Session 03 - TRANSPORTATION + SERVICING

SHAPING THE FUTURE:

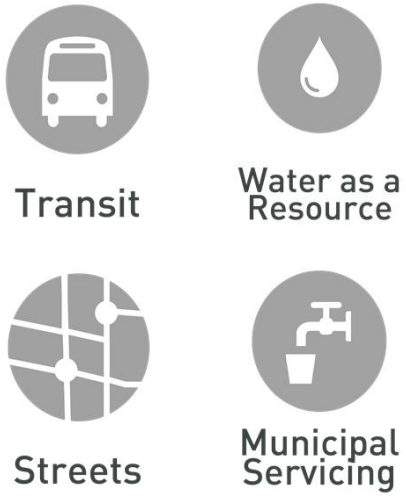
Placemaking in the Port Lands + Connecting South of Eastern

November 14, 2015 Open House

George Brown College - Waterfront Campus

Purpose of the Environmental Assessment (EA)

- Integrate the South of Eastern and the Port Lands Areas through transportation and servicing
- Identify major street and transit networks
- Identify servicing and stormwater infrastructure needed in the future
- Outline a phased approach for future long-term development of the area
- Maintain consistency with other EAs in the area
  - Lower Don Lands EA (LDL EA)
  - Don Mouth Naturalization and Port Lands Flood Protection Project EA (DMNP EA)



What is a Master Plan?

- The Municipal Class EA identifies “Master Planning” as an approach to planning for multiple types of infrastructure in a process that integrates infrastructure and land use planning approvals
- The Master Planning process addresses Phases 1 and 2 of the Class EA process
- These phases address identifying the problem and opportunity as well as the preferred alternatives at a strategic level that will inform future more detailed planning and design phases of the Class EA process (i.e. Phases 3 and 4 where applicable)
- Consultation with the public and agencies is a required component of the Master Planning process

The Port Lands (Present Day)

Transportation

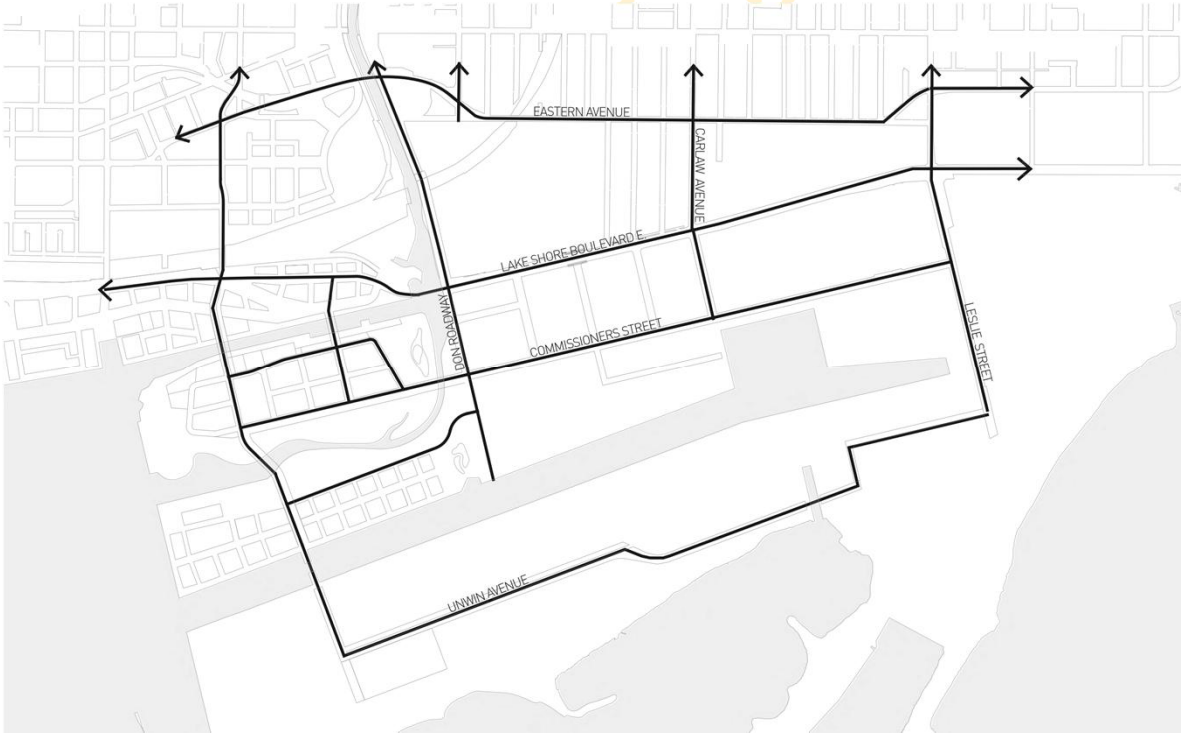
Transit

Streets

LACK OF A NETWORK = MORE POTENTIAL FOR CONGESTION

Existing + Approved Street Network

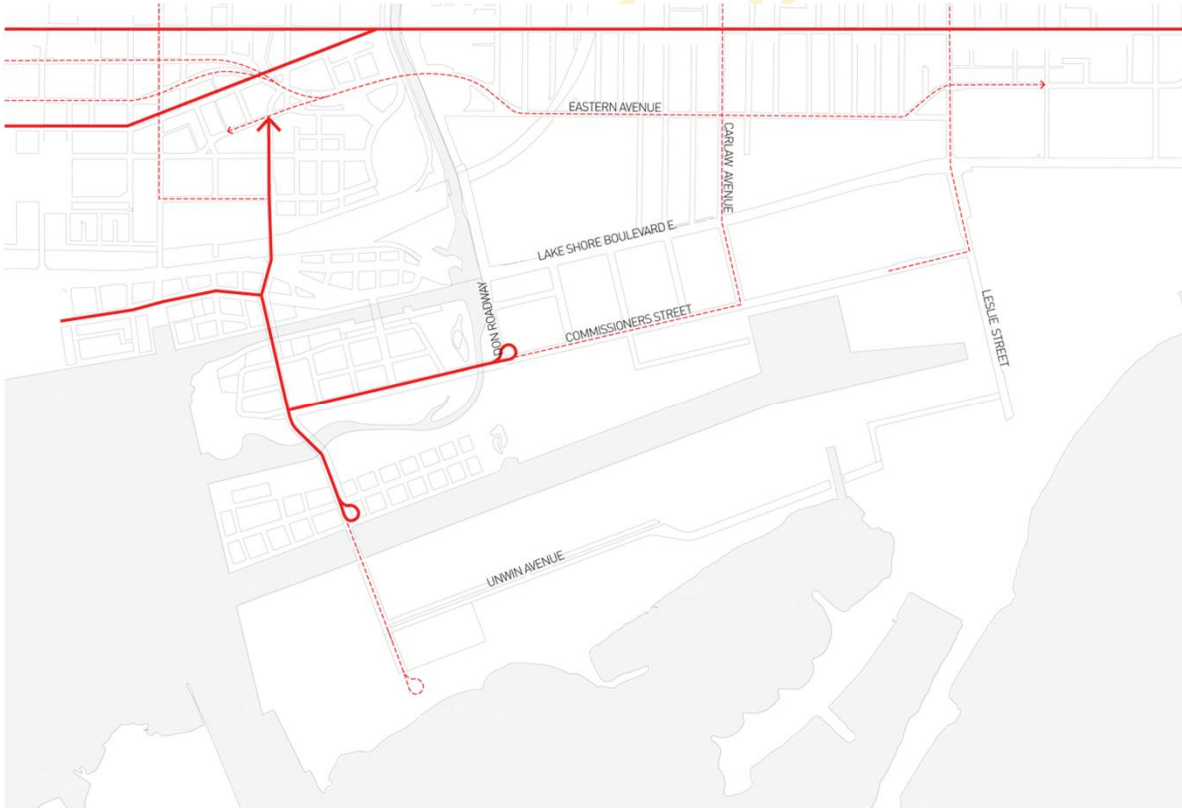
- Lack of surface street connections
- Lack of connections to transit
- Limited street network = long blocks and few options
- Limited Ship Channel crossings and in need of repair
- Gardiner Expressway / Lake Shore Blvd barrier/connection
- Auto-dependent transportation network
- Significant heavy truck traffic open to all streets



LACK OF TRANSIT = INCREASED AUTO DEPENDANCY

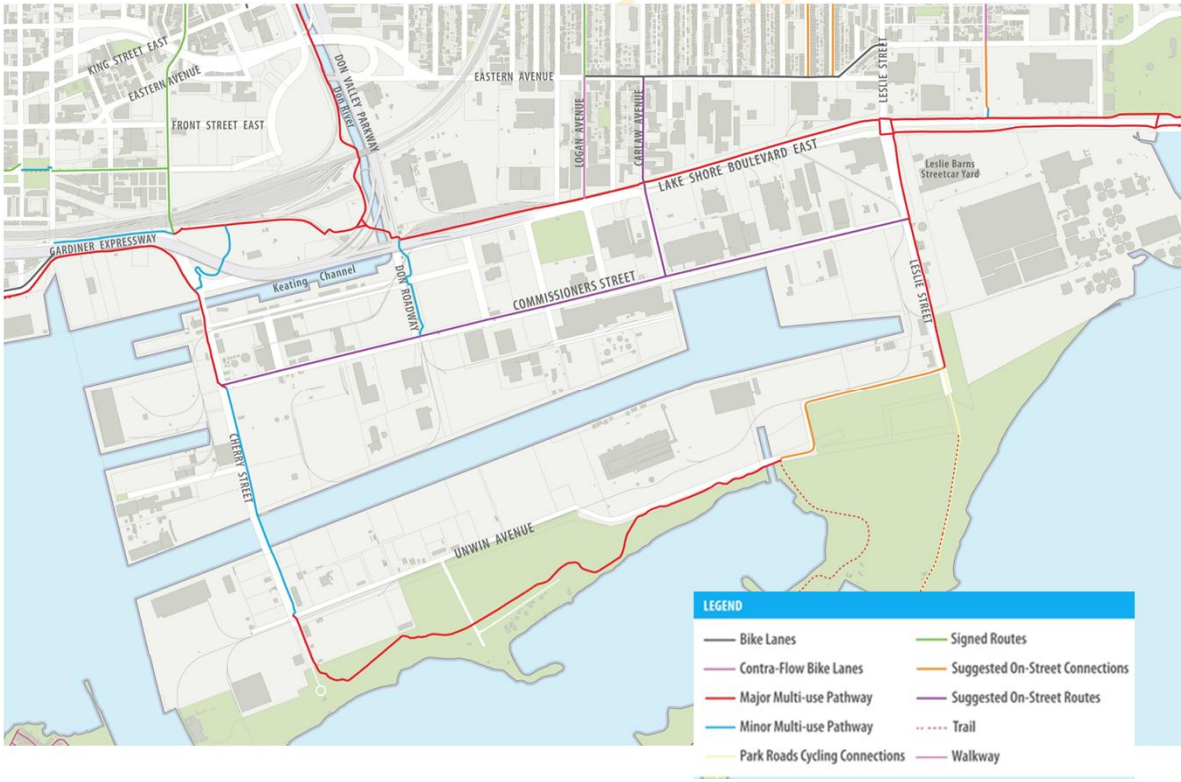
Existing + Approved Transit Network

- Lack of Higher Order Transit & Surface Transit
- Limited bus services
- Lack of Connections to transit

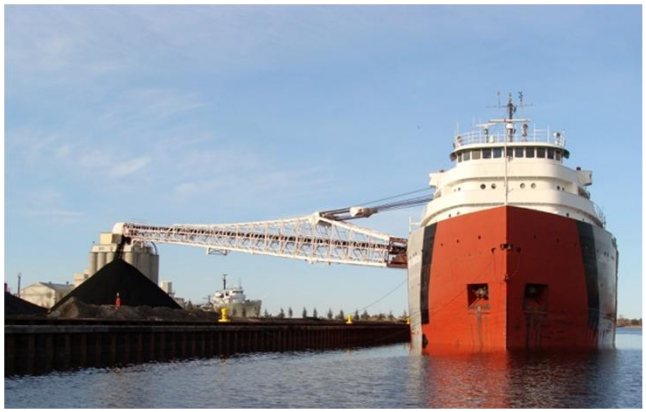


Existing Pedestrian & Cycling Network

- Limited amenities for pedestrians and cyclists
- Discontinuous or no sidewalks
- Streets lack defined streetscapes
- Streets are not desirable destinations



Other Existing Conditions and Issues



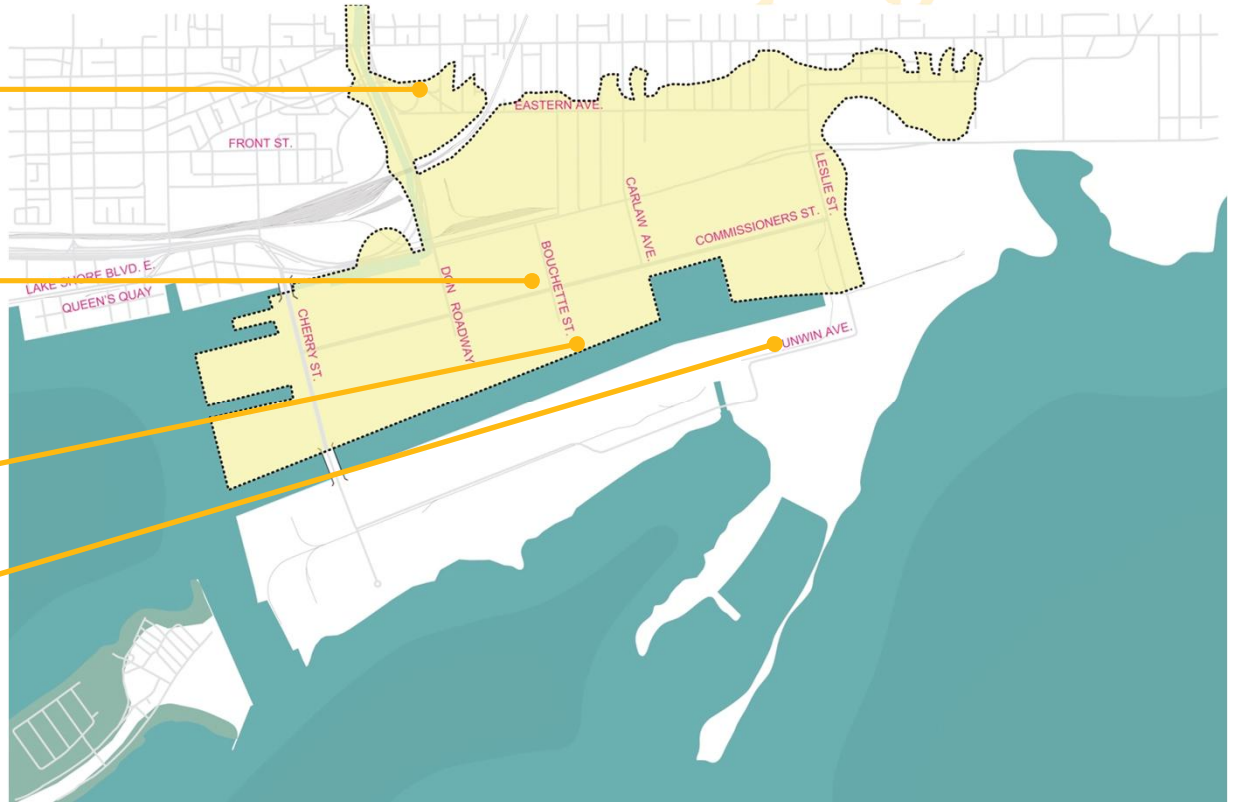
Other Existing Conditions and Issues

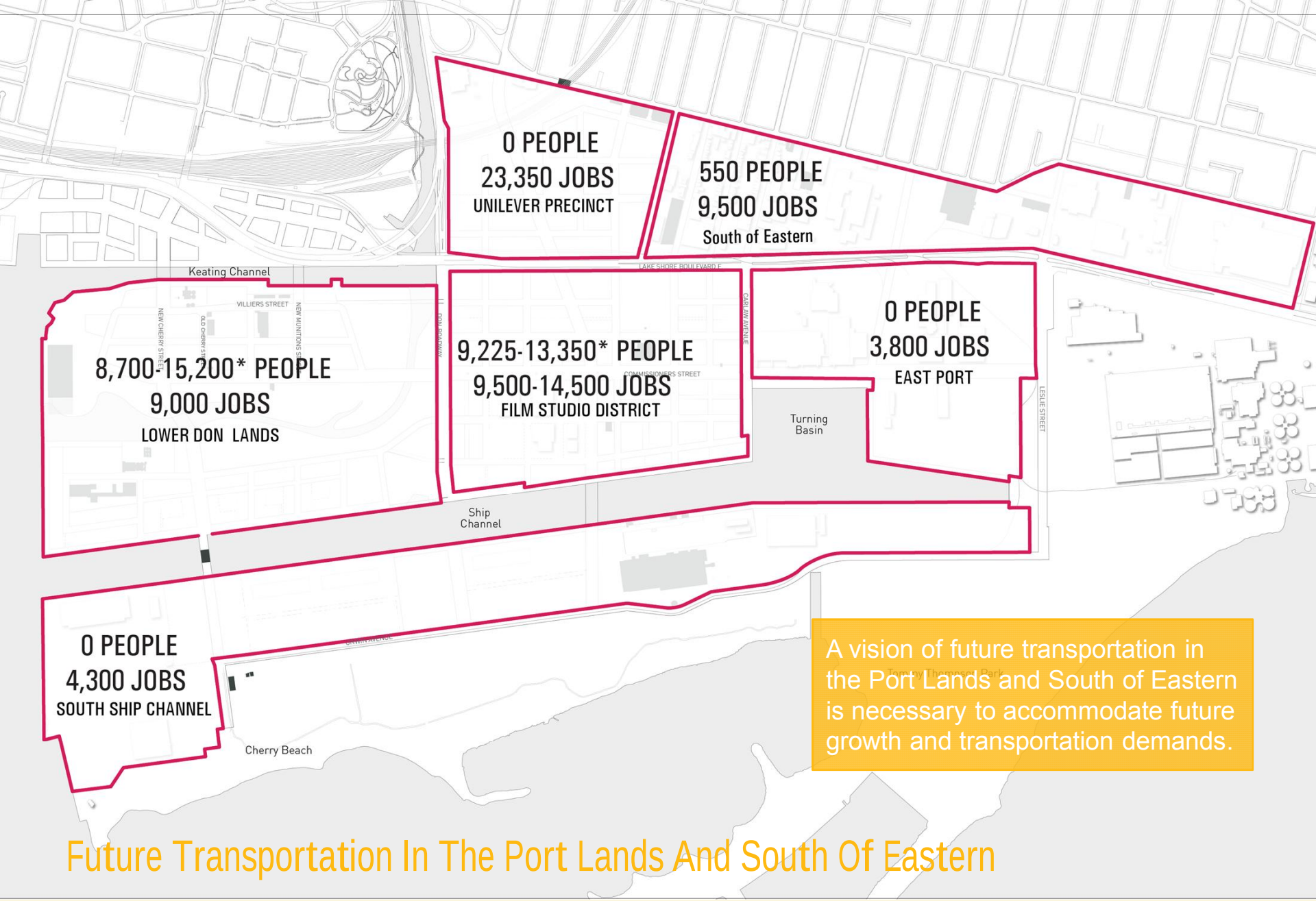
Lands remains in the floodplain

240 hectares flood protected through the DMNP EA

Transformer Station

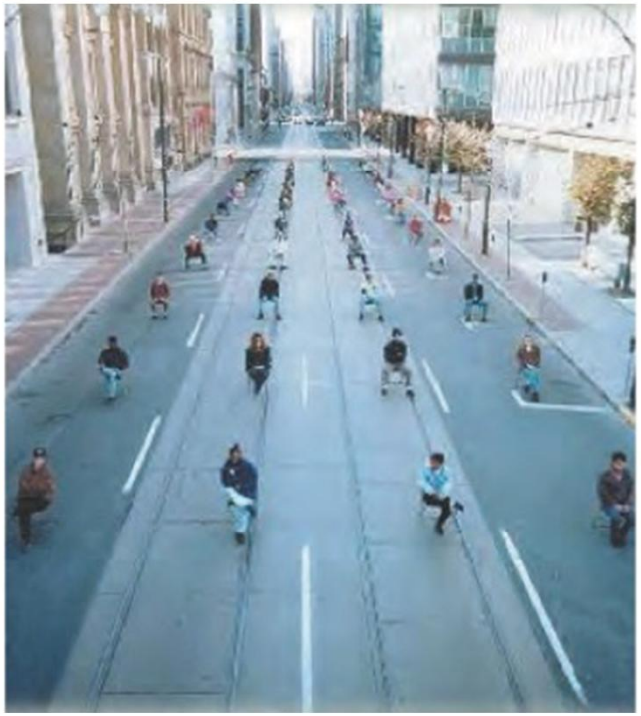
Portlands Energy Centre





Future Transportation In The Port Lands And South Of Eastern

More Options For More Movement



THE PORT LANDS AND SOUTH OF EASTERN, 2065

SHAPING THE FUTURE:
Placemaking in the Port Lands + Connecting South of Eastern

TORONTO

Toronto and Region Conservation for The Living City

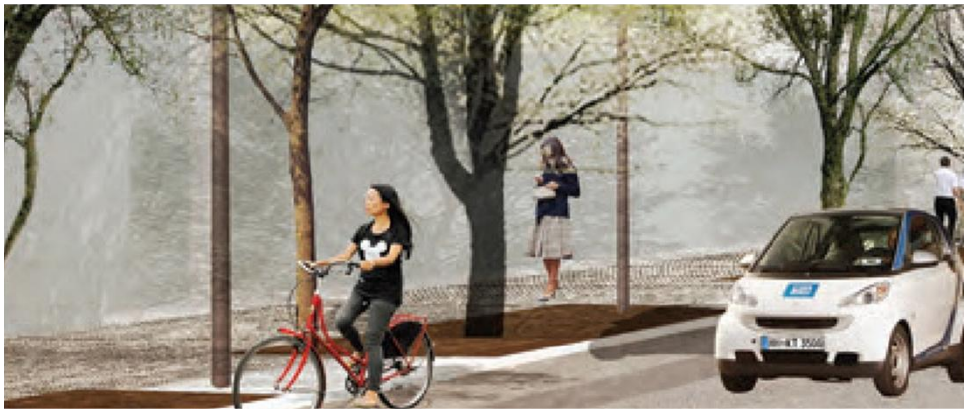
WATERFRONTToronto

Future Transportation in the Port Lands & South of Eastern

- Increased role for active transportation modes (pedestrian and cycling)
- Increased role of transit
- Role of automobile significantly reduced
- Maintain commercial vehicle activity
- Accommodate Service / Delivery trucks associated with office, commercial, and warehouse activity, including film studio
- Accommodate heavy trucks associated with industry, including aggregate and salt activity
- Create a system that provides a safe and efficient environment for all modes
- Support street character

Complete Streets Principles

- Transit Prioritization
- Minimum Lane Widths
- Bike Lanes and Amenities
- Wide Sidewalks
- Accommodate Goods Movement
- Water as a Community Resource & Permeable Surfaces
- Street Trees and Pedestrian Amenities
- Innovative Features



Desired Street Character Defined for the Port Lands And South of Eastern

Broadview Extension

New North-South Street

Carlaw Avenue

Eastern Avenue

Unwin Avenue

Desired Street Character Defined For The Port Lands And South Of Eastern

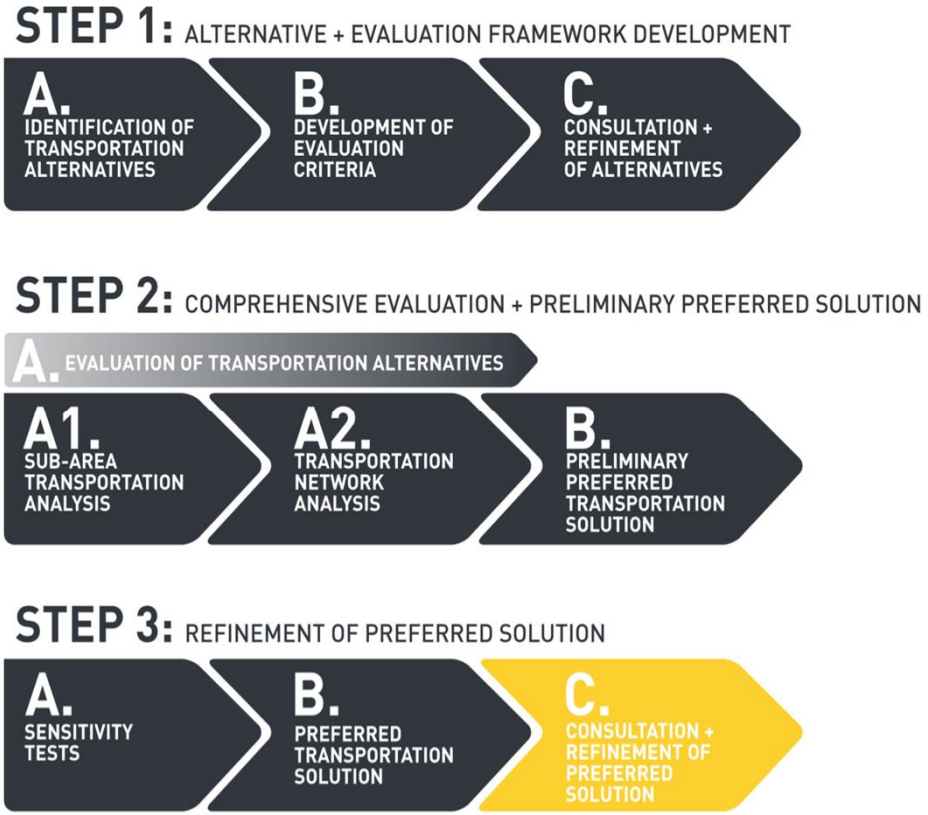
Ship Channel and Water's Edge

Don Roadway

Cherry Street

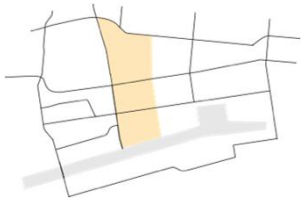
Commissioners Street

Developing a Preferred Network

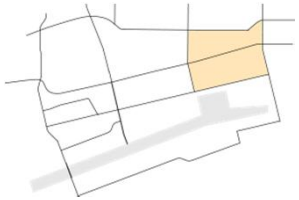


A Complex Geography with Different Areas of Concern

Sub-Area 1
Broadview Connections



Sub-Area 2
East of Carlaw + West of Leslie

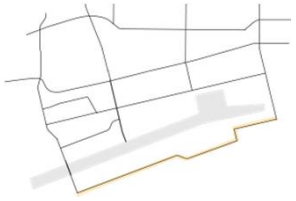


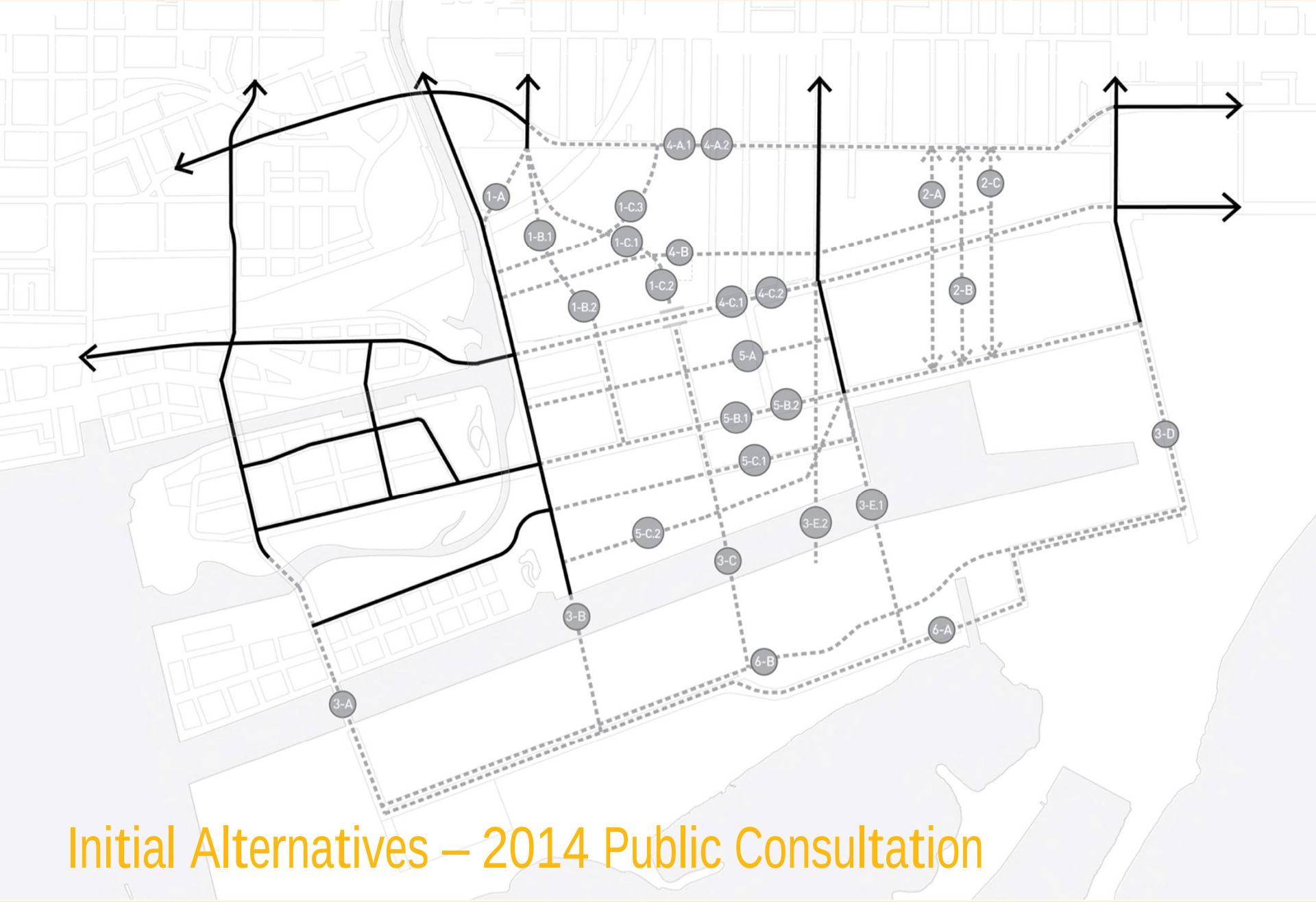
Sub-Area 3
Ship Channel Connections

Sub-Area 4
Eastern and Midblock East-West Connections Between Eastern + Lakeshore

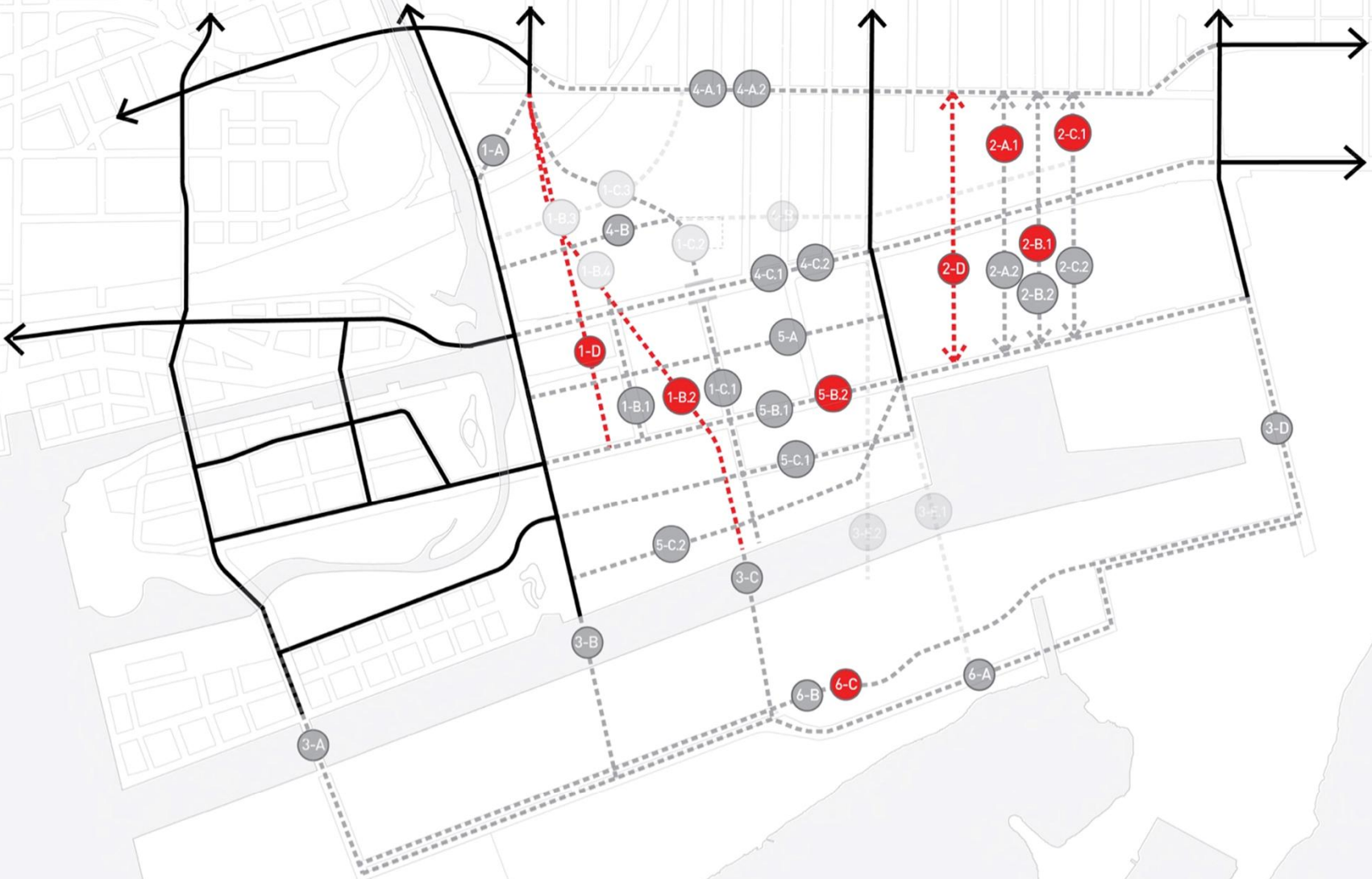
Sub-Area 5
Lakeshore + The Ship Channel

Sub-Area 6
South of the Ship Channel





Initial Alternatives – 2014 Public Consultation



Incorporation of Feedback Received

Comprehensive Evaluation of **30 Alternatives**

6 OBJECTIVES
28 CRITERIA
56 MEASURES

A Complex Geography with Different Areas of Concern

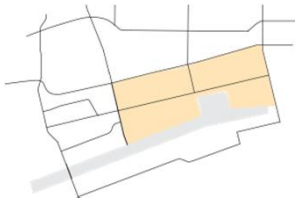
Sub-Area 1
Broadview Connections

Sub-Area 2
East of Carlaw + West of Leslie

Sub-Area 3
Ship Channel Connections

Sub-Area 4
Eastern and Midblock East-West Connections Between Eastern + Lakeshore

Sub-Area 5
Lakeshore + The Ship Channel

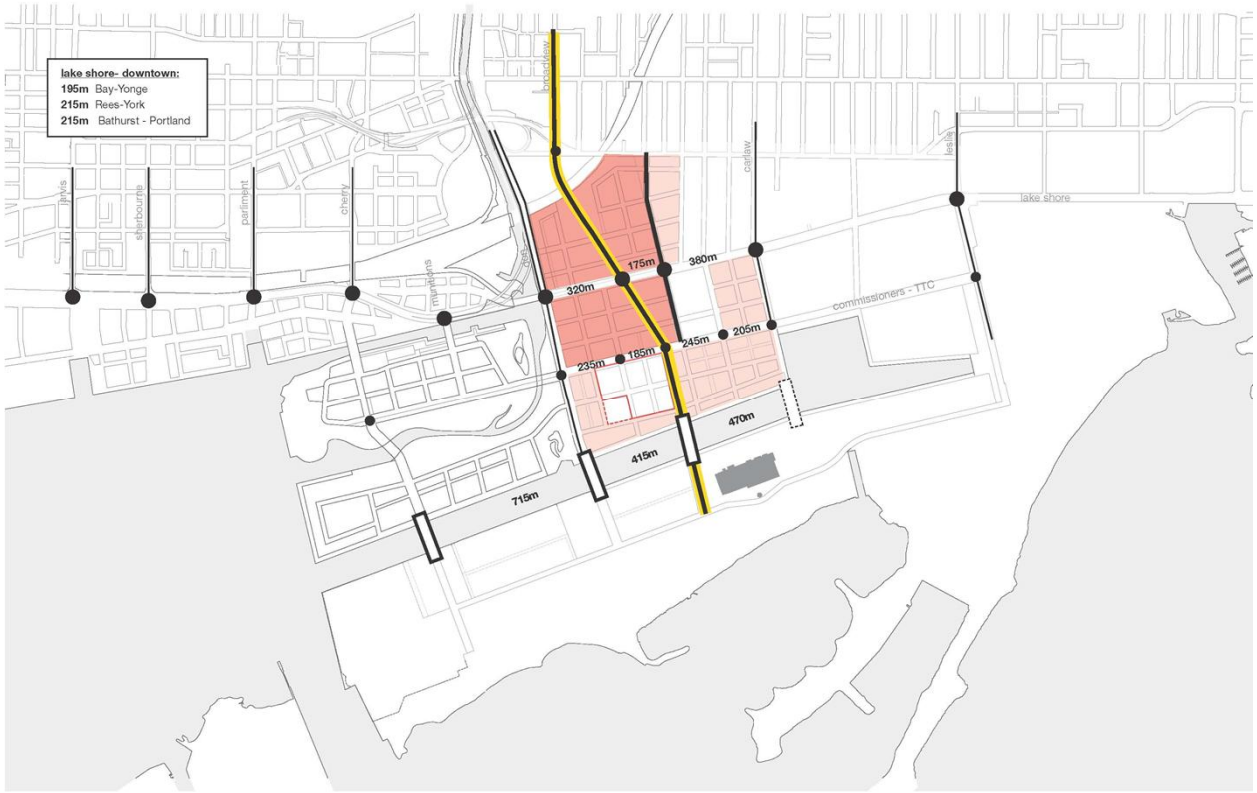


Sub-Area 6
South of the Ship Channel

BROADVIEW EXTENSION

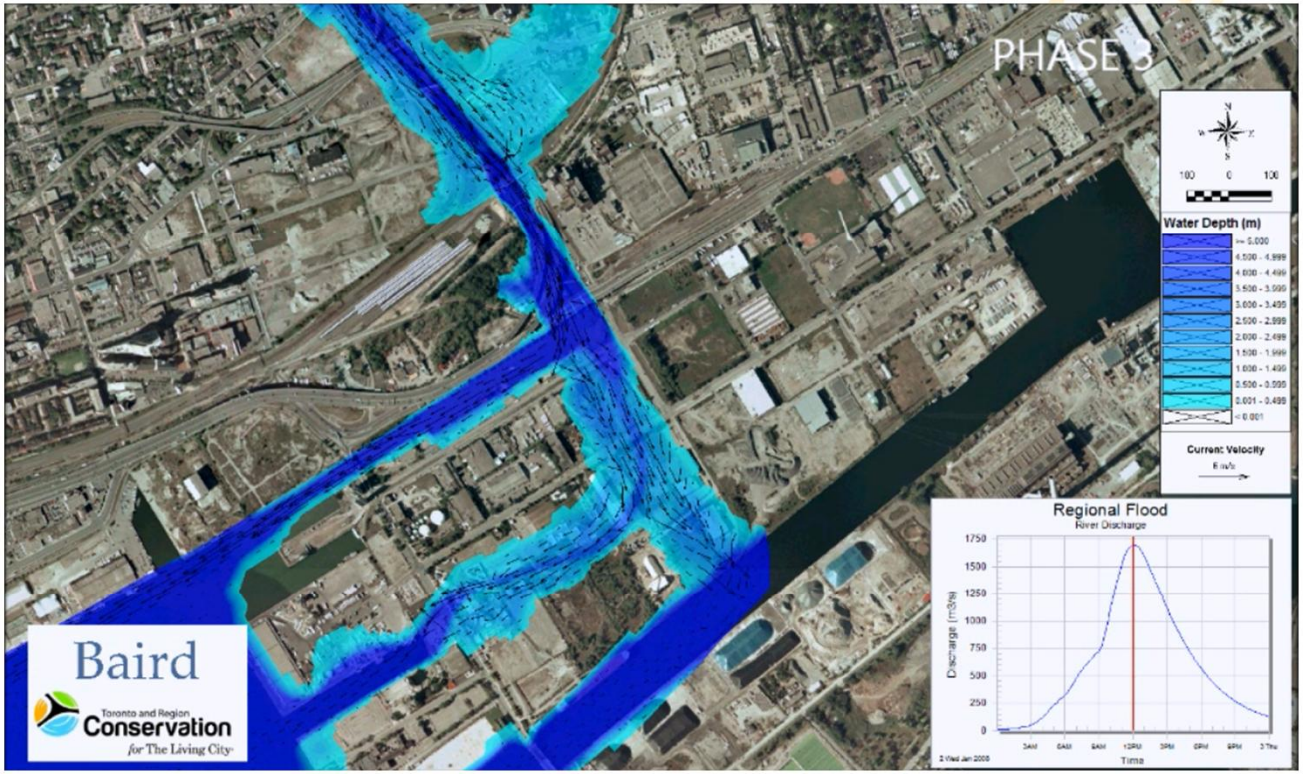
A New City Spine

Creating The Spine

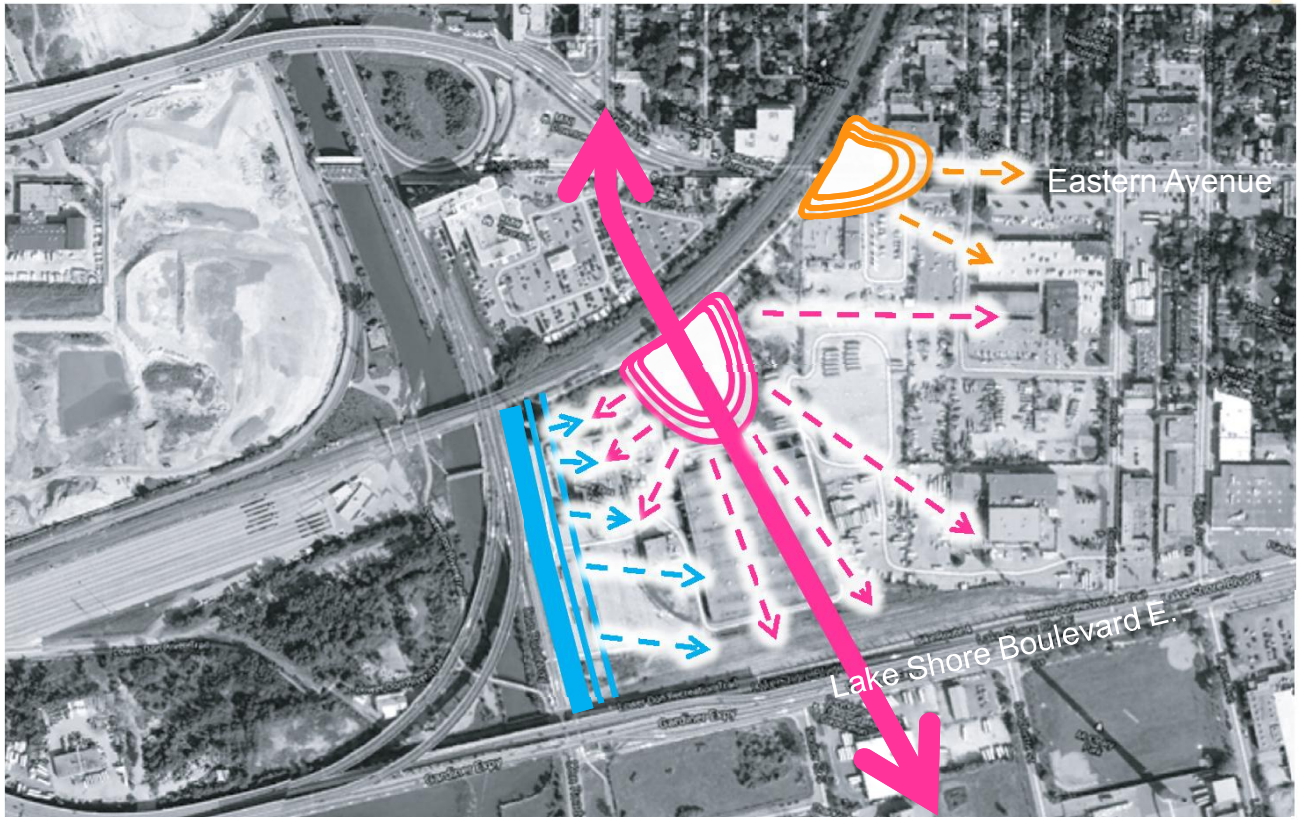


- Ability to mitigate flood risk
- Transit accommodation at a future hub in the Unilever Precinct
- Constraints with existing development
- Creating a forecourt to the Hearn main frontage
- Spacing across districts to improve access/connectivity
- Meets minimum TAC requirements
- Good spacing to protect for future bridges

240 Ha Flood Protected – Flood Containment



Mitigating Flood Risk



Don River VWF

Broadview VWF/FPL

Eastern Ave. VWF/FPL

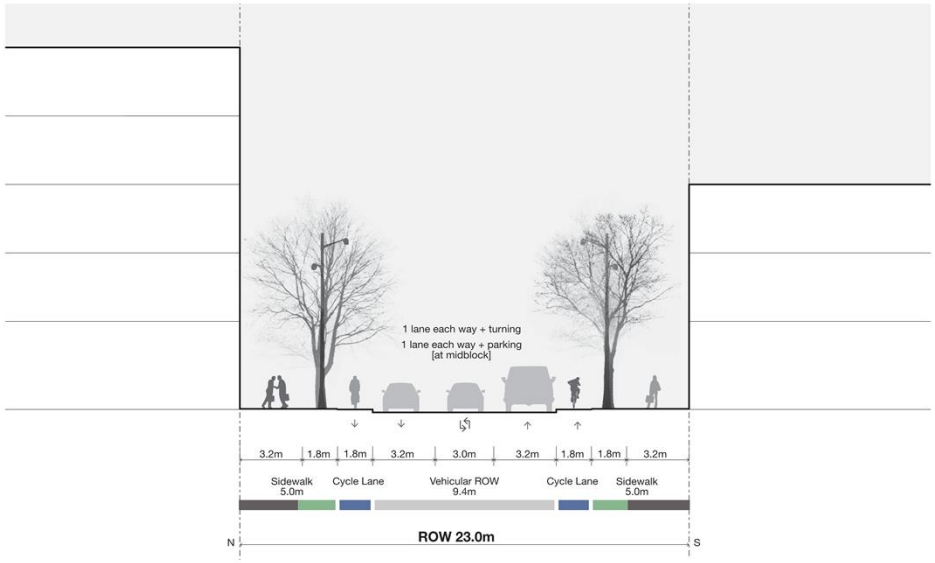
Conceptual – detailed design required.

CAROLINE EXTENSION*

*Name to be determined through a public process

A New North-South Connector

- Provides an outlet for Port Lands traffic to access Lake Shore
- Provides optimal spacing between Carlaw Avenue and Leslie Street
- Limited impact on cultural heritage resources
- Supports employment growth intentions
- Greater multi-modal traffic connections including linkages to the turning basin
- Existing businesses to remain
- Breaks up larger development sites – Official Plan objective
- Least physical barriers



UNWIN AVENUE

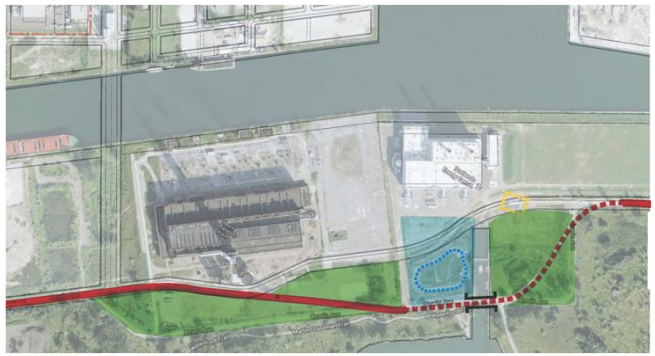
KEY CONSTRAINTS AND ISSUES ADDRESSED

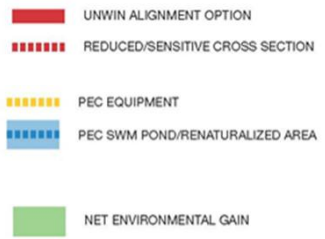
- Current alignment with 90 degree jogs impacts operations
- One lane bailey bridge is inadequate to meet today's needs
- Significant constraints in the vicinity of the Port Lands Energy Centre
- Traffic modeling indicates that one-lane in each direction is sufficient to meet future needs
- Opportunities to provide a net environmental gain
- Ability to provide on-street parking for recreational use and also staging of trucks during busy winter months
- Truck use is accommodated

Conceptual Alignments

UNWIN ALIGNMENT OPTION 1A:

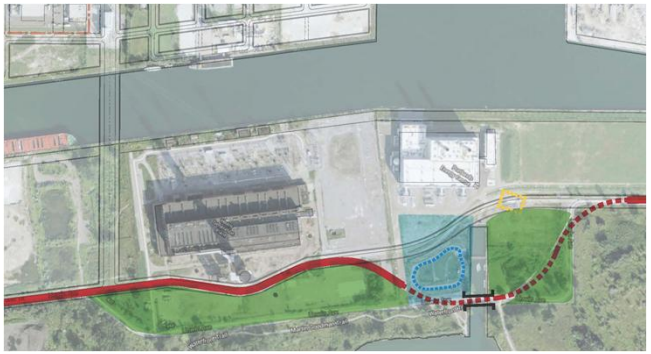
UNWIN ALIGNMENT OPTION 2A:



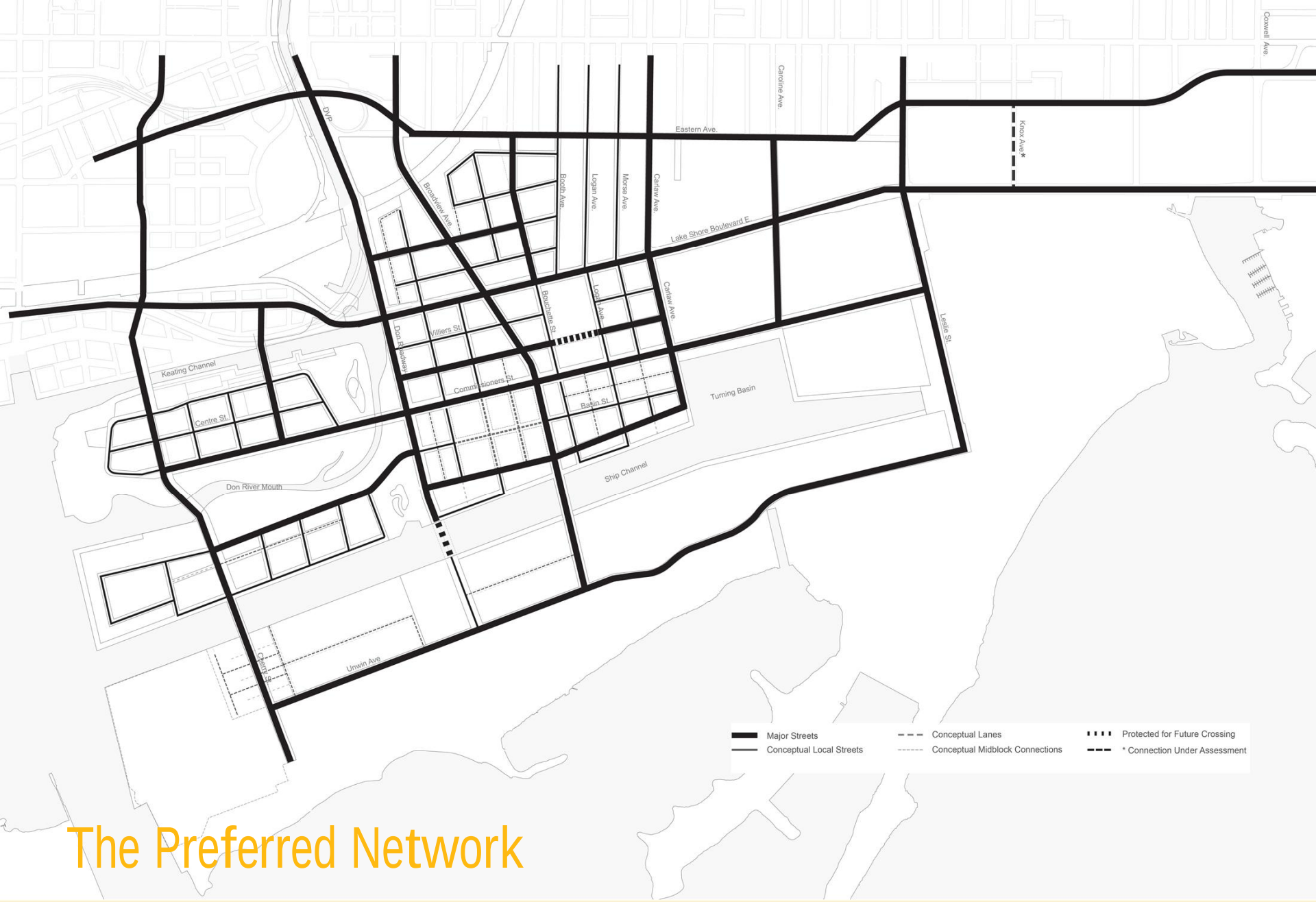


UNWIN ALIGNMENT OPTION 1B:

UNWIN ALIGNMENT OPTION 2B:



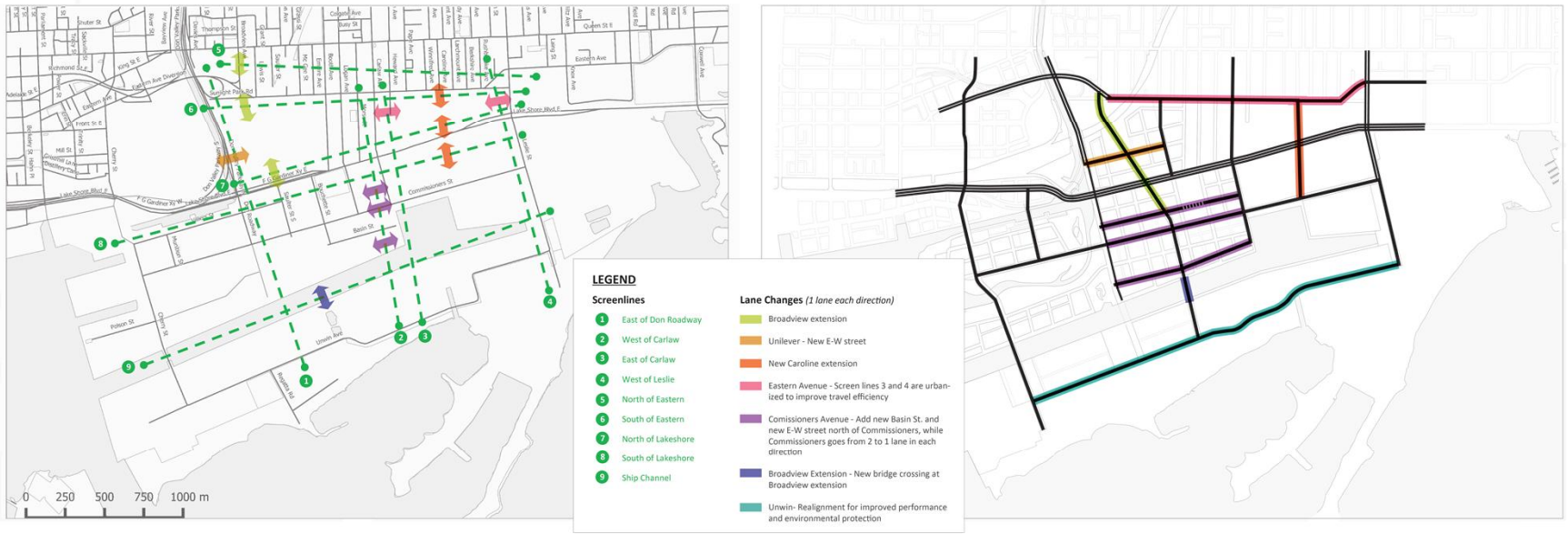
To be Further Assessed during phase 3 the Municipal Class EA



The Preferred Network

Network Performance Testing

- Once the network was identified we tested network performance



Transportation Analysis Performance

- Overall auto travel speed 10-25% faster than Base
  - Addressed bottlenecks and increased redundancy
  - All intersections with LOS D or better
- Efficient transit network
  - Delays similar to adjacent street traffic
  - Route and stop locations convenient to future land uses
  - 62% transit mode share
- Complete pedestrian network
  - Increased porosity for pedestrians
  - Friendlier, urbanized streets
- Goods movement uninhibited by modifications
  - Access to important regional facilities is improved

Preferred Network - Transportation Analysis Scenarios

- Sensitivity Tests
  - Gardiner Expressway – Hybrid Option
  - East of Leslie – New North/South Connection
  - Carlaw Avenue – Complete Street
  - Gap Analysis – Mitigating Preferred Network Deficiencies
  - Phasing and Implementation – Required Elements by 2031
  - Alternative Land Use – Modified Land Use in Film District and Villiers
  - Transit – Mode Split Testing

TRANSIT

Transit Mode Splits

2014

70%

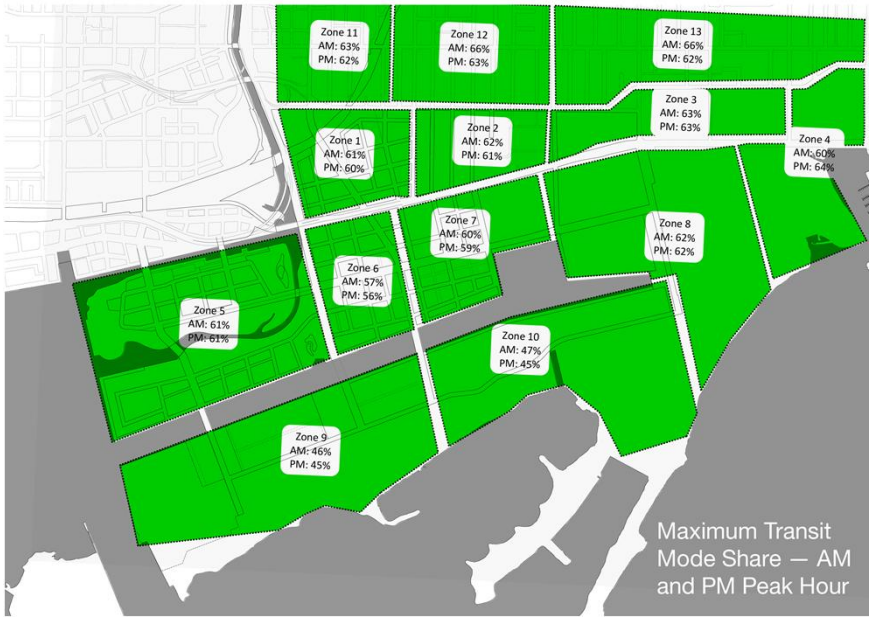
→

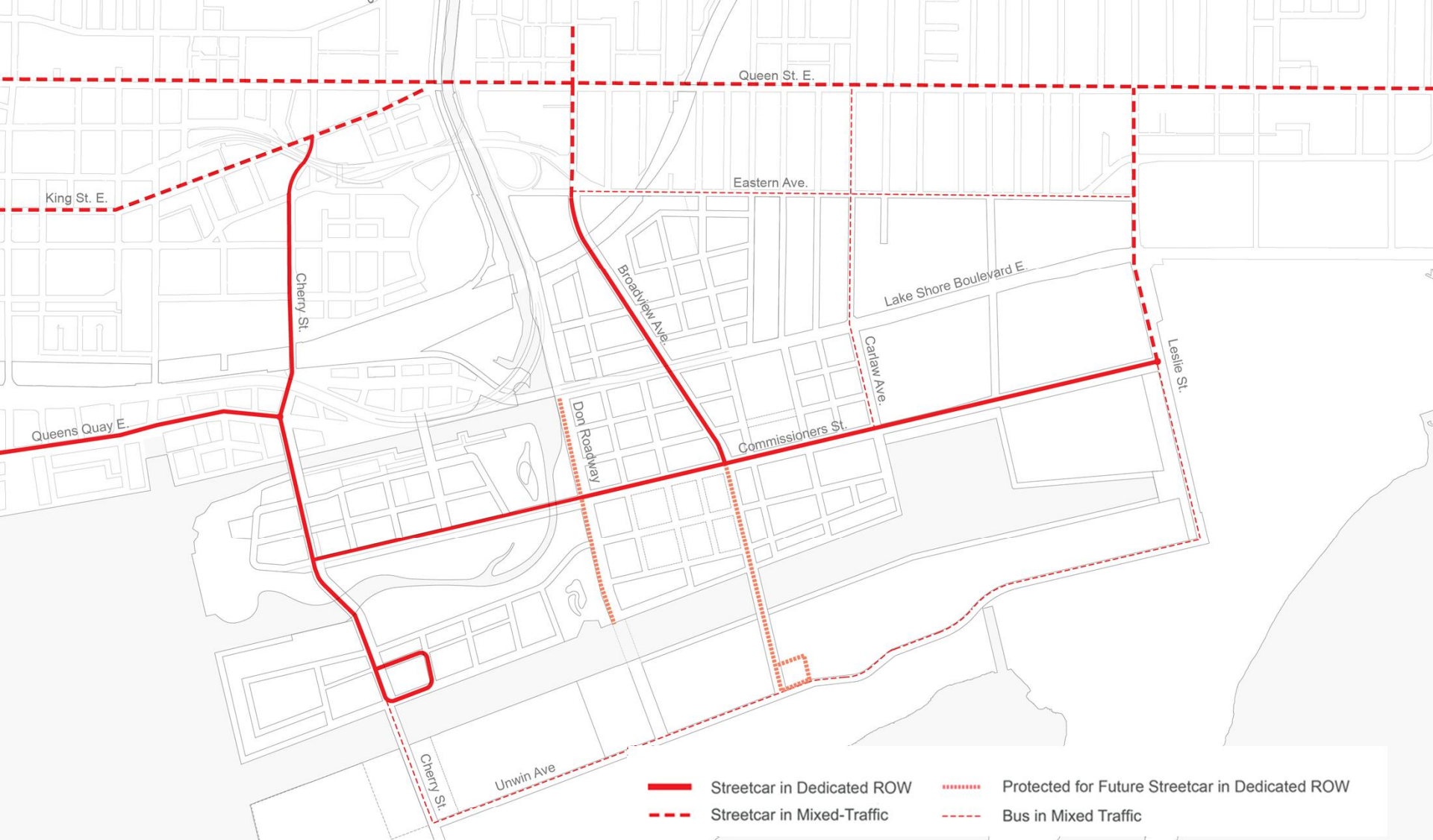
2015

62% Refined
+
Fine Grained

Transit Mode Splits

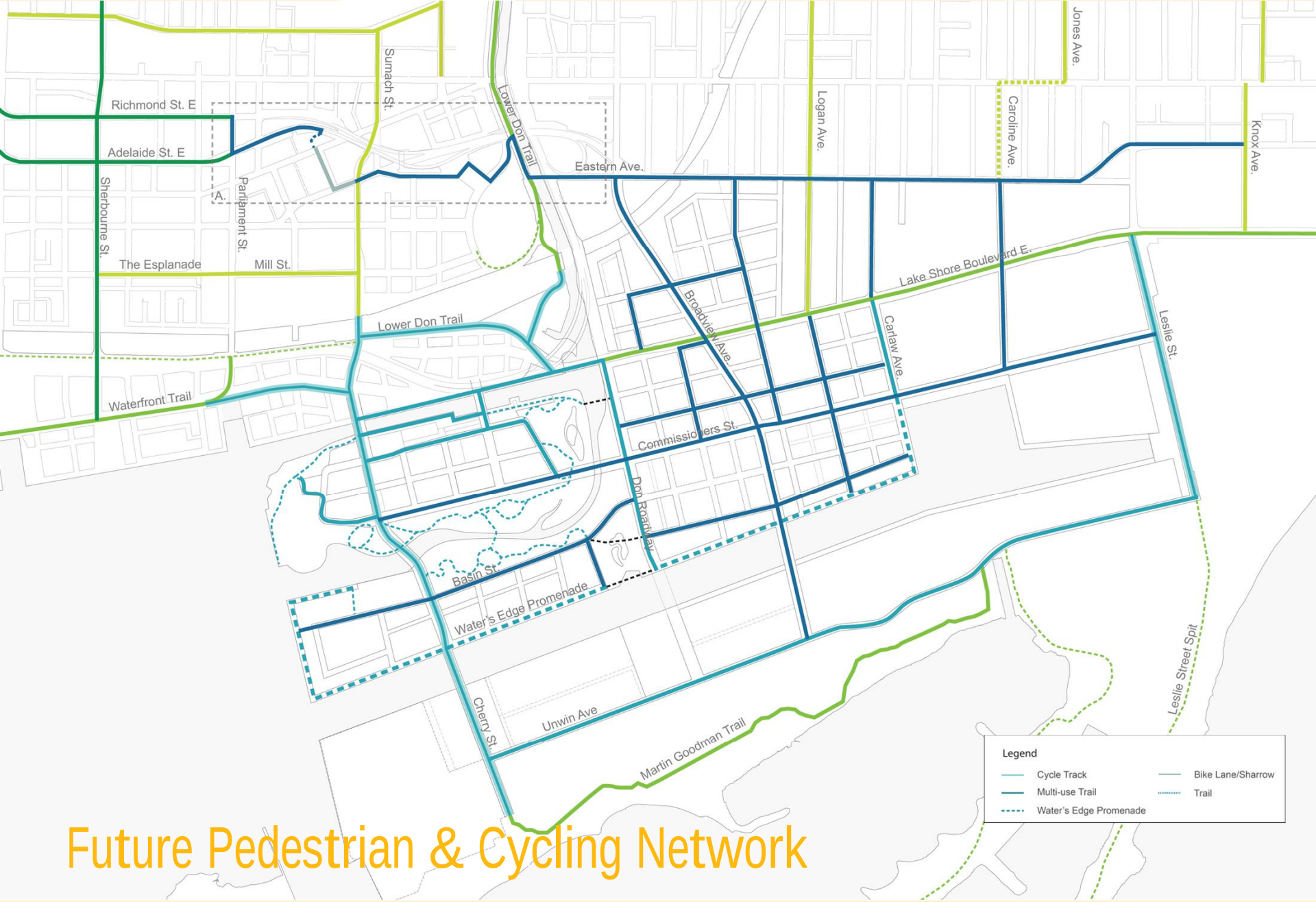
- Initial assessment in 2014 of land use options indicated the need for investment in higher order rapid transit
- Current approach based on a fine grained analysis and maintains a high transit mode split and based on capacity of future surface transit system
- Relief line assessment and ongoing assessment of Smart Track and final station identification could result in achieving higher transit mode splits





Preferred Transit Network

PEDESTRIAN + CYCLING NETWORK



Future Pedestrian & Cycling Network

GOODS MOVEMENT

Goods Movement

DEVELOPING A TRUCK MANAGEMENT FRAMEWORK:

- Identify and address areas where trucking and local quality of life and safety concerns come into conflict
- Look at methods to mitigate these conflicts – truck routes are only part of the solution
- Improve the overall management of trucks and commercial vehicles within Port Lands and South of Eastern.

MUNICIPAL SERVICING

Stormwater Management

Water as a Resource

Existing Conditions

- Existing infrastructure insufficient to accommodate future development
- DMNP EA a starting point and key consideration for stormwater management
- Existing stormwater management measures do not meet guidelines
- Aging and limited stormwater infrastructure in the vicinity of the Ship Channel
- Proposed greenways north and south of the Ship Channel
- Generally flat - ponding in low-lying areas during heavy rainfall
- Surface runoff drains directly into the Ship Channel and Lake Ontario without treatment

SOURCE
CONVEYANCE
TREATMENT

An ecological approach to stormwater management

Stormwater Management Alternatives

ALTERNATIVE 1: DO NOTHING

Combined Sewer

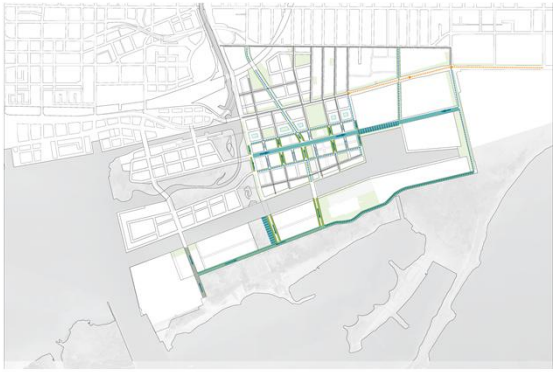
Stormwater Sewer

ALTERNATIVE 2: CONVENTIONAL APPROACH

Inner Harbour Tunnel

Sewer

ALTERNATIVE 3: WATER AS A RESOURCE



Open Channel - Commissioners

Open Channel - Cherry Beach Gateway

Open Channel - Unwin Wild East

Open Channel - Tree Trenches

Park / open space with constructed wetlands / pools

Open Channel - Hardscape

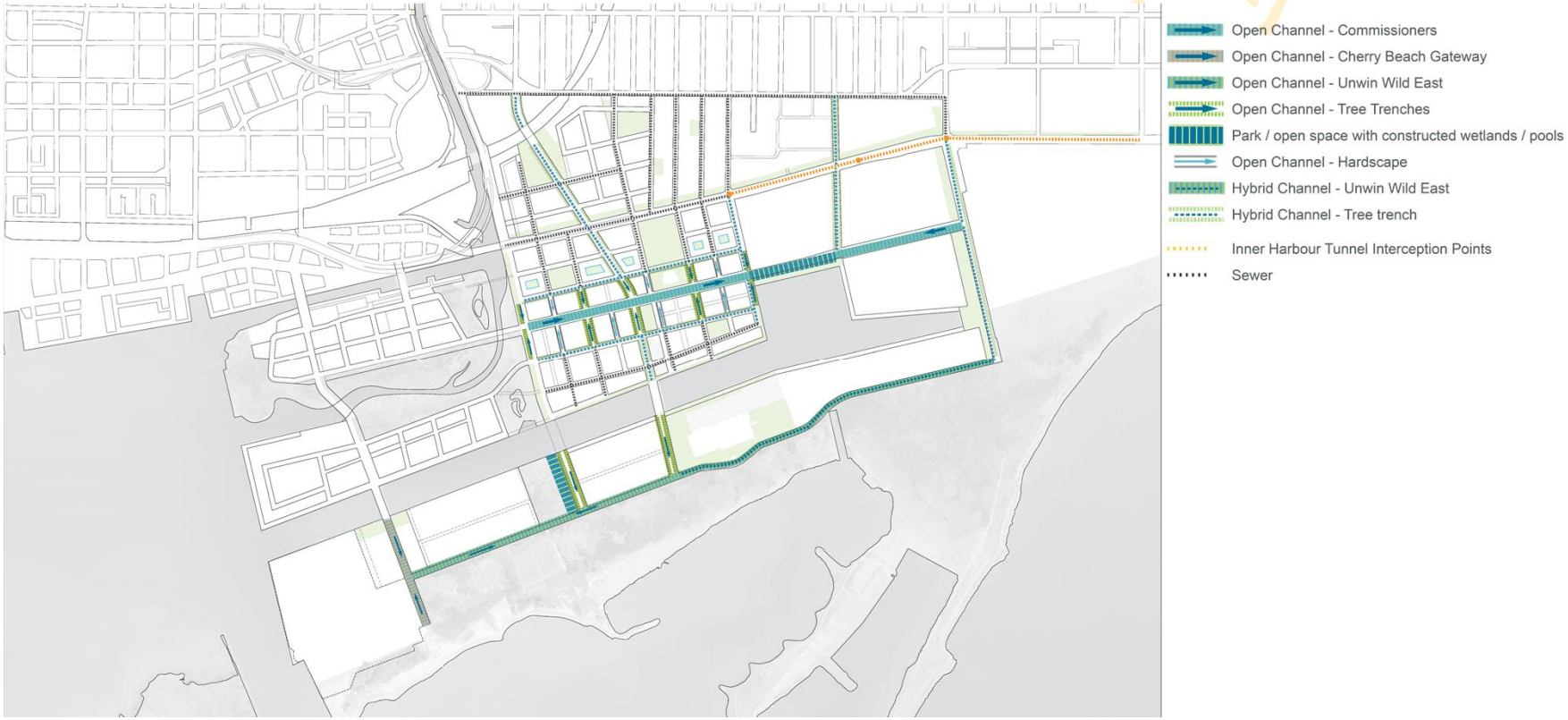
Hybrid Channel - Unwin Wild East

Hybrid Channel - Tree trench

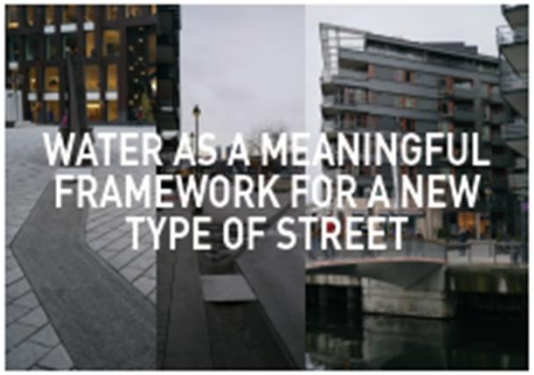
Inner Harbour Tunnel Interception Points

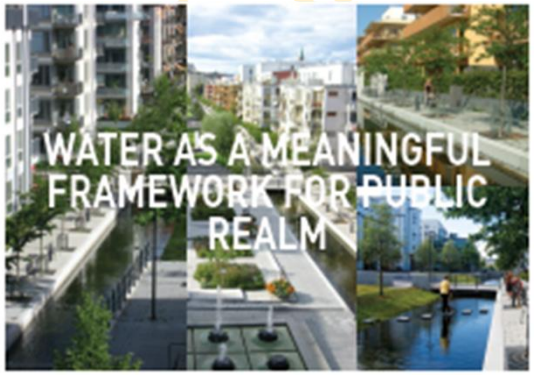
Sewer

Preferred Solution: Water as a Resource



Water as a Resource

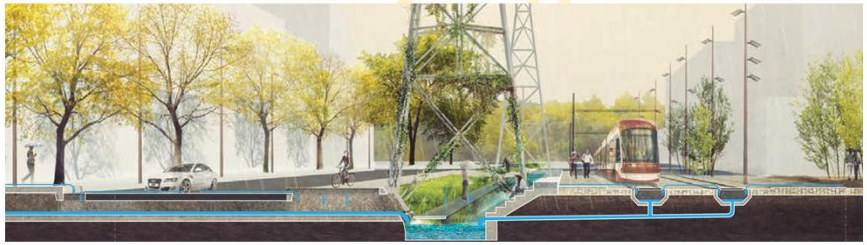




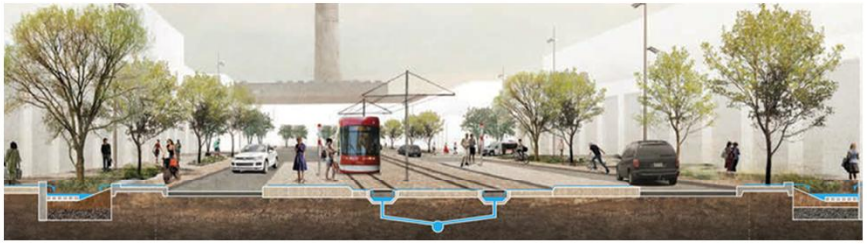
Preferred Disinfection Locations

Water as a Resource

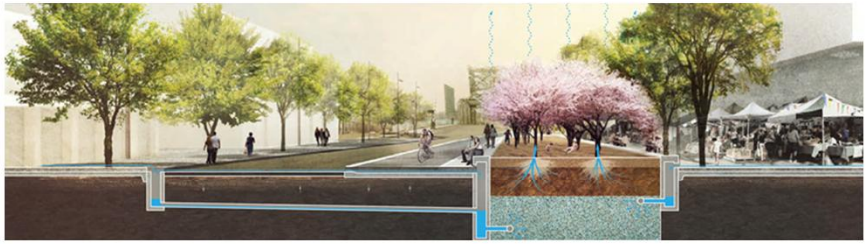
Unwin:
Bioswales



Commissioners:
Planted and Programmed Open Channel



Broadview:
Tree Trench Open Channels



Cherry:
Beach Gateway Open Channel and Sand Filter

Water and Wastewater

Water & Wastewater Existing Conditions + Challenges

- Pipes are generally under-utilized
- Fire flow constraints in some areas due to dead ends
- Current constraints with Low Level Interceptor
- Integration of the Lower Don Lands Infrastructure EA Addendum
- Future development requires alternative service outlets or depth constraints
- Minimal infrastructure and connections south of the Ship Channel
- Some development currently using private sanitary systems south of the Ship Channel
- Port Lands Energy Centre infrastructure and Circulating Channel pose issues for servicing south of the Ship Channel

Water

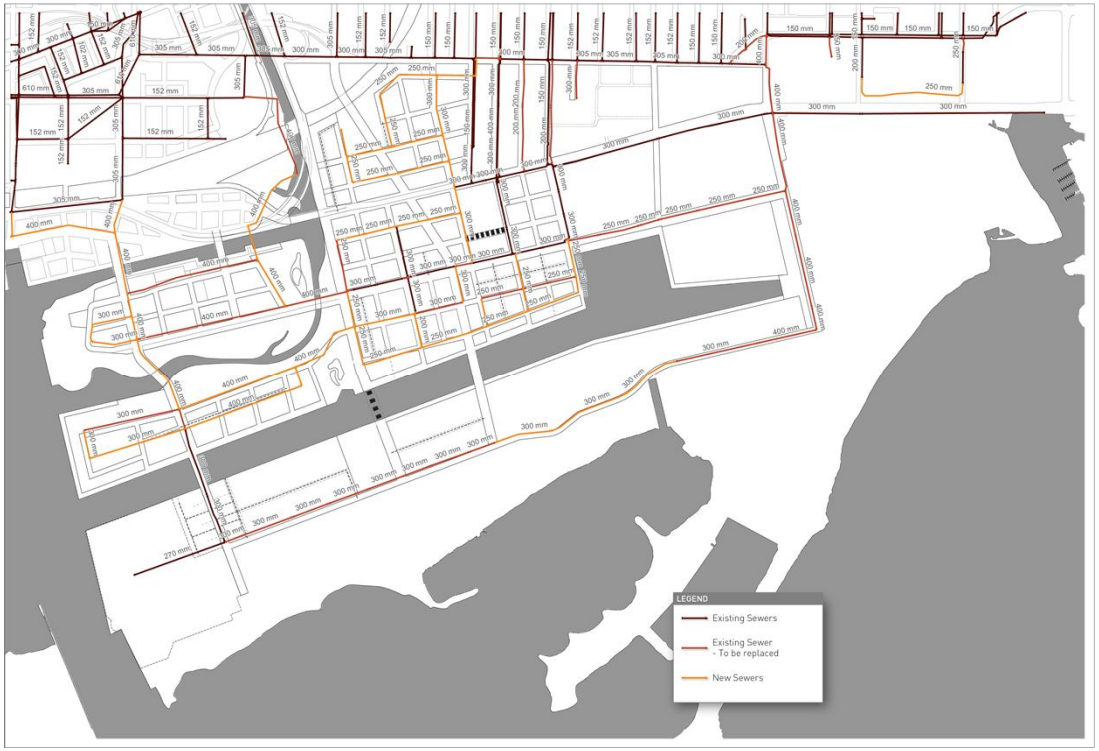
Water Alternatives

1. Reduce Water Usage by Users and Keep Existing Network - provides a baseline analysis but does not provide a complete solution throughout the Study Area

2. Reduce Water Usage by Users and Enlarge/Extend Network - identifies areas of the existing network that need upsizing to meet future demands, and new watermains required for system security/coping

3. Reduce Water Usage by Users and Enlarge/Extend Network + Install Separate Pipe Systems for Non-potable Users - in areas of existing network that need upsizing to meet future demand and new watermains are required for system security/looping

Preferred Water Solution

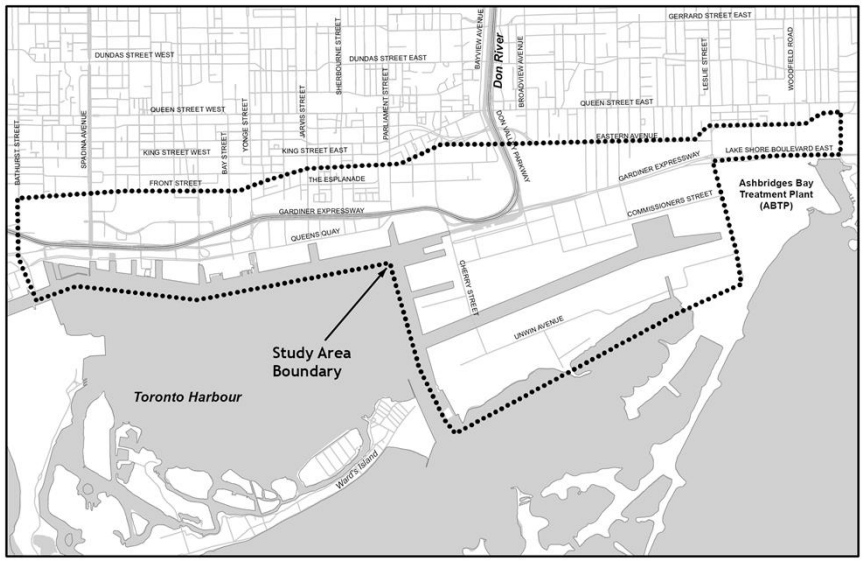


Alternative 2 - Reduce Water Usage +
Enlarge/ Extend Network, is Preferred.

Wastewater

Context:
Waterfront Sanitary Servicing Master Plan Update + Other Inputs

- Initiated in spring 2015 to address growth in the Central Waterfront
- Update and re-exploration of alternatives focused on the major trunk systems
- Provides the discharge point for the Port Lands with Port Lands and South of Eastern EA no longer needing address this aspect
- Feedback from the public in 2014 to explore new, innovative facilities



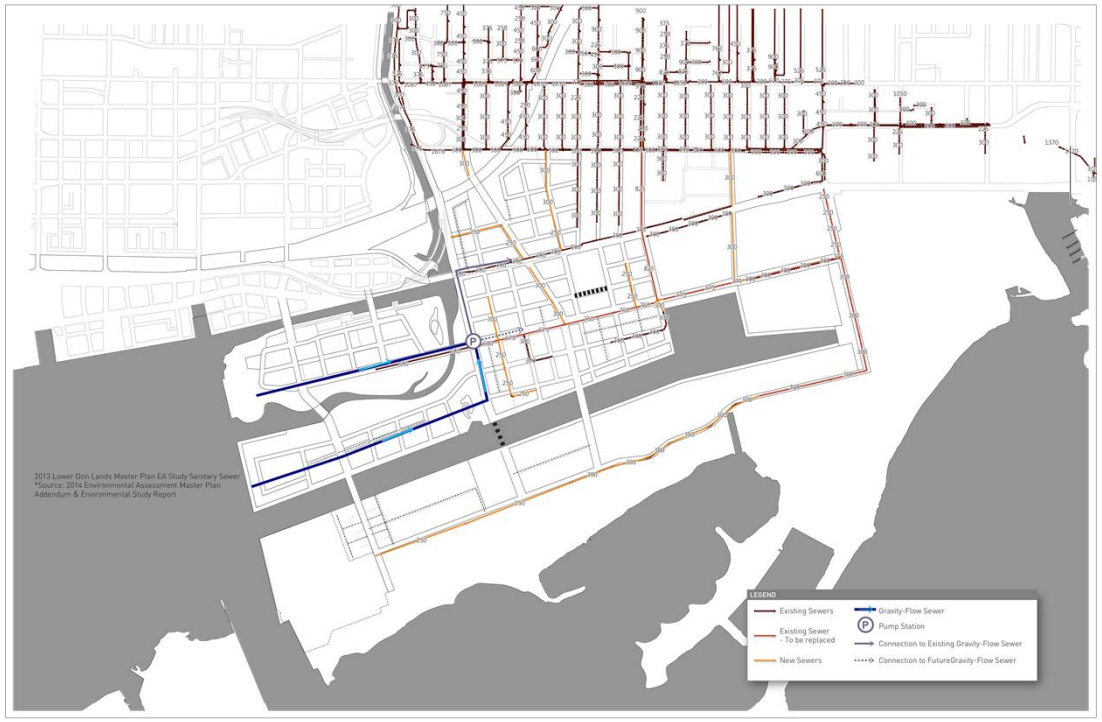
Wastewater Alternatives

1. Do Nothing & Reduce Waste Water Flows – provides a baseline analysis but does not provide a complete solution throughout the Study Area

2. Reduce Waste Water Flows & Enlarge/Extend Collection – Convey flow from Port Lands via Carlaw Avenue inter-connecting sewer at Eastern Avenue to Treatment Plant

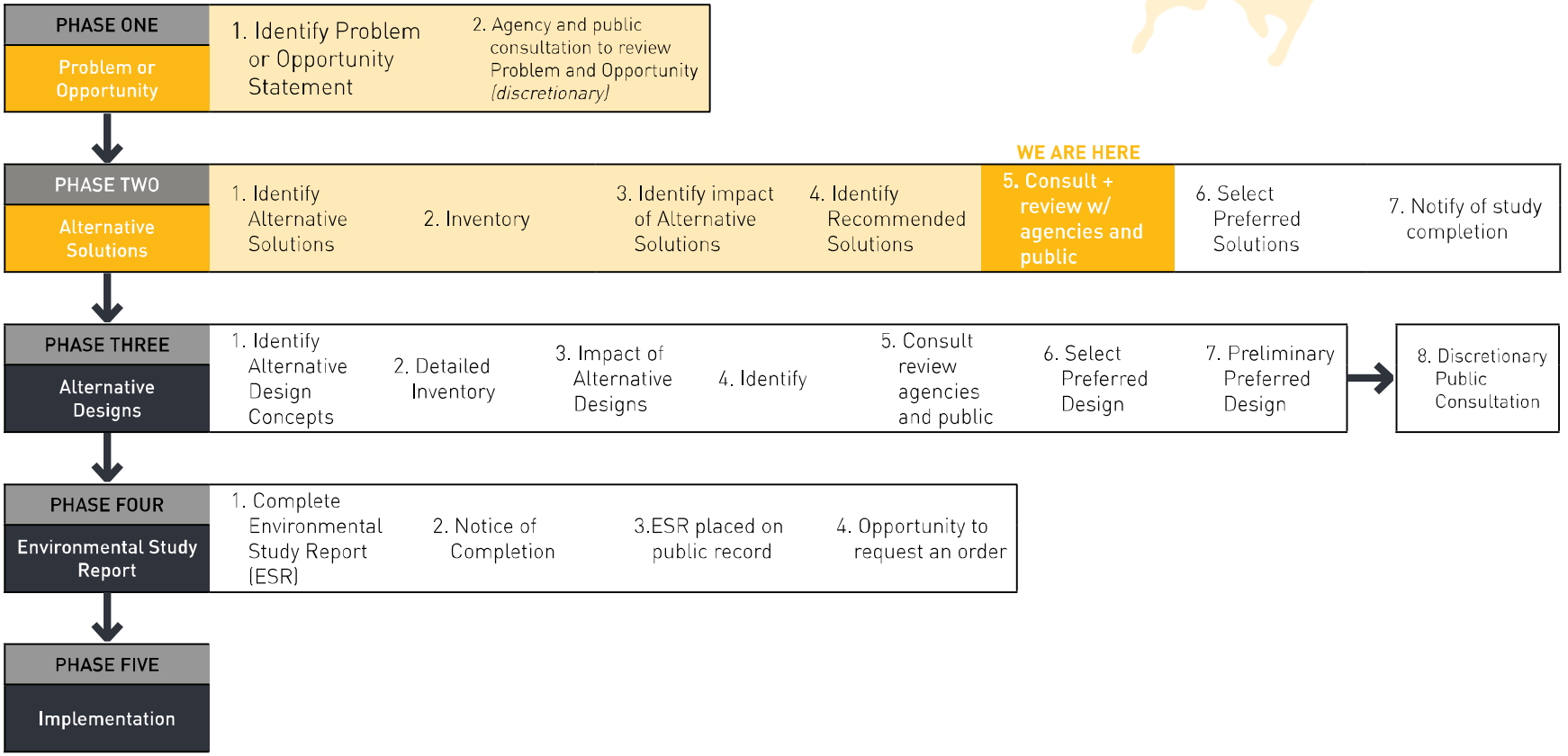
3. Reduce Waste Water Flows & Enlarge/Extend Collection and Provide Decentralized Treatment – for flows South of Ship Channel (west of, and including the Hearn)

Preferred Wastewater Solution



Alternative 2 -Extend + Enlarge and Convey Flows to the Carlaw Interconnecting Sewer, is Preferred.

Next Steps


PHASE ONE
Problem or Opportunity
1. Identify Problem or Opportunity Statement
2. Agency and public consultation to review Problem and Opportunity (discretionary)
PHASE TWO
Alternative Solutions
1. Identify Alternative Solutions
2. Inventory
3. Identify impact of Alternative Solutions
4. Identify Recommended Solutions
WE ARE HERE
5. Consult + review w/ agencies and public
6. Select Preferred Solutions
7. Notify of study completion
PHASE THREE
Alternative Designs
1. Identify Alternative Design Concepts
2. Detailed Inventory
3. Impact of Alternative Designs
4. Identify
5. Consult review agencies and public
6. Select Preferred Design
7. Preliminary Preferred Design
8. Discretionary Public Consultation
PHASE FOUR
Environmental Study Report
1. Complete Environmental Study Report (ESR)
2. Notice of Completion
3.ESR placed on public record
4. Opportunity to request an order
PHASE FIVE
Implementation