

PORT

2024

November 12, 2020

Port Lands Flood
Protection
SAC #9

LANDS

Canada

Ontario

Toronto



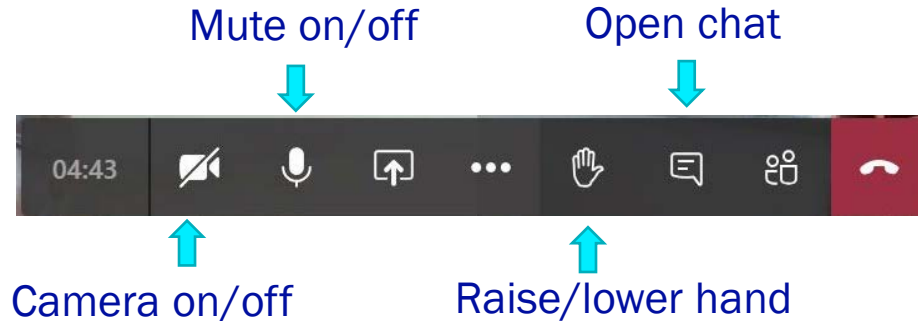
Agenda

- Introductions and Teams Instructions – Waterfront Toronto
- Lake Shore Boulevard East Public Realm – West8, Entuitive, & Dillon
 - Discussion

Introductions + Teams Instructions

Teams 101 – Joining on a Computer

- Turn your camera on if you're comfortable
- Click the microphone icon to mute yourself when you're not speaking
- Troubleshooting: use the chat window to note any issues
- "Raise your hand" to ask a question or make a comment



Teams 101 – Joining via Telephone

- To mute/un-mute yourself, press *6
- Mute yourself when you're not speaking
- Let us know if you can't hear or you can't tell which slide is being presented
- We'll open the floor to your questions/comments once all hands are down

Introductions

- We'll go through the list of attendees (usually in alphabetical order)
- Please introduce yourself and the organization you represent

Recording this session for the Public Meeting

- We're recording the design team's presentations at this meeting and will show these pre-recorded presentations at the upcoming Public Meeting. They will also be available to view in advance of the meeting.
- Please add your questions to the chat while presenters are speaking.
- We will open the floor to questions/comments at the end of each presentation, including those in the chat.
- You'll see we have given ourselves some cues to ensure the recording doesn't require too many edits.
- Thanks for your understanding!

Upcoming Public Meeting

How will we meet online?

- Materials posted on a dedicated page on PortLandsTO.ca
- Survey based on materials will be open until 2 weeks after the meeting
- A public meeting is being scheduled for December 2020
 - First hour is presenting the pre-recorded materials
 - Second hour is Live Q&A with project team



Lake Shore Boulevard East Public Realm - Don River to Carlaw Avenue SAC Presentation

November 12, 2020

Agenda

- 1. Introduction & Environmental Assessment Context**
- 2. Roadway Design**
- 3. Public Realm Design**

Introduction & Environmental Assessment Context

Project Context:

The Gardiner and Lake Shore Boulevard design has been shaped by:

- 1. The approved Gardiner Expressway and Lake Shore Boulevard Reconfiguration EA and Urban Design Study (2017)**
- 2. Lake Shore Boulevard East Public Realm Vision, Phasing and Implementation Plan (2020)**
- 3. Ongoing detailed design work**

Lake Shore Boulevard East Public Realm Vision



Project Area: Lake Shore Boulevard East Bridge and Public Realm



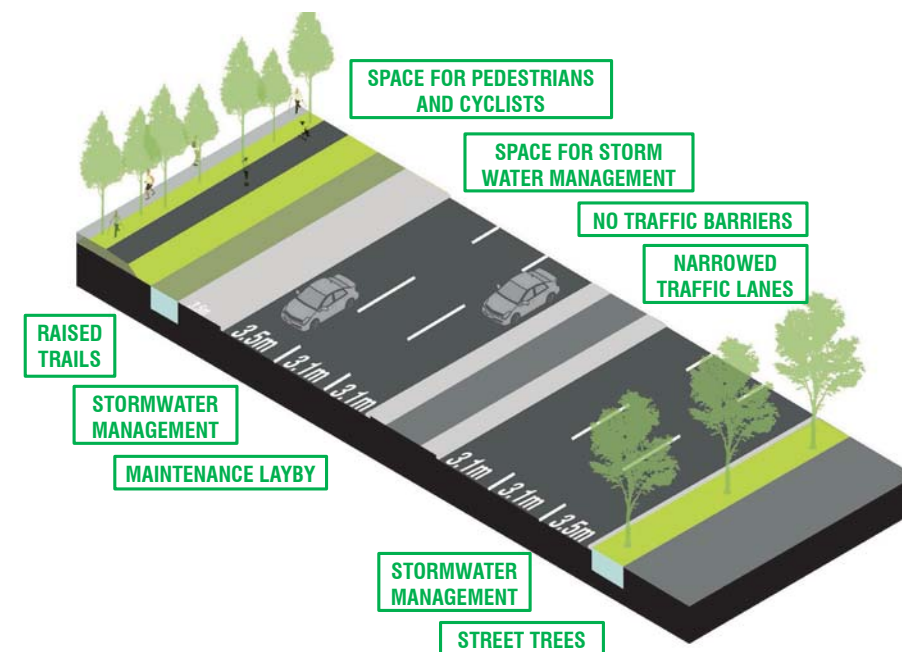
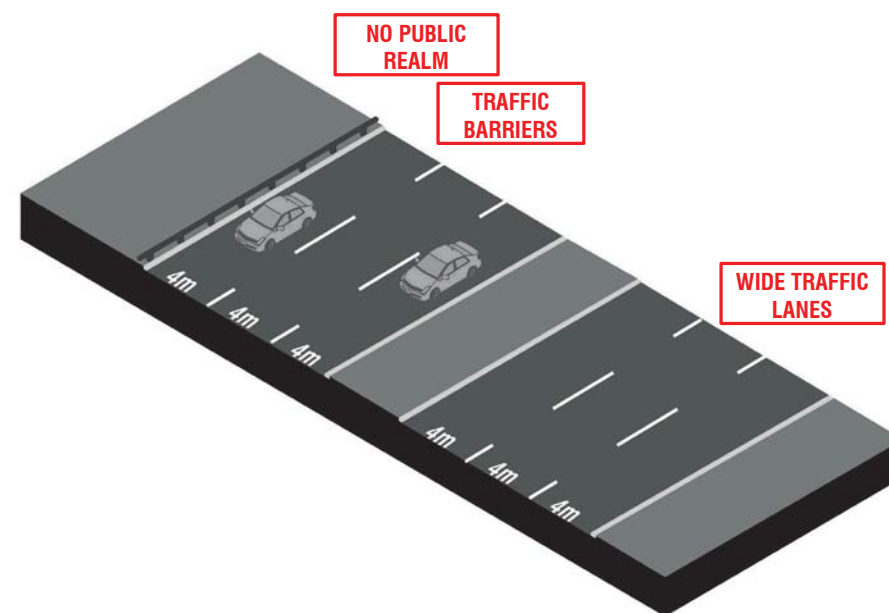
Past Consultation:

Stakeholder and Public Engagement for the following projects has informed this design

- Gardiner Expressway and Lake Shore Boulevard Reconfiguration EA and Urban Design Study
- Lake Shore Boulevard East Public Realm Vision, Phasing and Implementation Plan (Jarvis to Cherry Streets)
- Port Lands Flood Protection

Lake Shore Boulevard Public Realm Design Vision - Objectives

- 1 Design an **urban civic boulevard** with a distinct **continuous landscape identity**
- 2 Prioritize **traffic calming** measures and **enhance public realm experience and safety**
- 3 Improve **East-West connectivity** through rebalanced multimodal mobility
- 4 Improve **North-South connectivity** through enhanced intersections
- 5 Design for **sustainable operations and maintenance** for public realm



North Landscape & Trails

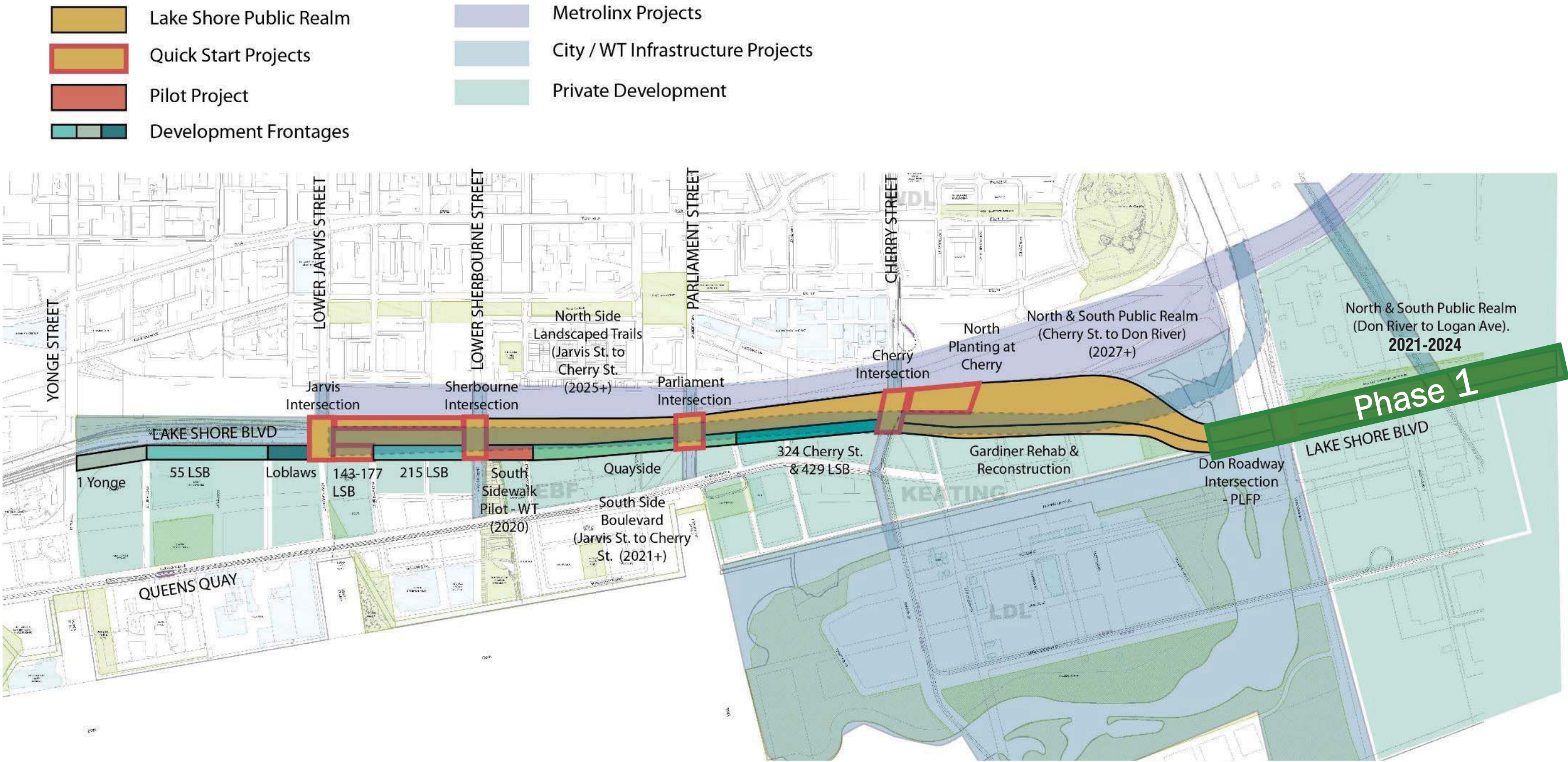


South Sidewalk Improvements



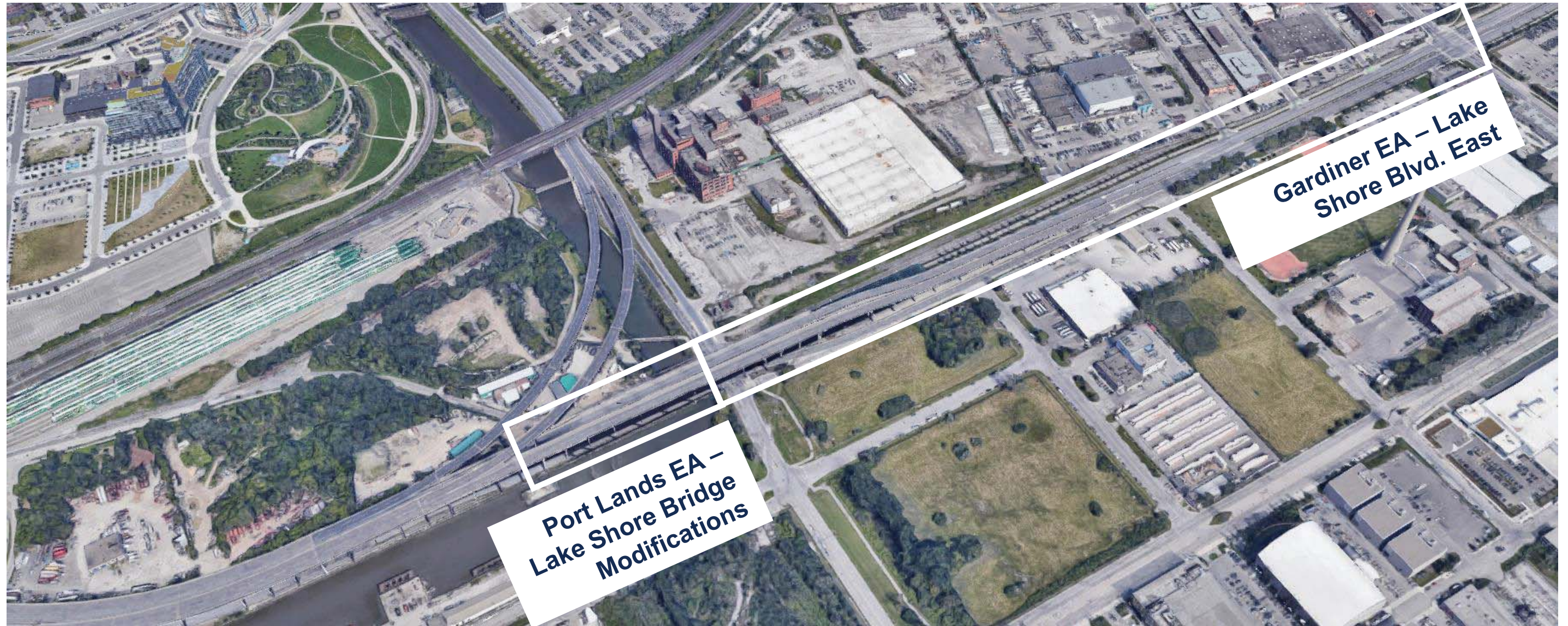
Lake Shore Boulevard Public Realm Implementation Plan

WATERFRONToronto



Project Area: Lake Shore Boulevard East Bridge and Public Realm

Opportunity: Integrate design and delivery of two different projects/approved Environmental Assessments as part of Port Lands Flood Protection Project



Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment, 2017

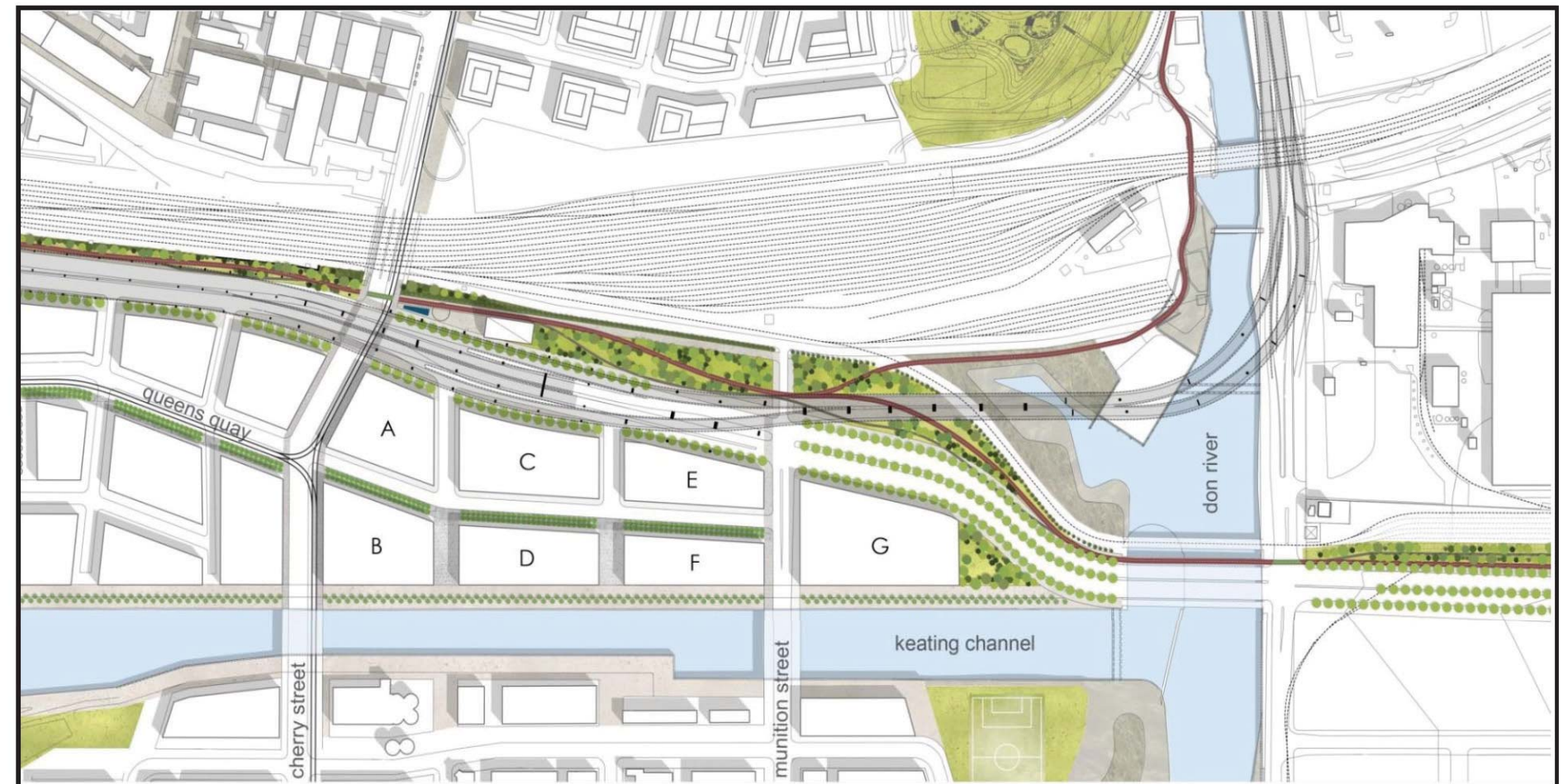
Lake Shore Bridge Scope

- Rebuilt to provide sufficient width for: 6 travel lanes, an eastbound left turn lane to access the northbound Don Roadway / Don Valley Parkway, a multi-use trail, and sidewalk
- Reconstruction to occur with Gardiner demolished

Lake Shore Don Roadway to Carlaw Scope

- Demolish Gardiner ramps
- Realign / Reconstruct Lake Shore Boulevard within the same Right of Way into a 6-lane boulevard with streetscape improvements

HYBRID 3 CONCEPTUAL DESIGN PLAN BETWEEN CHERRY STREET AND DON ROADWAY (KEATING CHANNEL PRECINCT)
CHAPTER 6 - FIGURE 6-7



Don Mouth Naturalization and Portlands Flood Protection Project Environmental Assessment, 2014

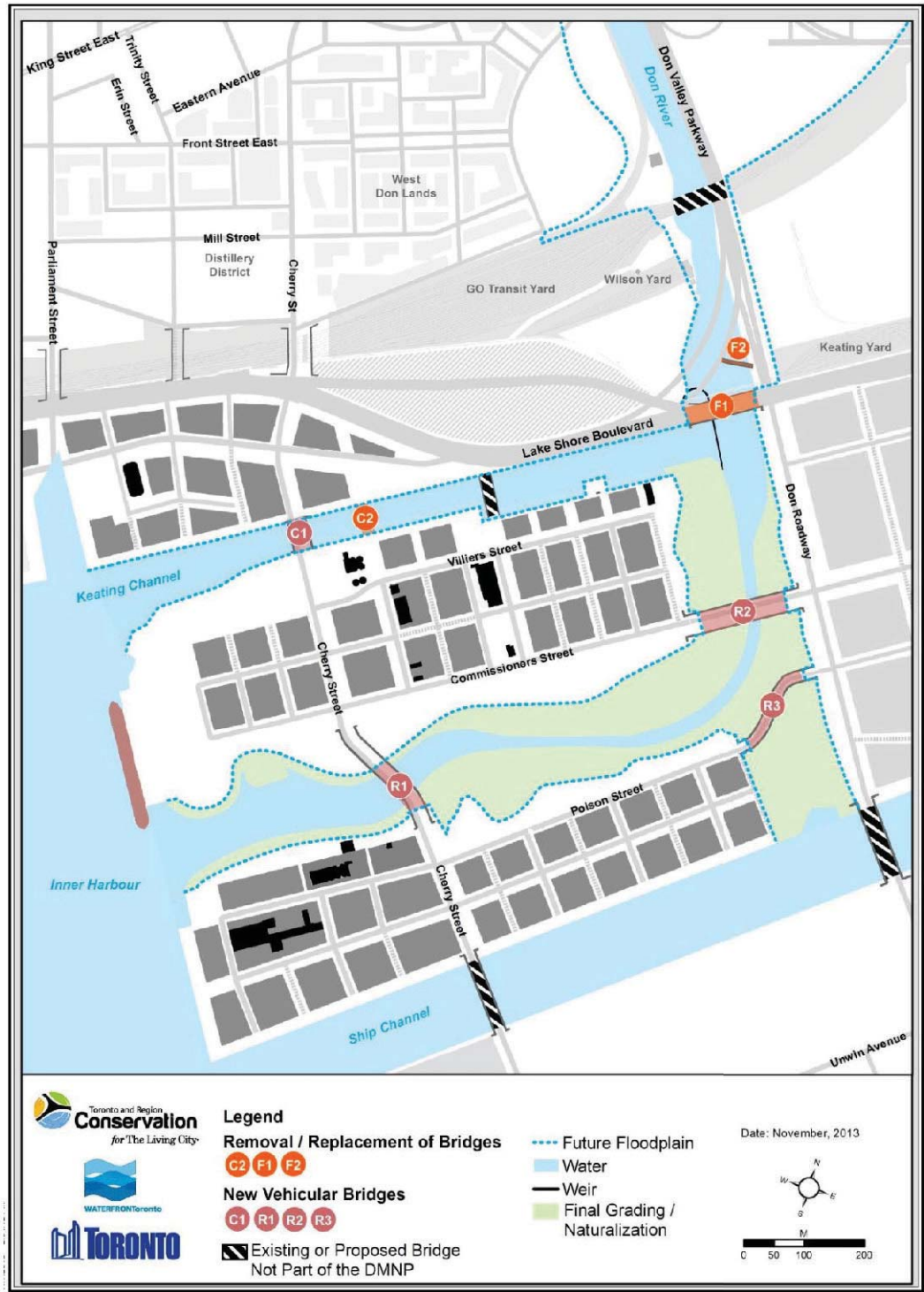
Lake Shore Bridge Scope

- To improve flood conveyance, the existing Lake Shore Boulevard and Harbour Lead rail bridges will be lengthened from the two bays that currently exist
- Extended bridge remains below the existing Gardiner elevated structure
- Bridge lengthening is also proposed in the Lower Don Lands Infrastructure Master Plan and Keating Channel Precinct Environmental Study Report

Lake Shore Don Roadway to Carlaw Scope

- No work defined

PROPOSED BRIDGE CROSSINGS
CHAPTER 6 - FIGURE 6-23



Two Projects, One Bridge

Combining projects to reduce construction duration, costs, and impacts

Lake Shore Bridge Scope

- Demolish Gardiner elevated structure above.
- Construct 2 span extension and replace existing 2 spans to provide a 4 span bridge supporting 6 travel lanes, an eastbound left turn lane, a multi-use trail, and sidewalks.
- Improve Don River flood conveyance with extension.

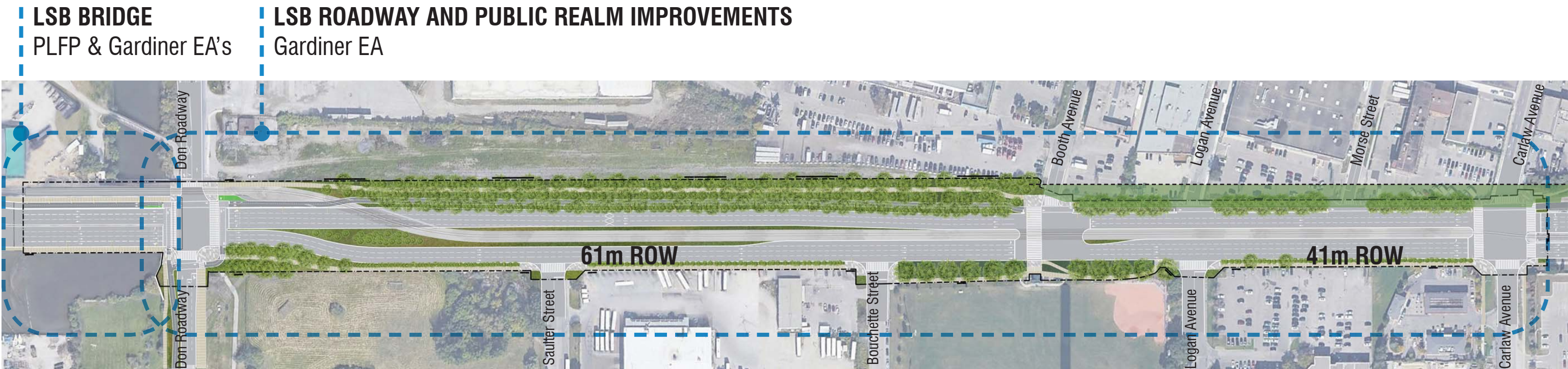
Lake Shore Don Roadway to Carlaw Scope

- Demolish Gardiner ramps
- Realign / Reconstruct Lake Shore Boulevard within the same Right of Way into a 6-lane boulevard with dedicated left turn lanes, bicycle paths, sidewalks, and streetscape improvements
- Realign and relocate Harbour Lead Rail Line to Median of Lake Shore Boulevard

Why Combine These Projects?

- Shorter construction period
- Shorter period of traffic disruption
- Safer
- Reduced cost
- No interim conditions on Lake Shore Boulevard

Advancing design for public realm improvements approved through Gardiner Environmental Assessment



Project Benefits

DRAFT

Considerations	Two Separate Projects	Combined Single Project
Duration of construction	Two disruption periods: 2.5 years + 3 years = 5.5 years total	Single disruption period: 3.5 years total Reduces period of traffic disruption by approx. 2 years
Timing to deliver: - New bridge with cycling/pedestrian connections - Public spaces along Lake Shore - Safer intersections along Lake Shore	2028	2024 4 years earlier
Level of Risk	1) Structural stability related to working in and around Gardiner bents: high risk 2) Schedule risk related to complexity of work: medium risk	1) Structural stability risks related to working in and around Gardiner bents - risk eliminated 2) Schedule risk related to complexity of work - low risk
Cost savings		Total estimated savings of \$29 million
Safety	Construction detour at Lake Shore Boulevard and Don roadway identified as significant safety risk due to presence of Gardiner bents	By removing Gardiner bents prior to construction of detour roads, traffic safety risk reduced

Proposed Construction Timelines* - PLFP and Lake Shore Boulevard East Public Realm

Description	Date
Traffic Management	
Public outreach on planned traffic mitigations	Winter 2021
Traffic mitigations complete	Fall 2021
Construction	
Logan Ramp Closed/Ramp Demolition Begins	Fall 2021
Lake Shore Bridge Demolition - Eastbound	Fall 2021
Rail Bridge Closure	Spring 2022
Opening Lake Shore Bridge - Eastbound	Spring 2023
Lake Shore Boulevard Closure/Demolition - Westbound	Spring/Summer 2023
Rail Bridge Construction Complete	Spring 2024
Opening Lake Shore Bridge - Westbound	Fall 2024
Construction Finish	Winter 2024

**Note: Schedule not confirmed, subject to City approval*

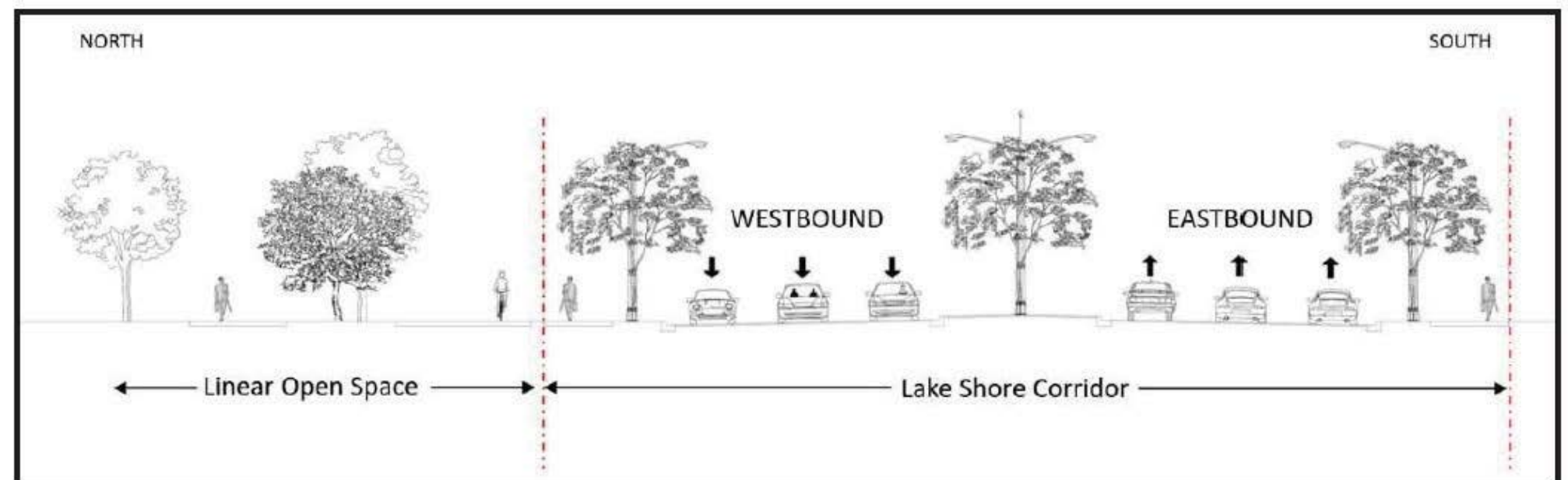
Roadway Design

Lake Shore Boulevard East Roadway Design

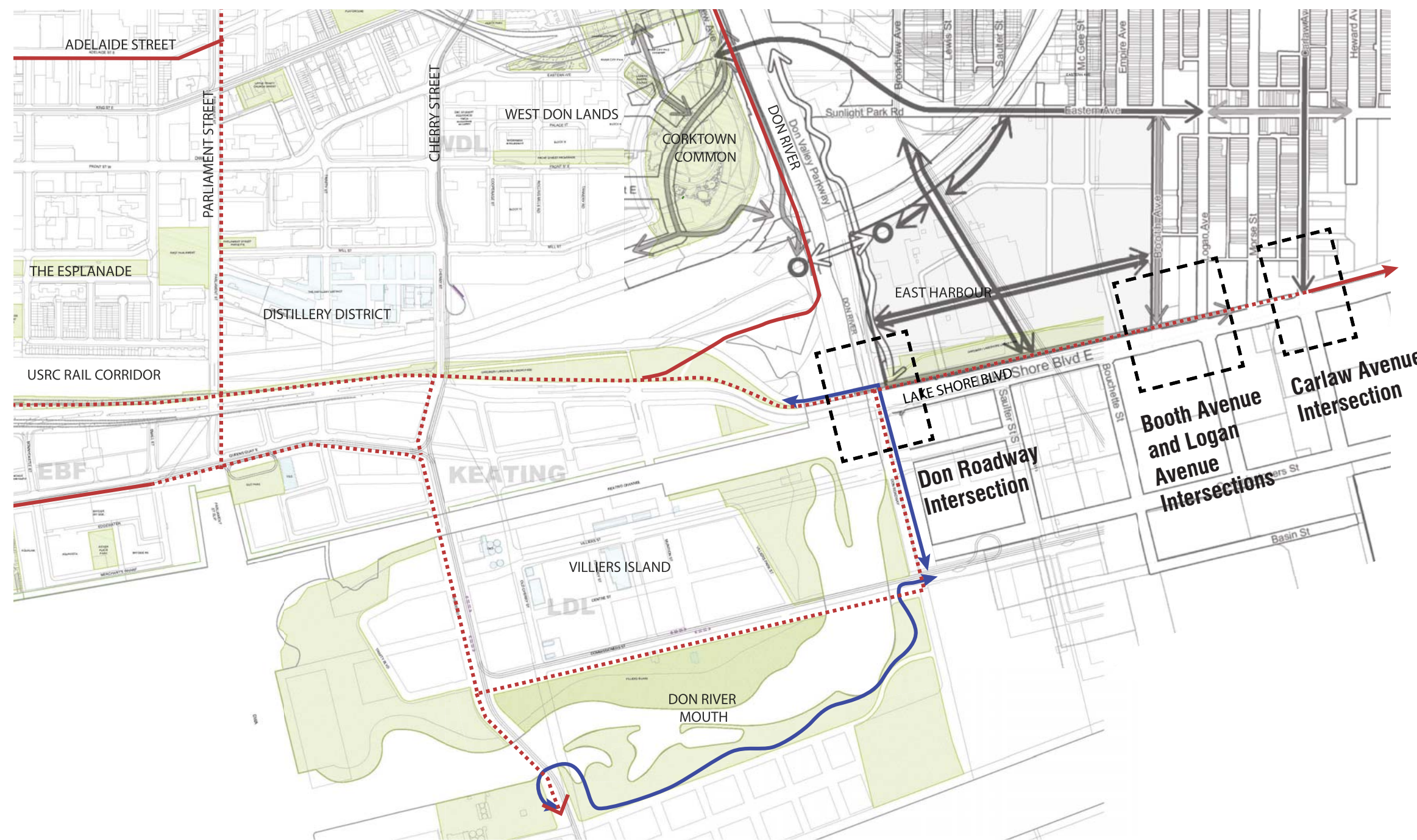
ROADWAY LAYOUT

- In 2017, City Council approved proposed design in Gardiner Expressway and Lake Shore Boulevard East Reconfiguration EA: landscaped 6-lane boulevard with generous medians
- Design advanced following guidelines by City and by Transportation Association of Canada
- Incorporating past public and stakeholder feedback
- In coordination with City and nearby projects (East Harbour, McCleary District, PLFP)
- Lake Shore Boulevard remains an arterial road with dedicated left turn lanes added at intersections

EA CROSS SECTION EAST OF DON RIVER
CHAPTER 6 - FIGURE 6-4



Cycling Connections - Existing and Planned



- Lower Don Trail

Planned Bicycle Network Infrastructure

Existing Bicycle Network Infrastructure
- Planned Bicycle Network Infrastructure (per Unilever Precinct Secondary Plan)

Existing Bicycle Network Infrastructure (per Unilever Precinct Secondary Plan)

Multi-use Path

Lake Shore Boulevard East Intersection Design

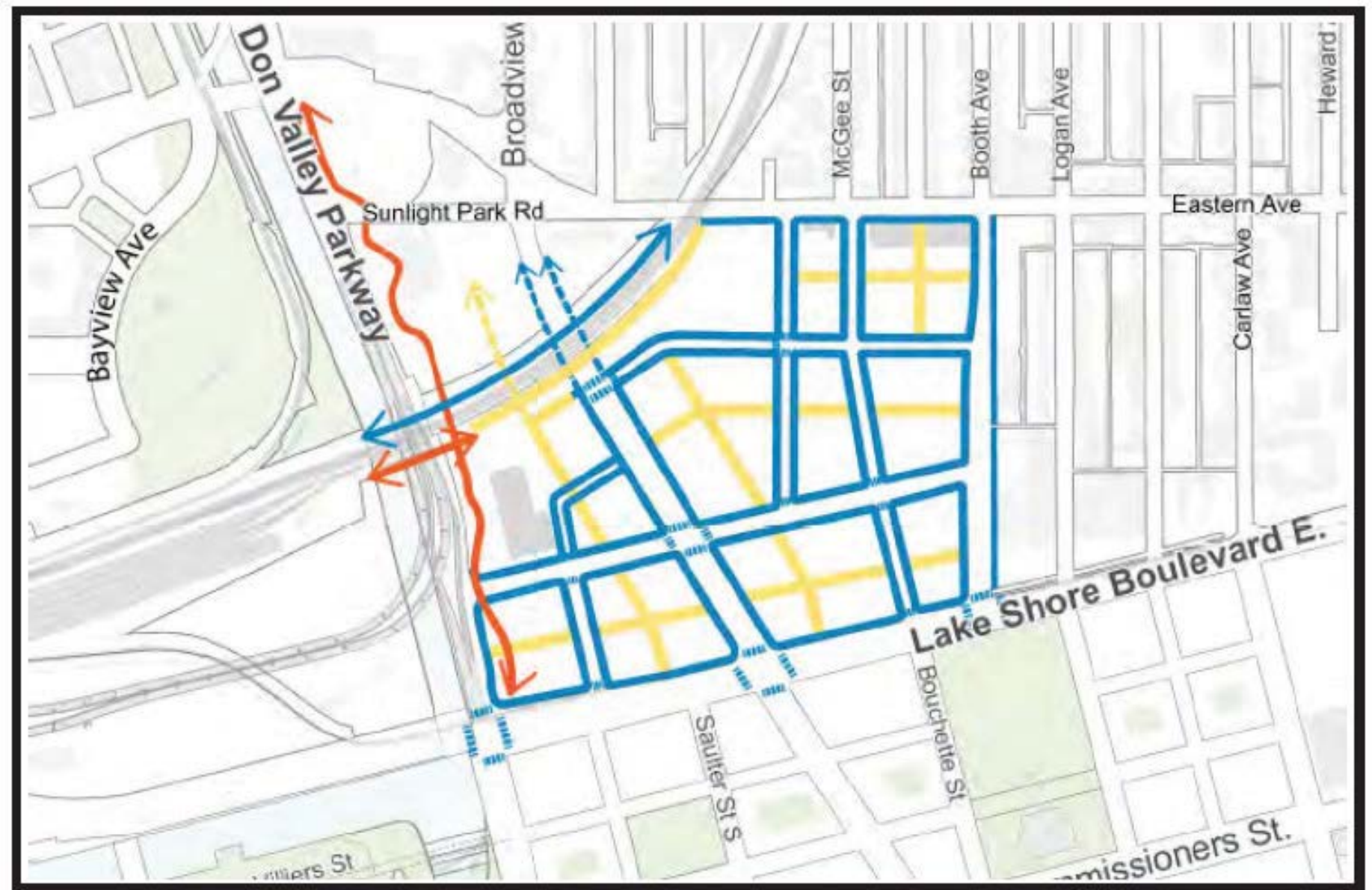
INTERSECTION GEOMETRY AND LOCATIONS

- Design advanced following guidelines by City and by Transportation Association of Canada
- Improved crossing for cyclists and pedestrians with dedicated, separated waiting areas
- In coordination with City and nearby projects (East Harbour, McCleary District, PLFP)
- Improved connectivity to future trail along Don Roadway and to existing McCleary Park
- Dedicated cyclist crossing signals
- Traffic modelling to optimize traffic flow

Final alignments and designs for intersections to be determined through additional studies

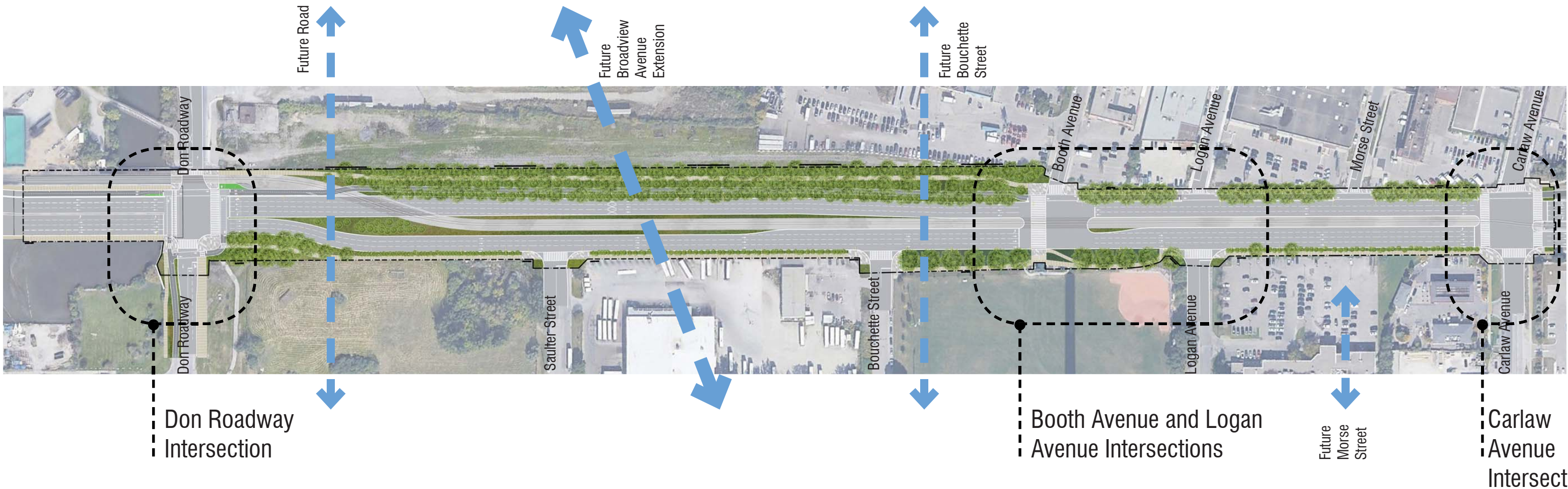
UNILEVER PRECINCT PLANNING FRAMEWORK (EAST HARBOUR)

PEDESTRIAN NETWORK MAP



Intersection Design

Three Key Intersections in Context of Future Expanded Connectivity



← - - - - - → Future Intersections (per Unilever Precinct Plan)

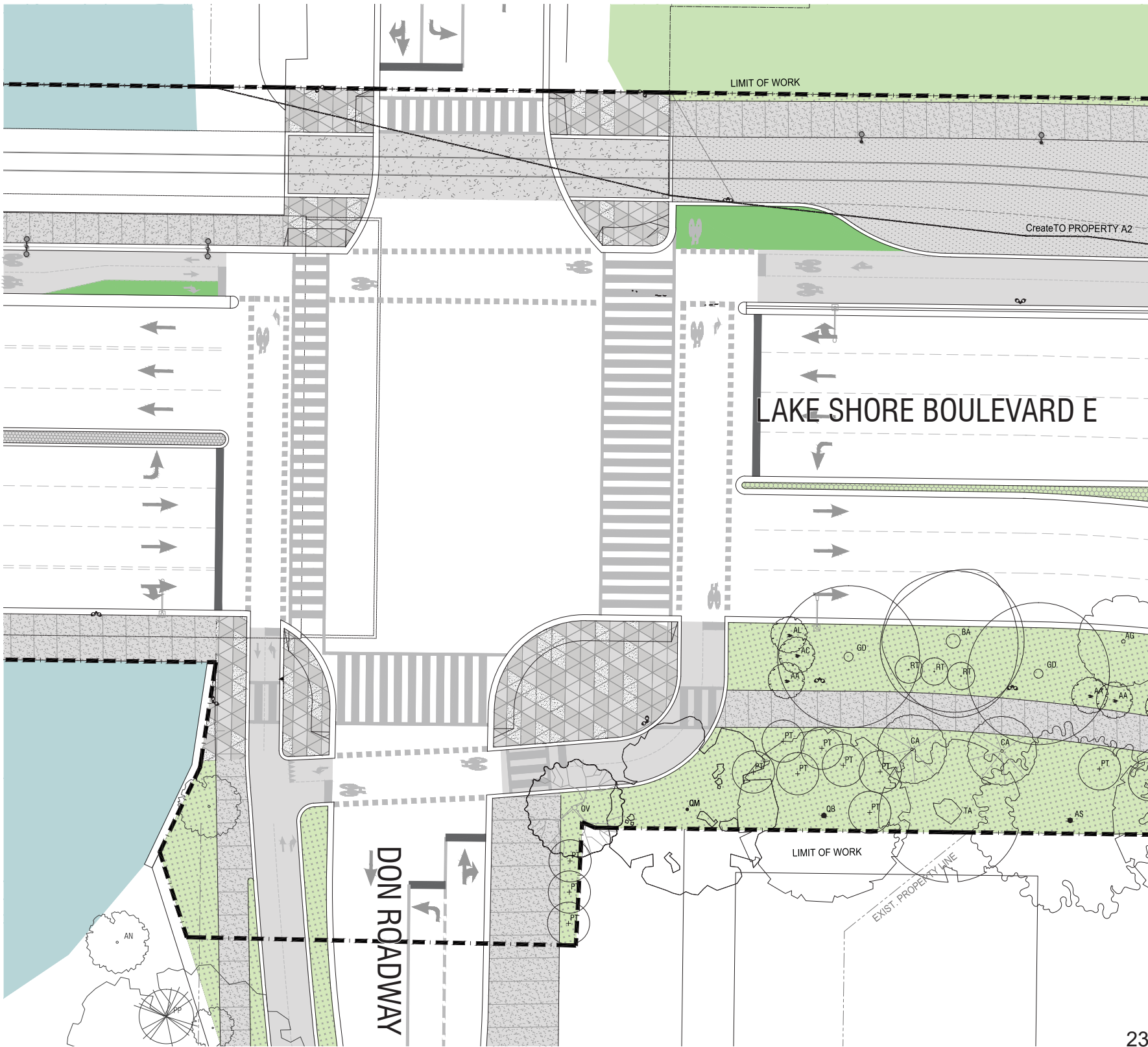
Intersection Design - Don Roadway

Proposed Design

Key Design Features

- Where existing Don Roadway meets new Don Roadway (designed by PLFP Roads team)
- Where Lower Don Trail on Don Roadway meets trail along Lake Shore Boulevard
- Safe crossings for pedestrians and cyclists: pedestrians cross east-west north of Harbour Lead Rail Line, cyclists have extra space for turning
- Leading signal interval for advanced north-south crossing of pedestrians and cyclists for increased safety and visibility
- No right turn on red for vehicles
- All left turning vehicles to turn within a dedicated signal phase

Note: The design for Don Roadway between Lake Shore and Commissioners Street has been finalized and approved as part of Port Lands Flood Protection project



Intersection Design - Don Roadway

Truck Turning Analysis

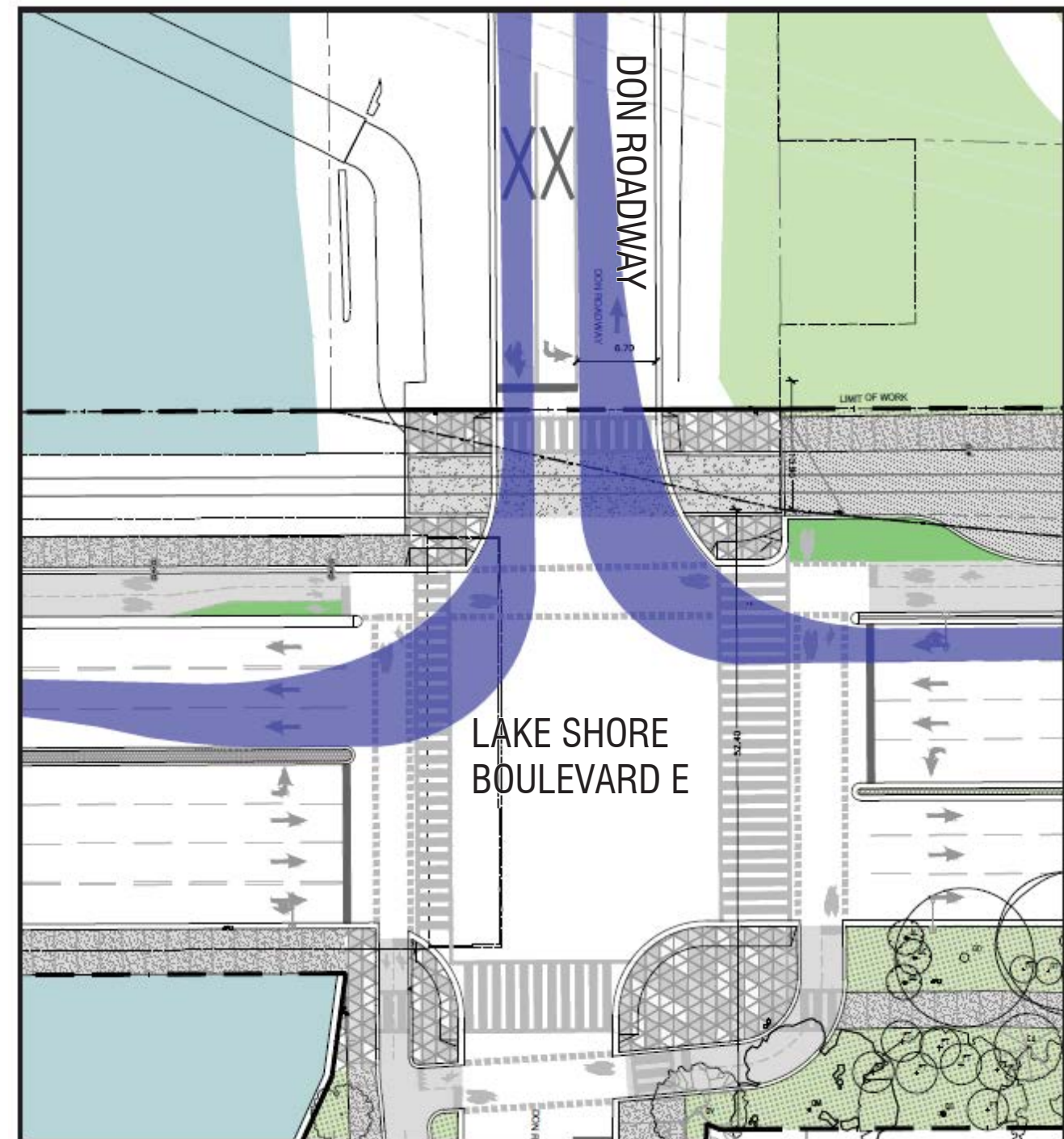
Verifying Intersection Geometry

- Ensure truck movement through intersections are in accordance with City's Curb Radii Guideline.
- WB-20 (tractor semi-trailer) used at north corners of Don Roadway intersection.
- MSU (medium single unit truck) used at all other intersections.
- Trucks do not track over the curb, bicycle trail or sidewalk to complete turn.
- Carlaw Ave. intersection curb radii set to match existing.
- Don Roadway intersection south corners match new Don Roadway design between LSB to Commissioners St.



TRUCK TURN ANALYSIS PATHING EXAMPLE

WB-20 RIGHT TURN AT NORTH CORNERS OF DON ROADWAY INTERSECTION

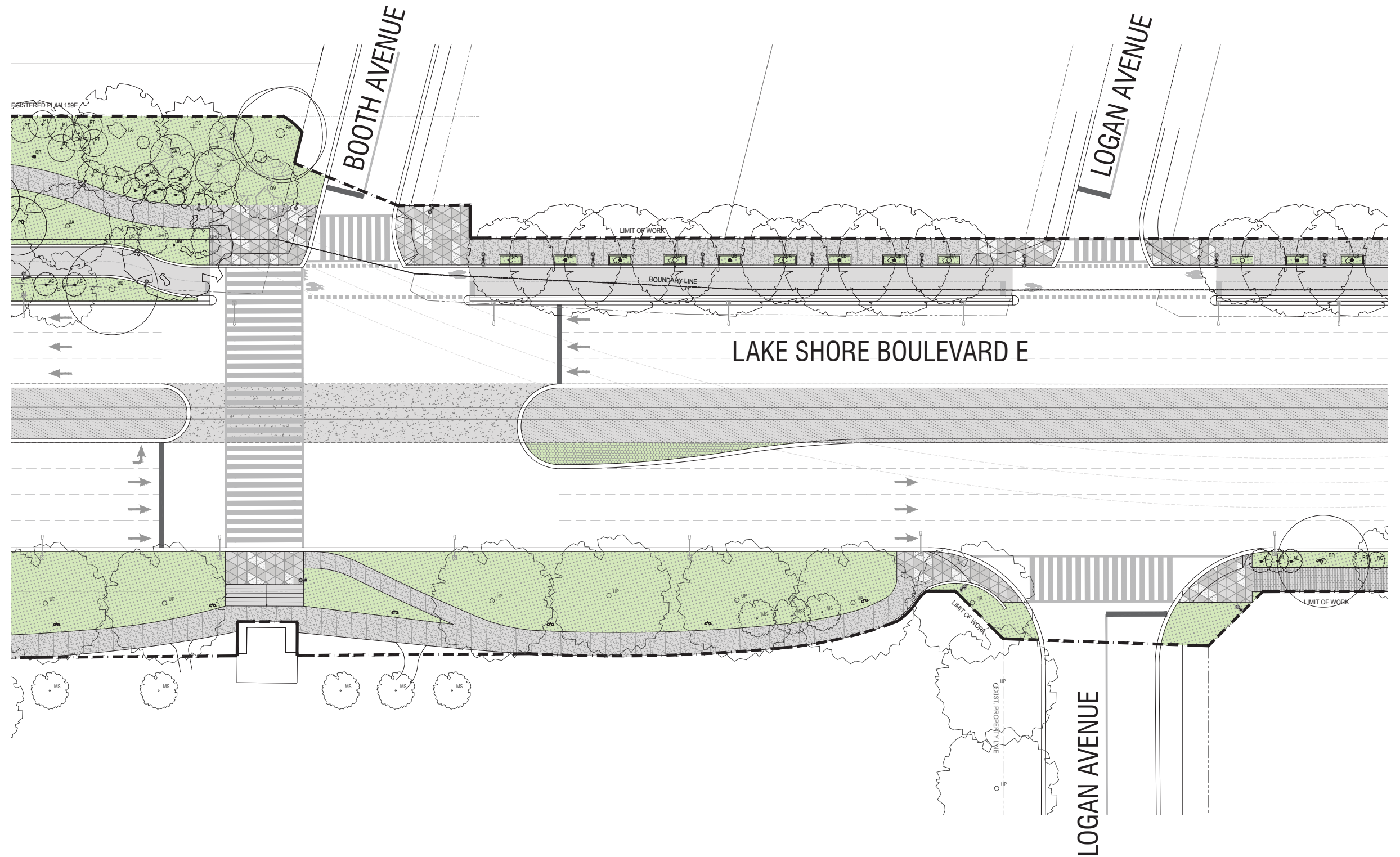


Intersection Design - Booth and Logan Avenue

Proposed Design

Key Design Features

- New controlled intersection at Booth Avenue
- Extra wide pedestrian crossing North to South at Booth Avenue and McCleary Park - no cycling crossside
- Access to McCleary Park via stair and ramp to preserve mature Elm trees
- No controlled intersection at Logan Avenue

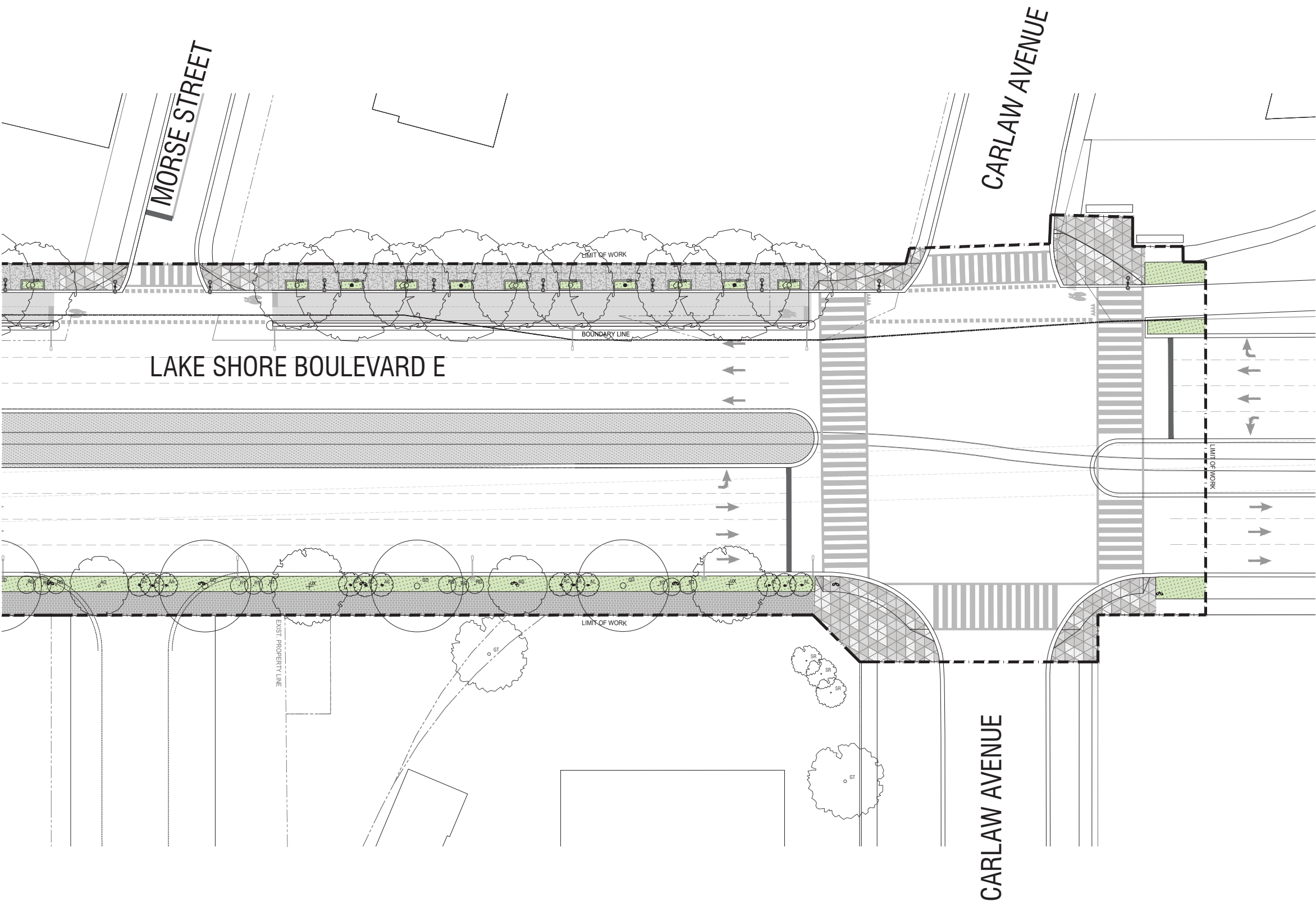


Intersection Design - Carlaw Avenue

Proposed Design

Key Design Features

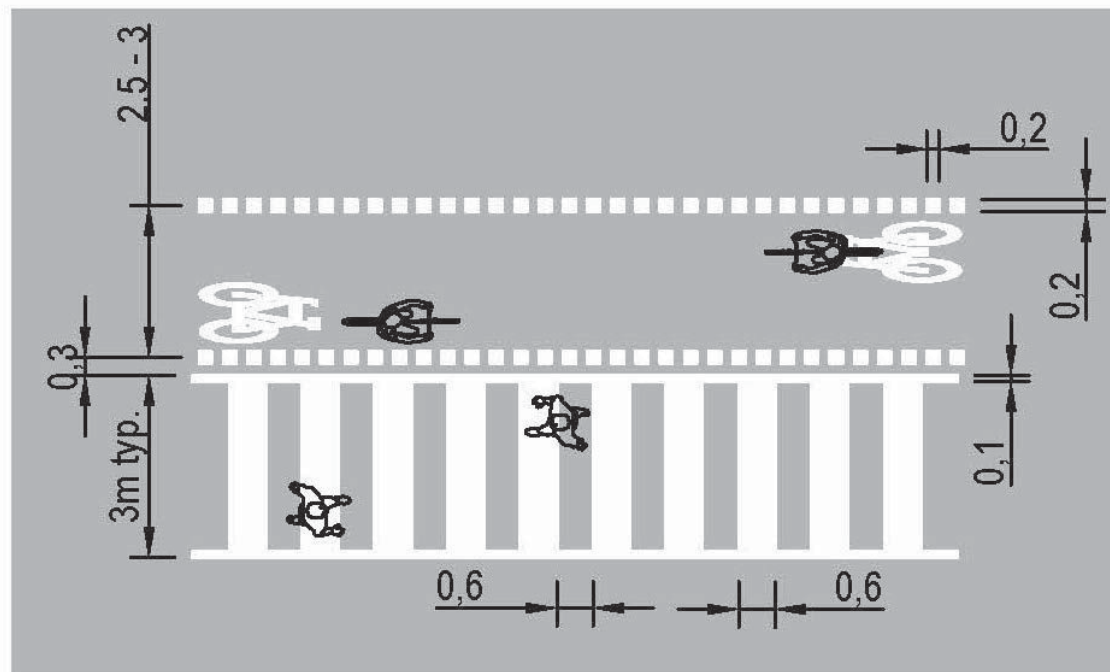
- Existing cycling trail ties into new one with new crossride and intersection modifications
- Cyclist and vehicles at same grade at intersection
- Harbour Lead Rail Line ties into existing location in median after Carlaw Avenue



Improved Pedestrian and Cycling Markings for Visibility at Intersections

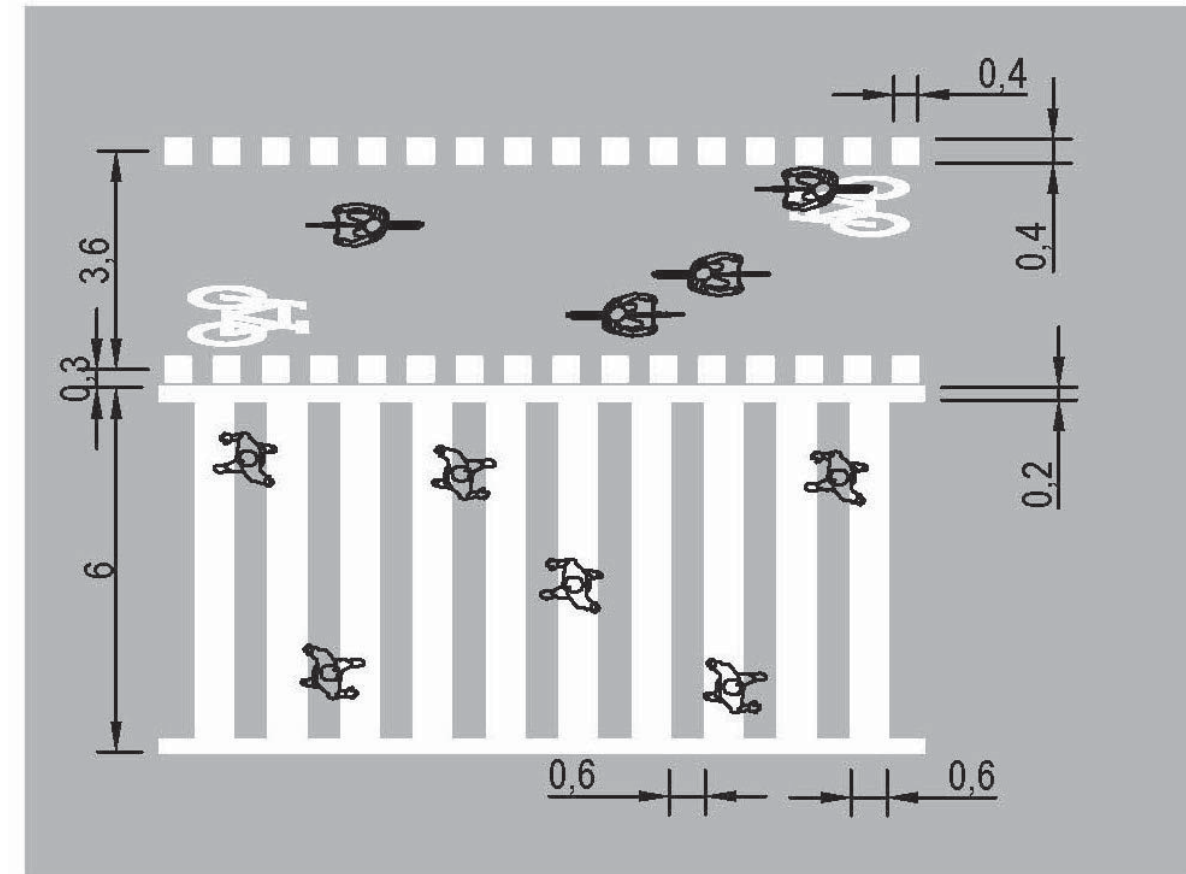


Thermoplastic Application



TYPICAL CROSSING CONDITION

Pedestrian zebra based on existing condition on Lake Shore Boulevard
Bi-Directional bicycle cross ride width from Ontario Traffic Manual Book 18
Elephants' feet dimensions from Cycling Toronto



PROPOSED CROSSING CONDITION

Typical zebra width doubled
Bi-directional bicycle cross ride wider
Elephants' feet dimensions from Ontario Traffic Manual Book 18

Public Realm Design

Public Feedback on PLFP Roads and Bridges 2017-2019

Strong emphasis on separated cycling paths for safety, both from vehicular and pedestrian traffic

Having a physical barrier that separates cyclists from traffic

was identified as the most important feature to help cyclists feel safer.

- participants prioritized higher barriers such as planters that would physically prevent cars from entering bike paths
- curbs or medians were the next preferred option, followed by the elevation of bicycle paths
- extra separation and robust barriers contribute to a sense of safety
- feeling safe but also feeling good are important

Clear and separated bicycle and pedestrian paths preferred

- Participants would be ok with different approaches in different parts of the network based on space and cost
- Put cyclists and pedestrians at a different level (grade separation) on the bridges

Visual cues can help indicate separation

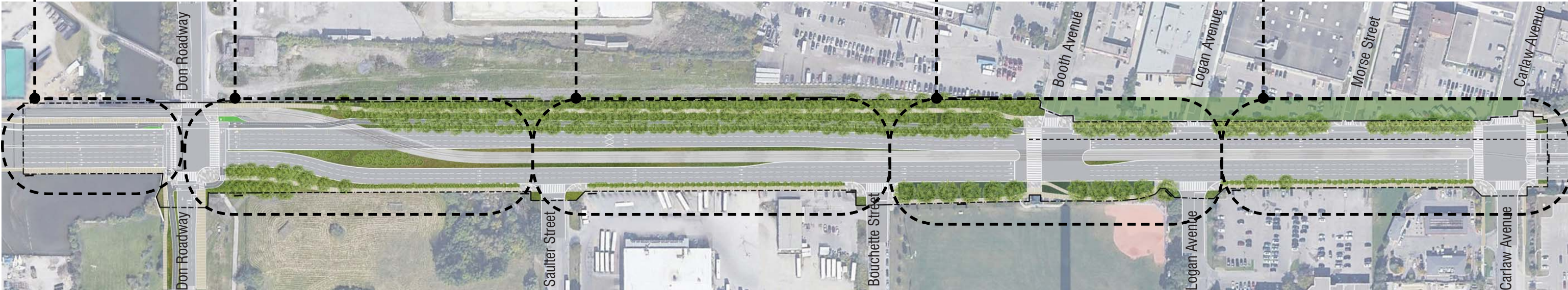
Preference was for a combination of multiple cues

- vertical signage
- horizontal pavement markers (should be used regularly and maintained regularly)
- limit textured surfaces on cycling paths
- no preference over colour, texture, or graphic cues

Project Overview

Five Zoomed In Areas

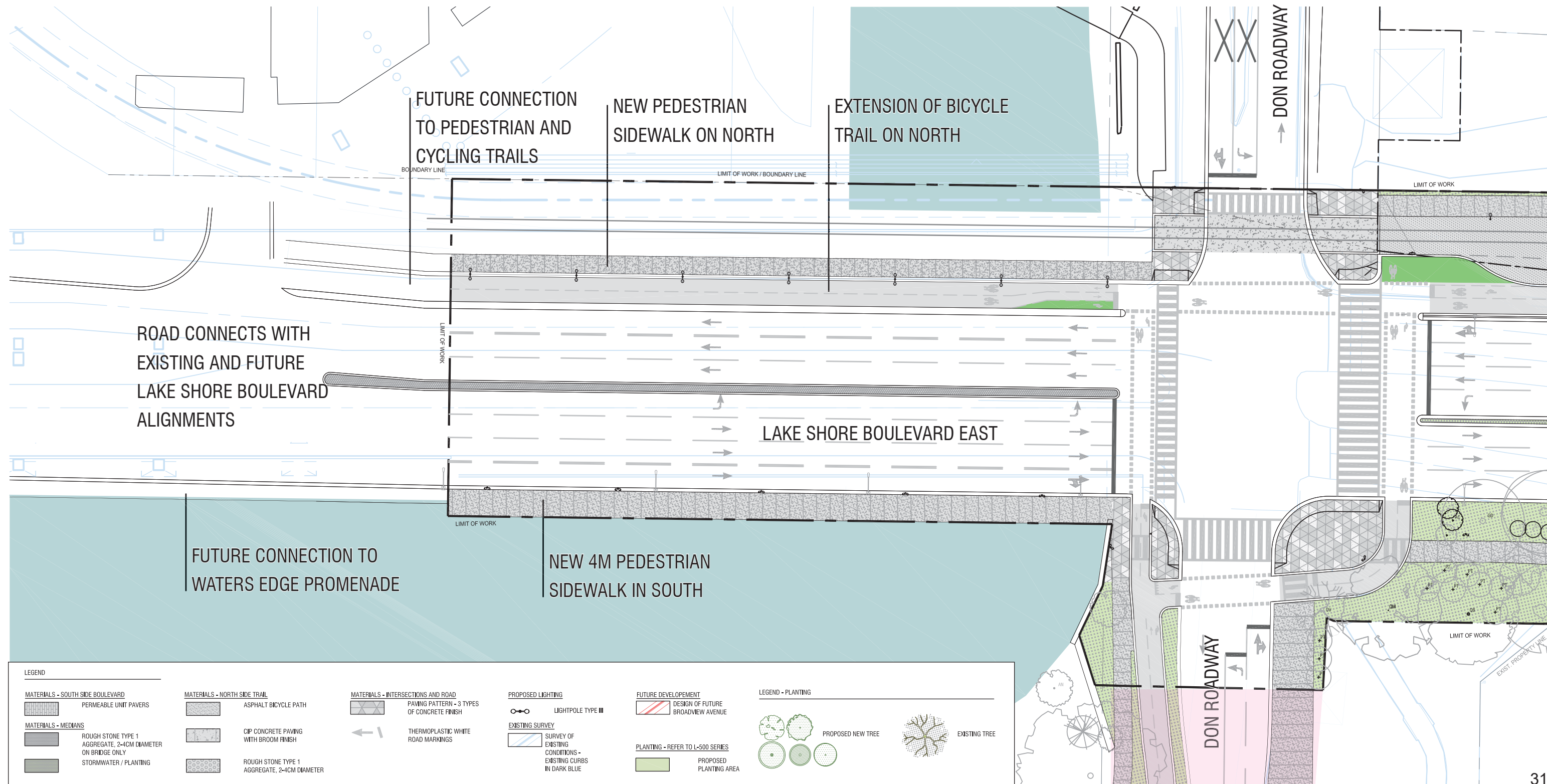
- Area 1** - Lake Shore Boulevard Bridge
- Area 2** - Don Roadway to Saulters Street
- Area 3** - Saulters Street to Bouchette Street
- Area 4** - McCleary Park
- Area 5** - Logan Avenue to Carlaw Avenue



 Future Improvement Zone
- Setbacks Adjacent to
New Development

Area 1 - Lake Shore Boulevard Bridge

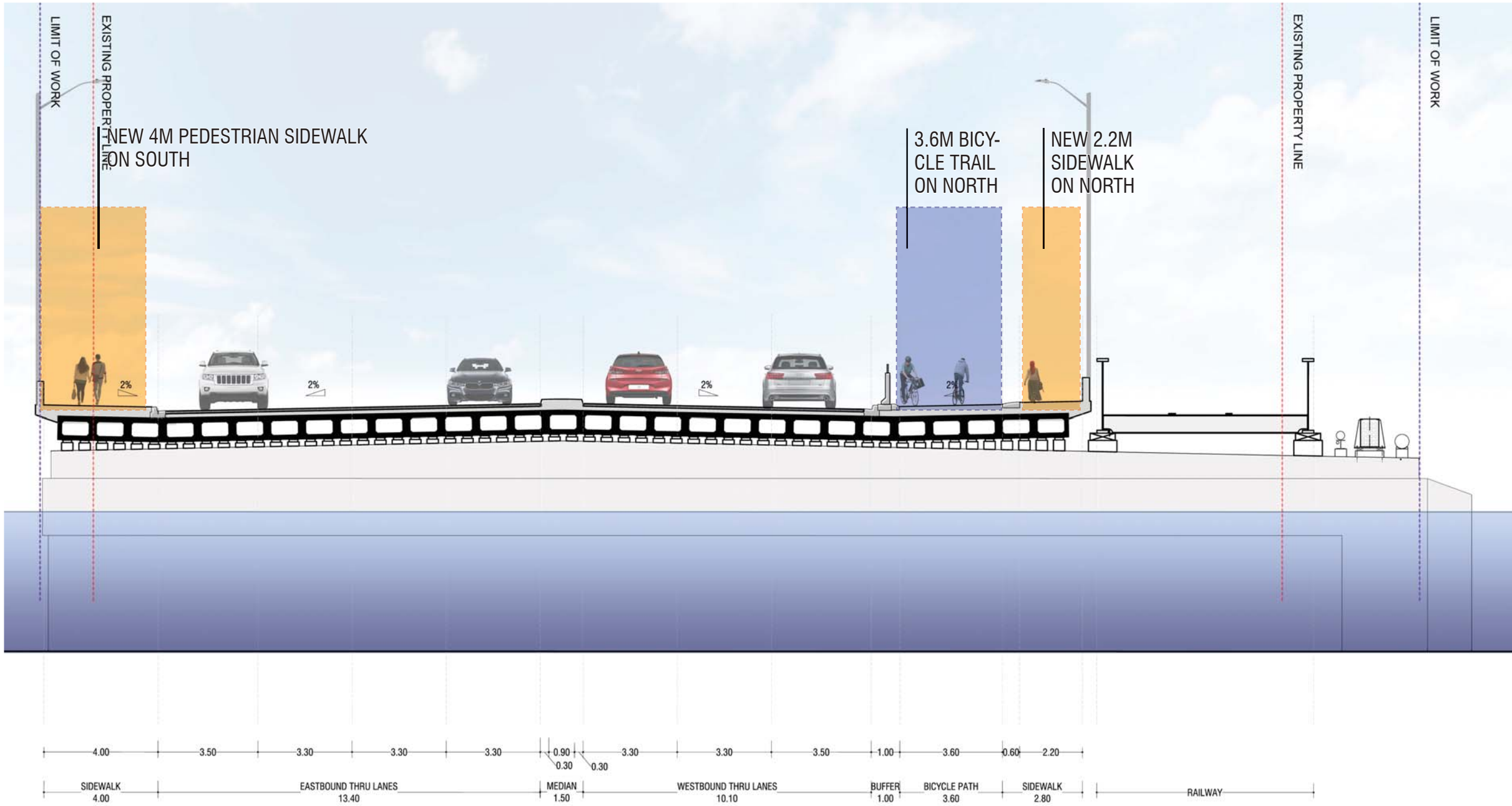
A Wider Space for Public Realm



Overlay with 90-100% Design Sketch by Portlands Road Team received from Waterfront Toronto

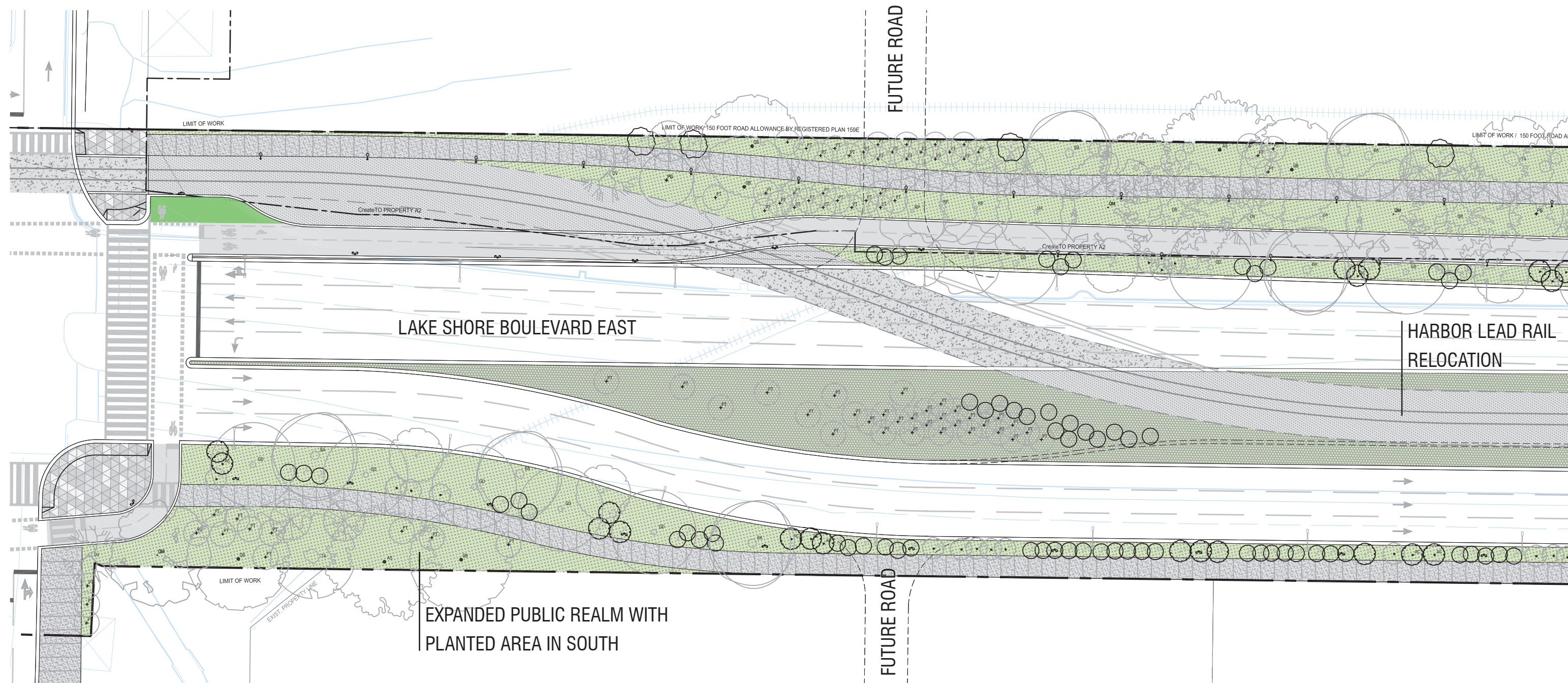
Area 1 - Lake Shore Boulevard Bridge

Expanded Public Realm



Area 2 - Don Roadway to Saulter Street

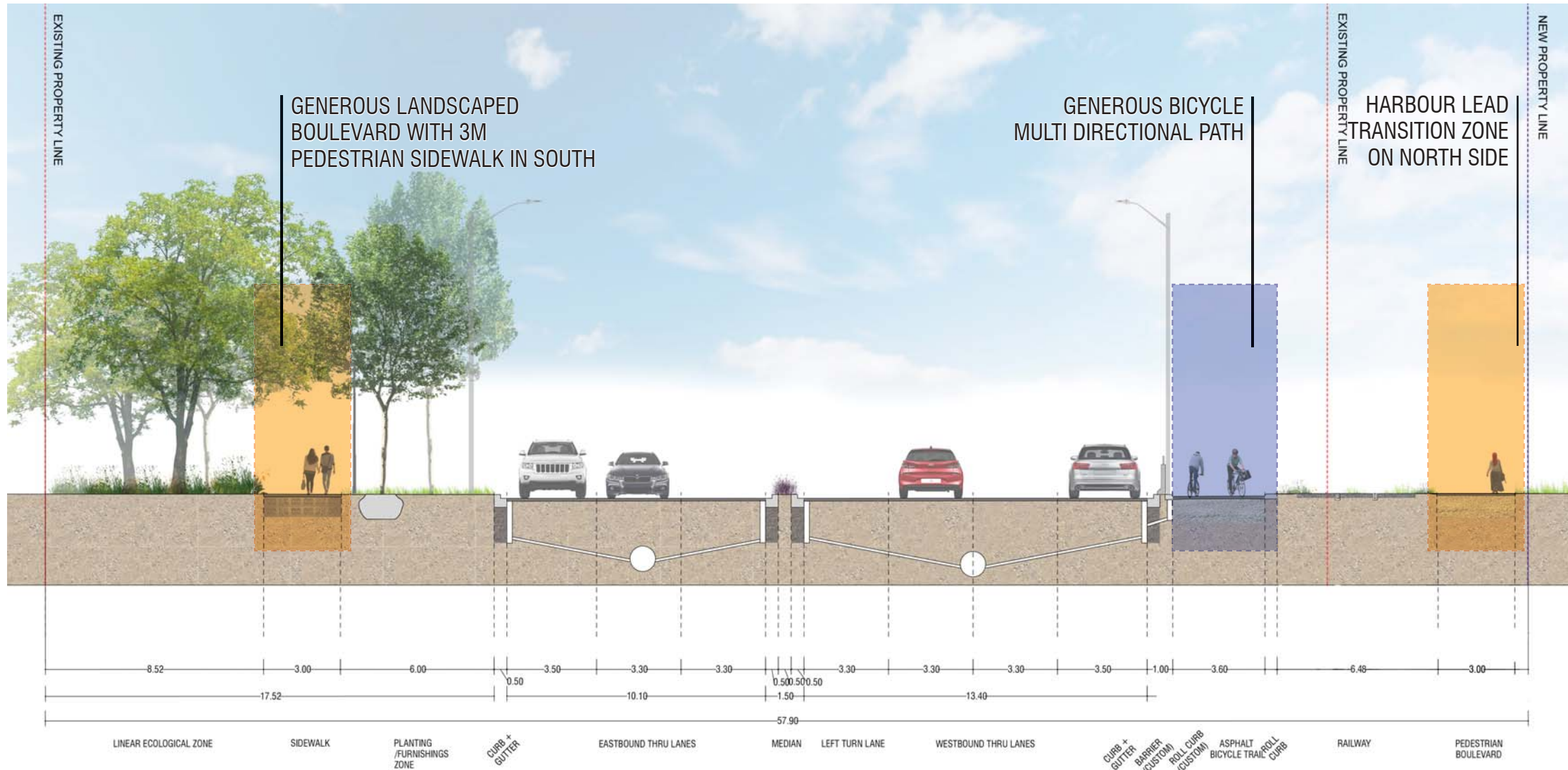
Transition of Harbor Lead to Center Median



LEGEND					
MATERIALS - SOUTH SIDE BOULEVARD		MATERIALS - NORTH SIDE TRAIL		MATERIALS - INTERSECTIONS AND ROAD	
PERMEABLE UNIT PAVERS		ASPHALT BICYCLE PATH		PAVING PATTERN - 3 TYPES OF CONCRETE FINISH	
MATERIALS - MEDIANS		CIP CONCRETE PAVING WITH BROOM FINISH		THERMOPLASTIC WHITE ROAD MARKINGS	
ROUGH STONE TYPE 1 AGGREGATE, 2-4CM DIAMETER ON BRIDGE ONLY		ROUGH STONE TYPE 1 AGGREGATE, 2-4CM DIAMETER		LIGHTPOLE TYPE III	
STORMWATER / PLANTING				SURVEY OF EXISTING CONDITIONS - EXISTING CURBS IN DARK BLUE	
				FUTURE DEVELOPMENT	
				DESIGN OF FUTURE BROADVIEW AVENUE	
				PLANTING - REFER TO L-500 SERIES	
				PROPOSED PLANTING AREA	
				LEGEND - PLANTING	
				PROPOSED NEW TREE	
				EXISTING TREE	

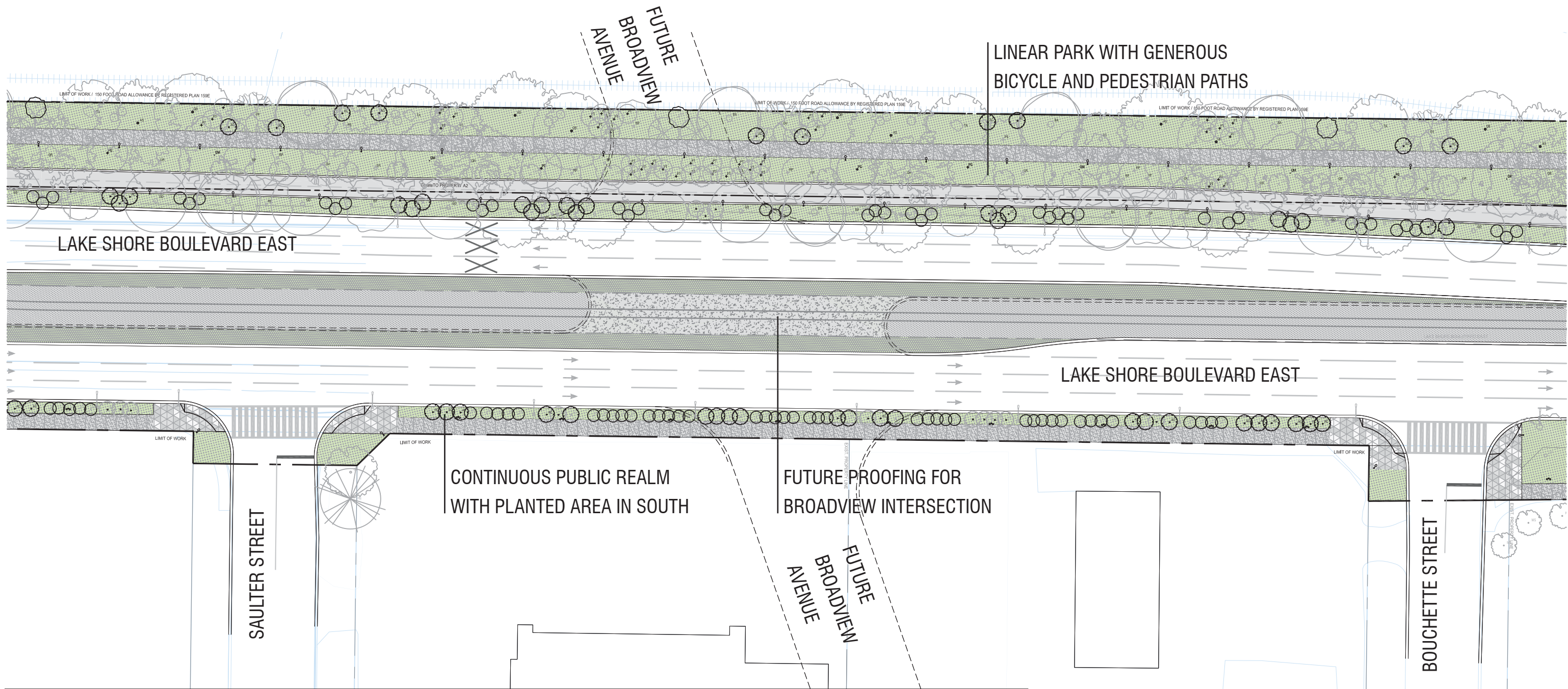
Area 2 - Don Roadway to Saulter Street

Transition of Harbor Lead to Center Median



Area 3 - Saulter Street to Bouchette Street

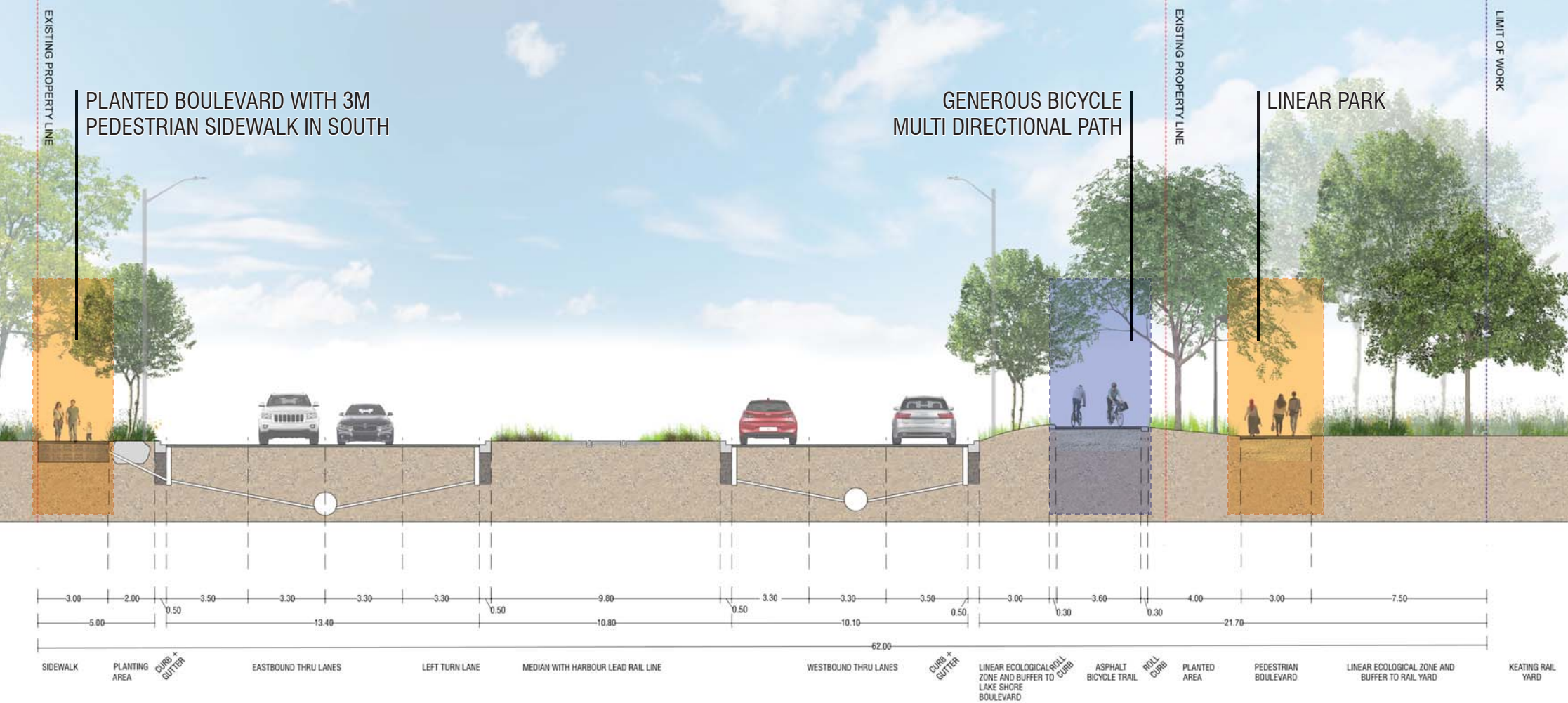
Linear Park and Green Scenery



LEGEND					
MATERIALS - SOUTH SIDE BOULEVARD		MATERIALS - NORTH SIDE TRAIL		MATERIALS - INTERSECTIONS AND ROAD	
PERMEABLE UNIT PAVERS		ASPHALT BICYCLE PATH		PAVING PATTERN - 3 TYPES OF CONCRETE FINISH	
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STORMWATER / PLANTING				SURVEY OF EXISTING CONDITIONS - EXISTING CURBS IN DARK BLUE	
				FUTURE DEVELOPEMENT	
				DESIGN OF FUTURE BROADVIEW AVENUE	
				LEGEND - PLANTING	
				PROPOSED NEW TREE	
				EXISTING TREE	
				PLANTING - REFER TO L-500 SERIES	
				PROPOSED PLANTING AREA	

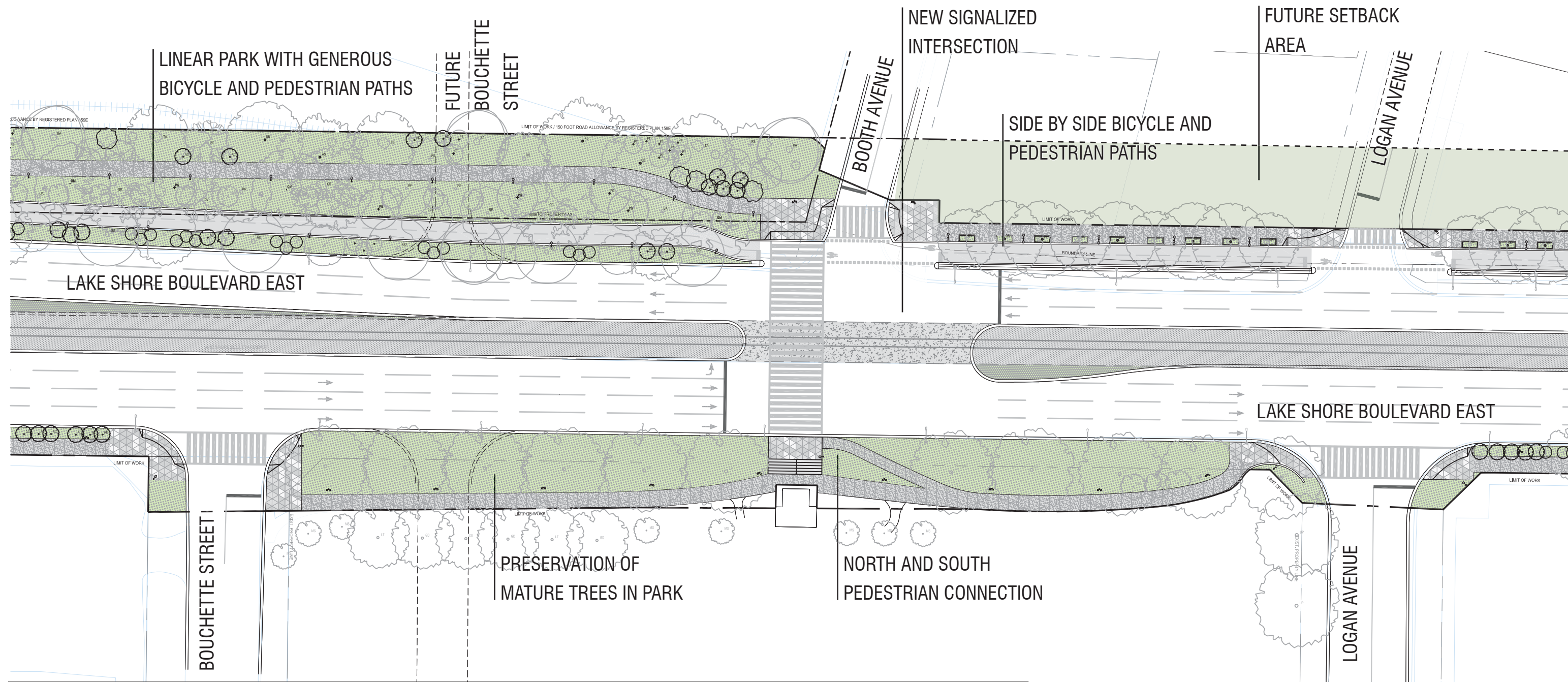
Area 3 - Saulter Street to Bouchette Street

Linear Park and Green Scenery



Area 4 - McCleary Park

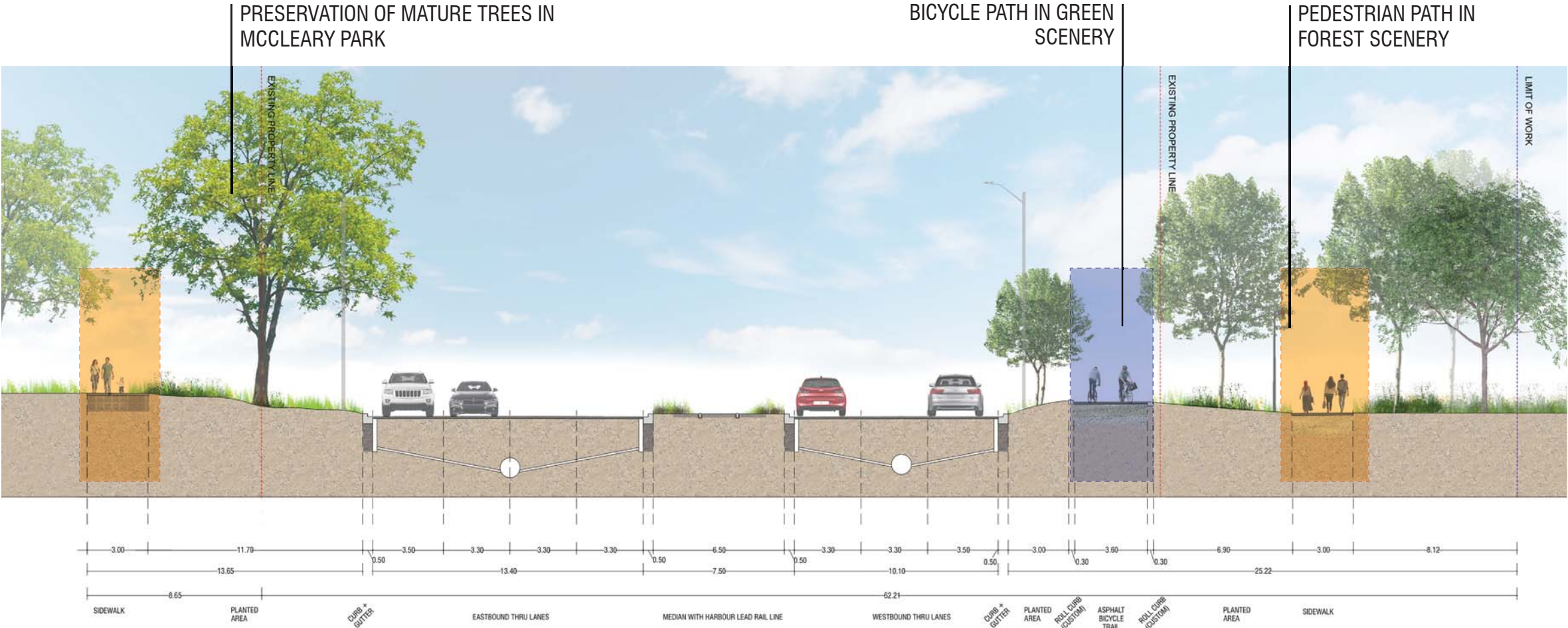
Transition from Linear Park to Side by Side Trails and Connection to Park



LEGEND					
MATERIALS - SOUTH SIDE BOULEVARD		MATERIALS - NORTH SIDE TRAIL		MATERIALS - INTERSECTIONS AND ROAD	
	PERMEABLE UNIT PAVERS		ASPHALT BICYCLE PATH		PAVING PATTERN - 3 TYPES OF CONCRETE FINISH
MATERIALS - MEDIANS			CIP CONCRETE PAVING WITH BROOM FINISH		THERMOPLASTIC WHITE ROAD MARKINGS
	ROUGH STONE TYPE 1 AGGREGATE, 2-4CM DIAMETER ON BRIDGE ONLY		ROUGH STONE TYPE 1 AGGREGATE, 2-4CM DIAMETER	PROPOSED LIGHTING	
	STORMWATER / PLANTING	EXISTING SURVEY			LIGHTPOLE TYPE III
		FUTURE DEVELOPEMENT			SURVEY OF EXISTING CONDITIONS - EXISTING CURBS IN DARK BLUE
				LEGEND - PLANTING	
		PLANTING - REFER TO L-500 SERIES			PROPOSED NEW TREE
					EXISTING TREE

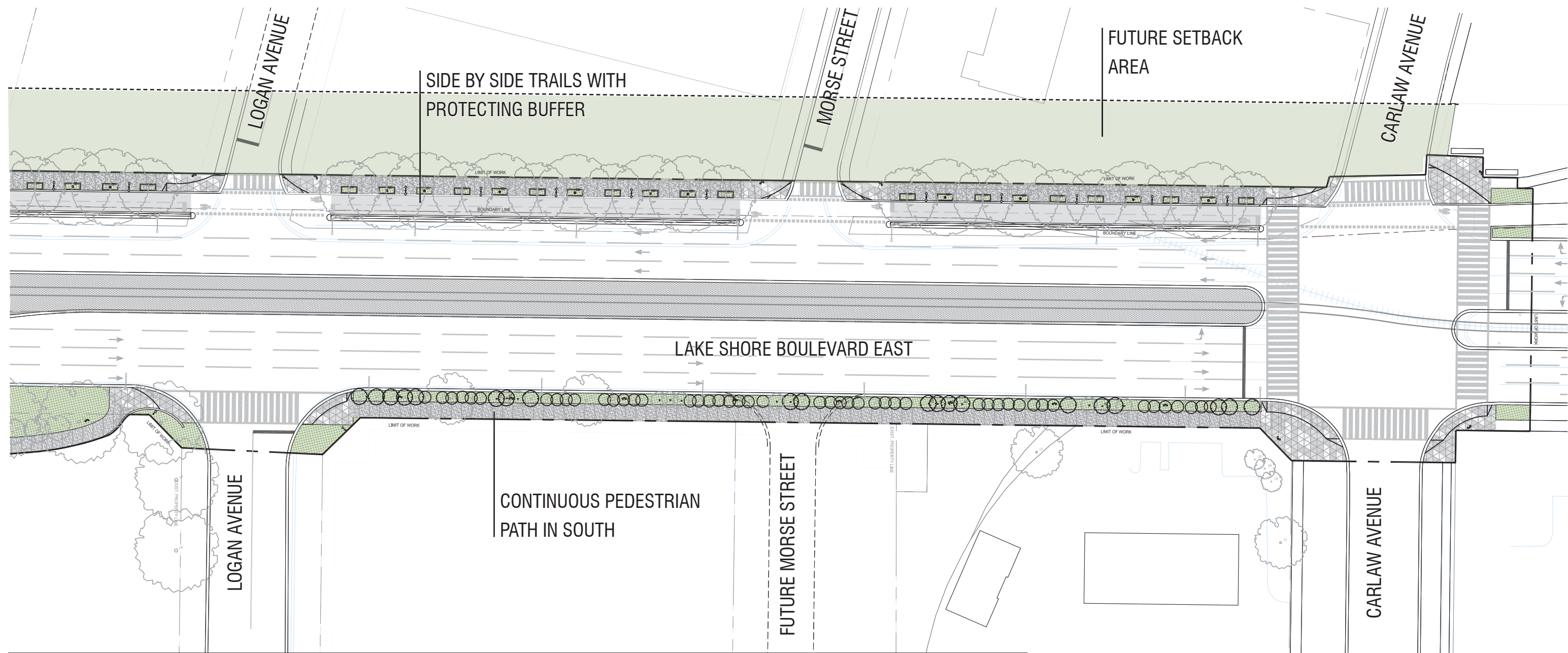
Area 4 - McCleary Park

Transition from Linear Park to Side by Side Trails and Connection to Park



Area 5 - Logan Avenue to Carlaw Avenue

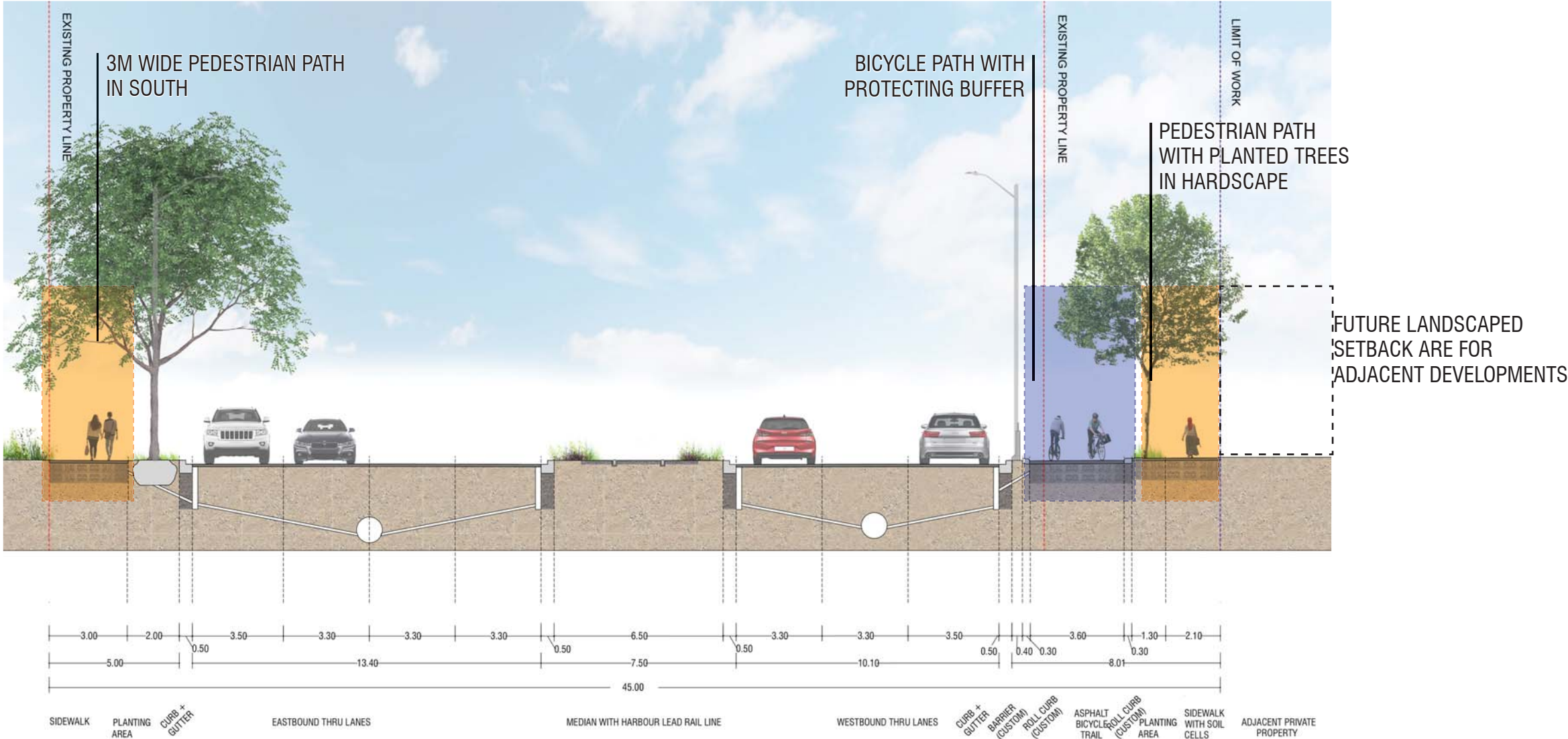
Protected and Side by Side Trails



LEGEND					
MATERIALS - SOUTH SIDE BOULEVARD		MATERIALS - NORTH SIDE TRAIL		MATERIALS - INTERSECTIONS AND ROAD	
	PERMEABLE UNIT PAVERS		ASPHALT BICYCLE PATH		PAVING PATTERN - 3 TYPES OF CONCRETE FINISH
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	STORMWATER / PLANTING	EXISTING SURVEY			LIGHTPOLE TYPE III
LEGEND - PLANTING		FUTURE DEVELOPEMENT			SURVEY OF EXISTING CONDITIONS - EXISTING CURBS IN DARK BLUE
			DESIGN OF FUTURE BROADVIEW AVENUE	PLANTING - REFER TO L-500 SERIES	
			PROPOSED PLANTING AREA		

Area 5 - Logan Avenue to Carlaw Avenue

Protected and Side by Side Trails



Character of Lake Shore Boulevard East of Carlaw Avenue

North Boulevard / Linear Park



Separate bi-directional cycling trail and pedestrian sidewalk with bar shaped seating at intersections



Landscaped and planted linear park on north side

South Boulevard and Median



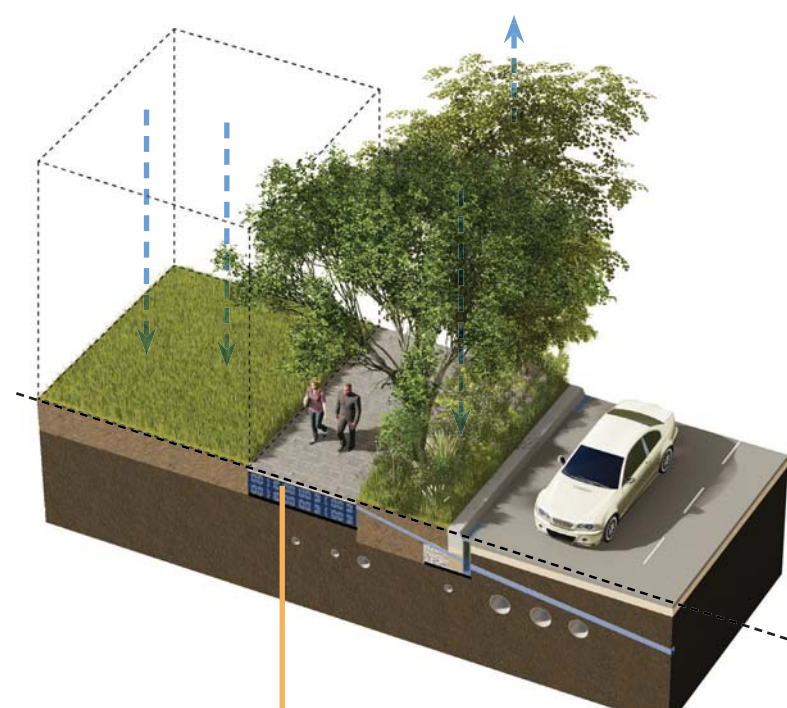
Formal boulevard layout of planting and sidewalk
Harbour Lead Rail Line crosses from median to Porlands at multiple points between Carlaw and Leslie Street



Bi-directional multi-use Martin Goodman Trail after Leslie connects to Leslie Street Spit (in addition to cycling trail on north side)
Planted median, no more Harbour Lead Rail Line

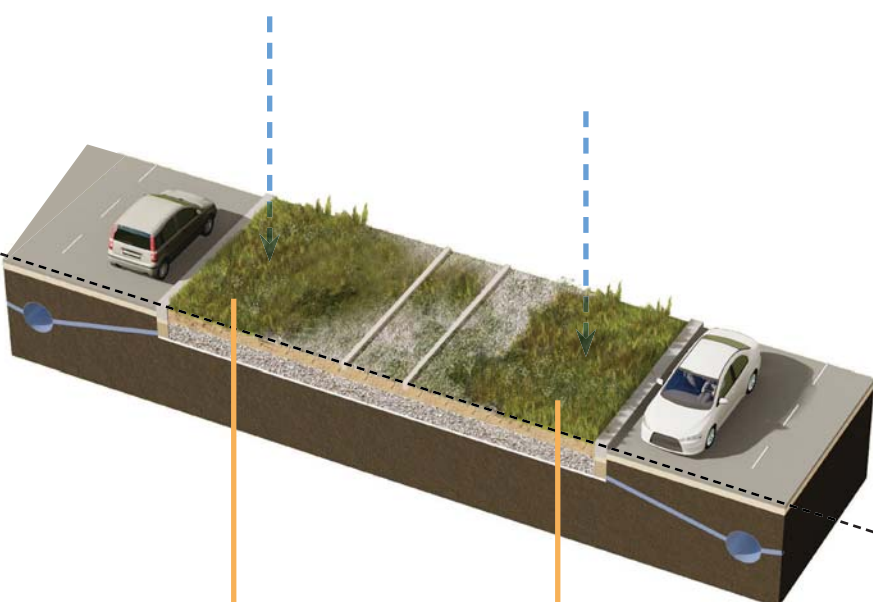
Public Realm Design

South Boulevard



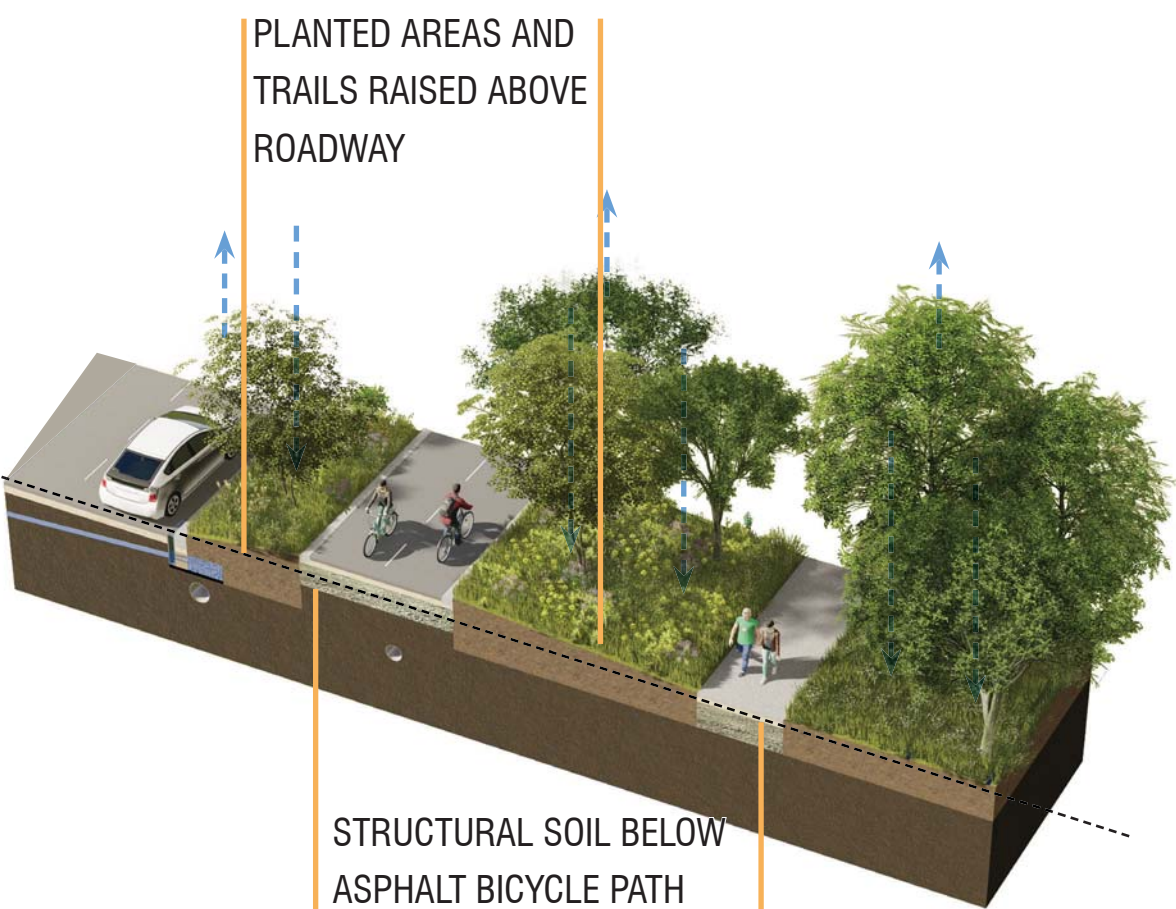
SOILS CELLS UNDER
CONCRETE PEDESTRIAN
PATH TO INFILTRATE
WATER AND HELP TREE
GROWTH

Centre Median



PLANTED MEADOW
ALONGSIDE RAIL
BALLAST HARBOUR
LEAD RAIL LINE

North Boulevard (Linear Park)

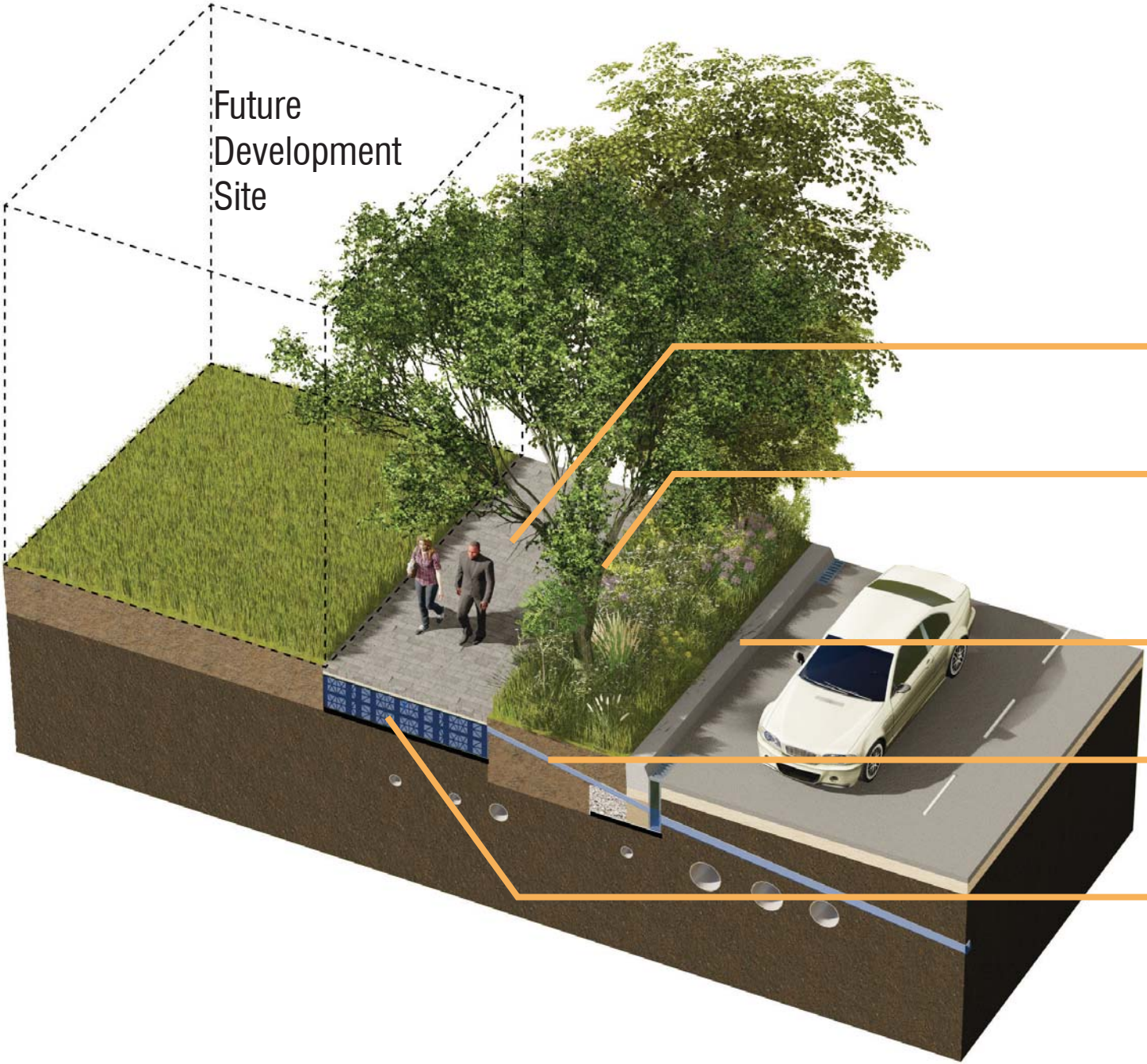


PLANTED AREAS AND
TRAILS RAISED ABOVE
ROADWAY

STRUCTURAL SOIL BELOW
ASPHALT BICYCLE PATH
AND CONCRETE SIDEWALK
TO PROVIDE NUTRIENT AND
OXYGEN EXCHANGE

Public Realm Design

South Boulevard



Cast-in-place concrete sidewalk

Bio-retention planters with robust salt, snow, and wind tolerant species

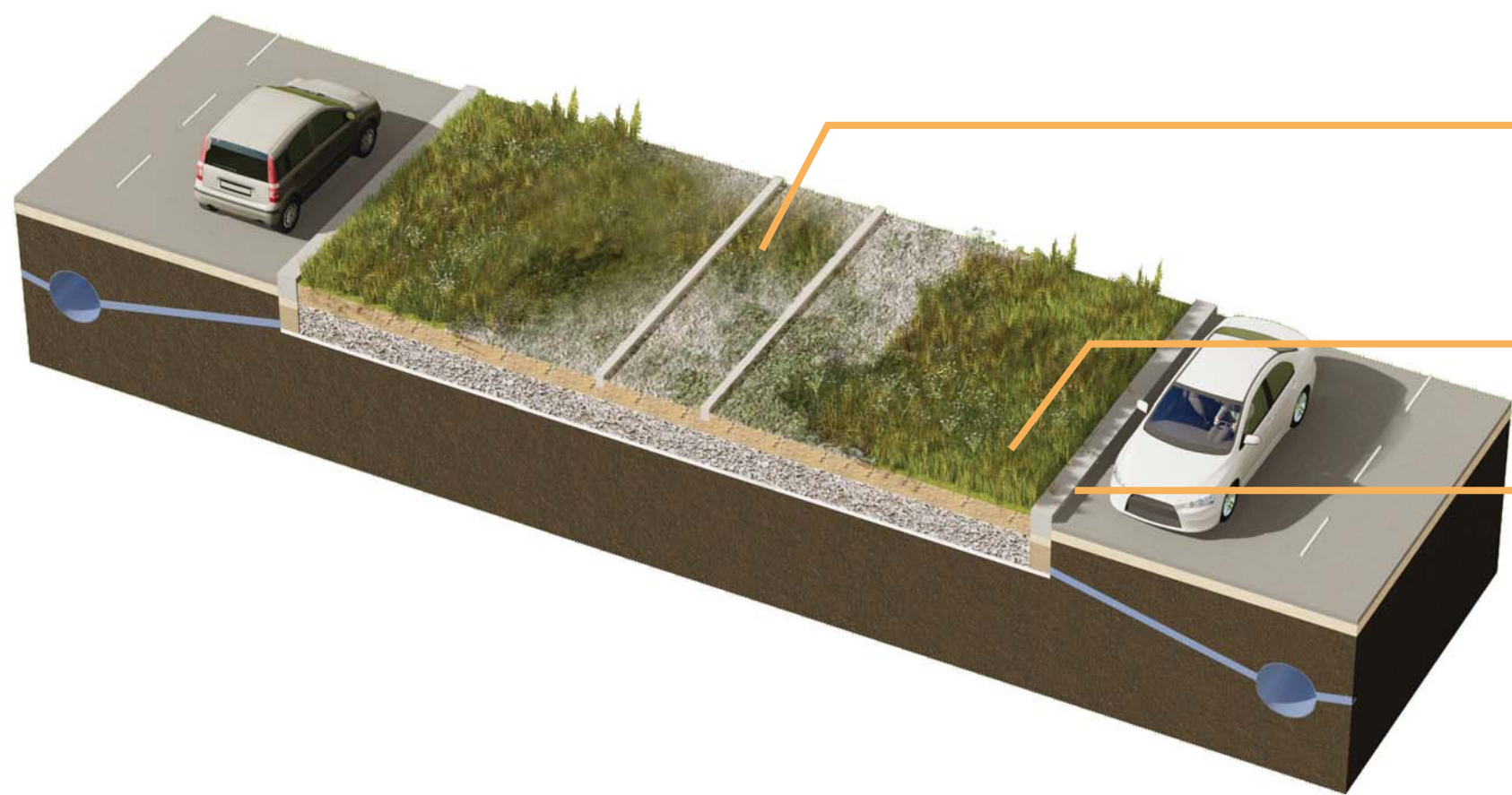
Concrete curb and gutter, roadway drains to boulevard

Bio-retention tied to existing storm sewer

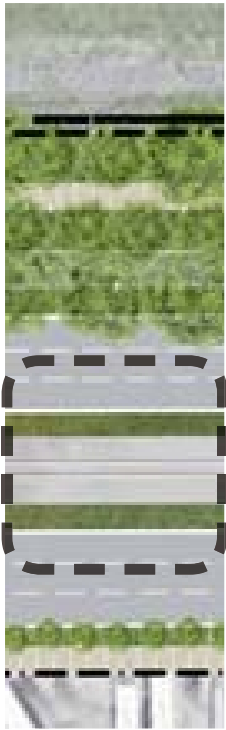
Soil cells for additional soil volume beneath sidewalk

Public Realm Design

Centre Median

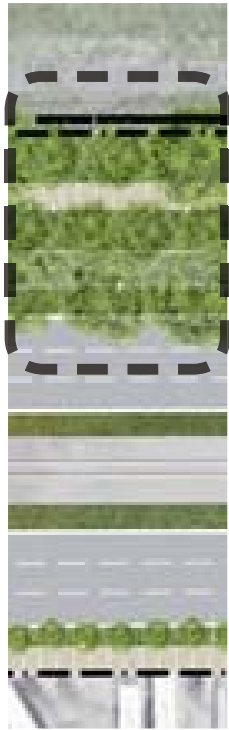


- Harbour Lead Rail Line on compacted rail ballast (cast-in-place concrete at future intersections)
- Robust drought and salt tolerant meadow species
- Concrete curb



Public Realm Design

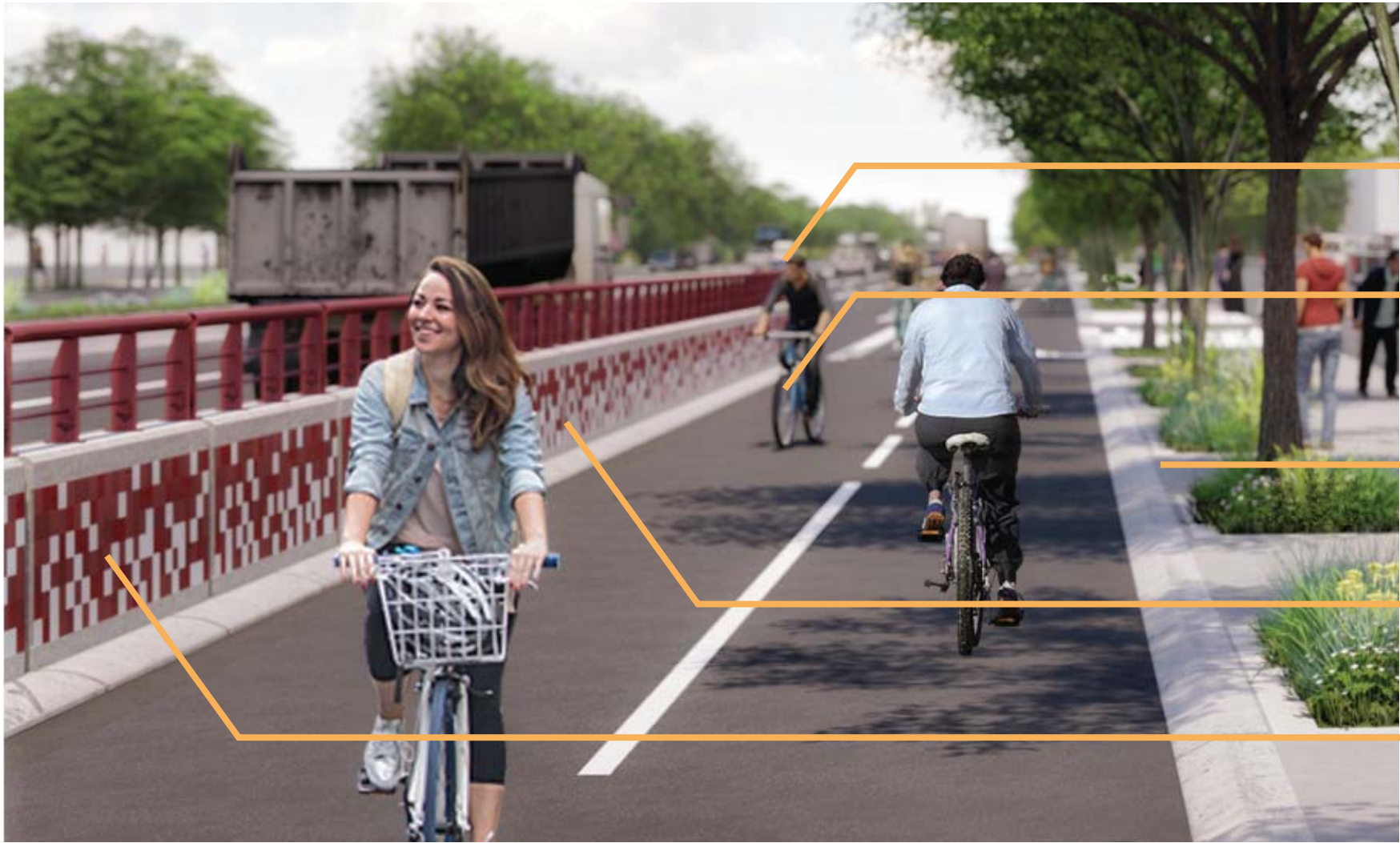
North Boulevard



Public Realm Design

Barrier Design - Comfort, Safety, and Delight

Tell us what
you think of
this design



Railing provides additional height, transparency

Rolled curb provides spacing between wall and cyclists

Rolled curb separates pedestrians and cyclists

Tile inlaid in modular barrier provide sense of place, delight, human scale

Crash tested TL-4 straight profile barrier provides protection, safety for cyclists

Public Realm Design

Resting Area “Pocket Parks”

Tell us what
you think of
this design

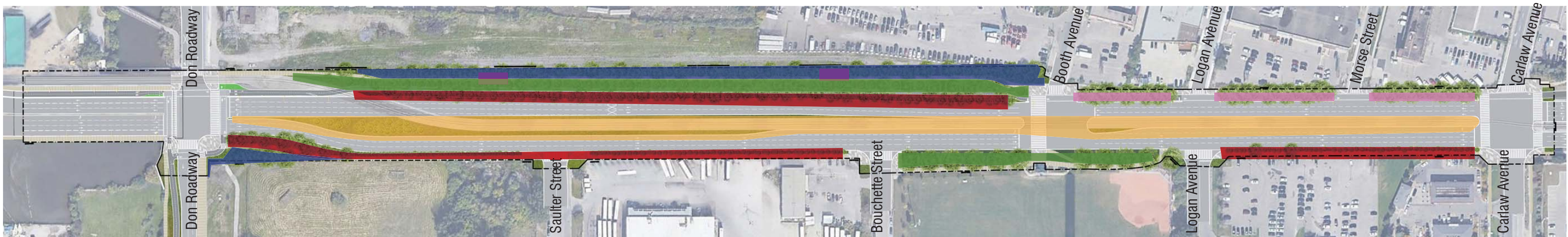


- Raised Planting Bed for Trees and Shrubs
- Concrete Social Seating Circle
- Drinking fountain
- Tile to match barrier
- Special Paving at Pocket Park Matches Intersection Corners
- Rolled Curb at Bicycle Path: cyclists stop and dismount to use rest area

Public Realm Design - In Progress

Planting strategy for microclimatic-appropriate Zones

Tell us what
you think of
this design



Buffer

- Next to the road
- Wind and salt planted buffer as protection layer
- Limited height planted trees and meadow
- Low maintenance, biodiverse, resilient species
- Access to soil cells

Forest

- Secondary plan
- Narrow screen buffer
- Edge forest and meadow, lower specimens
- Ravine ecology, medium salt tolerance
- Access to structural soil

Edge Forest

- Space furthest from road
- Edge Forest
- Dry, Sandy Maple hardwood ecotype
- Requires less salt tolerance
- Most natural

Formal Streetscape

- In hardscape
- Large planted trees
- Biodiverse, resilient species
- Medium salt tolerance
- Access to soil cells

Median

- Between roadways
- Salt, wind and snow storage tolerant species
- Low planting to accommodate railroad
- Roadside meadow and grass
- Native species

Public Realm Planting Strategy

Establishment 5-10 Years



Future Canopy and Succession



Public Realm Design - In Progress

Lighting Strategy

Tell us what
you think of
this design



Lake Shore Bridge
Roadway Lighting
mounted on outside
of bridge

Additional pedestrian level lighting
in "Linear Park" condition between
cycling and pedestrian pathways

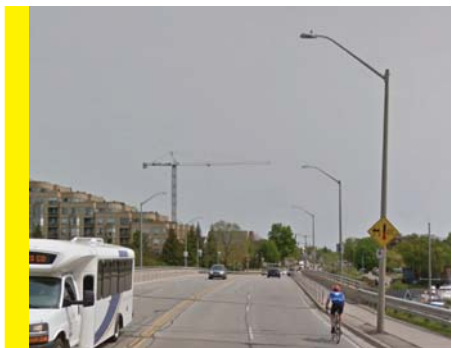
Future
Broadview
Avenue
Extension

Existing flood lighting for McCleary
Park baseball diamond - additional
pedestrian lighting required?

Future
Morse
Street



Existing Combined Roadway & Pedestrian
Lighting on LSB
Shared pedestrian and street lighting pole
no longer permitted



Proposed Roadway & Cycle Path Lighting
Fixture: NXT-72M-700mA-2ES-3000K
Pole: Standard Toronto Hydro
Spacing: 30m o.c.



Proposed Pedestrian Lighting
Fixture/Pole: Olivia Grande, Asymmetric, 2G350 LED Engine, 3000K CCT
Minimum Height: 4.5m
Spacing: 15m o.c.
Avg. Illuminance: 1.04

Public Realm Design - Linear Park

Biodiverse Pollinator Paradise, 65m Right of Way



Public Realm Design - Formal Boulevard

Anticipates Future Development Setback, 41m Right of Way



Public Realm Design - Linear Park

Seasonal Variation in Experience, 65m Right of Way



Questions and Comments?

Discussion
(Will be edited out of
public presentation)