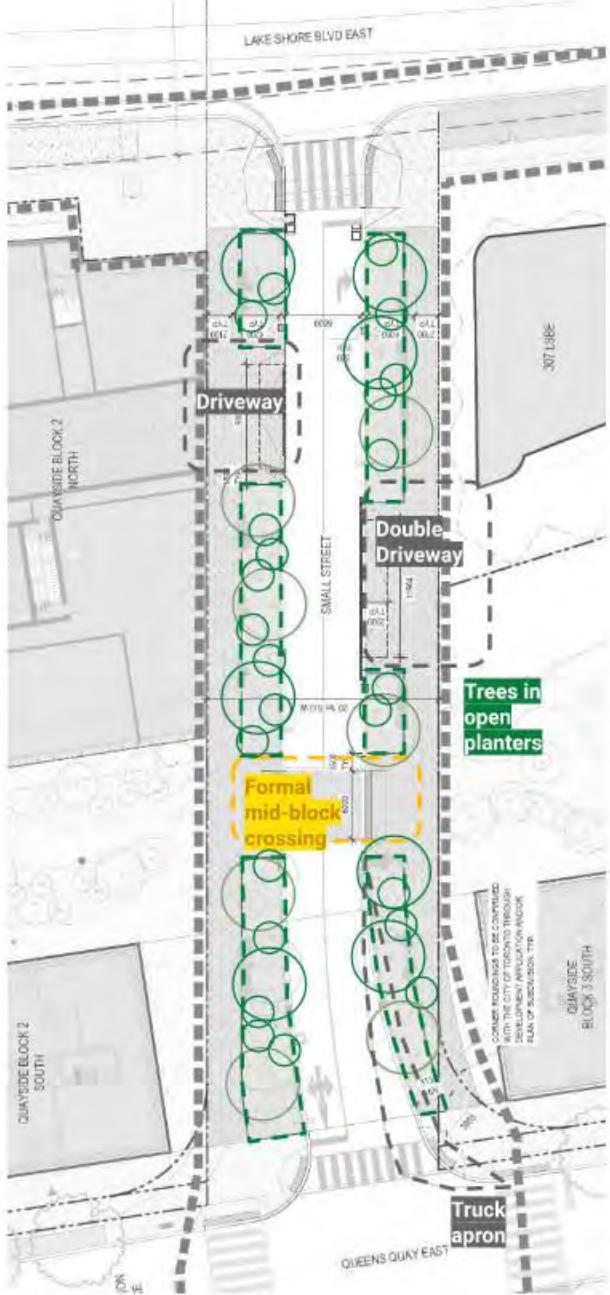
2 Small Street - pedway connector

Schematic Design



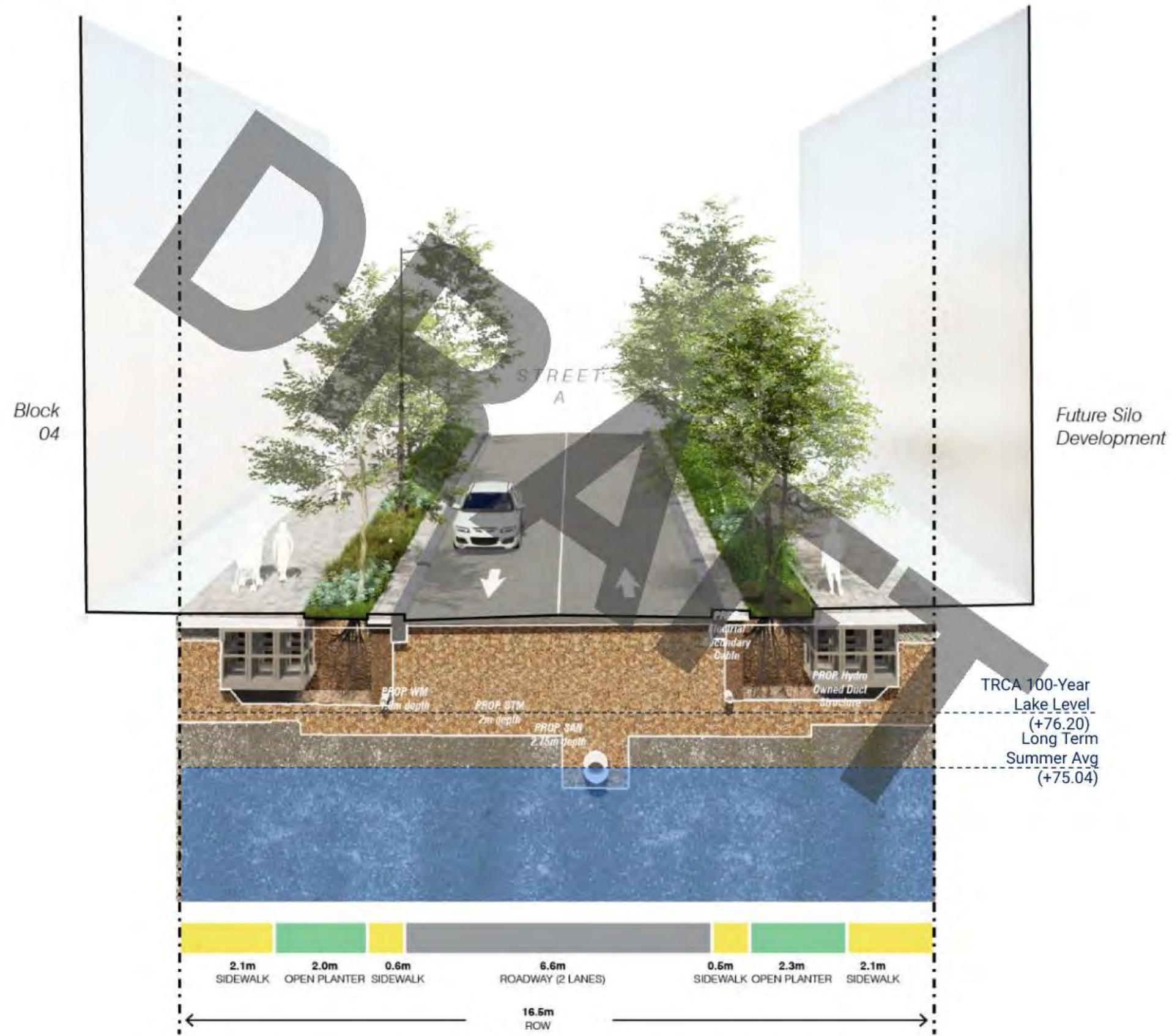
2 Small Street - pedway connector

Detailed Design Update



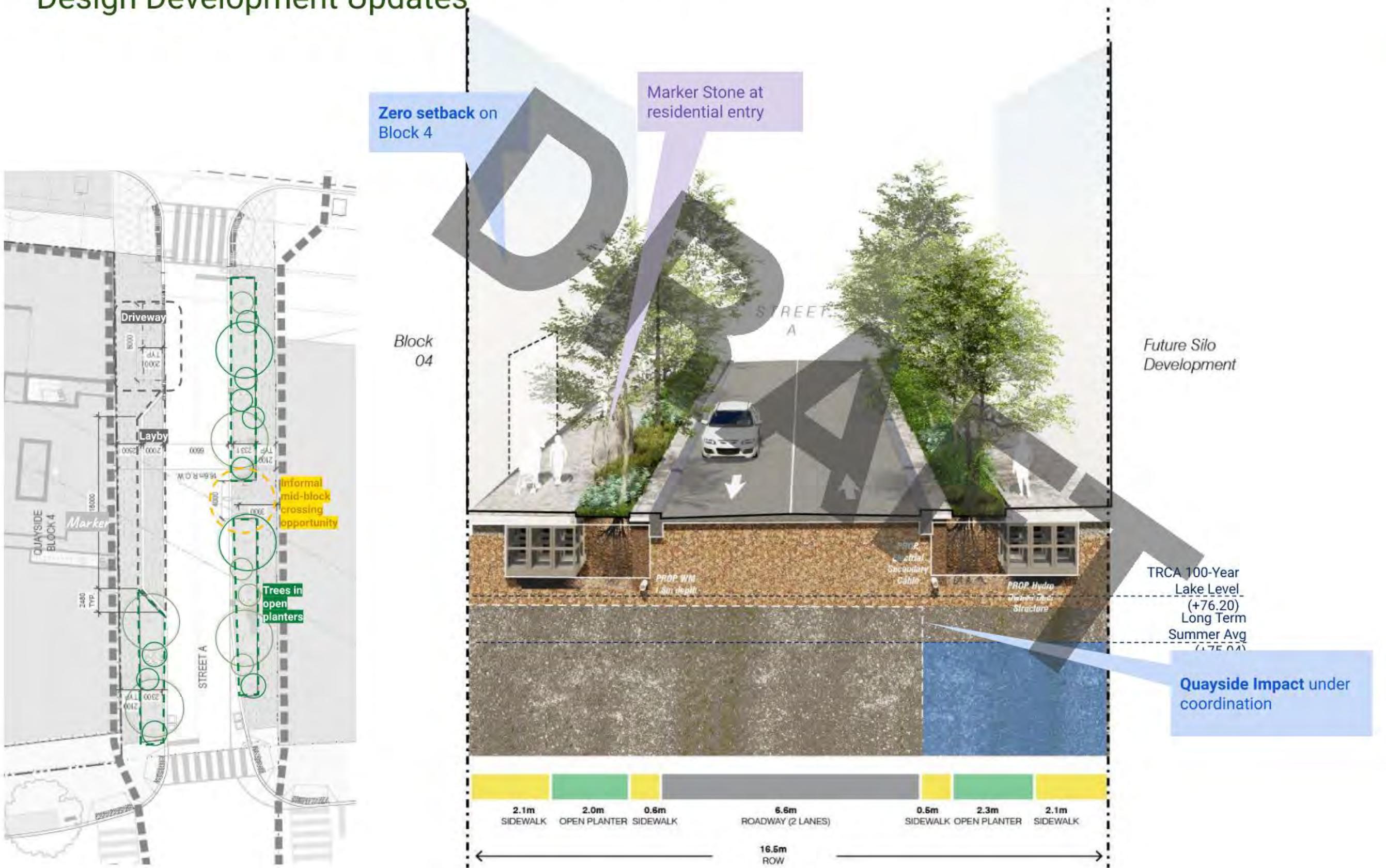
3 Street "A"

Schematic Design



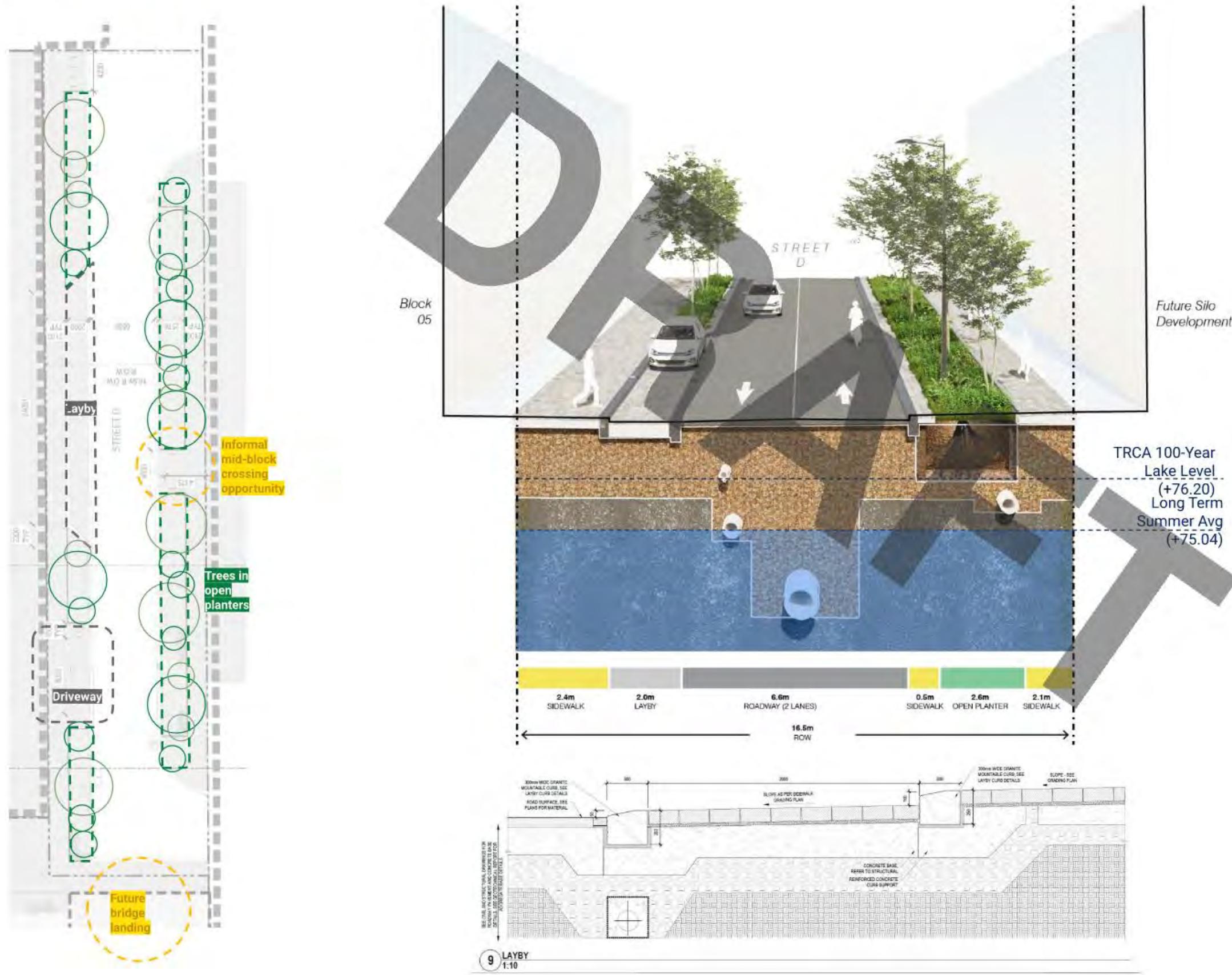
3 Street "A" - local street

Design Development Updates



4 Street "D" - local street

Detailed Design



Edge Restraints: takeaways



City of Toronto Recent Green Streets Projects
- Tall, trunk-focused protection
- Paired with grates
- Maintained by City



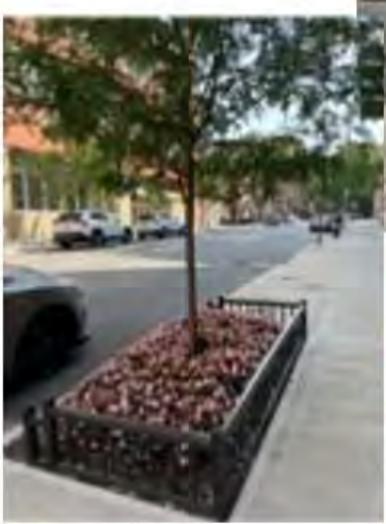
Existing Waterfront Palette
- Granite curb or galvanized steel toerail
- Groundcover underplanting
- Maintained by City



Tensioned Wire Cables
- Blend into planting areas
- Need tensioning



Wooden and biodegradable
- blend into park-like settings

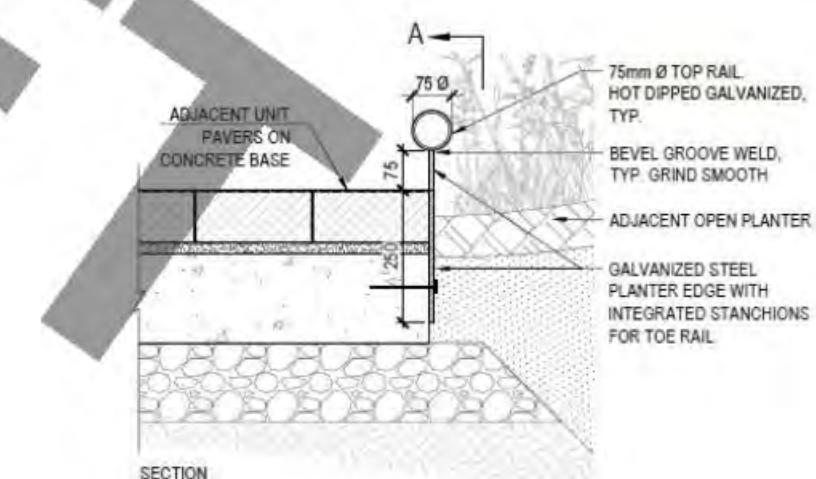
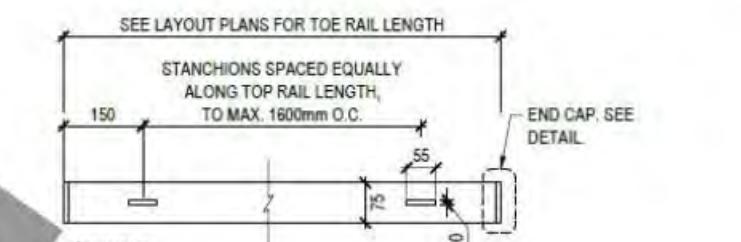
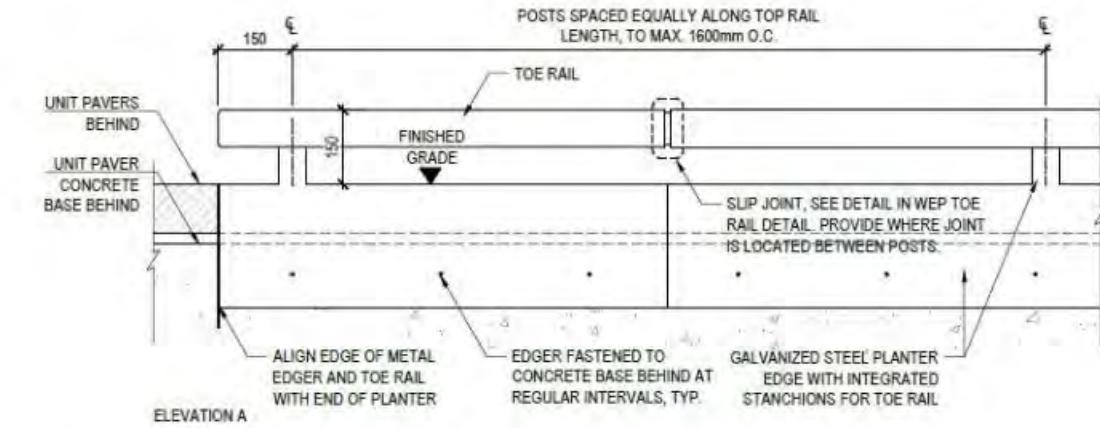
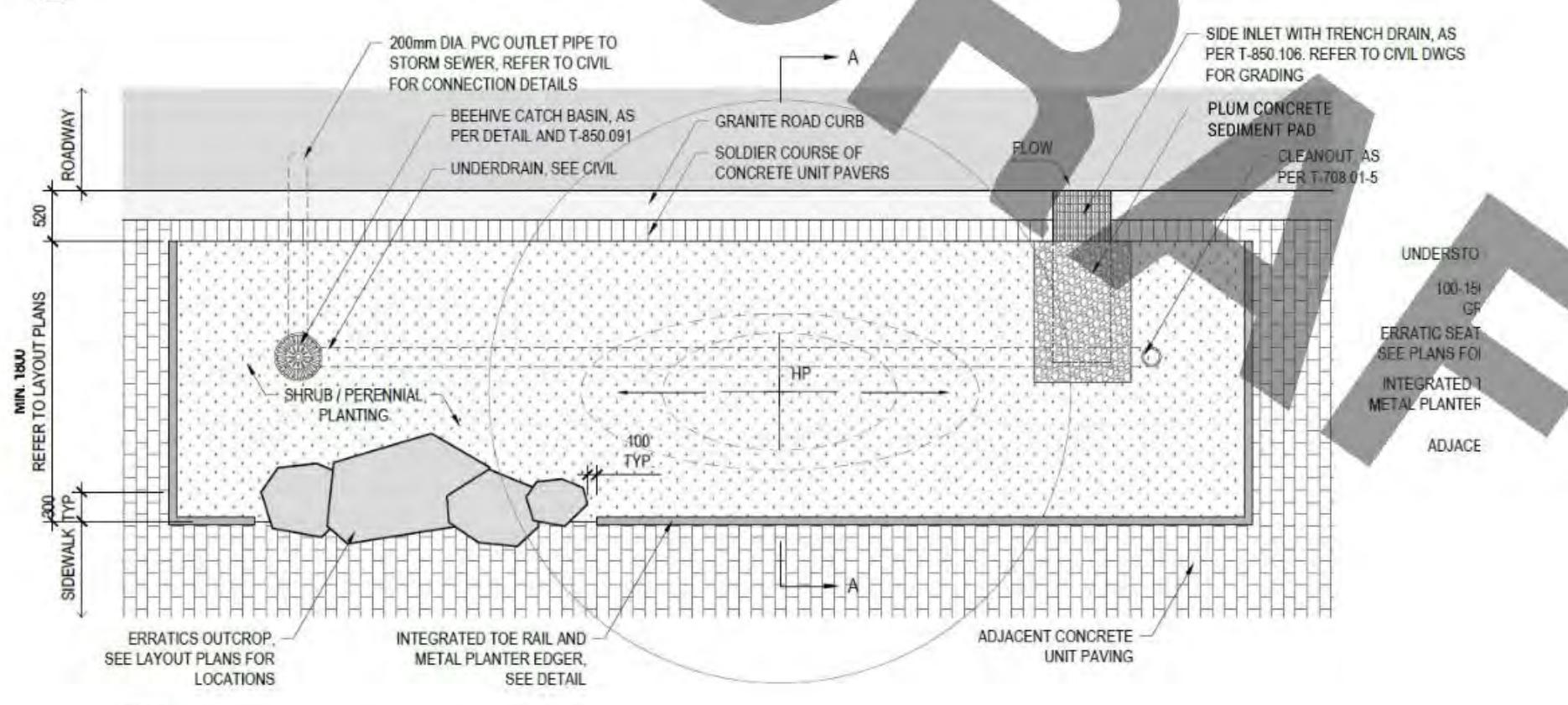
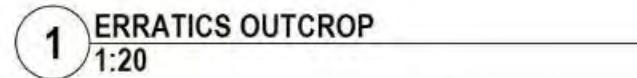
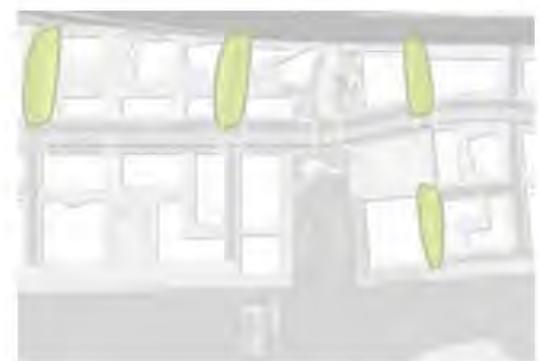


New York City Street Trees
- Underplanting regularly replaced
- Durable materials: stone or cast iron
- Signage reminding dog owners to keep dogs out
- Many maintained by neighbourhood residents

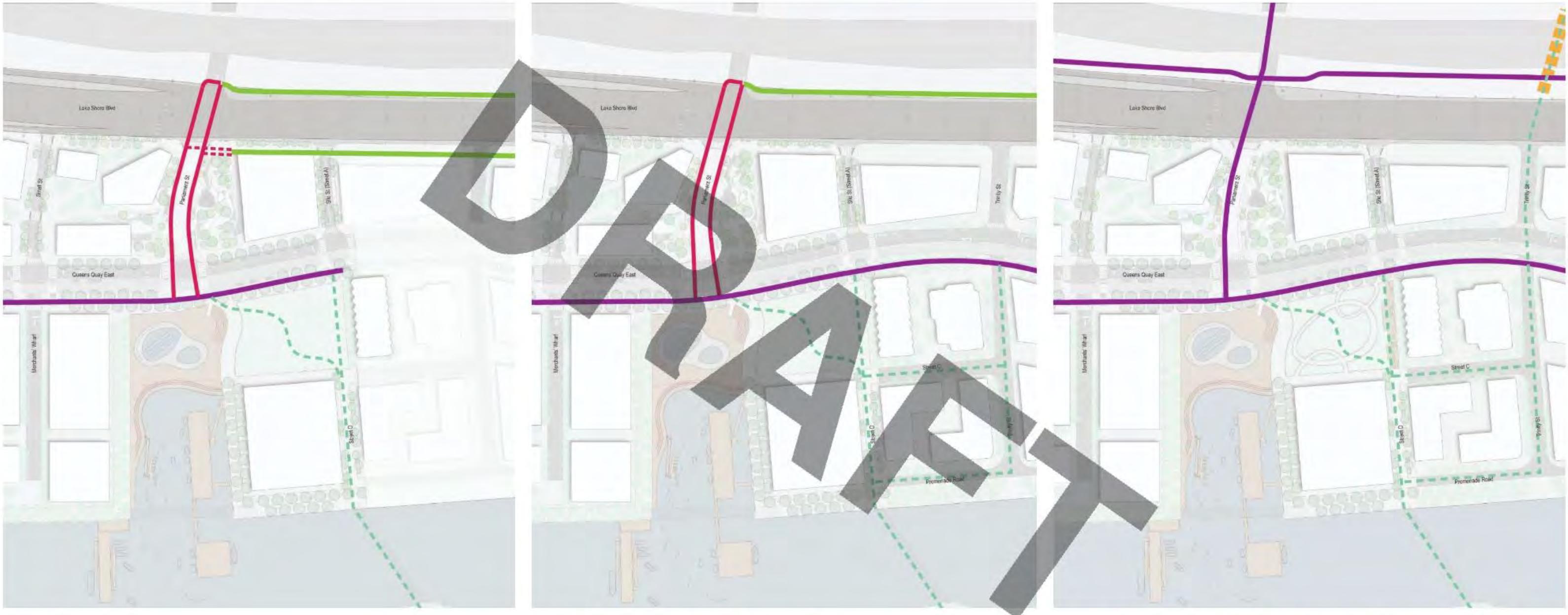


Boulders / erratics
- Informal seating elements
- Retaining function
- Irregular form

Neighborhood Grove edge details



Parliament Street & surrounding cycling network



Day One

QQE Extension to Cherry St

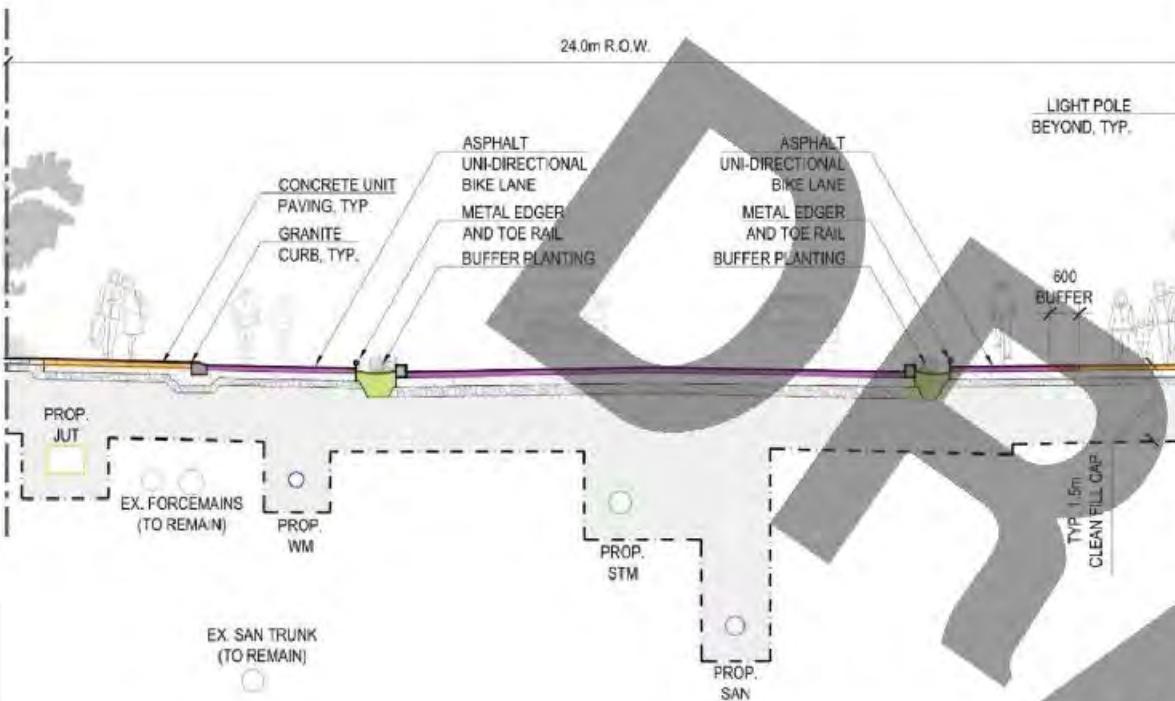
Lake Shore Public Realm and Parliament North

LEGEND

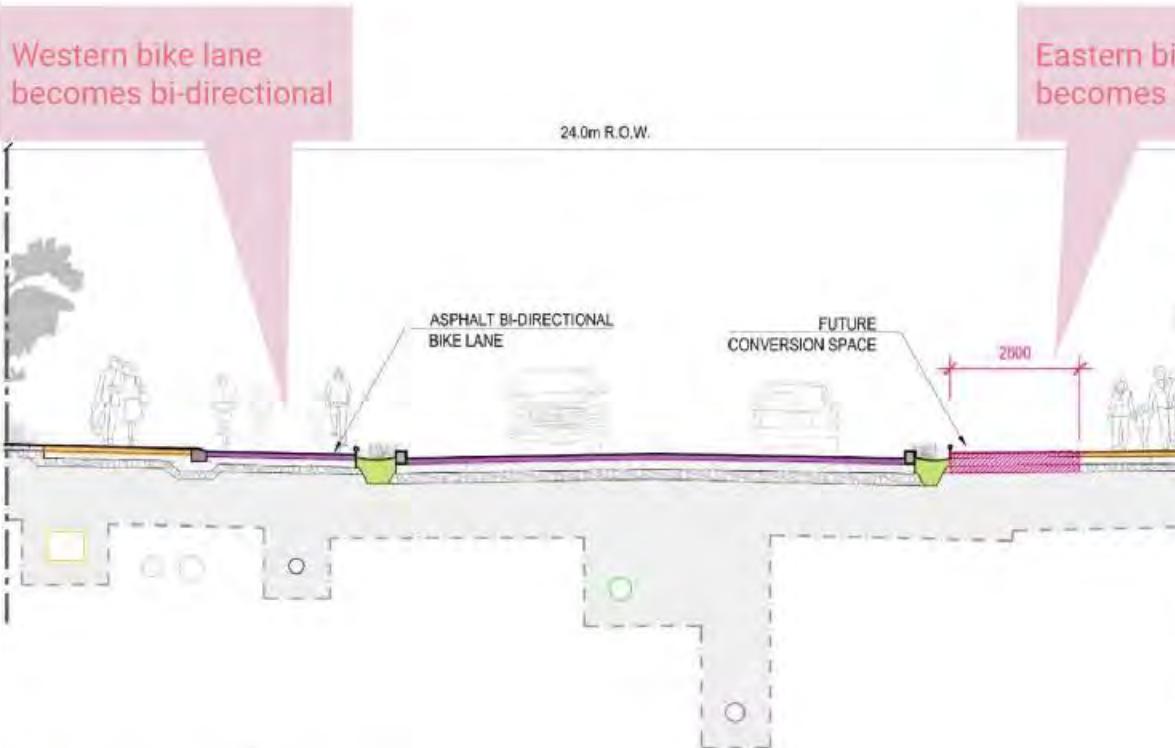
- EXISTING - BIDIRECTIONAL
- PROPOSED - UNIDIRECTIONAL
- PROPOSED - BIDIRECTIONAL
- - - INFORMAL CONNECTION

5 Parliament Street

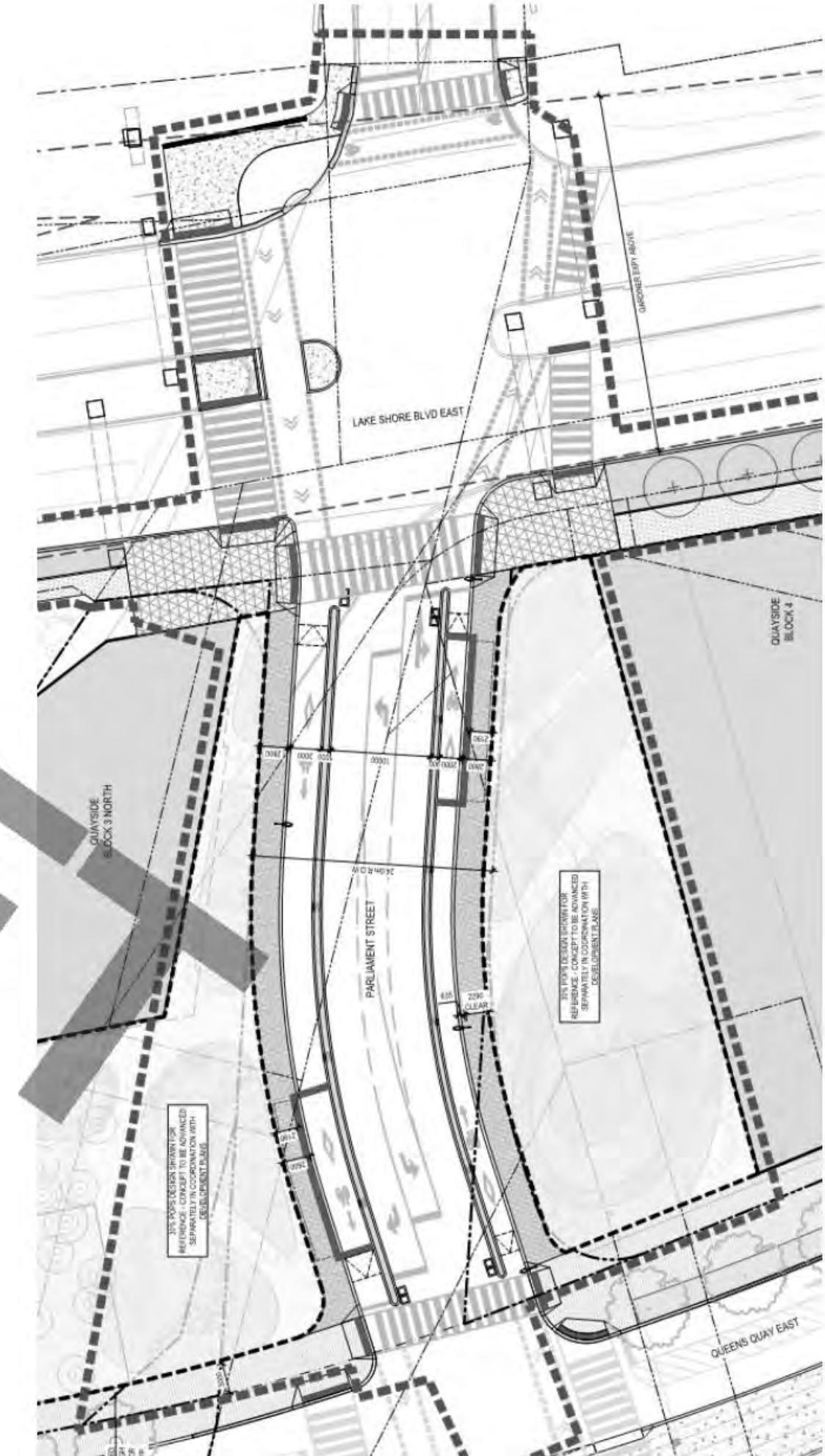
Design Development Updates



Opening day condition



Potential for future conversion



Material and planting palette - inner streets



MATERIALS

Hardscape & Edges



Concrete Unit Pavers
Pedestrian Walkway



Granite Curbs
Barrier curb for vehicles



Metal Toe Rail, Teacher Stone, Metal Grate
Edge protection for planters and green infrastructure details

PLANTING

*Final plant selection will be informed by outcomes of engagements with Local Indigenous Environmental and Plant Culture Subject Matter Experts

Trees & Large Shrubs



Honey Locust (Bonnycastle & Small St)
Gleditsia triacanthos



Pin Oak
Quercus palustris



Eastern Redbud
Cercis canadensis



Cucumber Tree
Magnolia acuminata



Flowering Dogwood
Cornus florida

FURNISHINGS



Erratic boulders and River Rock
Informal seating edges and placemaking elements



City Standard Bike Racks
Classic and robust



New Waterfront Signature Lighting
Aluminium pole with approved new fixture

SHRUBS AND UNDERSTORY



Little Bluestem
Schizachyrium scoparium



Tufted Hair Grass
Deschampsia cespitosa



Abbotswood Potentilla
Potentilla fruticosa 'Abbotswood'



Gro-Low Fragrant Sumac
Rhus aromatica 'Gro Low'



Dwarf Ninebark
Physocarpus opulifolius 'Nanus'



Downy Phlox
Phlox pilosa



Bee Balm
Monarda didyma



Wild Lupine
Lupinus perennis



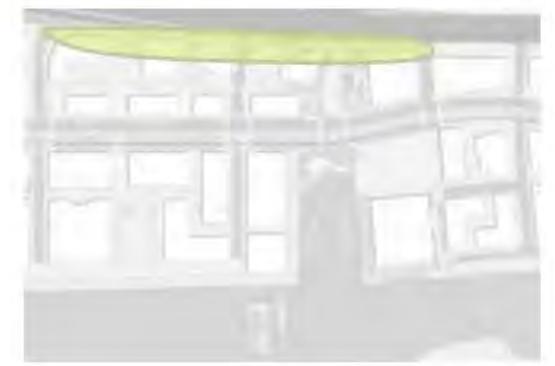
New Jersey Tea
Ceanothus americanus



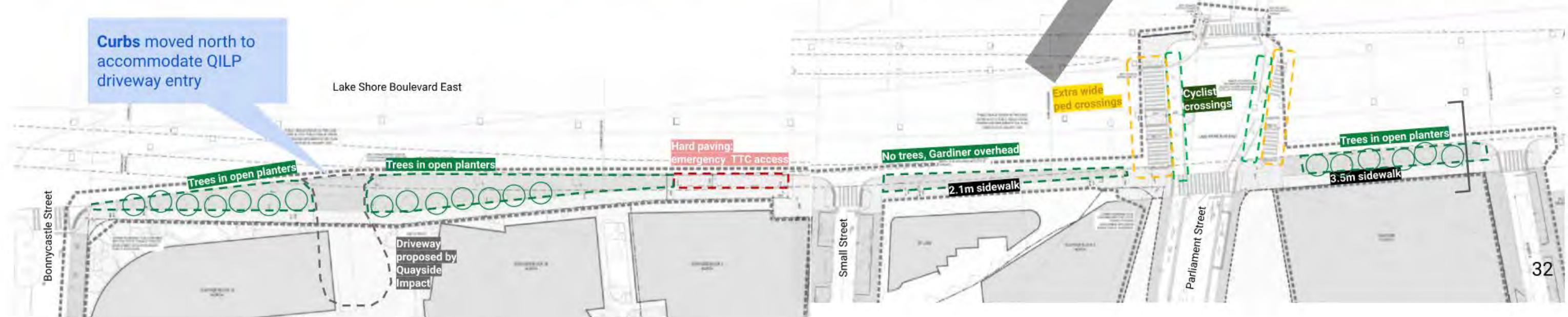
Canada Wild Rye
Elymus canadensis

6 Lake Shore Boulevard E (south side)

Implementing approved public realm plan



Findings from
TRCA pilot
monitoring are
forthcoming



Material and planting palette - Lake Shore Public Realm

MATERIALS

Hardscape & Edges



Exposed Aggregate Concrete with granite aggregate and special saw cuts
Intersection corners



Permeable Unit Pavers
Pedestrian Walkway



CIP Concrete Curbs
Vehicular barrier curb and paving edge

PLANTING

*Final plant selection will be informed by outcomes of engagements with Local Indigenous Environmental and Plant Culture Subject Matter Experts

TREES & LARGE SHRUBS



American Elm
Ulmus americana 'Valley Forge'
Ulmus americana 'Princeton'

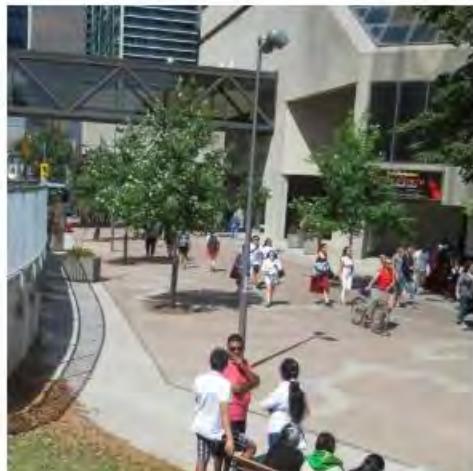


Homestead Elm
Ulmus 'Homestead'



Accolade Elm
Ulmus japonica x Wilsoniana 'Morton'

FURNISHINGS



Pedestrian Lighting (consistent with JLFT and LSB)
Aluminium with Olivo Candelabra

SHRUBS AND UNDERSTORY



Switchgrass
Panicum virgatum



Little Bluestem
Schizachyrium scoparium



Lanceleaf Coreopsis
Coreopsis lanceolata



October Skies Aster
Aster oblongifolius 'October skies'

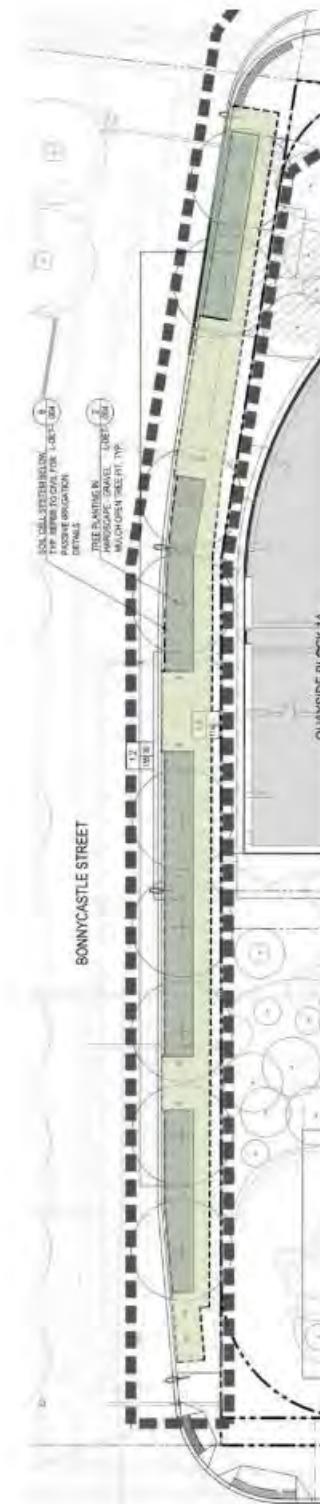


Lakeshore Boulevard East,
Green Infrastructure Pilot, 2022

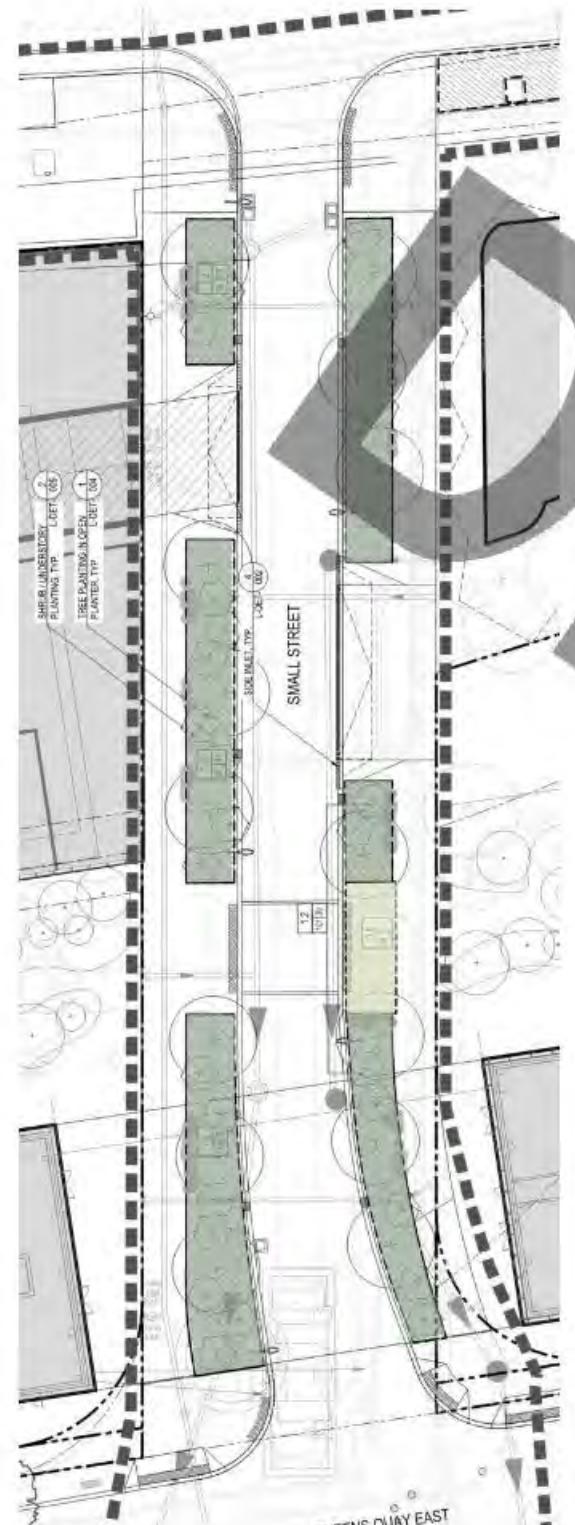


*Species to be informed by outcomes of LSB planting pilot

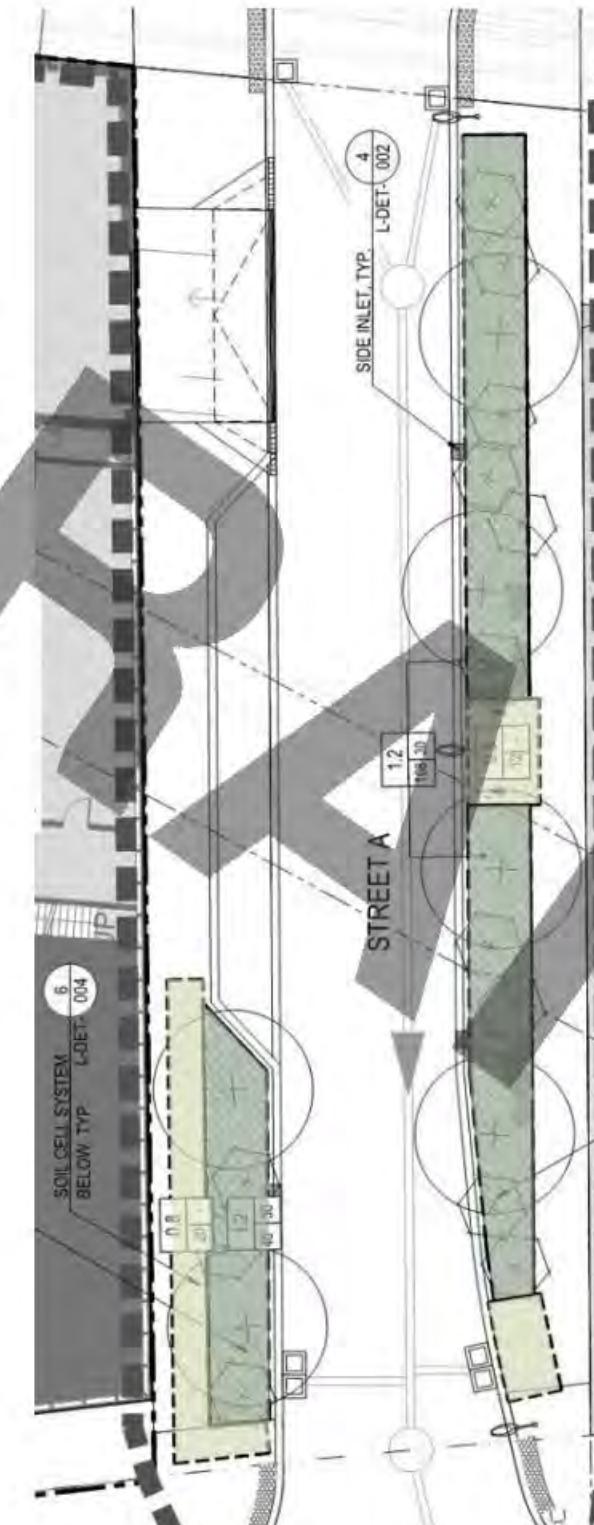
Soil Volume



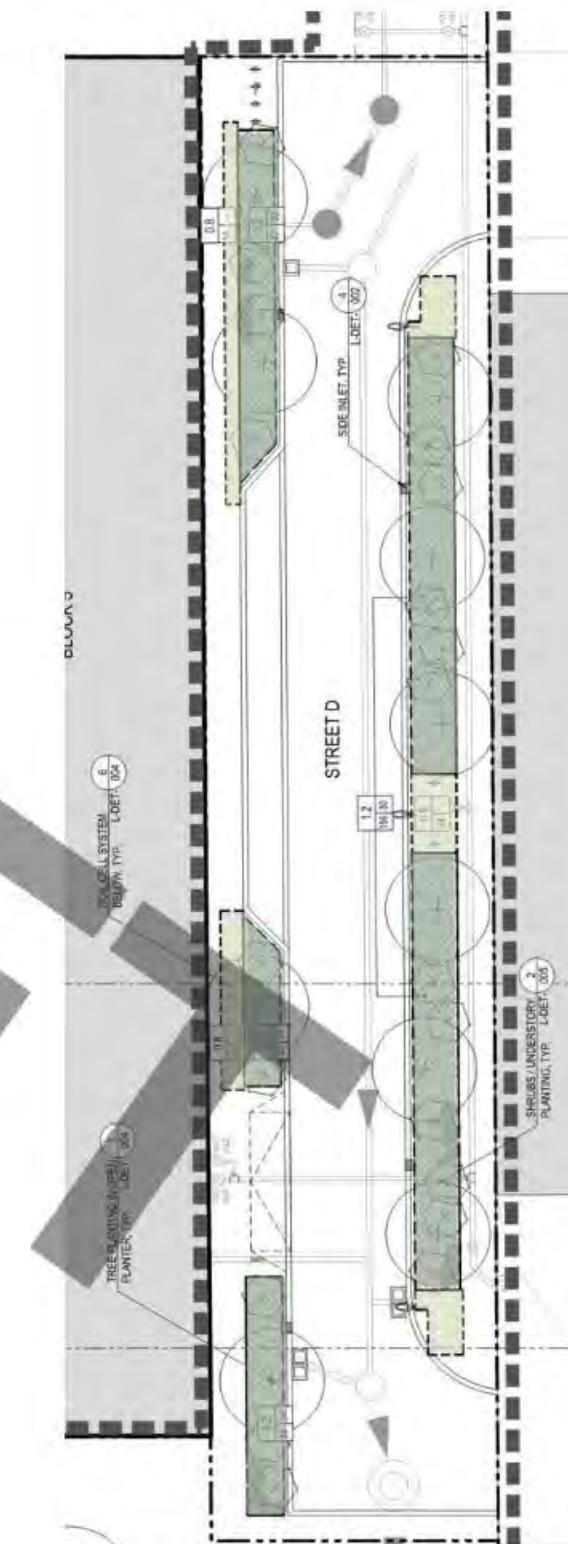
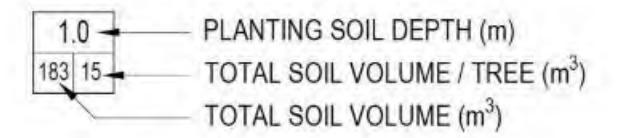
Bonnycastle Street
30m³ / tree, combination
of open planters with soil
cells



Small Street
31 - 38m³ / tree, open
planters



Street A
30m³ / tree, combination of open
planters with soil cells

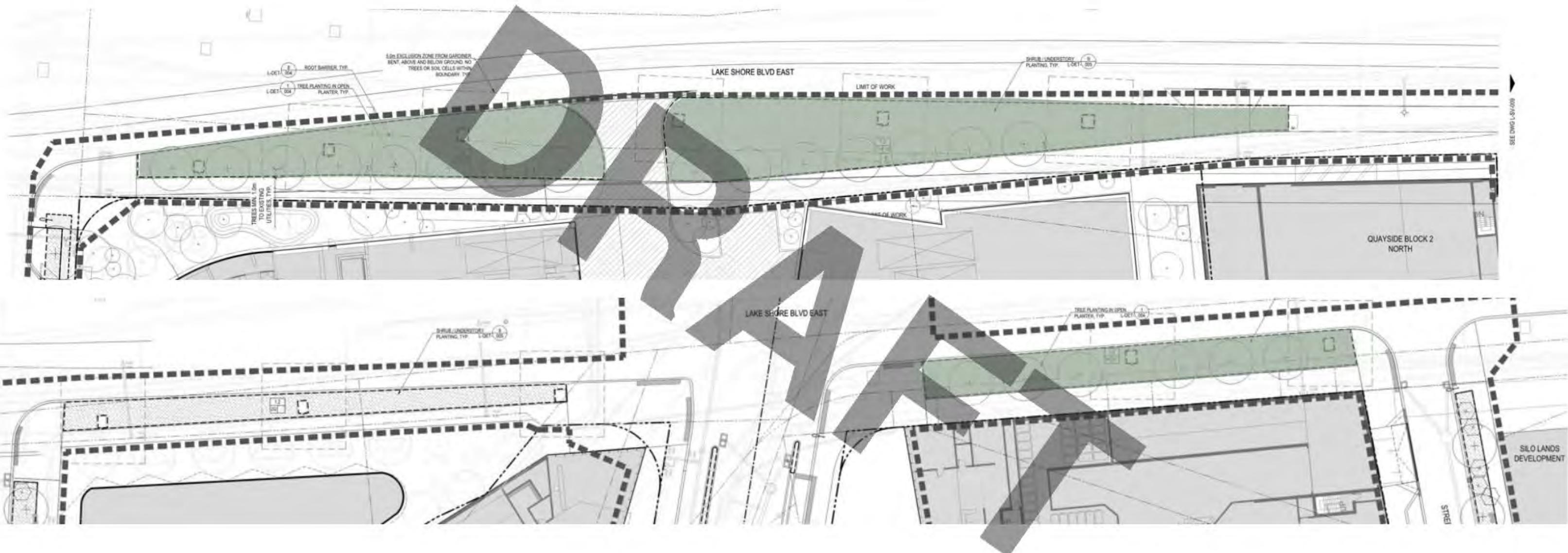
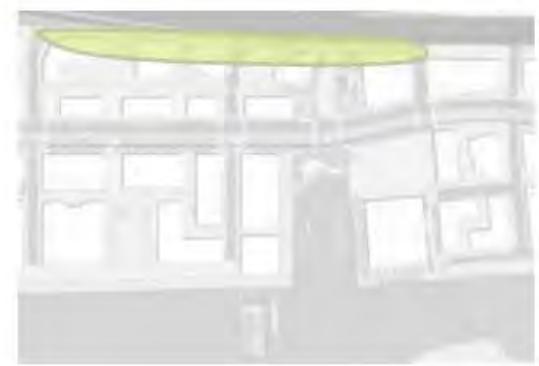


Street D
30 - 34 m³ / tree, combination of
open planters with soil cells



Soil Volume

1.0	PLANTING SOIL DEPTH (m)
183 15	TOTAL SOIL VOLUME / TREE (m ³)
	TOTAL SOIL VOLUME (m ³)



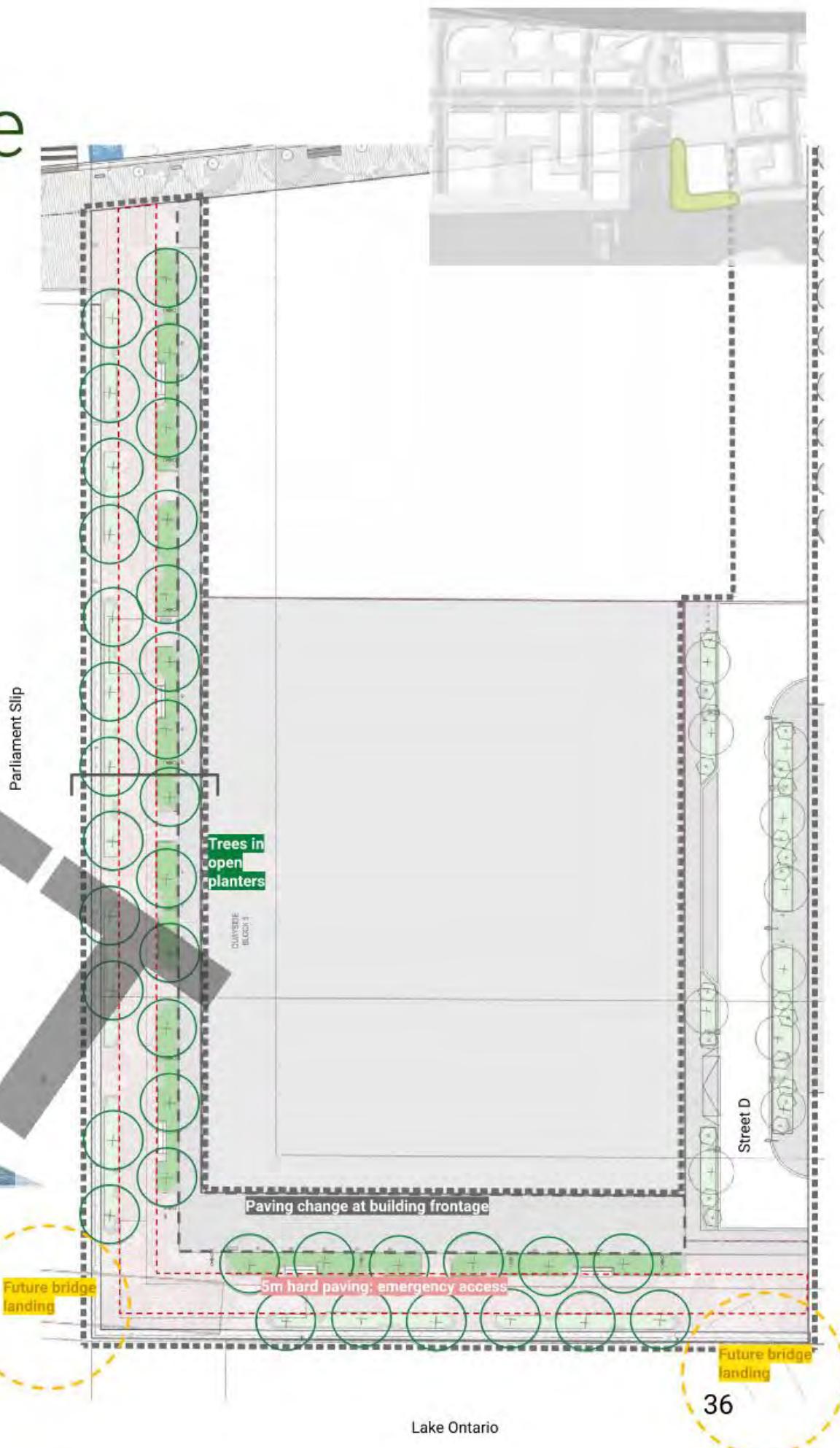
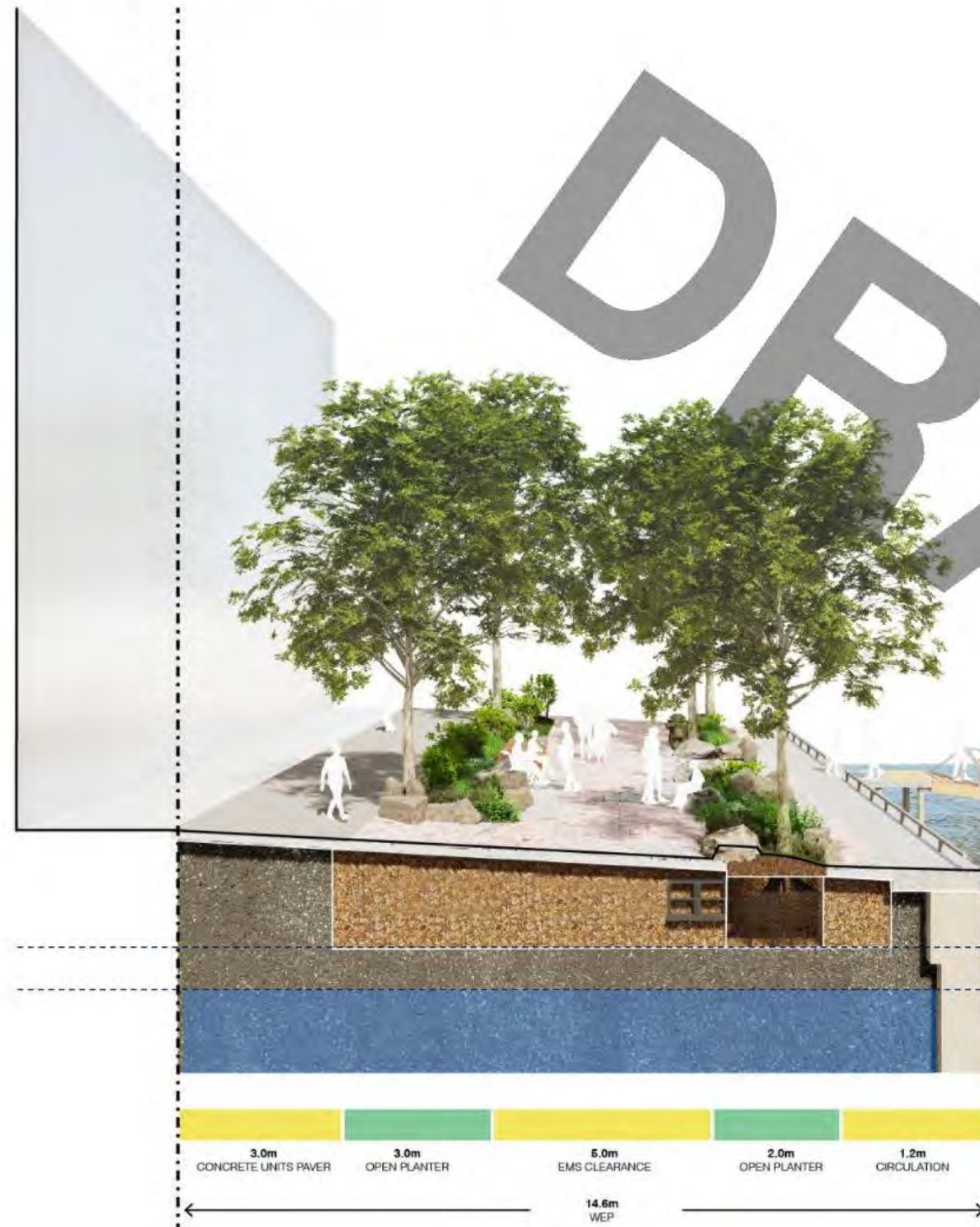
Open Planters

Lake Shore Boulevard

63 - 49 m³ / mature tree spacing, open planters

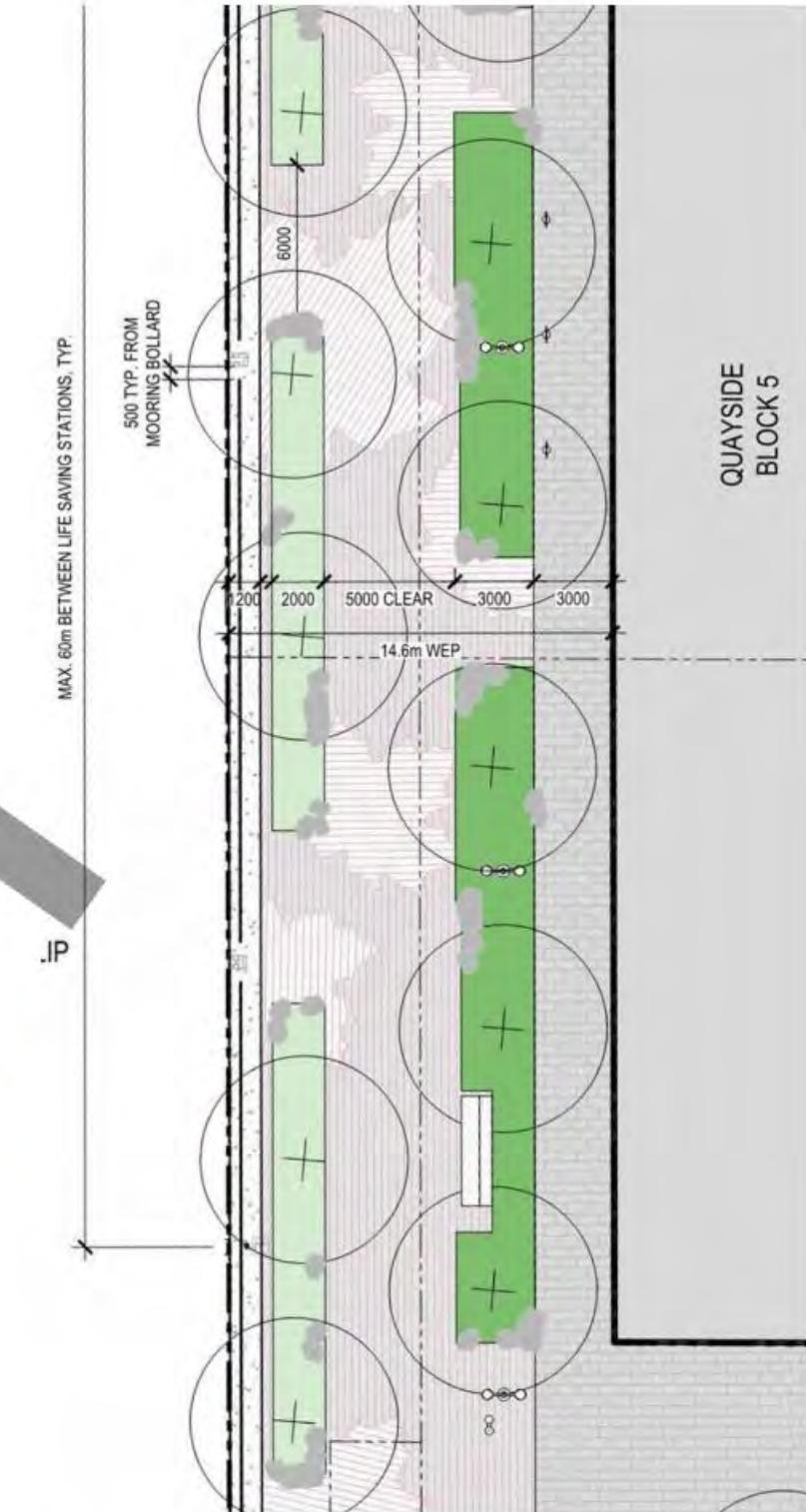
7 Water's Edge Promenade Quayside

Design Development



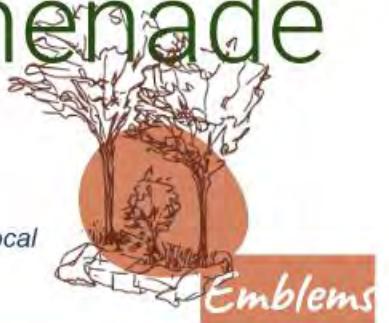
7 Water's Edge Promenade Quayside

Design Development with storytelling stones



Typical Furnishings Layout

Material and planting palette - Water's Edge Promenade

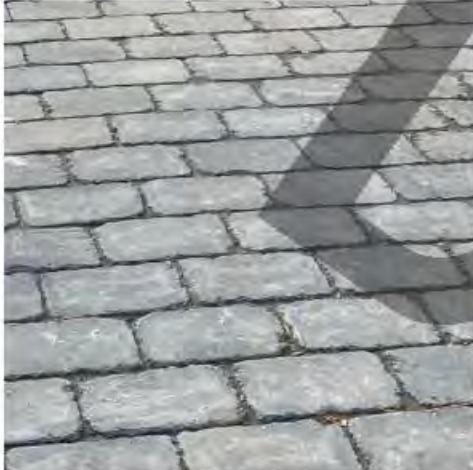


MATERIALS

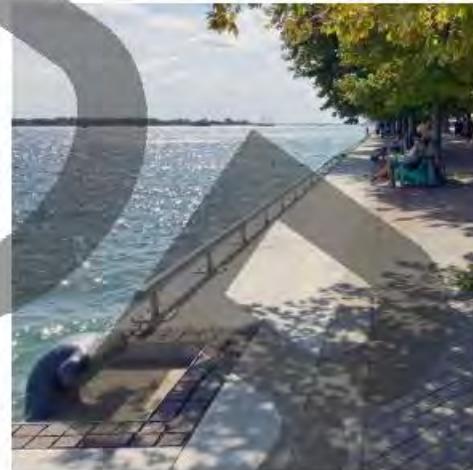
Hardscape & Edges



Granite Setts with Maple Leaf Pattern
Pedestrian Promenade (Waterside)



Concrete Unit Pavers
Pedestrian Walkway (Building Edges)



Metal Toe Rail
Edge protection

FURNISHINGS



Waterfront Signature Benches with new armrest detail
Thermally modified wood and aluminium



City Standard Bike Racks
Classic and robust



Waterfront Signature Lighting
Wood and aluminium with Olivio



Erratic boulders and River Rock
Informal seating edges and placemaking elements

PLANTING

*Final plant selection will be informed by outcomes of engagements with Local Indigenous Environmental and Plant Culture Subject Matter Experts

TREES & LARGE SHRUBS



Freeman Maple
Acer x freemanii
3 varieties



Striped Maple
Acer pensylvanicum



Dogwood
Cornus alternifolia

SHRUBS AND UNDERSTORY



Spicebush
Lindera benzoin



Carrionflower
Smilax herbacea



Canada mayflower
Maianthemum canadense



Solomon's Seal
Polygonatum pubescens



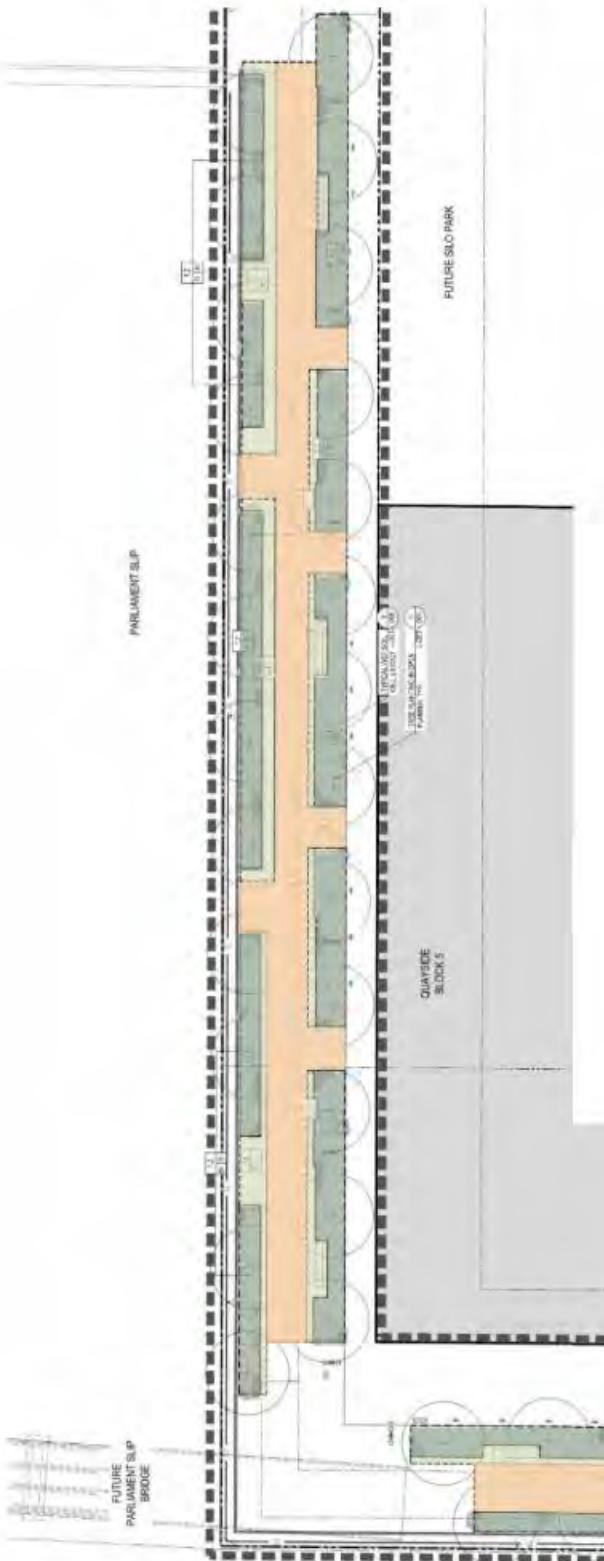
Wild Sarsaparilla
Aralia nudicaulis



Foamflower
Tiarella cordifolia

Soil Volume

1.0 PLANTING SOIL DEPTH (m)
 183 TOTAL SOIL VOLUME / TREE (m³)
 15 TOTAL SOIL VOLUME (m³)



DRAFT

Shared Soil Cells

Open Planters

Structural Soil

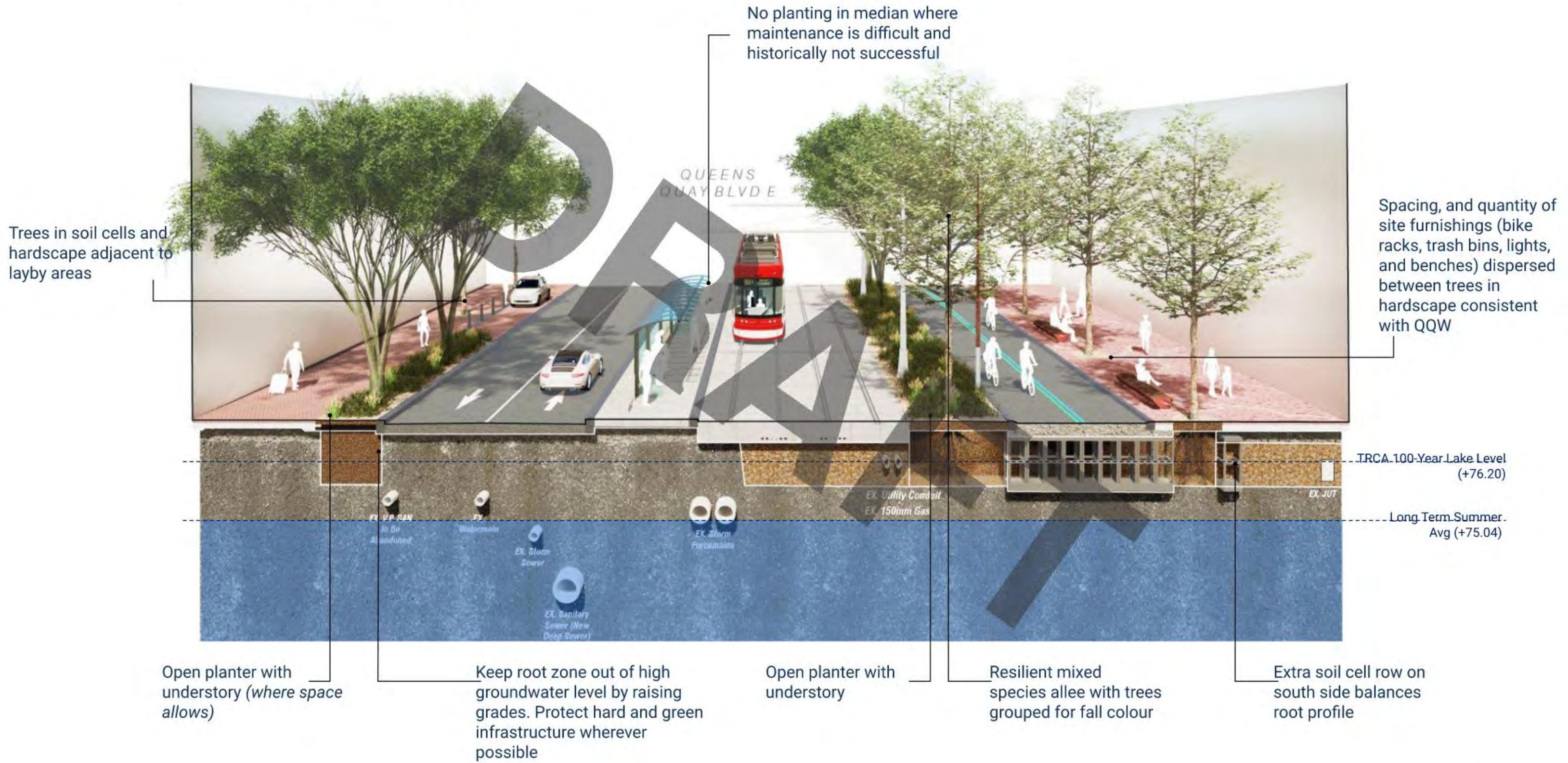


New research and innovation opportunity on waterfront living laboratory: **Freeman maple biochar top dressing study** will inform soil specs and maintenance plan

Water's Edge Promenade

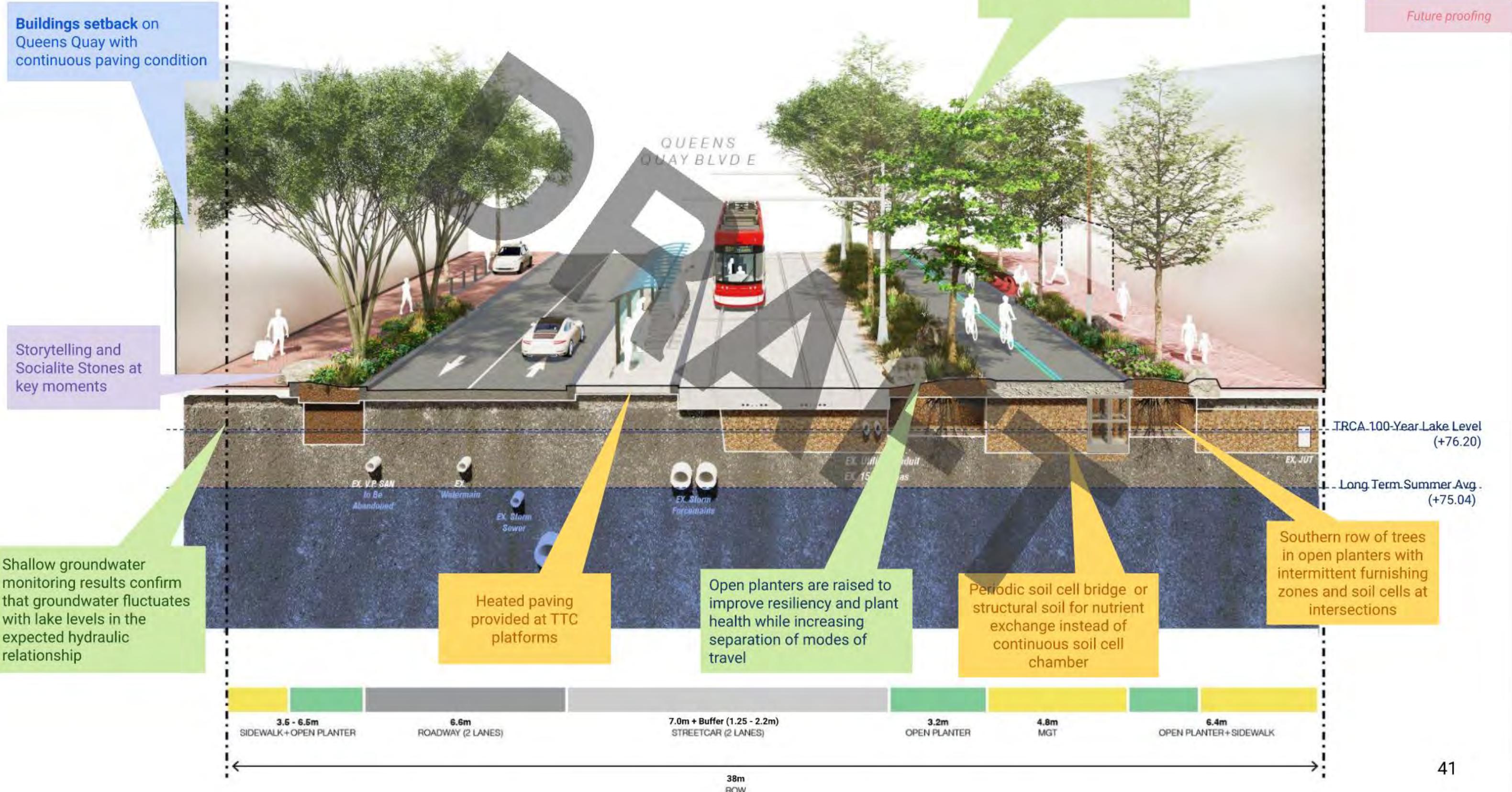
30m³ / tree spacing, combined open planters and soil cells

8 Queens Quay East 30% Design



8 Queens Quay East 60% Design

Species selection optimized based on site research and waterfront living laboratory

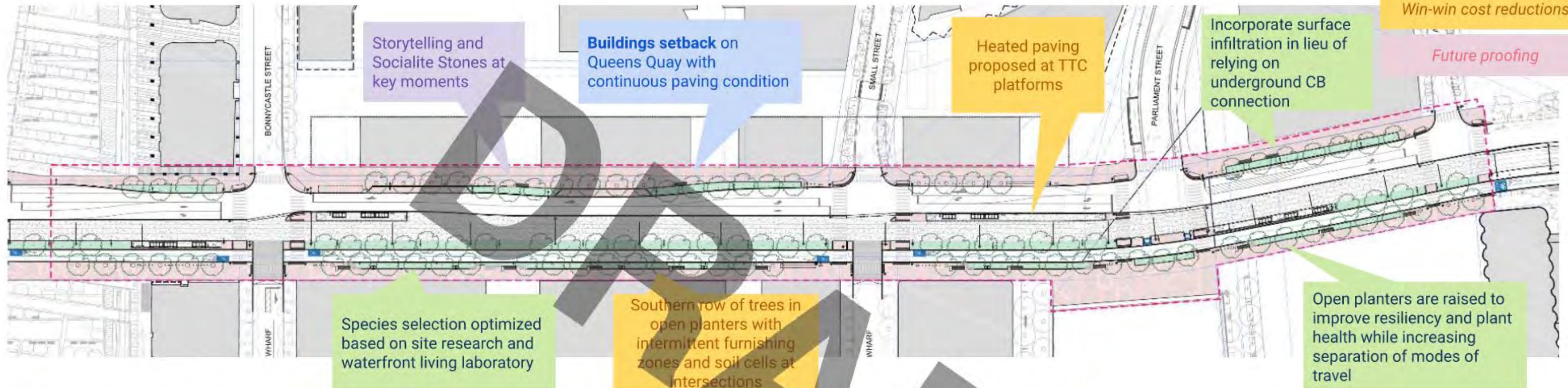


8 Queens Quay East 60% Design

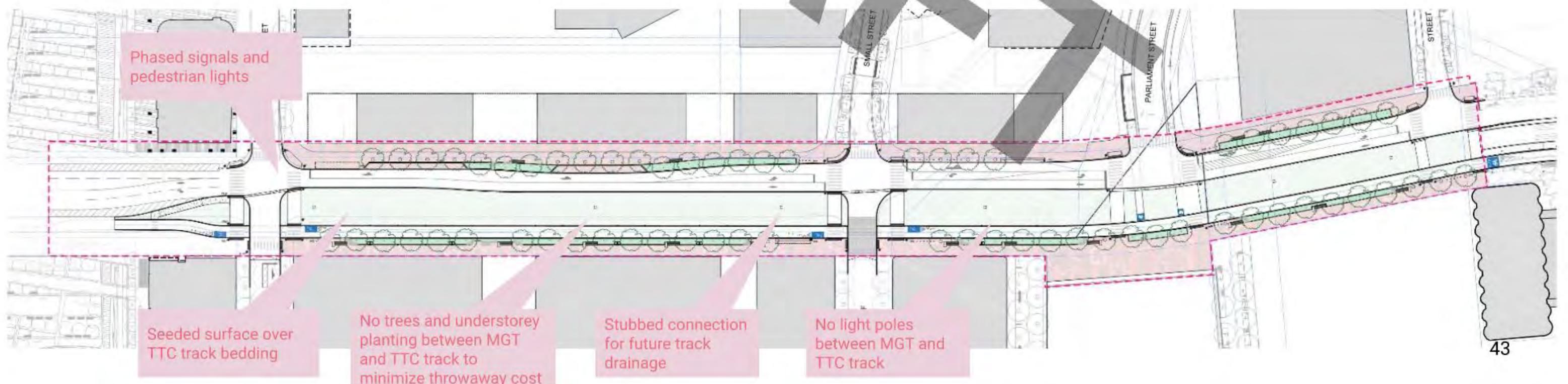
Quayside Phase



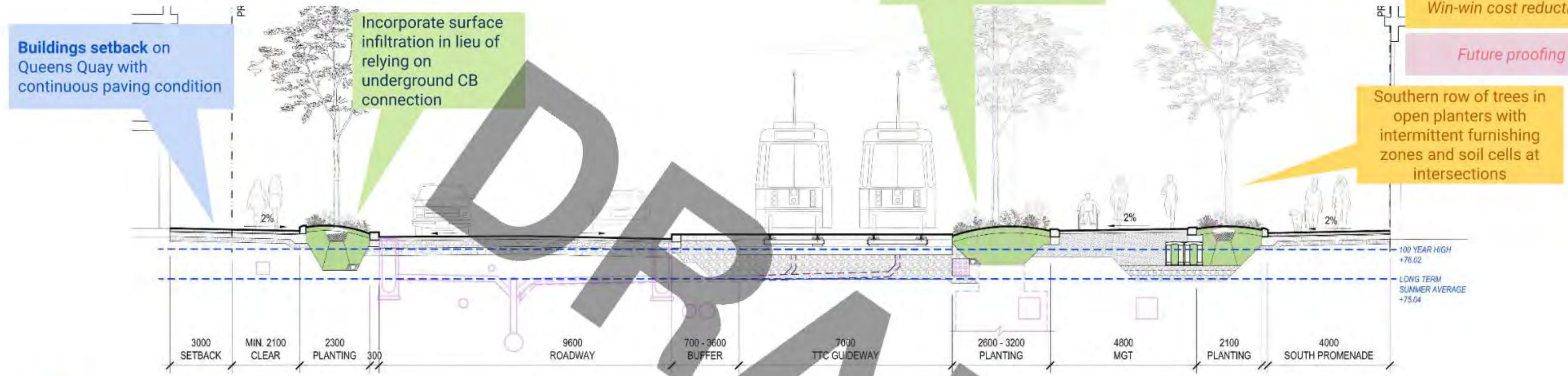
Full Vision



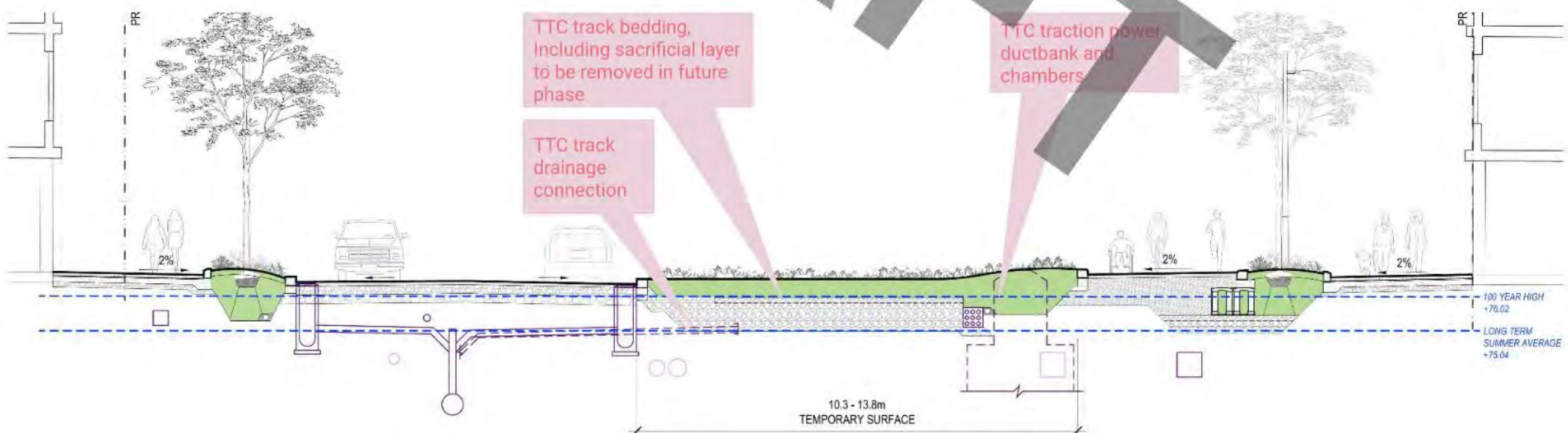
First phase implementation (no streetcar)



Full Vision



First phase implementation (no streetcar)



Green Infrastructure Lessons Learned

Programming & Indigenous Placekeeping

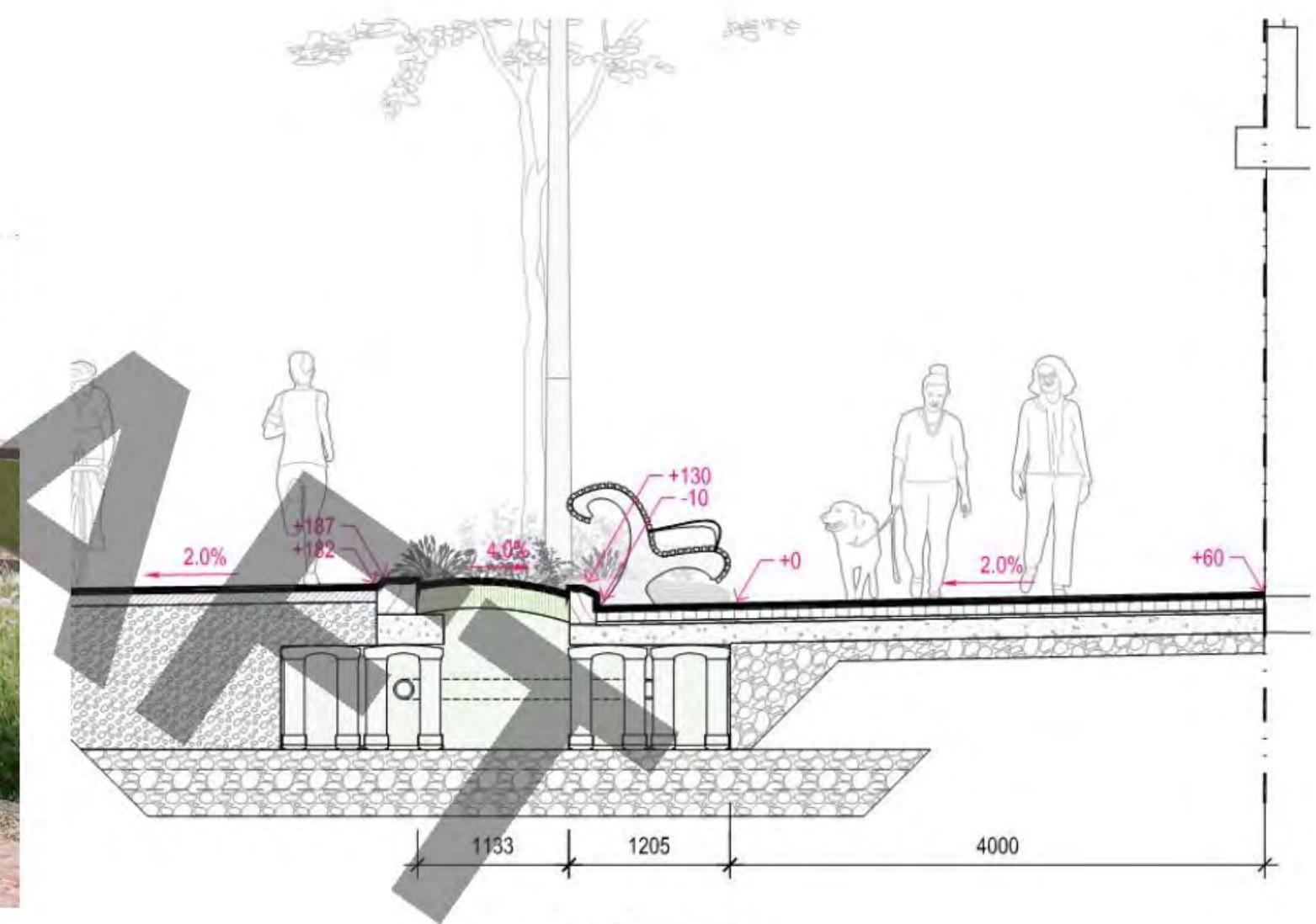
Quayside Impact Coordination

Win-win cost reductions

Future proofing

Southern row of trees in open planters with intermittent furnishing zones and soil cells at intersections

Seating pockets with formal and informal furnishings



Queens Quay West



Queens Quay East Area 2B

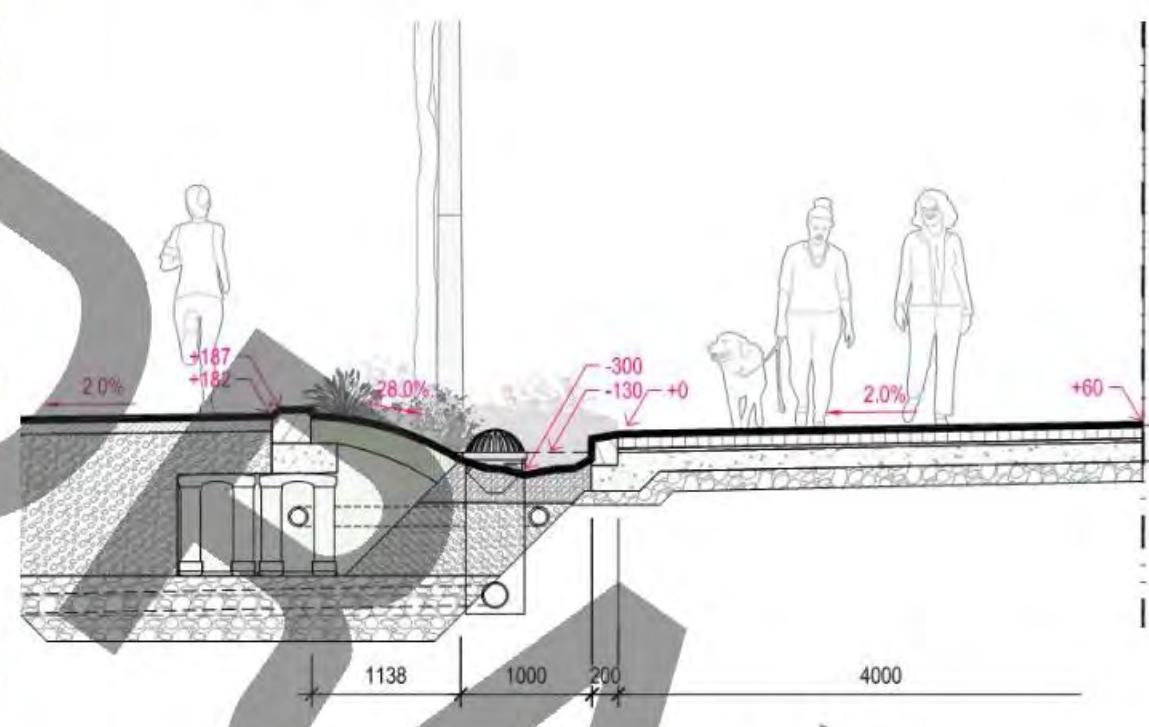
Integration of drainage features



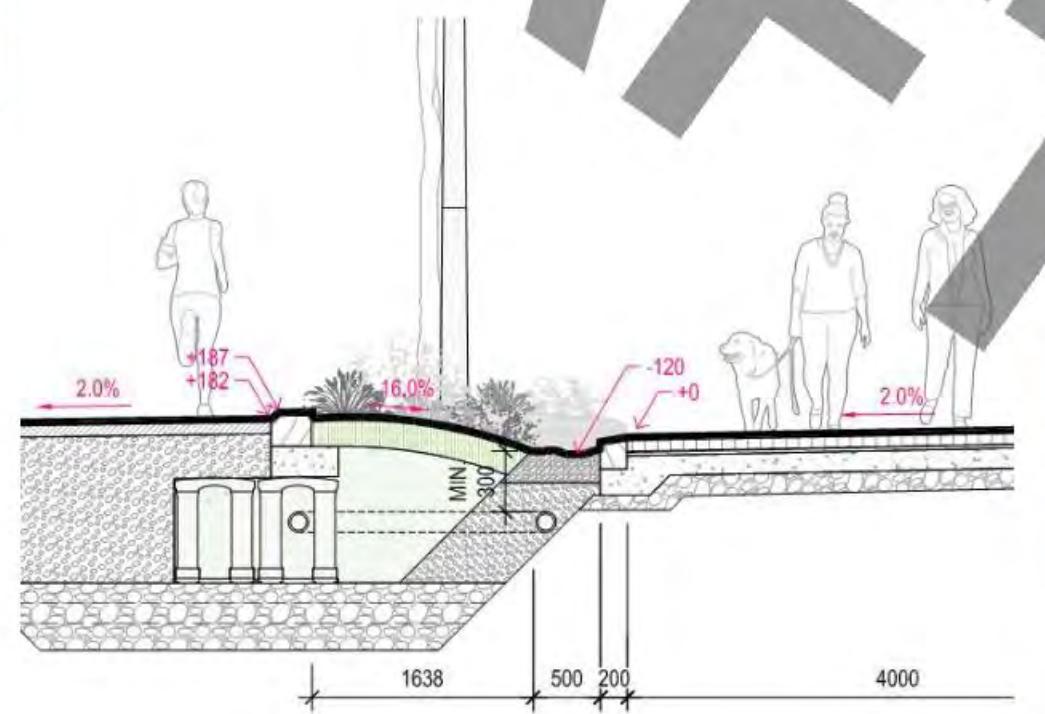
*Impervious:Pervious Ratio < 20:1;
Lower the ratio = less sediment = less maintenance*

*Below-grade pipe (irrigation, etc) maintenance & inspection
is challenging, doesn't end up happening frequently*

Maximize open planters on streets and use surface infiltration as much as possible to divert from grey system.



Storm inlet and distribution pipe



Curb cut inlet



*Inlets filled with granular
material very challenging to
clean out.*



Queens Quay East - typical new intersection



QQW Optimizations Pilot: intersection takeaways

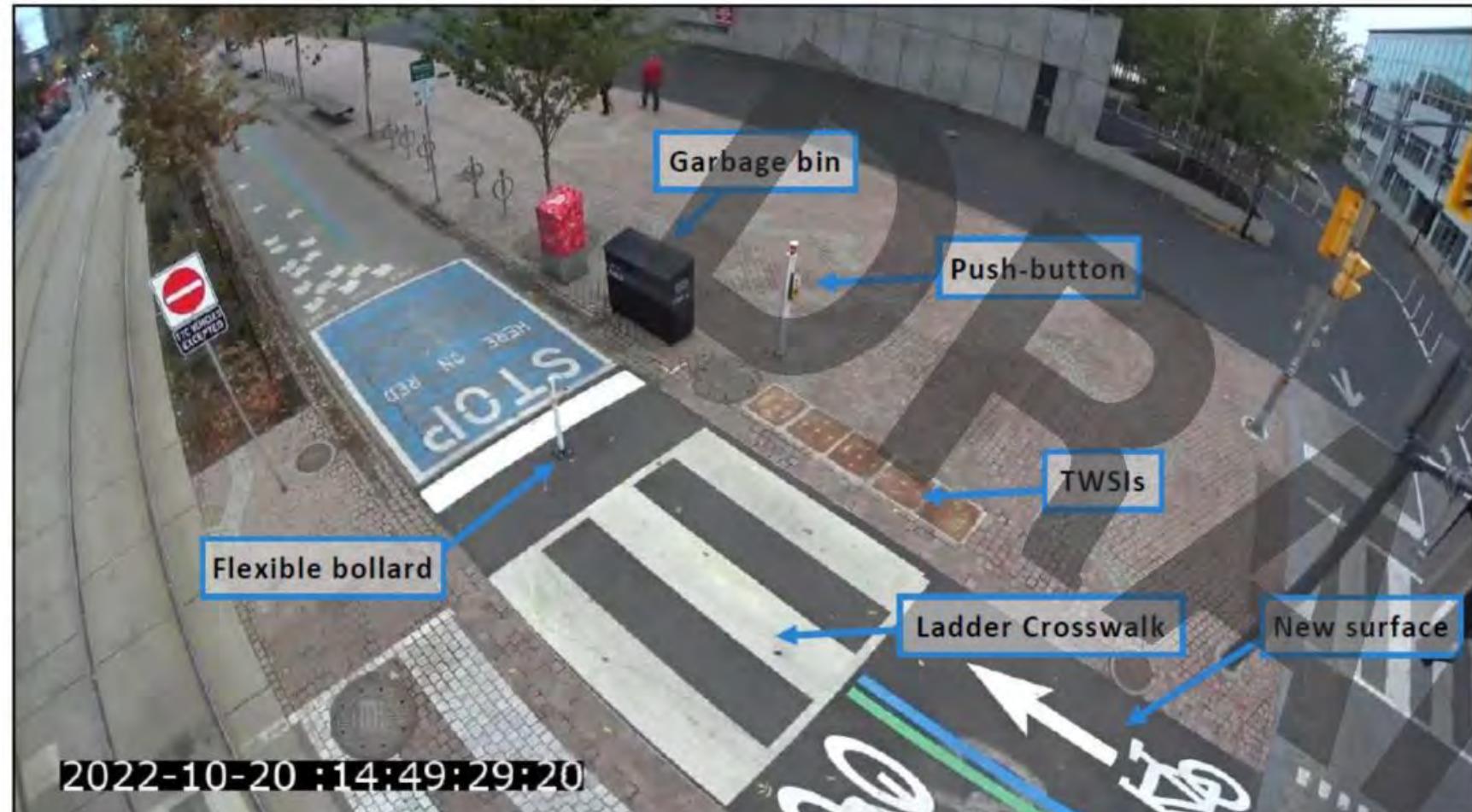


Figure 3: Image of the remedial measures installed at the southeast corner of the Queens Quay West and Lower Simcoe Street intersection (©Transoft, 2022).

Remedial measures resulted in a **61%** reduction of “conflicts” (closeness to colliding less than 2 seconds)

Incorporate into final intersection design

3.3 Trajectories

The trajectories of users recorded at the study crosswalk during the video data collection are shown in Figure 8 and Figure 9.

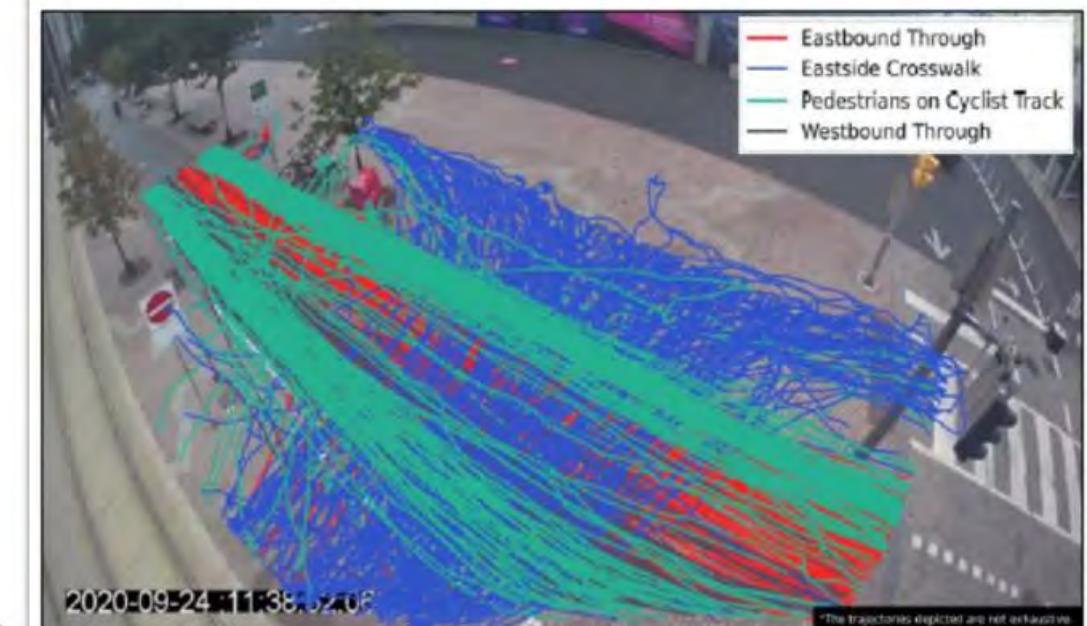
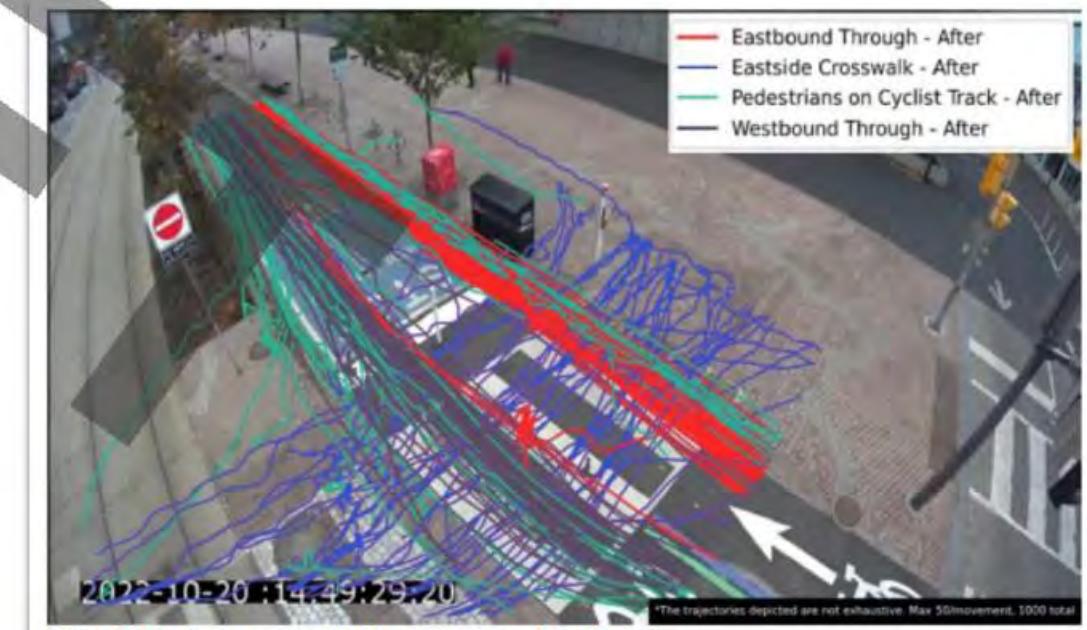
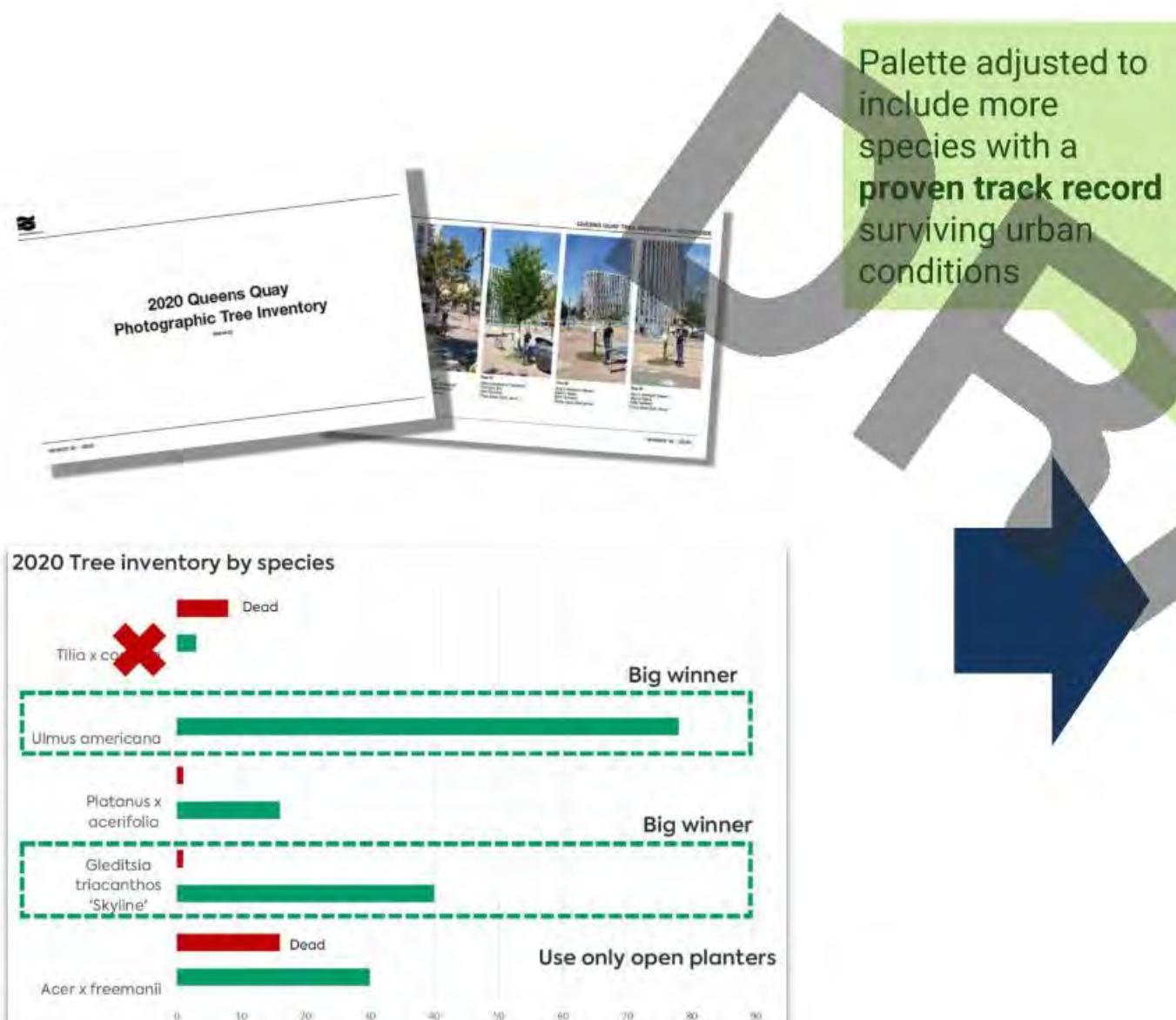


Figure 8: Road user trajectories by movement – Before Period.



More pedestrians used
marked crosswalk to cross
MGT instead of diagonally

Focus on resilient early successional urban pioneer tree species



Broadleaf typology		
AcAB	Acer xfreemanii 'Jeffersred' AUTUMN BLAZE	Freeman maple
AcMO	Acer xfreemanii 'Morgan'	Freeman maple
AcSA	Acer xfreemanii 'Satzam' SATURN	Freeman maple
AcNS	<i>Acer truncatum</i> x <i>A. platanoides</i> 'Keithiform' NORWEGIAN SUNSET	Purpleblow maple
LiMO	<i>Liquidambar styraciflua</i> 'Moraine'	Sweetgum
LiCH	<i>Liquidambar styraciflua</i> 'Ward' CHEROKEE	Sweetgum
MaWS	<i>Maclura pomifera</i> 'White Shield'	Osage orange
TIGM	<i>Tilia tomentosa</i> 'PNI 6051' GREEN MOUNTAIN	Silver linden
TISS	<i>Tilia tomentosa</i> 'Sterling' STERLING SILVER	Silver linden
CeOc	<i>Celtis occidentalis</i>	Hackberry
UIPR	<i>Ulmus americana</i> 'Princeton'	American elm
UIVF	<i>Ulmus americana</i> 'Valley Forge'	American elm
UIMO	<i>Ulmus davidiana</i> var. <i>japonica</i> 'Morton' ACCOLADE	Elm
UIMG	<i>Ulmus</i> 'Morton Glossy' TRIUMPH	Elm
UIEM	<i>Ulmus parvifolia</i> 'Emer II' ALLÉE	Lacebark elm
AcAF	<i>Acer rubrum</i> 'Autumn Flame'	Red maple
AcRS	<i>Acer rubrum</i> 'Franksred' RED SUNSET	Red maple
AcNI	<i>Acer saccharum</i> subsp. <i>nigrum</i>	Black maple
NyWF	<i>Nyssa sylvatica</i> 'Wildfire'	Black gum
QuRu	<i>Quercus rubra</i>	Red oak
Fine textured typology		
GIMO	<i>Gleditsia triacanthos</i> 'Moraine'	Honeylocust
GISM	<i>Gleditsia triacanthos</i> 'PNI 2835' SHADEMASTER	Honeylocust
GISL	<i>Gleditsia triacanthos</i> 'Skycole' SKYLINE	Honeylocust
GySM	<i>Gymnocladus dioicus</i> 'Stately Manor'	Kentucky coffeetree

Pioneer tree species are typical of savanna environments

What we heard

How we'll incorporate

Green Streets Tour: planting takeaways

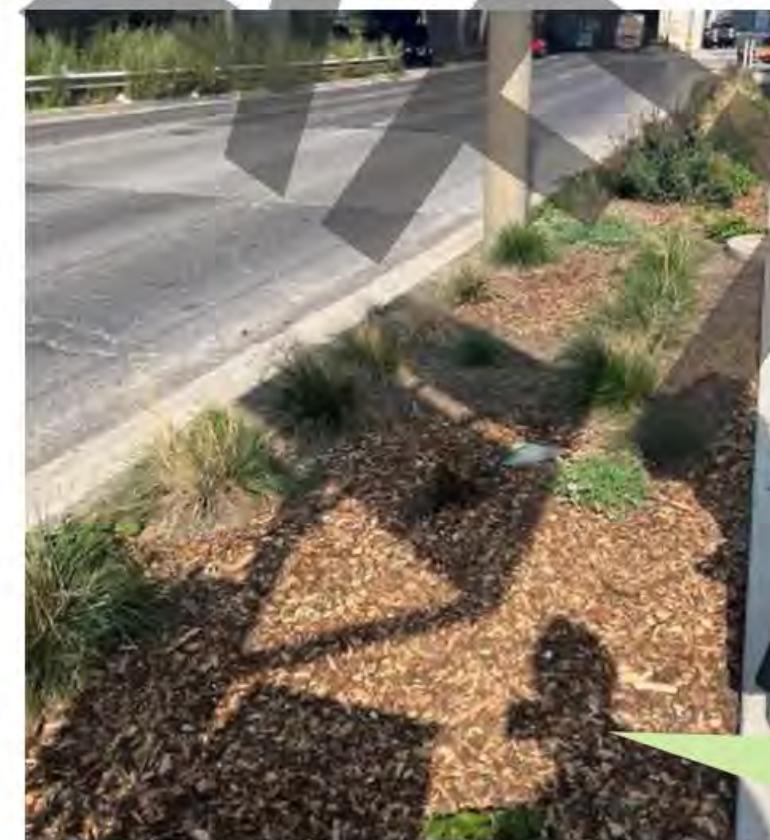


Appropriate species selection is key to success. All beds were generally under vegetated and relied on high maintenance mulch-based systems to suppress weeds.

Use **fast-establishing, street-resilient species** with vigour and ability to create their own populations as part of planting systems.

Sight lines become an issue near intersections

Consider and **limit height of understory planting** close to intersections



Space between plants present opportunities for weeds to grow

Plant **understory denser** and incorporate groundcover planting systems.

QQE Understory planting strategy

Matrix of grasses holding together clustered pockets of flowering forbs and shrubs for structure

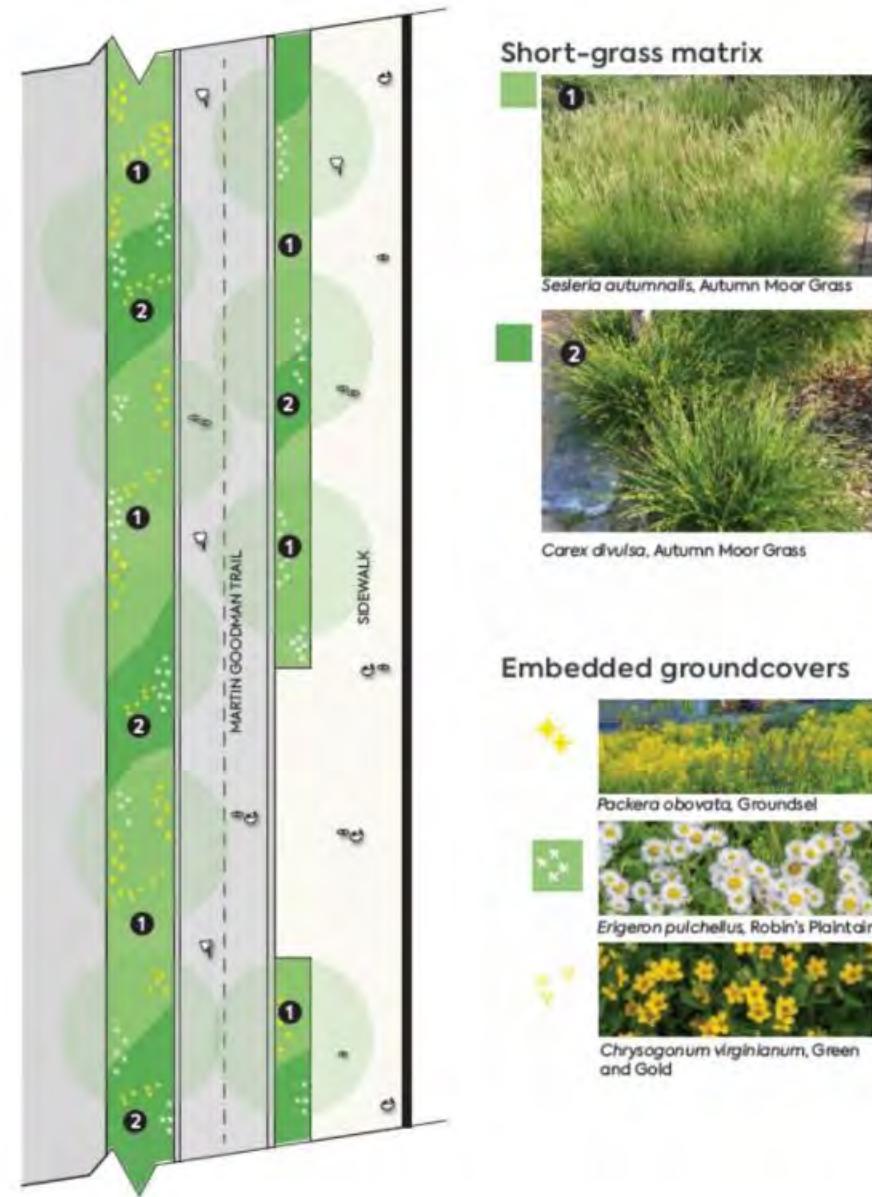


Resilient ground plane species
are evocative of diverse
savanna communities

QQE Understory planting strategy

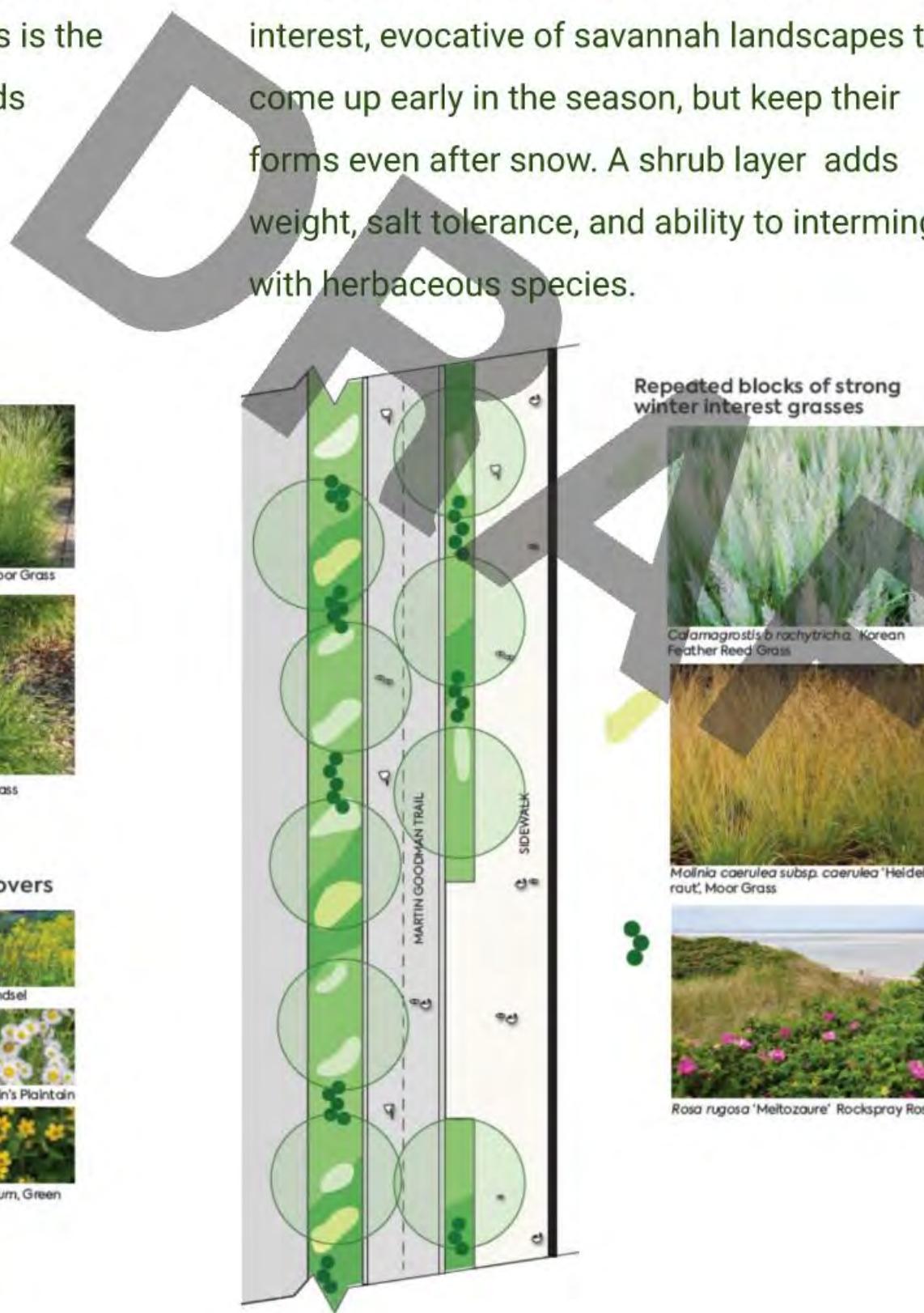
1. Matrix + Groundcovers

Unify the entire site with a simple, durable, year-round ground covering matrix. This is the functional and thematic “glue” that holds herbaceous layer together.



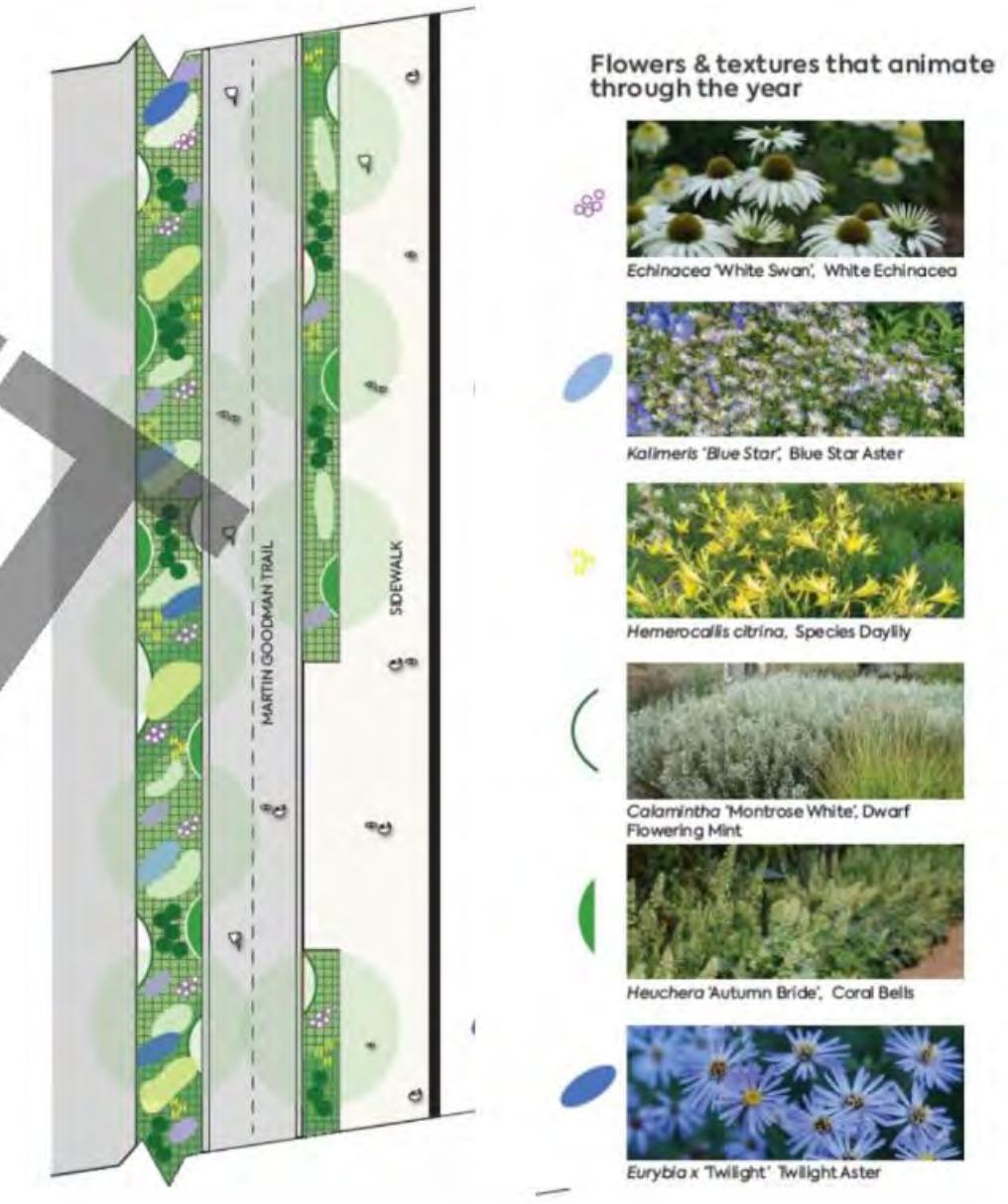
2. Structural anchor plants

Repeat use of grasses with strong winter interest, evocative of savannah landscapes that come up early in the season, but keep their forms even after snow. A shrub layer adds weight, salt tolerance, and ability to intermingle with herbaceous species.



3. Seasonal Themes

Animate the entire streetscape with long-flowering perennials that bloom at different times and support pollinators.



Material and planting palette - QQE summary

Diversity of tree species with similar forms and textures create resilient legibility without monoculture

MATERIALS

Hardscape & Edges



Granite Setts with Maple Leaf Pattern
South Pedestrian Sidewalk



Granite Setts
North Pedestrian Sidewalk



Granite Road Curbs, Planting Curbs, and Edge Details
Edge protection

PLANTING

*Final plant selection will be informed by outcomes of engagements with Local Indigenous Environmental and Plant Culture Subject Matter Experts

TREES



Freeman Maple
Acer x freemanii
3 varieties



Black gum
Nyssa sylvatica



Sweetgum
Liquidambar styraciflua
2 varieties



Elm
Ulmus species
5 varieties



Kentucky Coffeetree
Gymnocladus dioicus



Honey Locust
Gleditsia triacanthos
3 varieties



Hackberry
Celtis occidentalis

FURNISHINGS



Waterfront Signature Benches with new armrest detail
Thermally modified wood and aluminium



City Standard
Bike Racks
Classic and robust



Erratic boulders
Informal seating edges and placemaking elements



New Waterfront
Signature
Lighting
Aluminium pole with approved new fixture

SHRUBS AND UNDERSTORY



Short grass matrix and groundcovers



Seasonal themes

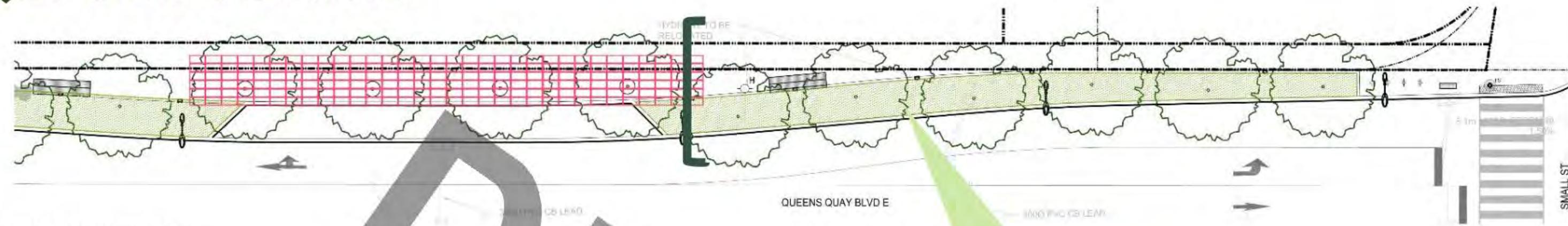


Structural anchor plants

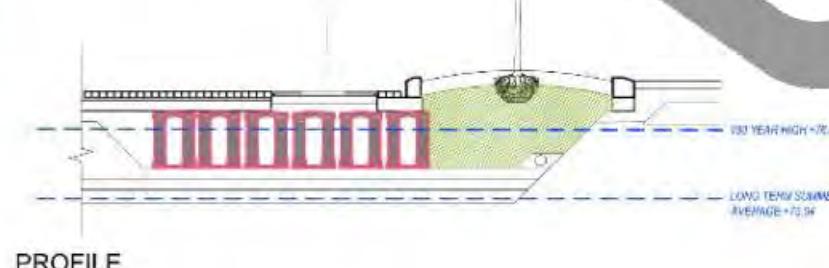


QQE: Soil Volume

NORTH BLVD



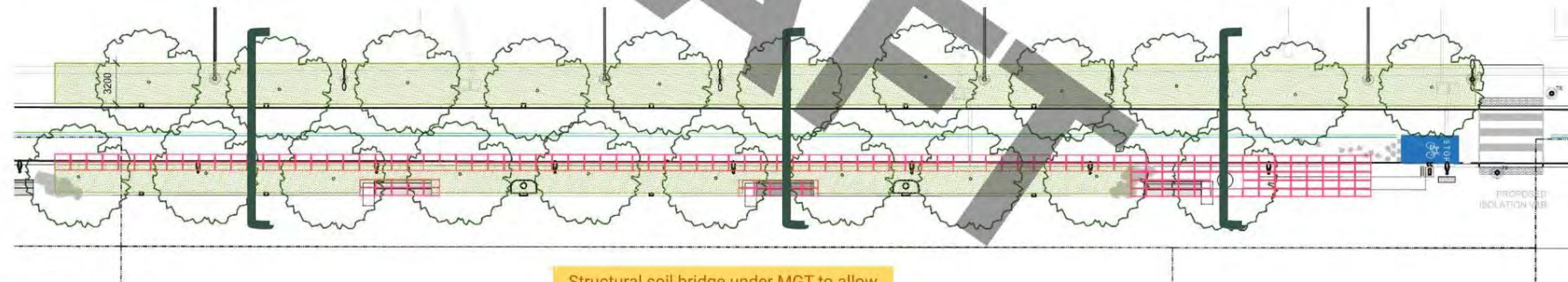
PLAN - NORTH BOULEVARD



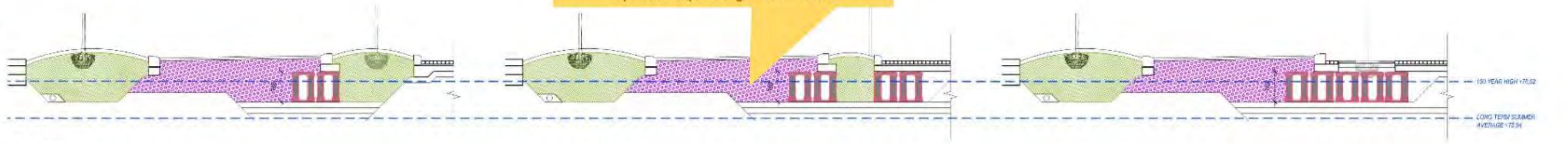
PROFILE

Use open planters where space allows, reducing below-grade infrastructure

SOUTH BLVD



PLAN - SOUTH BOULEVARD



PROFILES

Structural soil bridge under MGT to allow nutrient exchange, work around utilities, replace required granular base

Programmatic elements tie two projects together



Local natural elements tell the story of Quayside



Socialites

What?

Arrangements that encourage social interaction and provide informal seating.

Where?

George Brown College / W entrance to Community Forest

"Portals" to Community Forest

Parliament Grove



Markers

What?

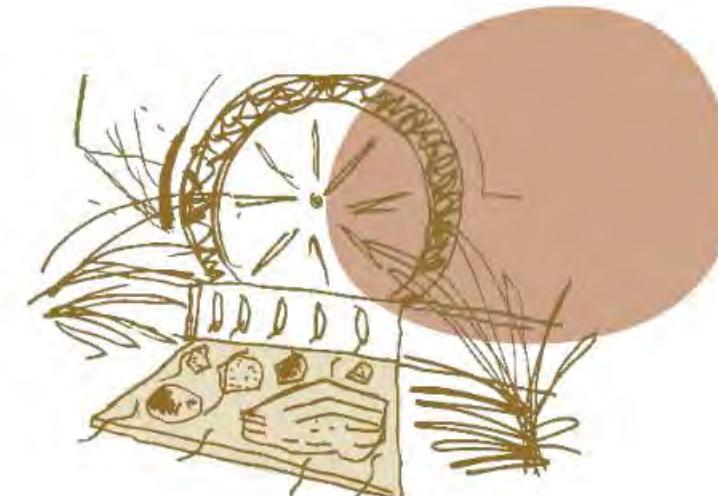
Wayfinding devices that celebrate moments of arrival and transition.

Where?

Residential front doors

Bridge landing zone on WEP

Community Forest Crossing



Teachers

What?

Thoughtfully detailed elements that draw attention to hidden processes like water cycles and soil health in the streetscape.

Where?

Sediment pads in planting beds

Socialite arrangements encourage social interaction and play along streets and WEP



"The surface of the stone is smooth from years of visitors resting their loads and feeling their way"

Markers celebrate moments of arrival, transition, and wayfinding



"I live in the building where the stone welcomes me home"



"I always visit the big mossy log with my grandpa to look for bugs"

Teachers bring hidden cycles to attention



Custom concrete **sediment inlet** is easy to sweep or vacuum compared to river rock. Removable grates for simple maintenance.



Use of recycled and found material tell the geologic story of the Toronto waterfront

What we heard on the Green Streets Tour:
Inlets filled with granular material very challenging to clean out.



City of Toronto sediment inlet details from the Green Streets Tour

What we heard

How we'll incorporate

Green Streets Tour: maintenance takeaways

Certain species are growing faster and spreading more than others

Incorporate into final planting design



Temporary fencing to protect planting from trampling and discourage jaywalking has been effective

Shrub and perennial beds require 8x amount of time and money to maintain compared to mowable species

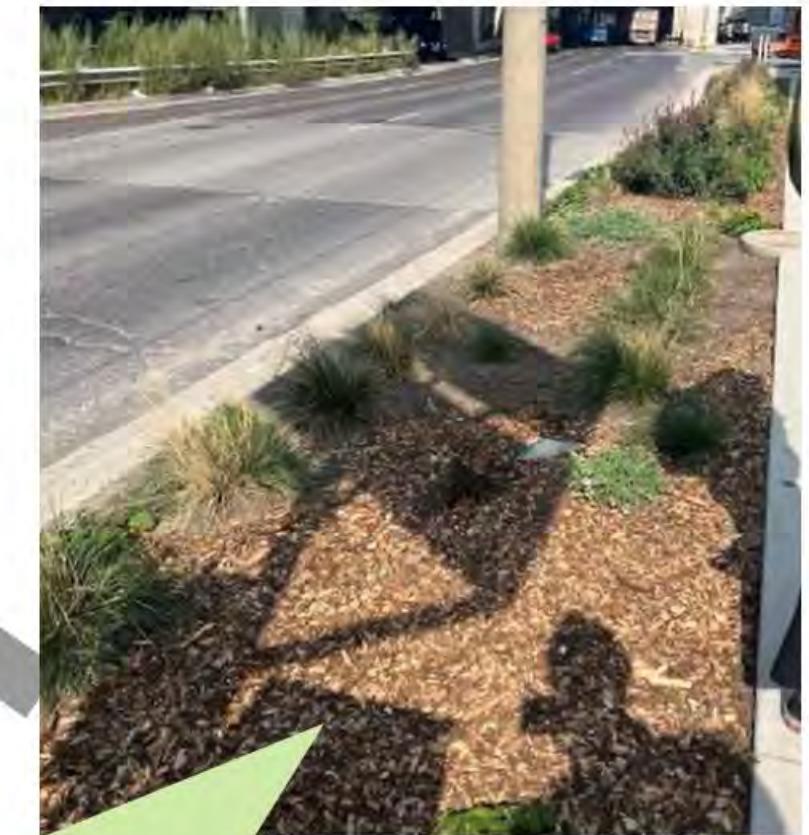
Conscious of city capacity, create some **mowable areas for sustainable maintenance** as well as perennial areas for impact. **Explore maintenance agreements with BIA or adjacent owners.**



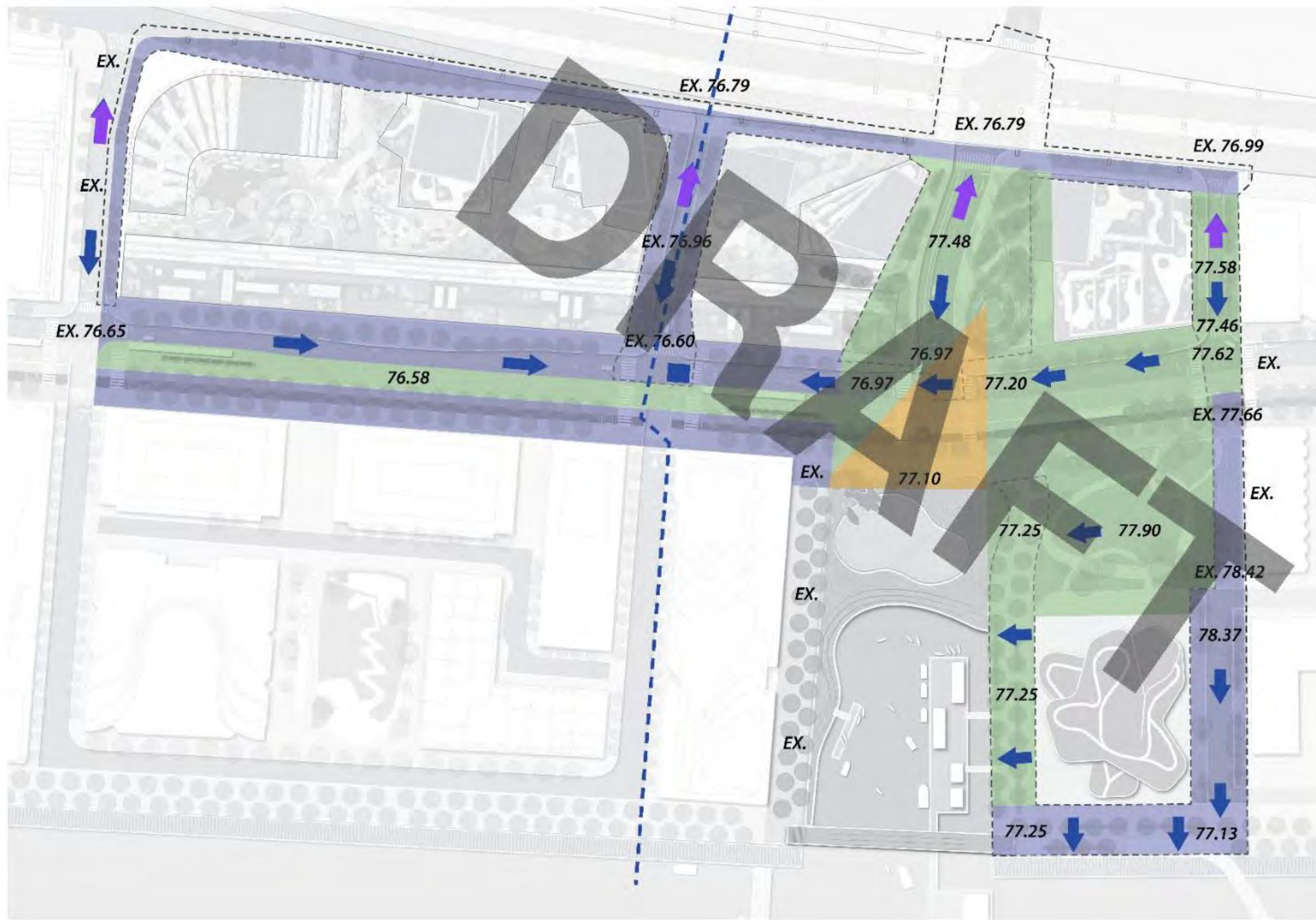
Contractor 2yr maintenance period often defers / creates more maintenance problems later

- eg. Contractor does not maintain throughout warranty period, and replaces planting at the end. Weeds are introduced into soil and takes 2-3yrs to fix seed bank.

Propose/discuss **City maintenance from day 1**

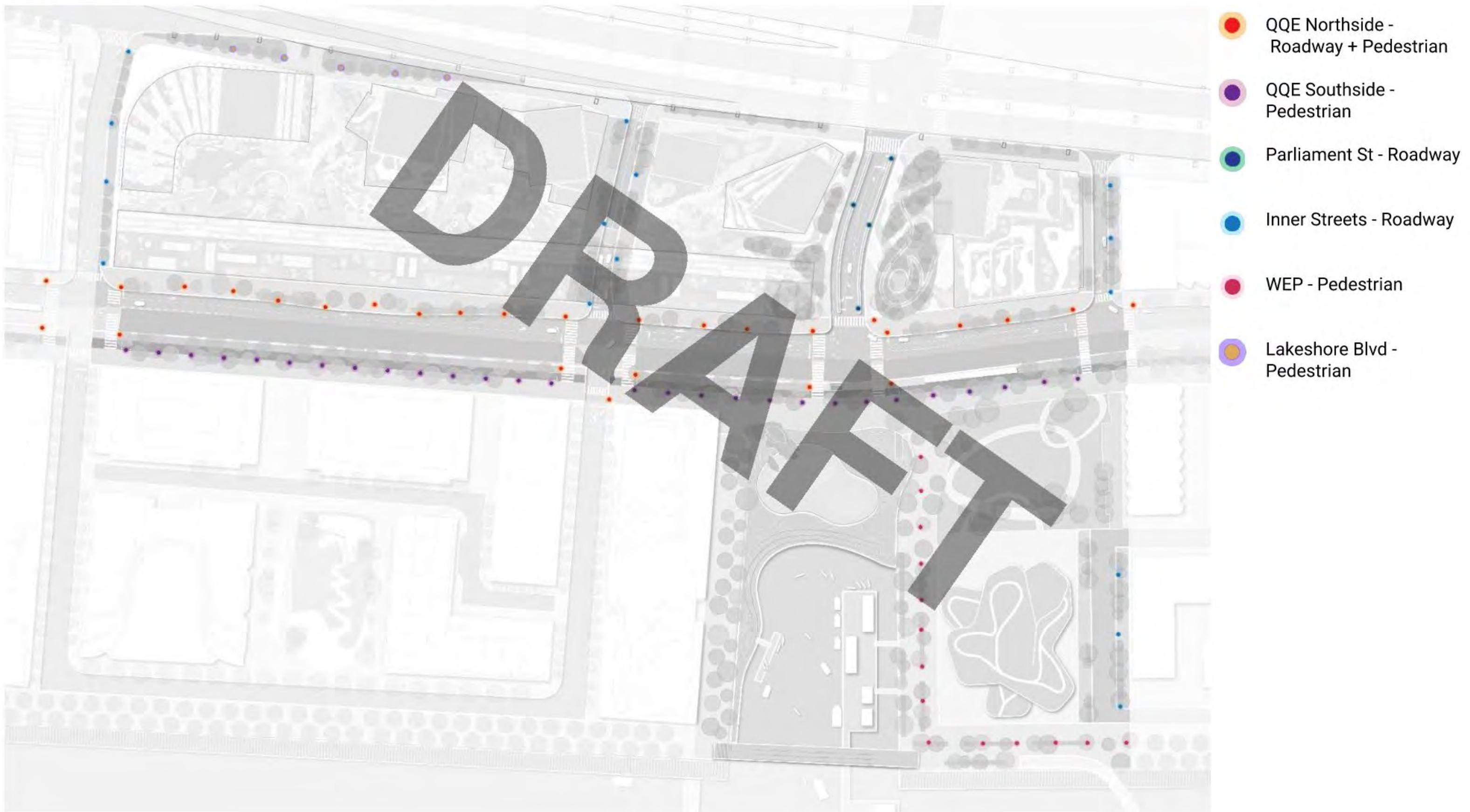


Grading Strategy



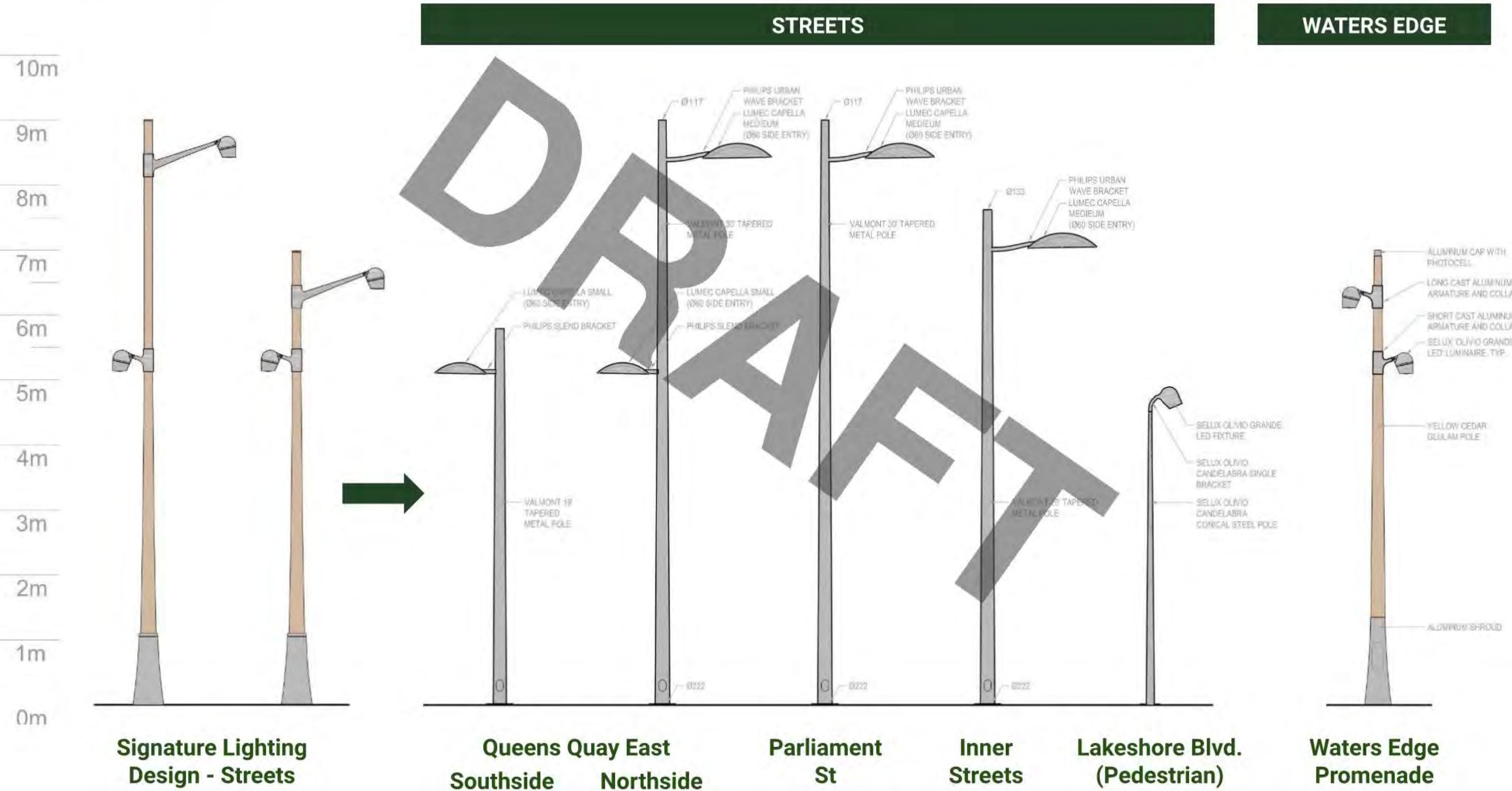
- Overland flow route
- Major storm flow drains into below-grade system
- Grade raised
- Existing grade maintained
- New land fill
- EX. Existing elevation
- XX.X Proposed elevation
- - - Existing Combined Sewer Overflow (CSO)
- Proposed super catch basin

Lighting Summary



Lighting Summary

Simplify components for streamlined approval process, reduce cost and improve photometric performance for street lighting.



Summary: Indigenous approaches to design and engagement topics

From integrated design process with Minokamik:

- Salvaged Storytelling Stones
- Inclusion of other species
- Intergenerational places
- Restoration, healing, and connecting with the (urban) forest as priorities for public space
- Integration of significant forest species (eg. cercis canadensis)
- Savanna as inspiration for landscape stewardship and resilience

Topics for subject matter experts and forthcoming Indigenous consultation:

- Connection to urban populations and landscapes
- Natural habitat, Indigenous plants, urban forest grove: relation to four elements
- Community Spaces
- Culture and Language: Arts and cultural heritage



Quayside Public Realm