

# LOWER DON LANDS



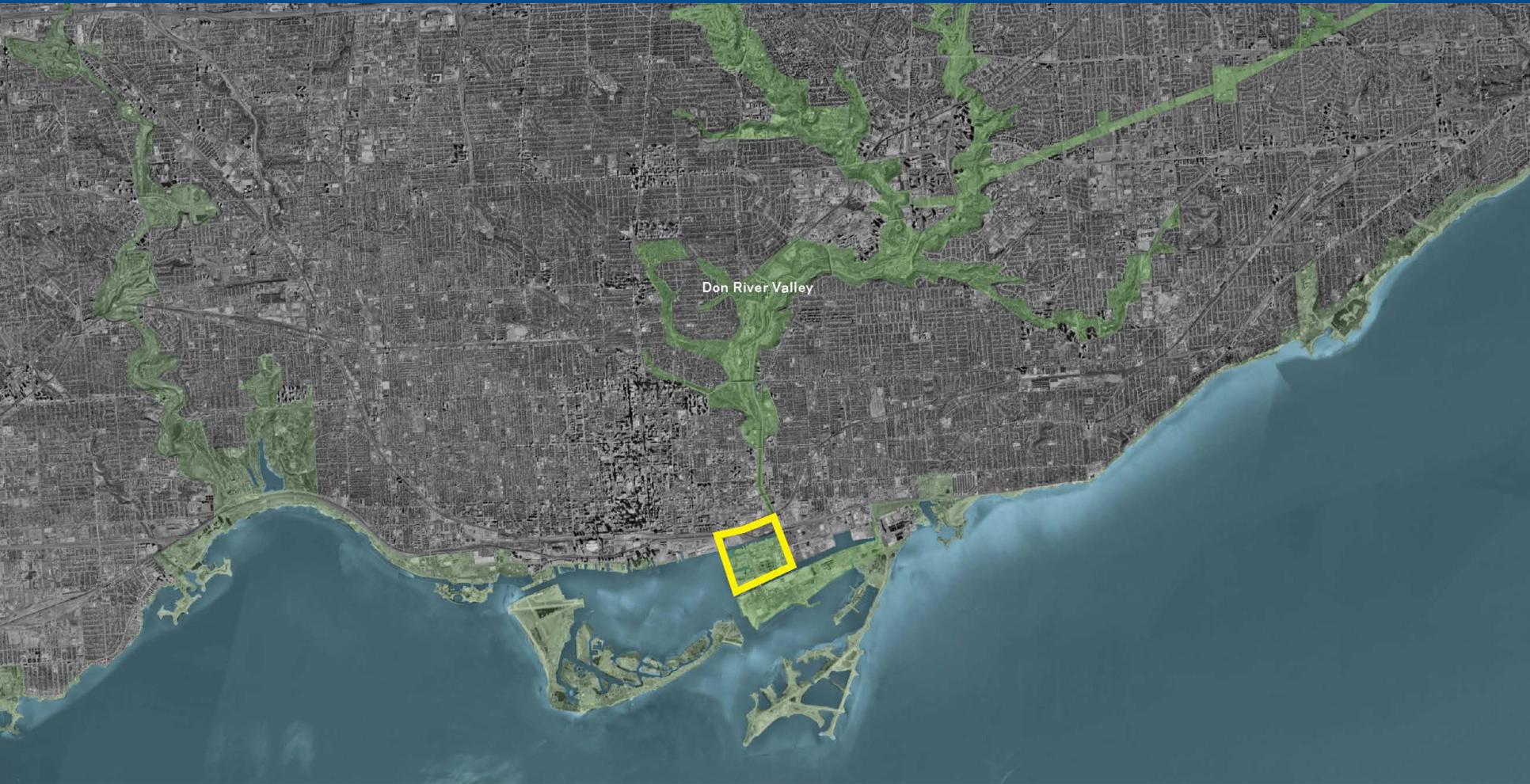
Executive Committee Presentation

June 14<sup>th</sup>, 2010



**WATERFRONT**Toronto

# Context



An aerial photograph of the Don River Valley in Toronto, Canada. The river is shown in green, winding through a dense urban grid. A yellow rectangular box highlights a specific area on the eastern bank of the river, near the waterfront, which is the Port Lands Regeneration Area. The text 'Don River Valley' is printed in the center of the map.

**1. Flood Protection and Naturalization Plan for the Don River**

**2. Sustainable Growth Plan for the Port Lands Regeneration Area**

# Environmental Assessments Affecting the Lower Don Lands Area



**Don Mouth EA**

**Keating Channel Precinct Plan and Municipal Class EA (phases 1 through 4)**

**Municipal Class EA (phases 1 and 2)**

# International Design Competition, Winning Proposal, 2007



# Coordinated Lower Don Lands and Don Mouth Naturalization Plans, 2010



## Awards for the Lower Don Lands Plan

City of Toronto, Urban Design Award, 2007

American Society of Landscape Architects, Honour in Analysis and Planning, 2008

Royal Architectural Institute of Canada, Sustainable Development Award, 2008

BEX International,  
Award for Best Futuristic Design, 2009

American Institute of Architects,  
Award of Merit, 2009

Institute of Transportation Engineers, Transportation Achievement Award, 2010

# Flood Protection and Naturalization Plan for the Don River

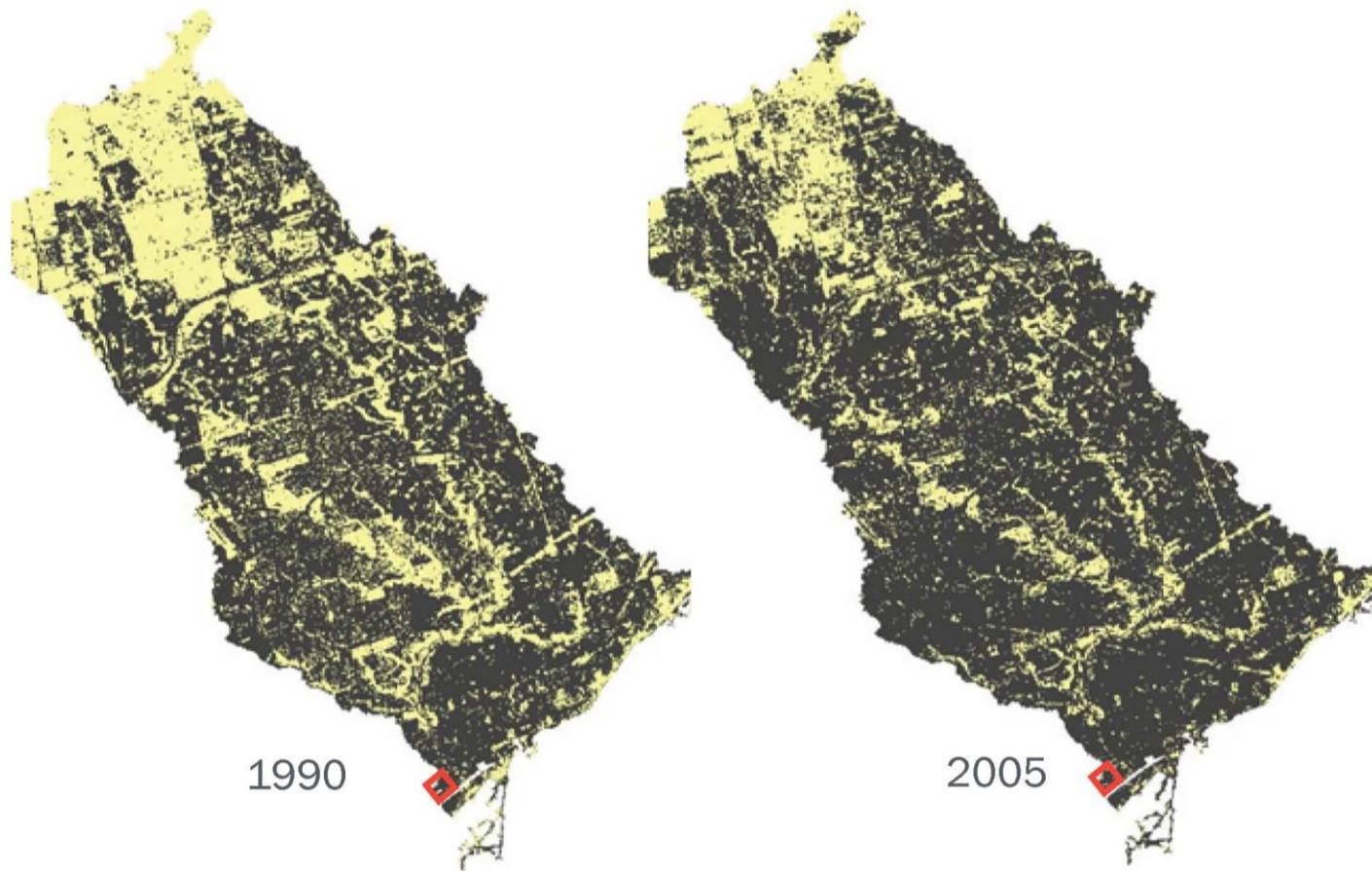


# Flood Risk and the Need for Flood Protection



In 1954, Hurricane Hazel caused extensive damage along the Don and Humber Valleys, pointing to the need for a restructuring of the relationship between Toronto and the Don River.

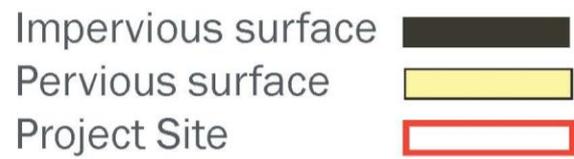
# Impact of Urbanization on the Don River



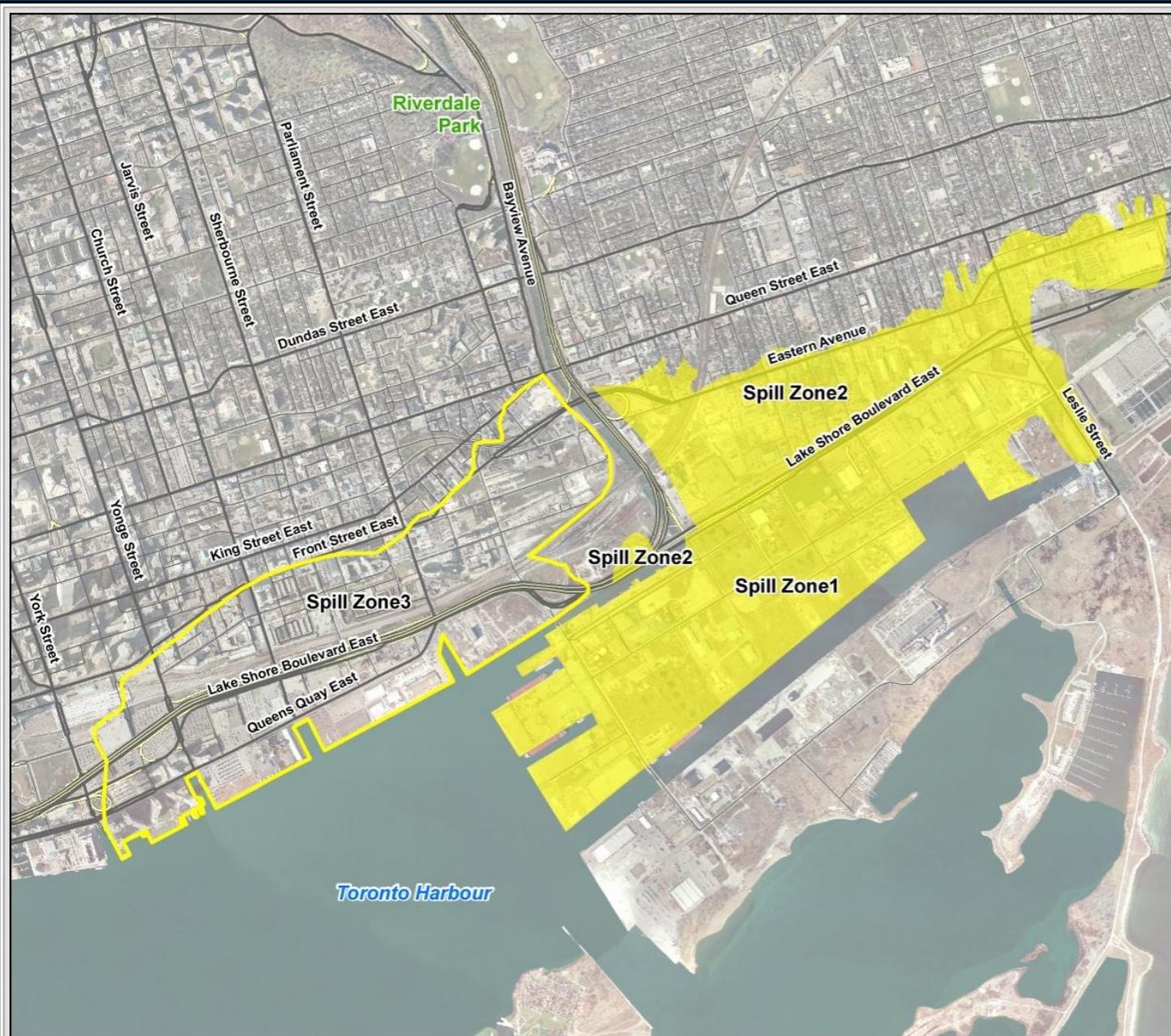
1990

2005

The Don River Watershed: 1990-2005



# Flood Zones



Don Mouth Naturalization And Port Lands Flood Protection Project

### Legend

- Spill Zone 1 and 2
- Spill Zone 3



0 125 250 500 750 1,000



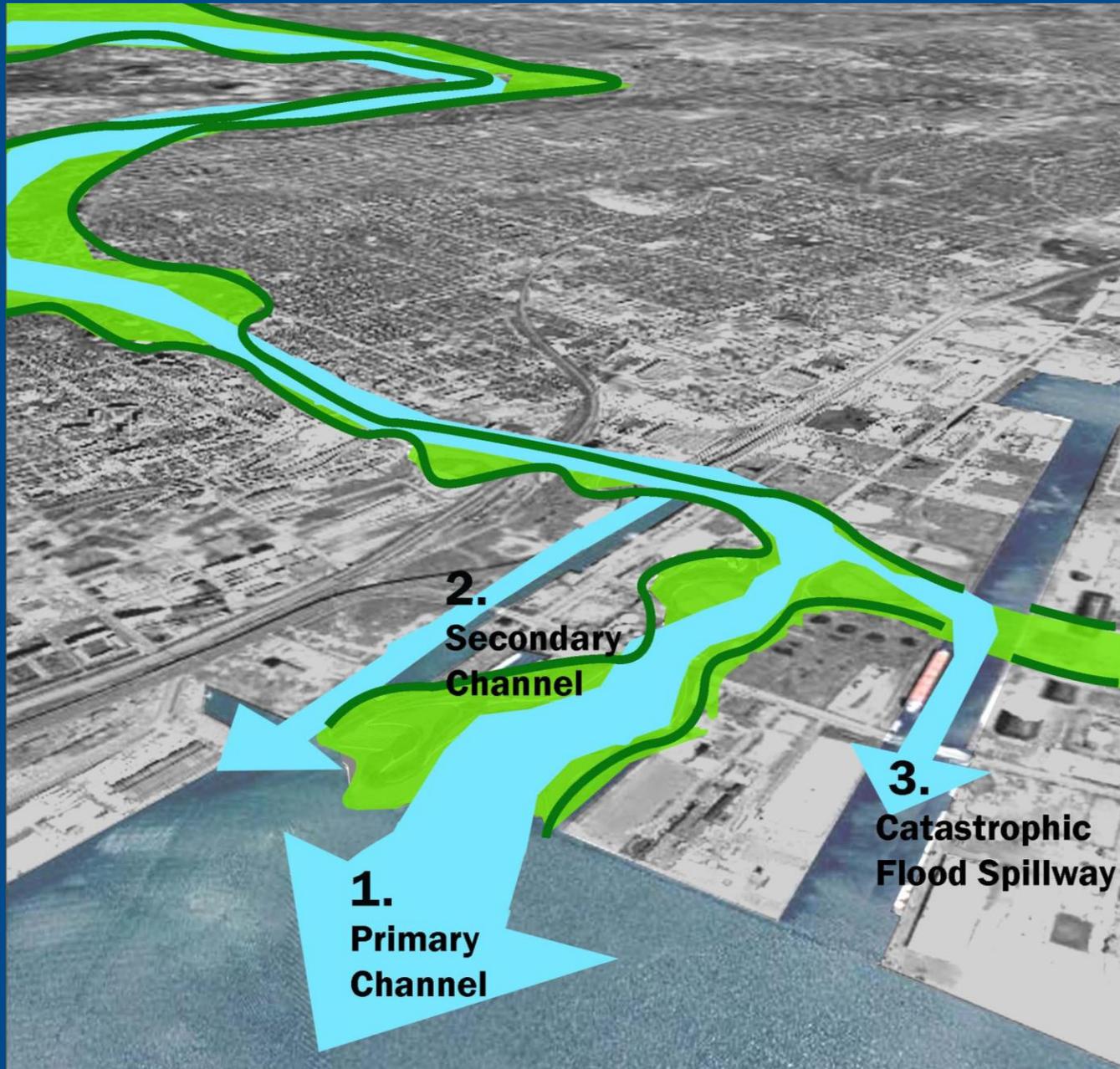
TORONTO AND REGION  
**Conservation**  
for The Living City

Member of Conservation Ontario

# Existing Flow Conditions



# Three-Tier Flood Protection Solution in Don Mouth EA



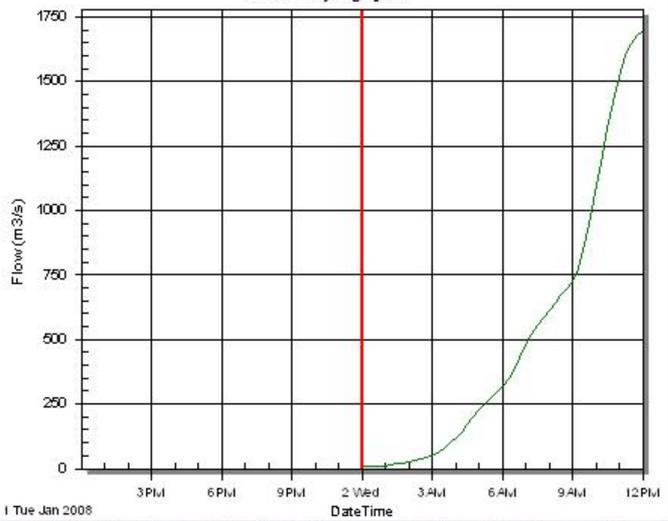
The Lower Don Lands plan creates a floodplain in which the river is allowed a range of flexible dynamism as it would have in nature, while the city is fully protected from flooding. Designing for these two goals at once would not have been possible without the use of current computer modeling technologies.

The two computer models that follow show the before and after of the reconfiguration of the river to contain the regulatory flood level

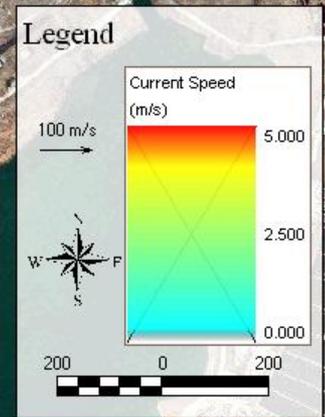
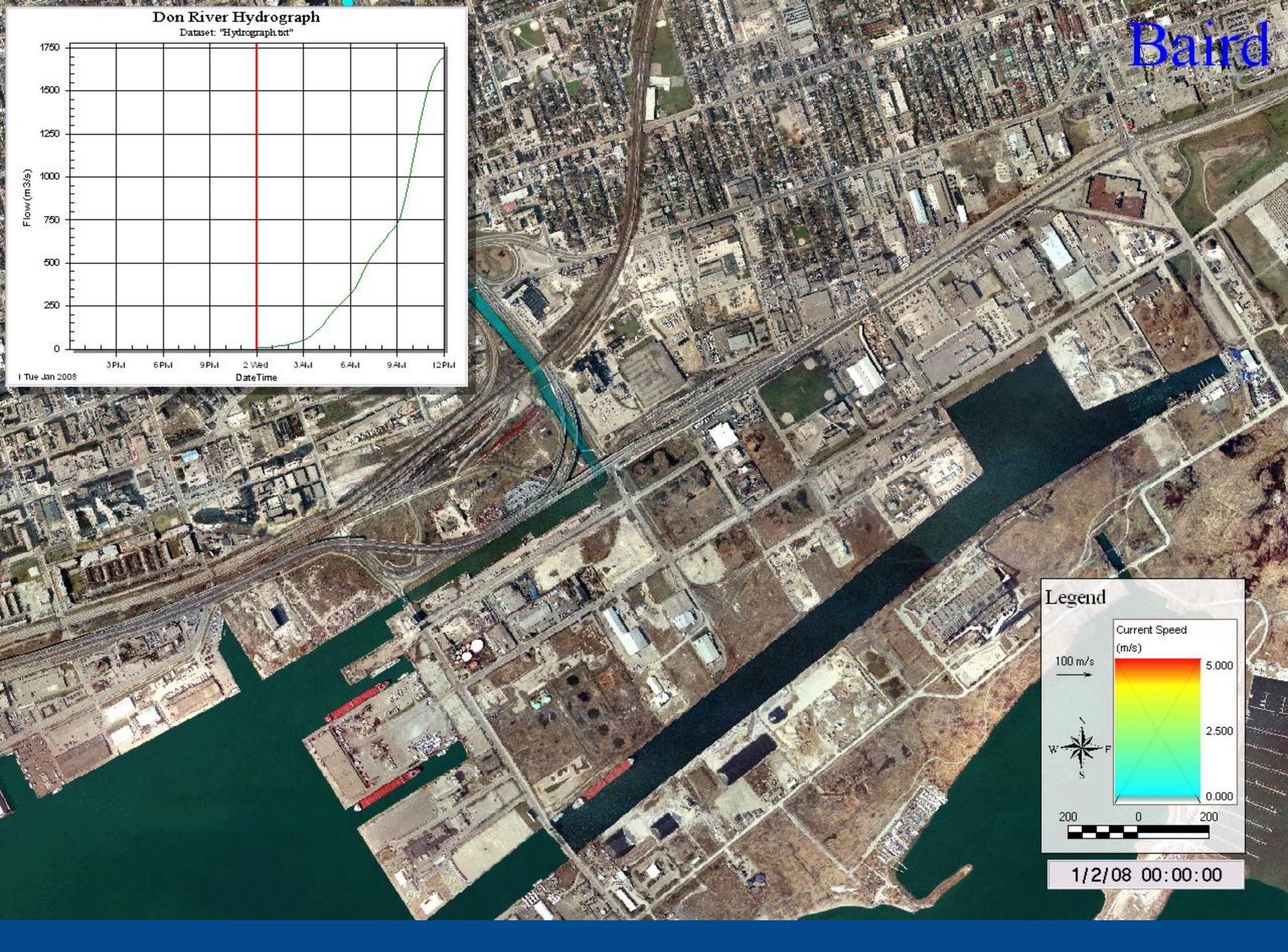


# Don River Hydrograph

Dataset: "Hydrograph.txt"



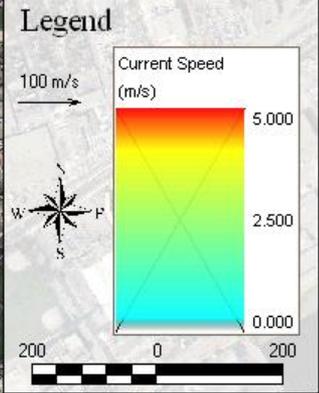
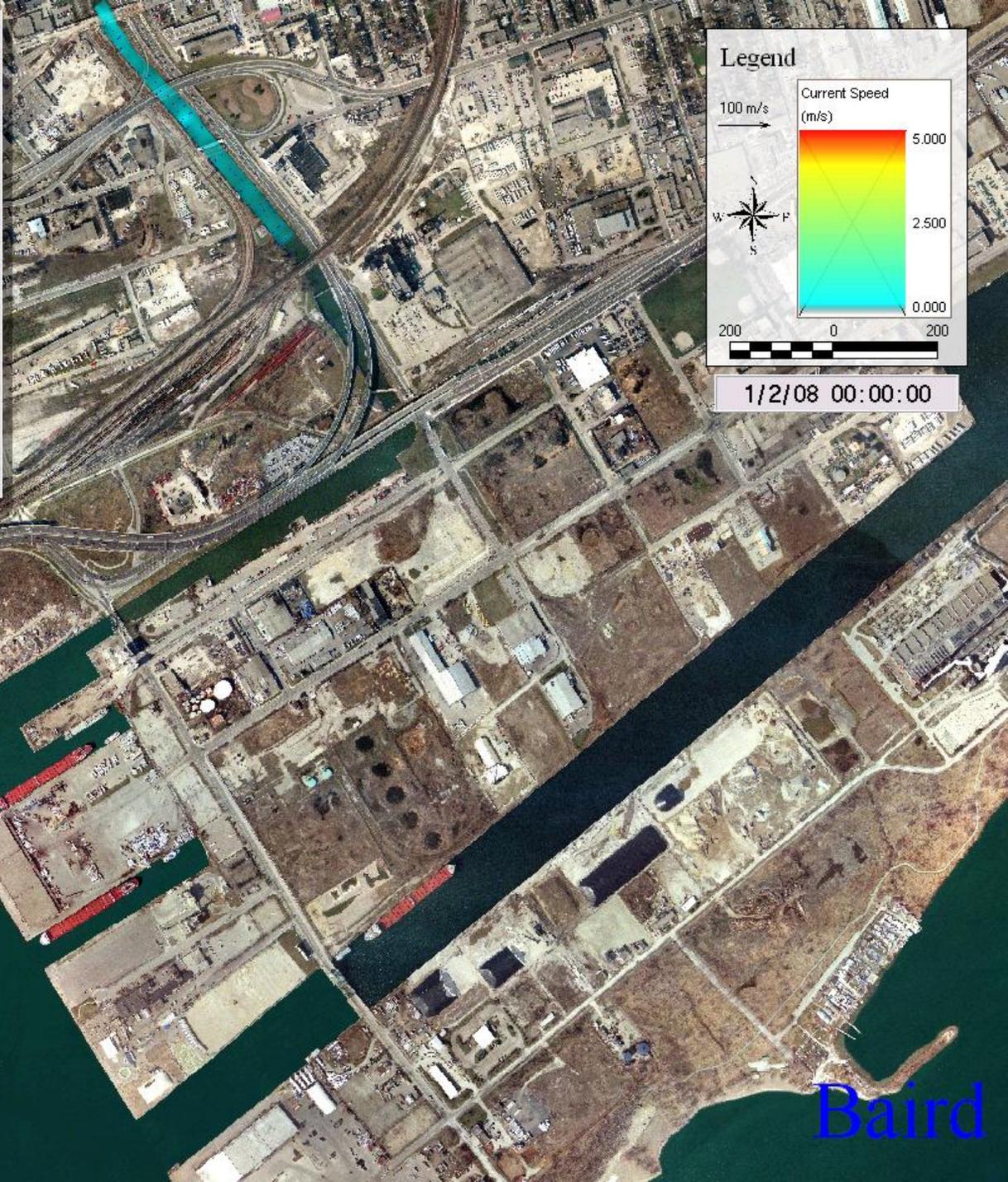
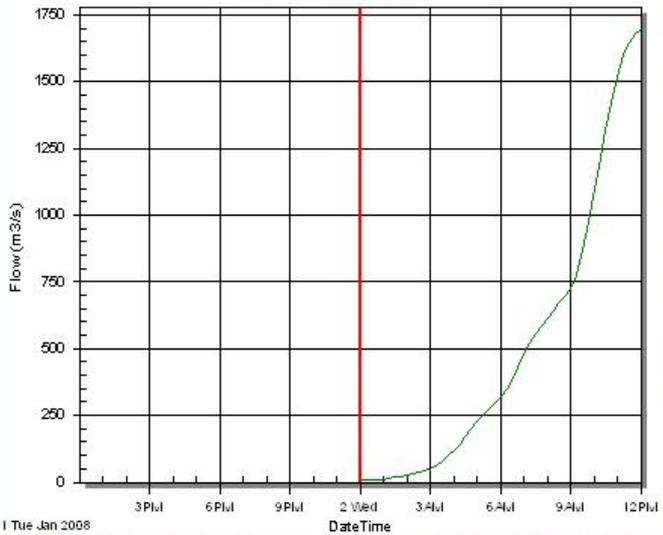
# Baird



1/2/08 00:00:00

# Don River Hydrograph

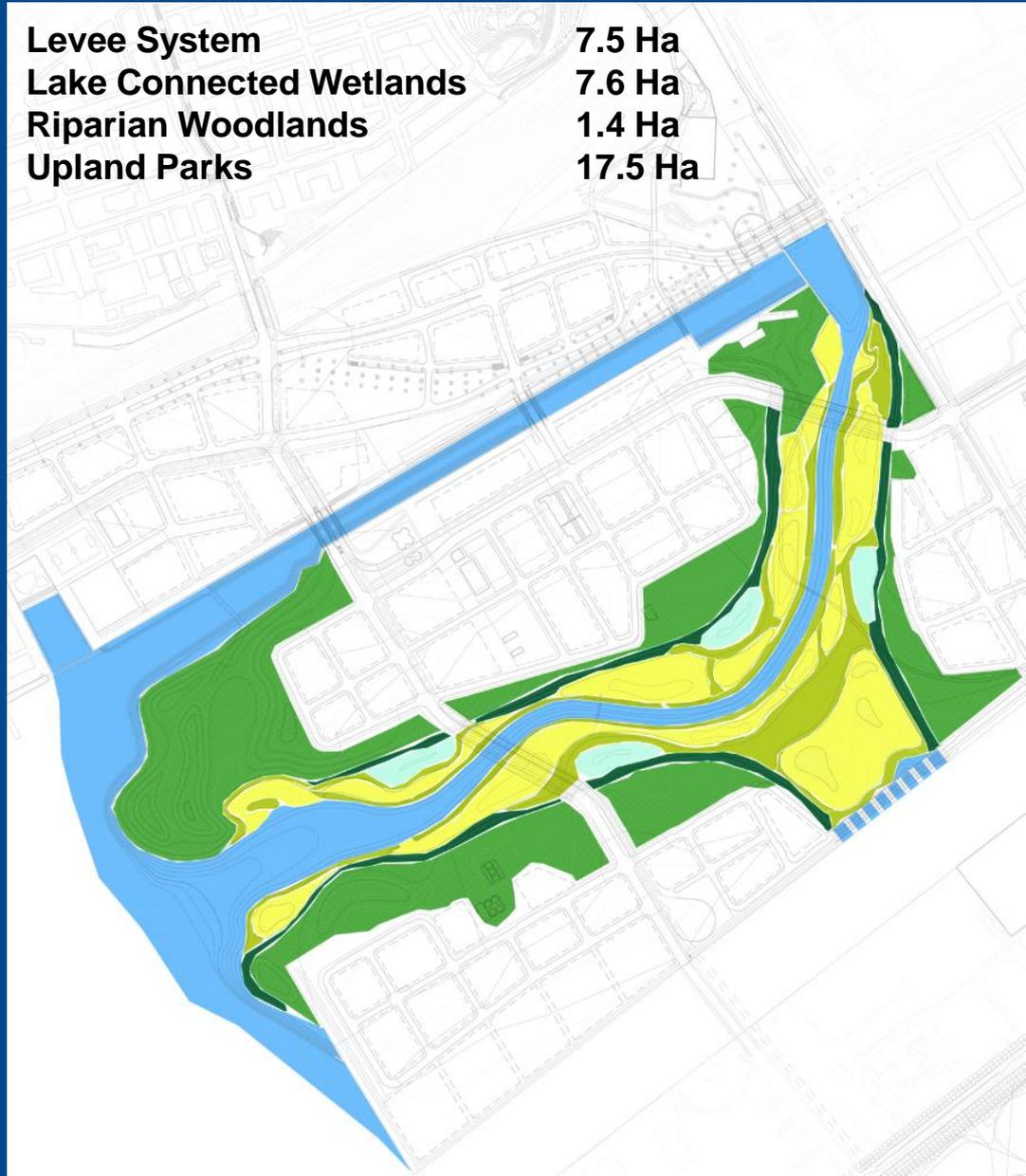
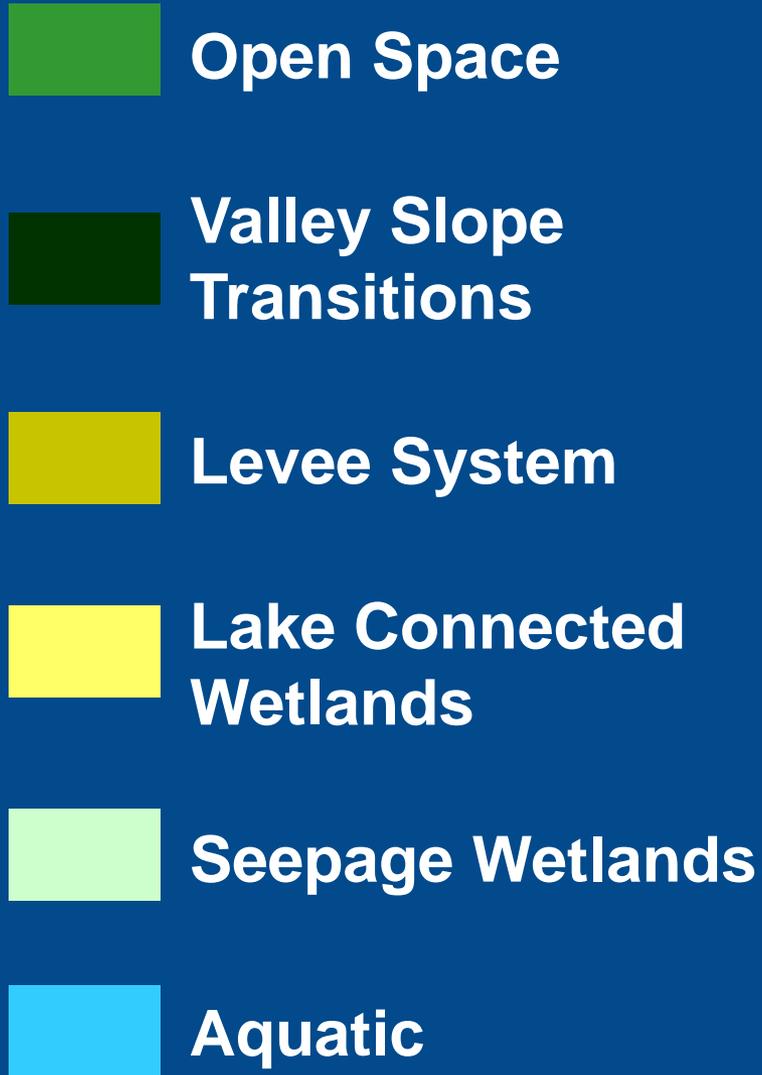
Dataset: "Hydrograph.txt"



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Baird

# Naturalization and Habitats



# Naturalized and Flood Protected Don River Mouth



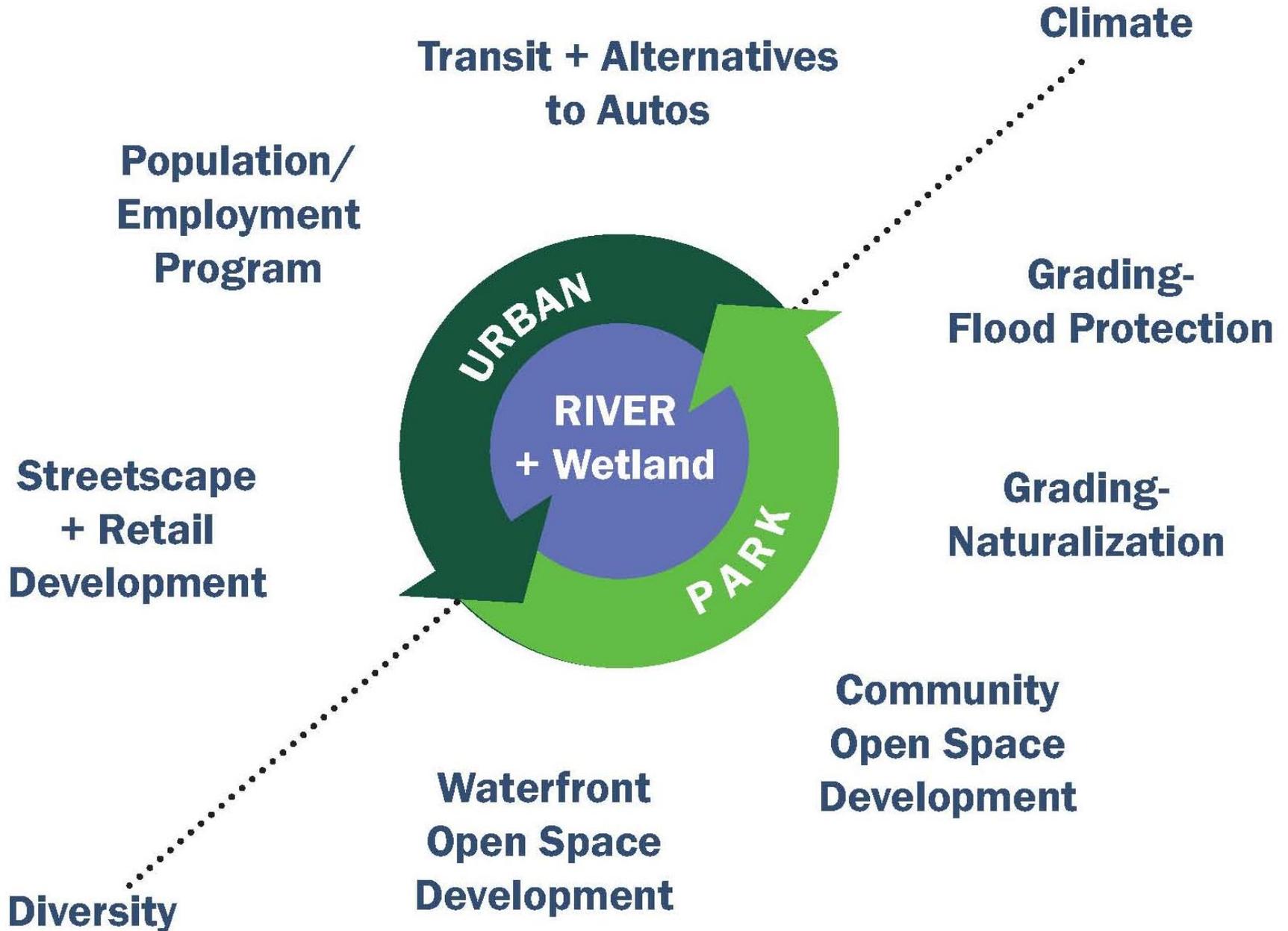
# Naturalization Connected to a Continuous Greenway System



# Sustainable Growth Plan for the Port Lands Regeneration Area



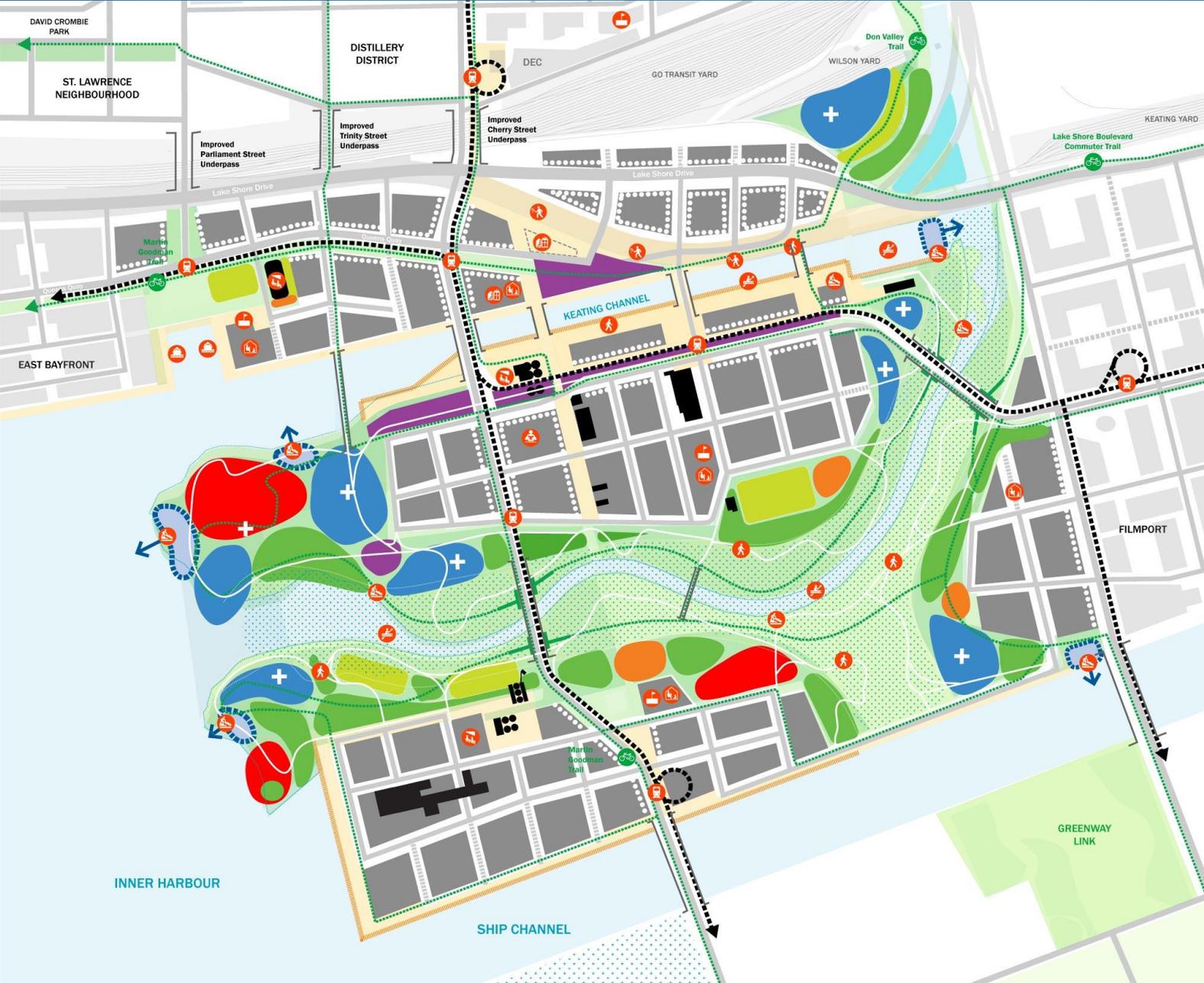
**WATERFRONT**Toronto



# Comprehensive Neighborhood Plan

**KEY**

-  Heritage Structure
-  Retail
-  LRT Stop
-  Bicycle Trail
-  School and/or Community Center
-  Day Care
-  Environmental and Cultural Special Uses
-  Library
-  Special Commercial Use
-  Small Boat Launch
-  Small Boating
-  Party Boats
-  Court Sports
-  Geographic Feature
-  Wooded Prospect
-  Passive Use Lawn
-  Multiuse Recreation (Active)
-  Esplanade
-  Playground
-  Public Garden
-  Event Space
-  Open Space
-  Water Access



## 2. The LDL Municipal Class EA Master Plan and Keating Channel Precinct ESR

Queens Quay



### LEGEND



LRT Stop

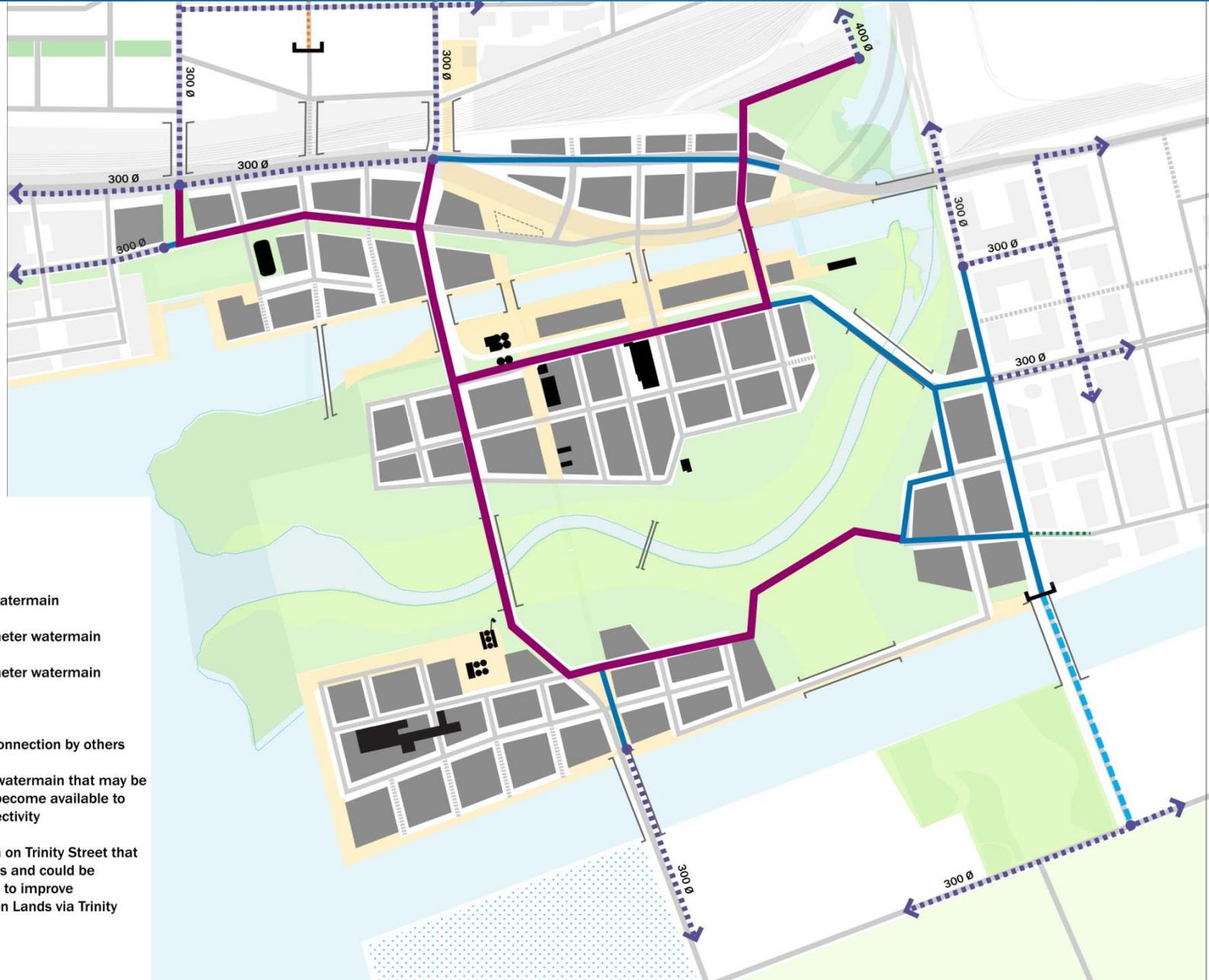


Transit Line



Retail

# Water Servicing Plan



## LEGEND

- Existing watermain
- Connection to existing watermain
- Proposed 300 mm diameter watermain
- Proposed 400 mm diameter watermain
- Pipe cap
- Future watermain and connection by others
- Future 300 Ø Film Port watermain that may be provided by others and become available to provide additional connectivity
- Future 300 Ø watermain on Trinity Street that will be provided by others and could be connected to, if required to improve connectivity to Lower Don Lands via Trinity Street underpass
- Open Space

# Sanitary Sewer Servicing Plan

## LEGEND

-  Connection to existing sanitary sewer
-  Gravity flow sewer
-  Inverted siphon
-  Force mains for initial development
-  Alternate force main if the LLI at the Cherry Street outlet does not have sufficient capacity as determined by the Toronto CSO Class EA
-  Pump station
-  Potential future trunk sewer for Port Lands if the Toronto CSO Class EA determines that this solution addresses the operational needs of the LLI
-  Open Space

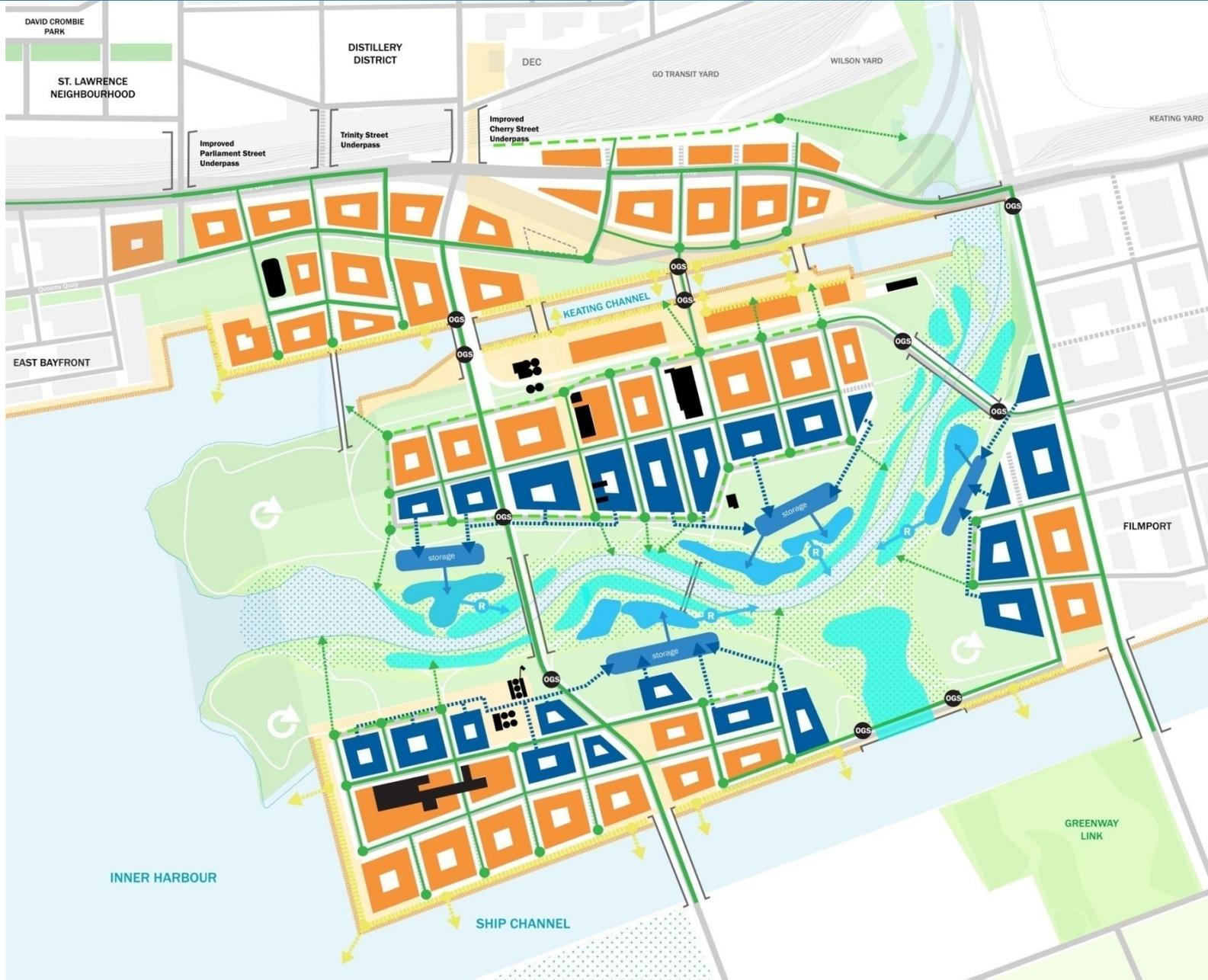


# Stormwater Management Plan

Compatibility between stormwater treatment and natural elements

Clean water for reuse in natural elements

Meets regulatory requirements for stormwater quality



# Community Services Plan

## LEGEND

- Daycare
- School and/or Community Cent
- Library
- Associated Open Space
- Major Roads
- Open Space



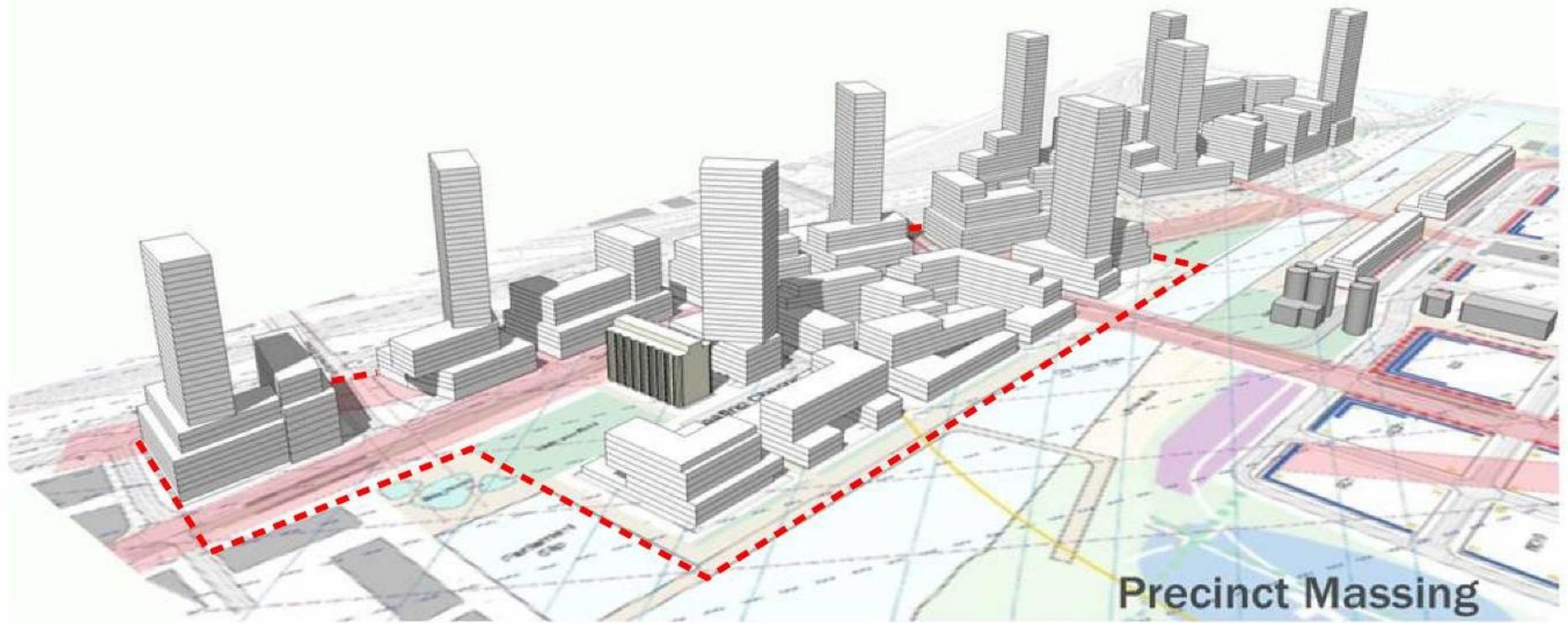
# Parks and Open Space Plan



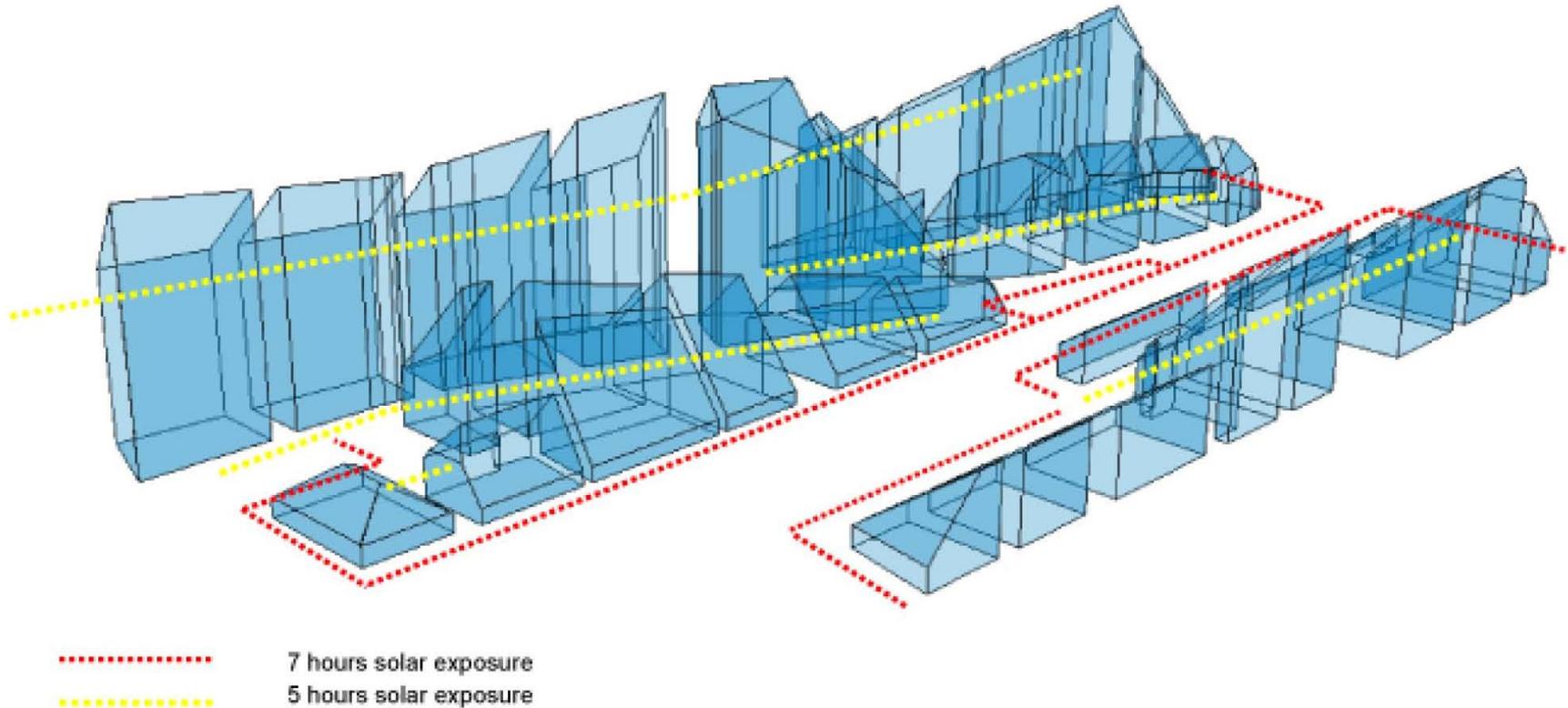
## LEGEND

- Esplanade
- + Woodland
- Passive Use Lawn
- Multiuse Recreation
- Pedestrian Path
- Bicycle Path
- Open Space

# Keating Channel Precinct Plan Building Massing



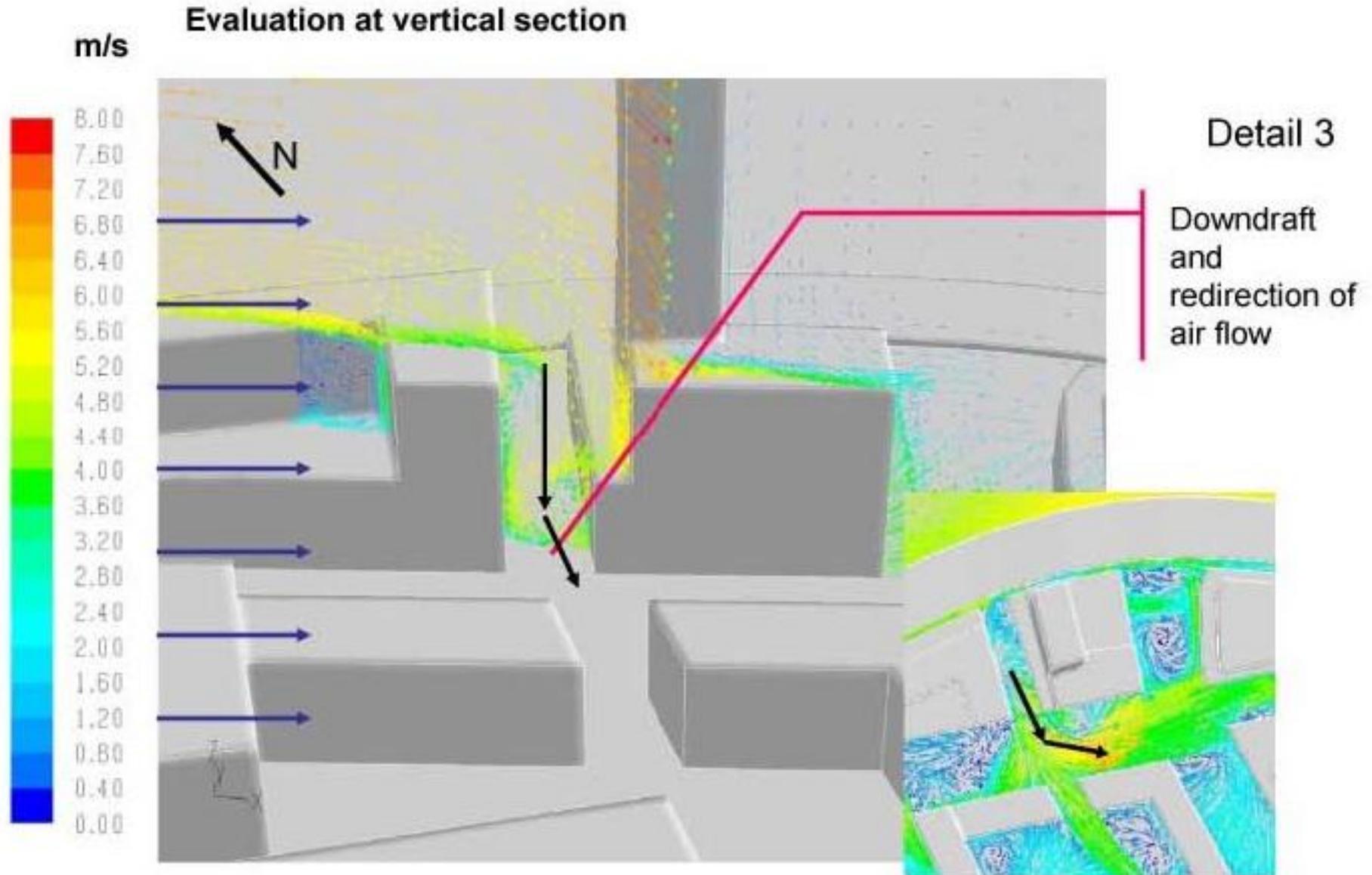
# Solar Access Planes



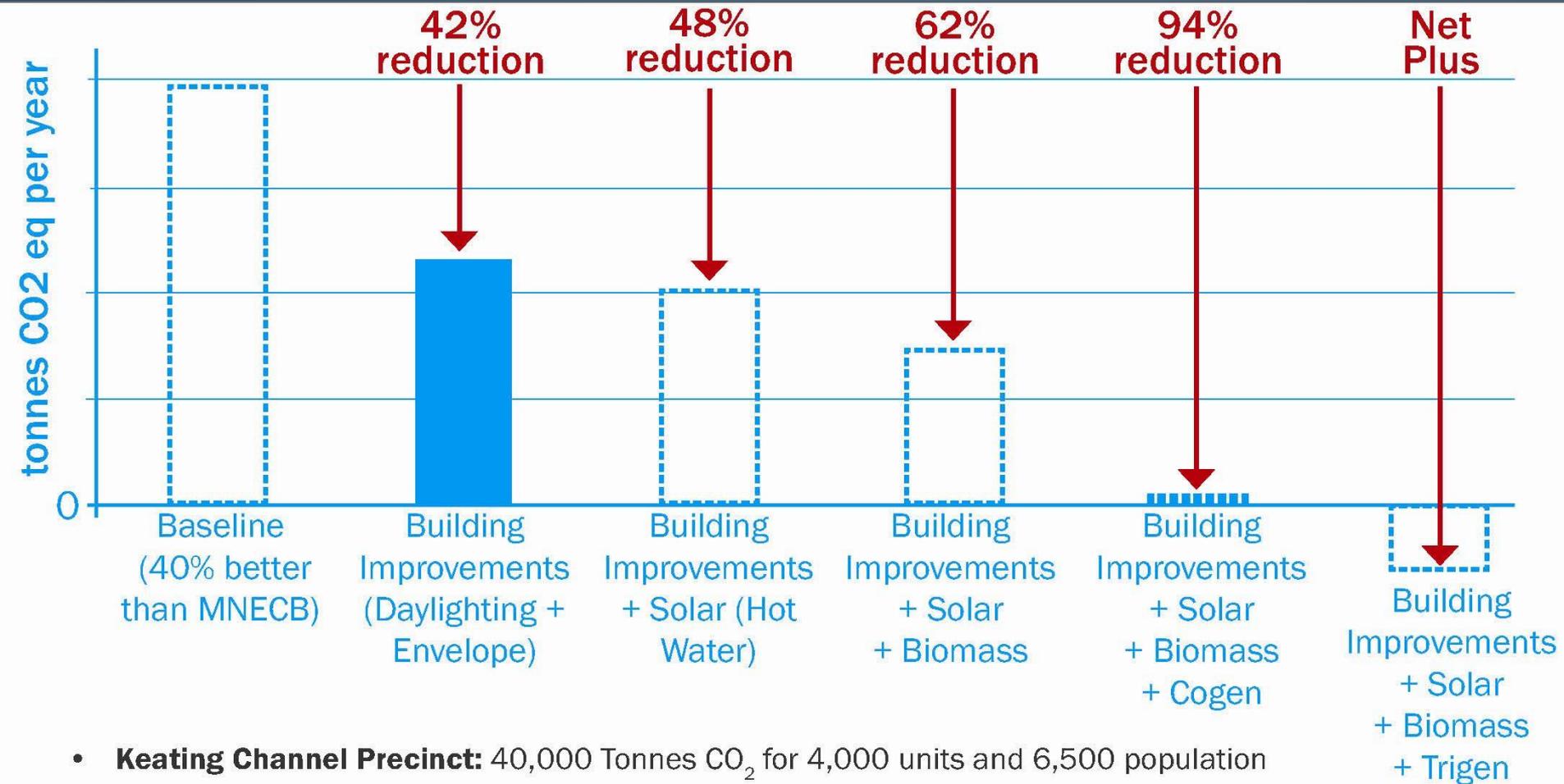
Sky exposure planes for the Keating North Precinct, shown in blue, are designed to allow solar access into the key public areas, shown as red and yellow lines, for a minimum of hours on March 21st.

Different proposals of building massing are tested for sun exposure, and changes are suggested to improve them.

# Design for Winter Wind Protection and Pedestrian Comfort



# Clinton Climate+ Program and Goals for Carbon Negative Communities



- **Keating Channel Precinct:** 40,000 Tonnes CO<sub>2</sub> for 4,000 units and 6,500 population
- **Building improvements** takes the largest step towards a carbon neutral development
- Approaching a **carbon neutral development** is one of the main goals for the Lower Don Lands
- Work closely with Waterfront Toronto for a potential **Net Plus scenario** - exporting net energy benefits to the City and the region

(Results from TRNSYS thermal/energy simulation software and GEMIS life-cycle analysis software)

# Preliminary Economic Impact and Phasing



**Costs:  
Flood  
Protection and  
Infrastructure  
(\$625 million in  
2010 dollars):**

**\$325 million** for construction of the new river mouth

**\$200 million** for new bridges and improvements to existing roads

**\$60 million** for creation of sediment and debris management area and flood protection features

**\$40 million** for creation of Promontory Park soil receiving site



## Economic Benefits: Avoided Flood Risk Liability

Assessed property value of **\$1.6 billion** at risk of flooding

**\$300-500 million** in estimated damages from a Regulatory Flood event



## Economic Benefits: Increased Value of City-Owned Land and New Tax Revenues

**\$480 million** increase  
in land value in Lower  
Don Lands

**\$300 million** increase  
in land value in  
adjacent  
neighbourhoods  
(Eastern Avenue  
employment district  
and eastern Port  
Lands)

**\$55 million** in new  
annual tax revenue  
from Lower Don  
Lands development

**\$6.8 billion** in private  
investment leveraged  
in Lower Don Lands



**Economic Benefits:  
Multiplier Effect  
of Public  
Investment**

DIRECT SPENDING  
EFFECTS

MULTIPLIER  
EFFECTS

TOTAL

**ECONOMIC  
ACTIVITY**  
(2010 \$M)

**EMPLOYMENT**  
(JOB YEARS)

**\$625**

**3,900**

**\$597**

**4,900**

**\$1,222**

**8,800**



## Economic Benefits: Urban Intensification

19,000 new residents

14,000 new workers

Reduced reliance on private automobiles and increased use of public and active transit



# Conceptual Phasing Plan

**Keating Channel West** can begin development once the zoning and Class EA are completed

**Keating Channel East** to begin after the 2015 Pan Am Games

**Don Mouth Naturalization and Flood Protection** to begin upon approval of the EA and completion of detailed engineering design

**Don Roadway West** available for Regional Sports Complex now

**River Precincts and Transit Lines** estimated to start sometime after 2020

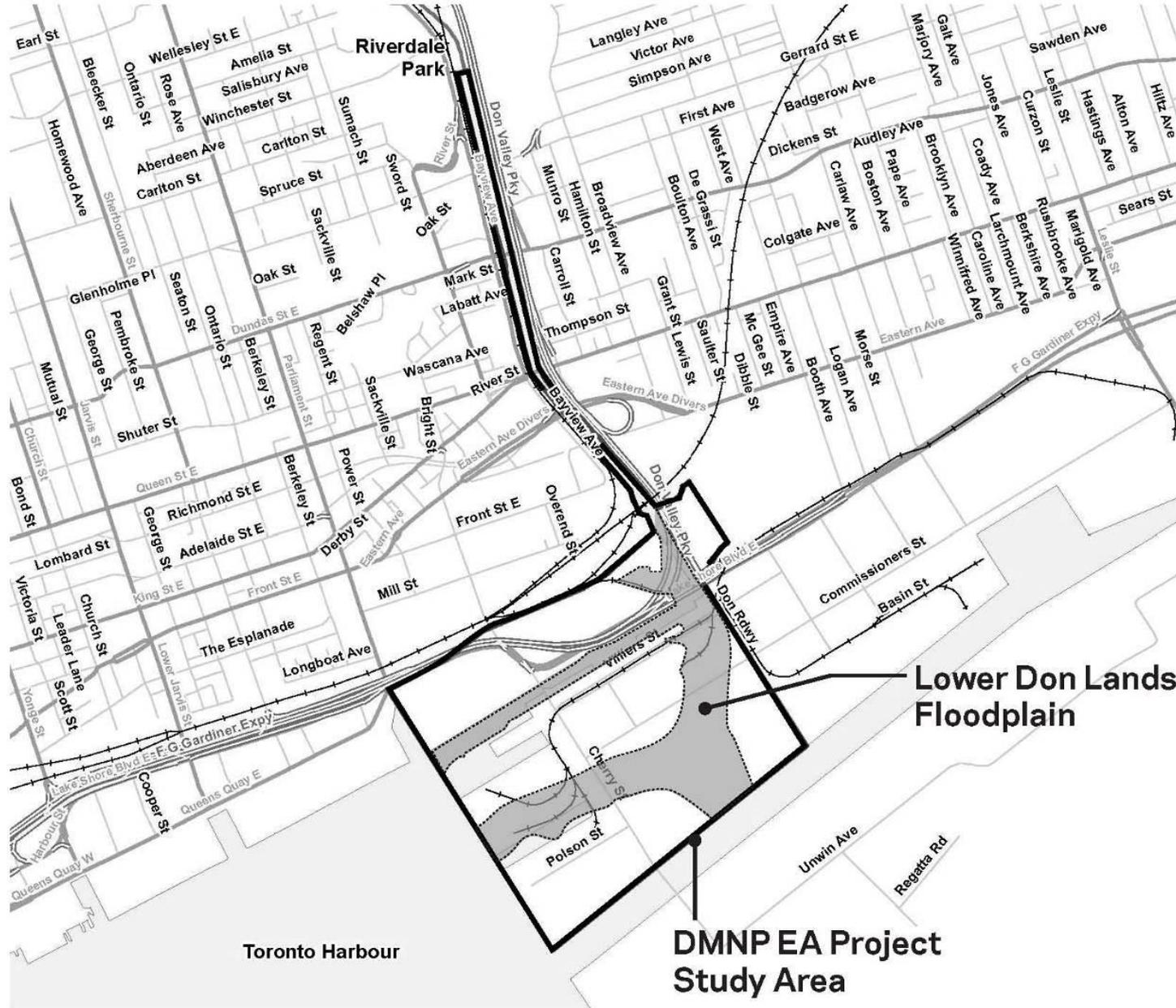


# Lower Don Lands Documents for Council Endorsement / Approval



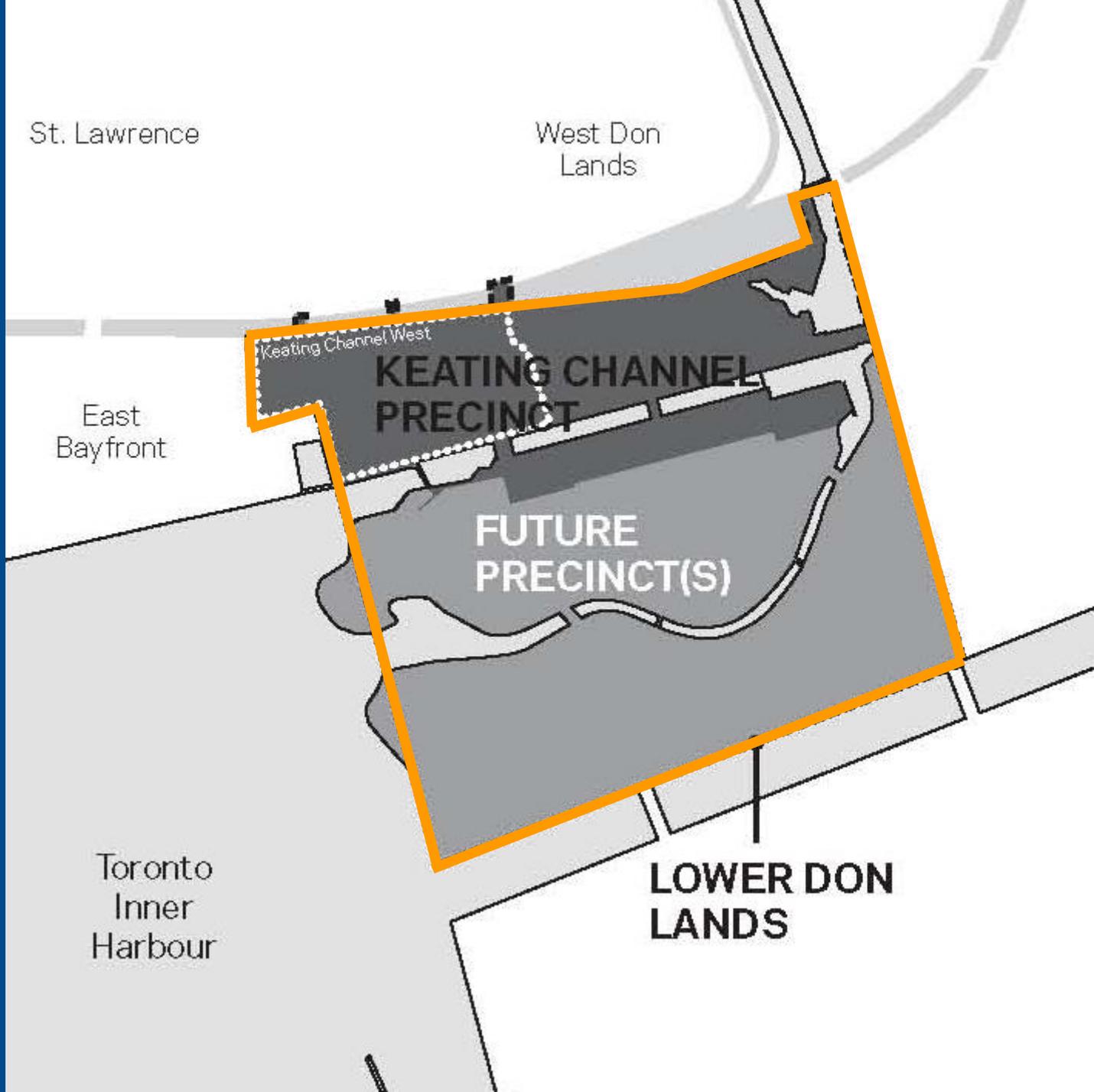
# 1. Don Mouth Naturalization and Port Lands Flood Protection EA

Council authorization for WT and TRCA to submit final draft EA to the Ministry of the Environment



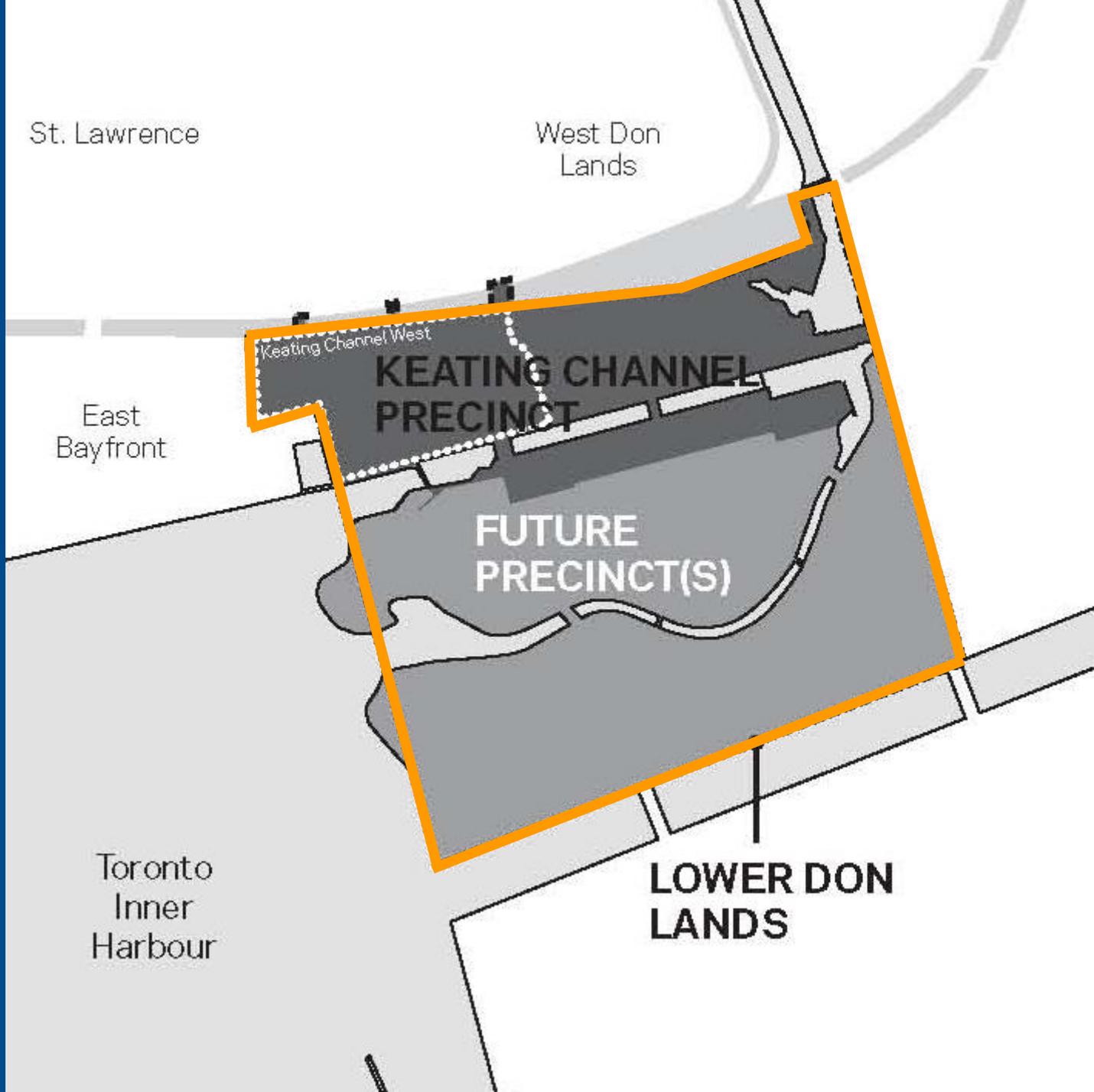
## 2. Lower Don Lands Framework Plan

Council endorsement for non-statutory document setting out the basic areas for naturalization and regeneration and major transportation connections



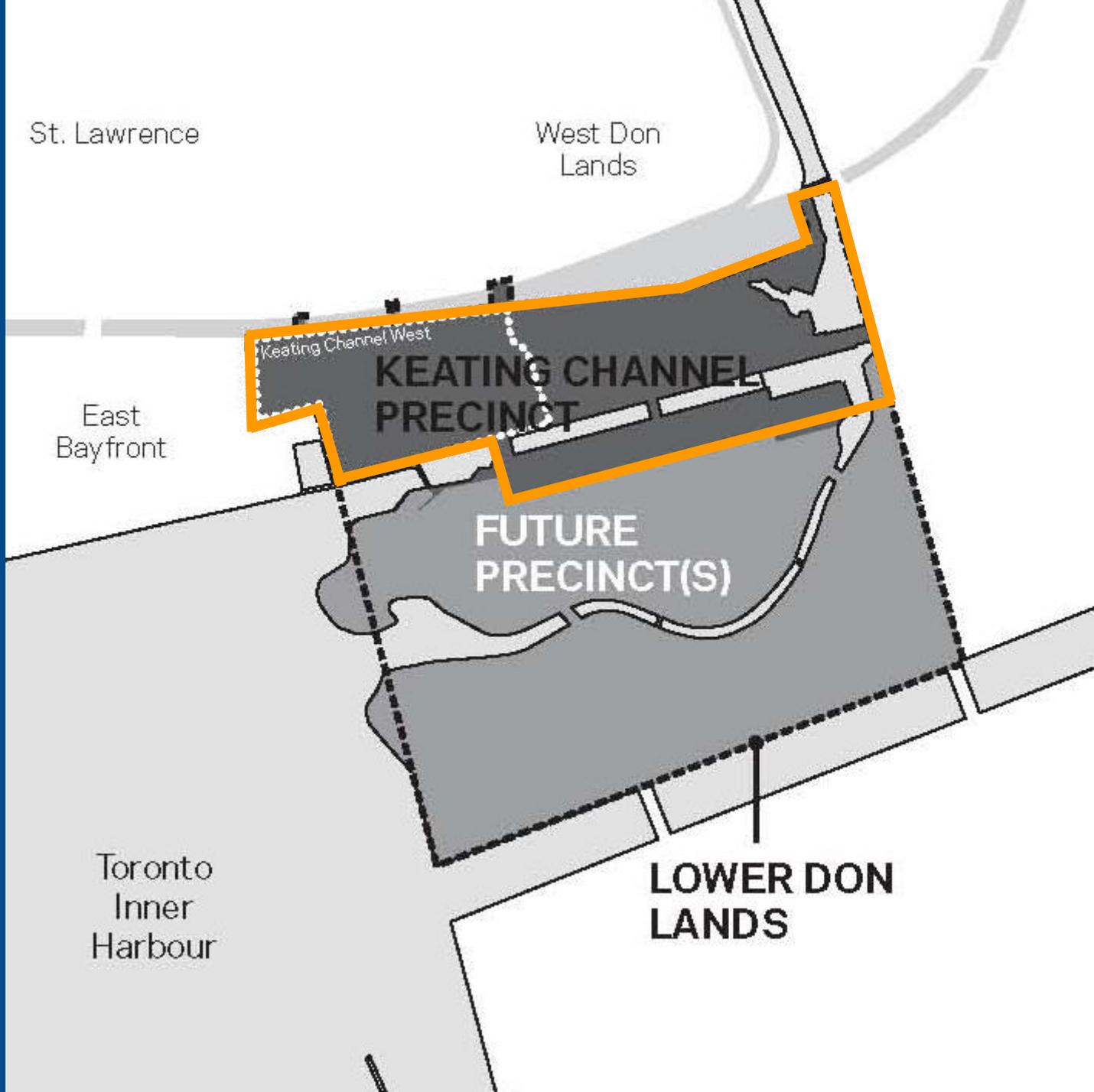
### 3. Lower Don Lands Class EA (Phases 1-2)

Council authorization for WT and TRCA to submit draft EA to the Ministry of the Environment



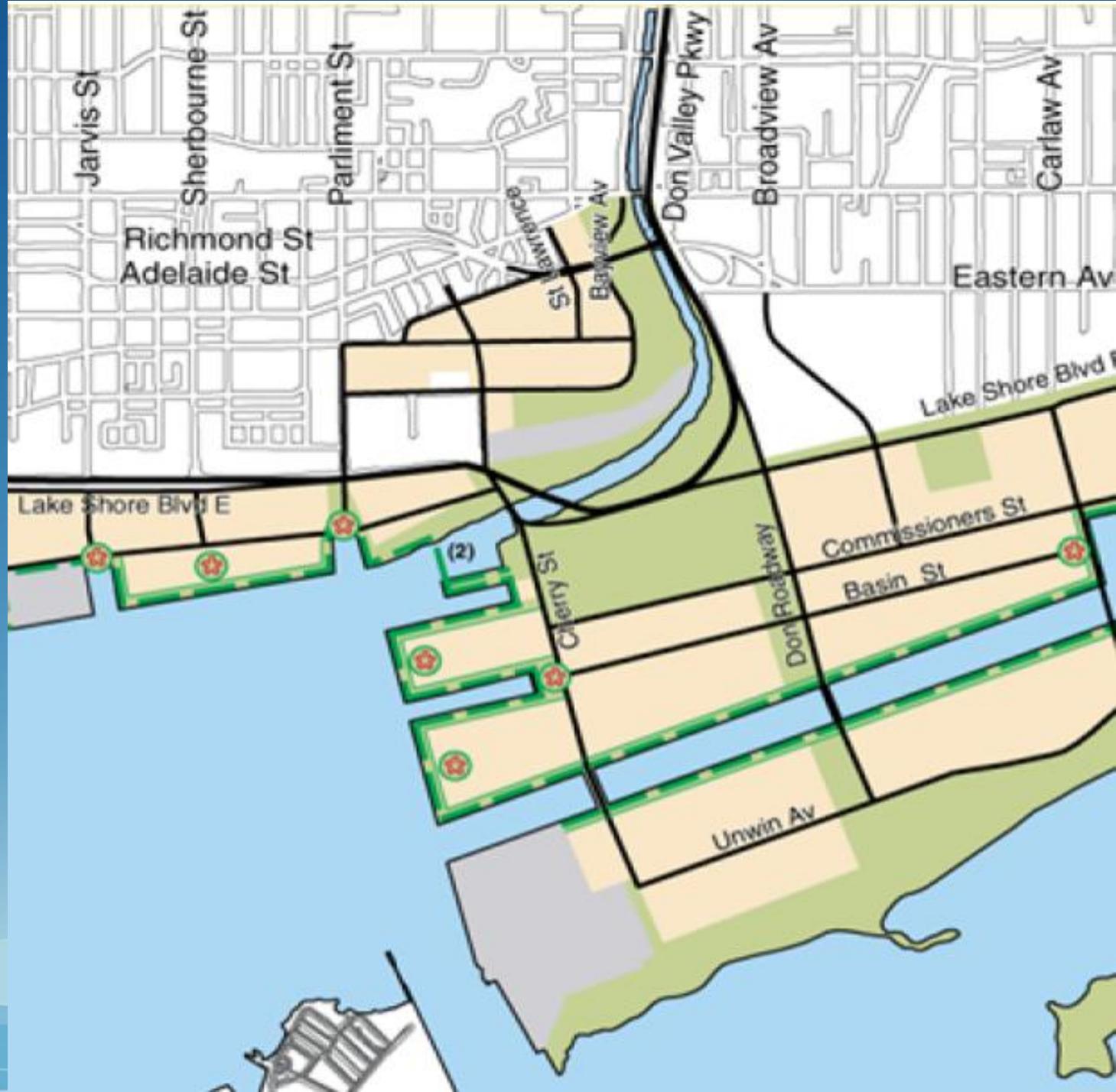
# 4. Keating Channel Precinct Plan and Class EA (Phases 1-4)

Council endorsement of the precinct plan, western half, and authorization for WT and TRCA to submit EA to the Ministry of the Environment



## Existing Secondary Plan

Sets a river alignment that is not the preferred alternative in the Don Mouth Naturalization and Flood Protection EA, and will require amending once the OPA is completed

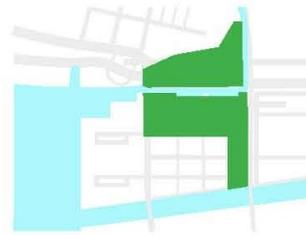


# Comparison Between Existing Secondary Plan and Lower Don Lands Plan

## Central Waterfront Secondary Plan

## Lower Don Lands

Park and  
Open Space  
Area



**100** Acres  
(40.5 Hectares)



**130** Acres  
(52.6 Hectares)

Water Area

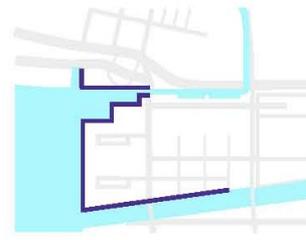


**25** Acres  
(10.1 Hectares)

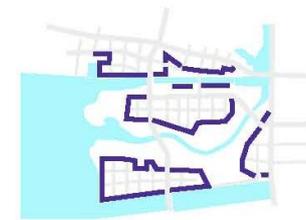


**35** Acres  
(14.2 Hectares)

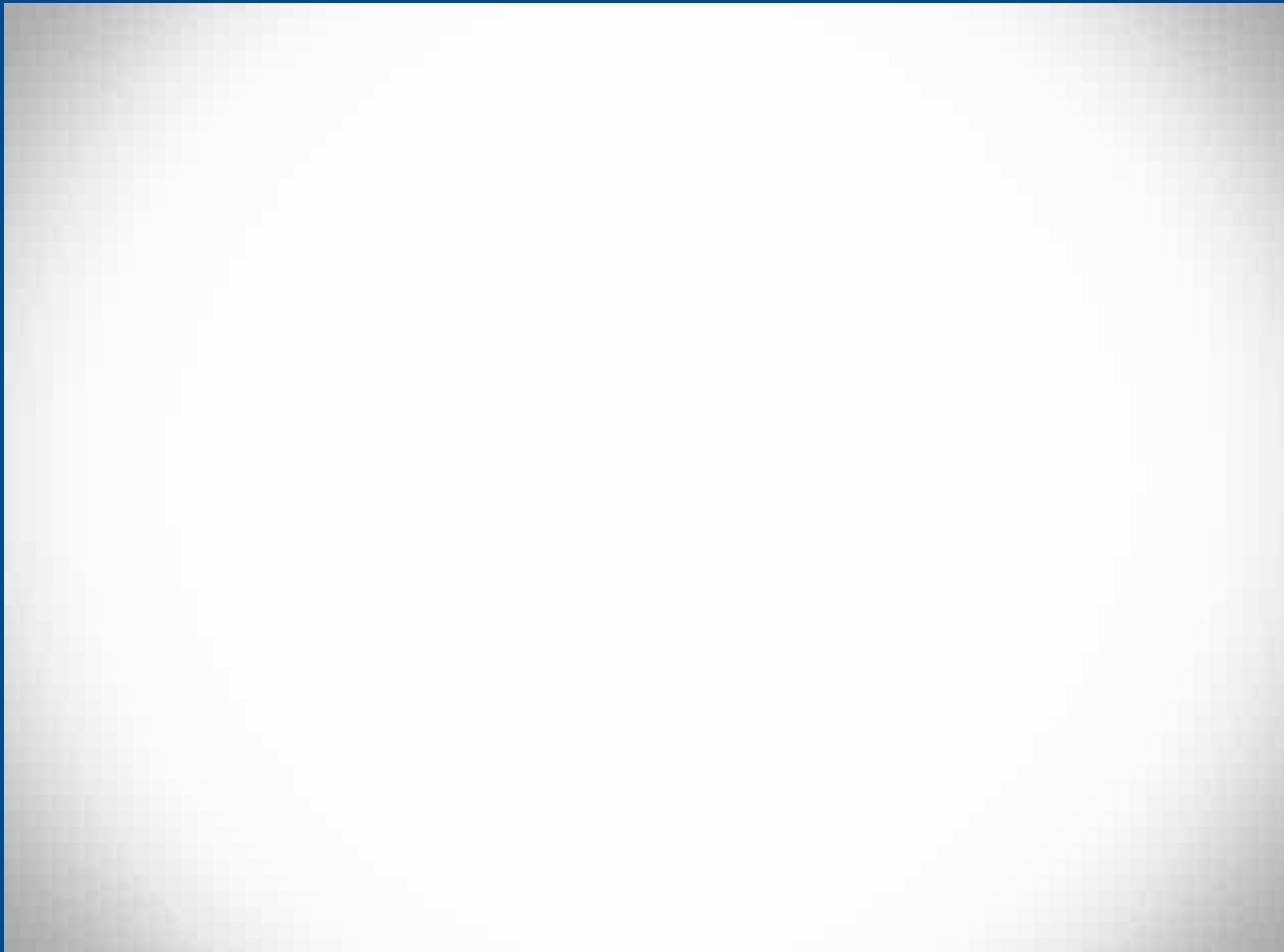
Waterfront  
Development



**3050**  
Linear Metres



**5200**  
Linear Metres



[www.youtube.com](https://www.youtube.com) search *sustainable urban design*

## The Deputy City Manager, Cluster B, recommends that Council:

1. Support the preferred alternative for the Don Mouth Naturalization and Flood Protection EA and authorize TRCA and WT to put it in the public record
2. Endorse the Lower Don Lands Framework Plan
3. Authorize WT to put the Lower Don Lands Class EA Infrastructure Master Plan in the public record
4. Endorse the Keating Channel Precinct Plan (for areas west of Cherry Street)
5. Authorize Waterfront Toronto to put the Keating Channel Precinct Class EA Environmental Study Report in the public record
6. Defer approval of the Precinct Plan and Keating Channel Class EA ESR as they relate to lands east of Cherry Street, until the Gardiner/Lake Shore Blvd Reconfiguration EA is further advanced
7. Request Waterfront Toronto to submit a Business and Implementation Plan for LDL, with priority for the Don Mouth Naturalization and Flood Protection
8. Request the Chief Planner and/or TRCA to ensure the proposed corridors of the river and infrastructure are protected from encroachment
9. Endorse the Affordable Housing Strategy, outlined in the Keating Channel Precinct Plan
10. Request Waterfront Toronto to prepare plans and guidelines for urban design, parks and public space, heritage and public art
11. Authorize and direct the appropriate City officials to take the necessary action to give effect thereto