Port Lands Flood Protection and Enabling Infrastructure: Parks and River, Bridges, Roads and Municipal Infrastructure

Schematic Design

April 18, 2018

Project Description & Background

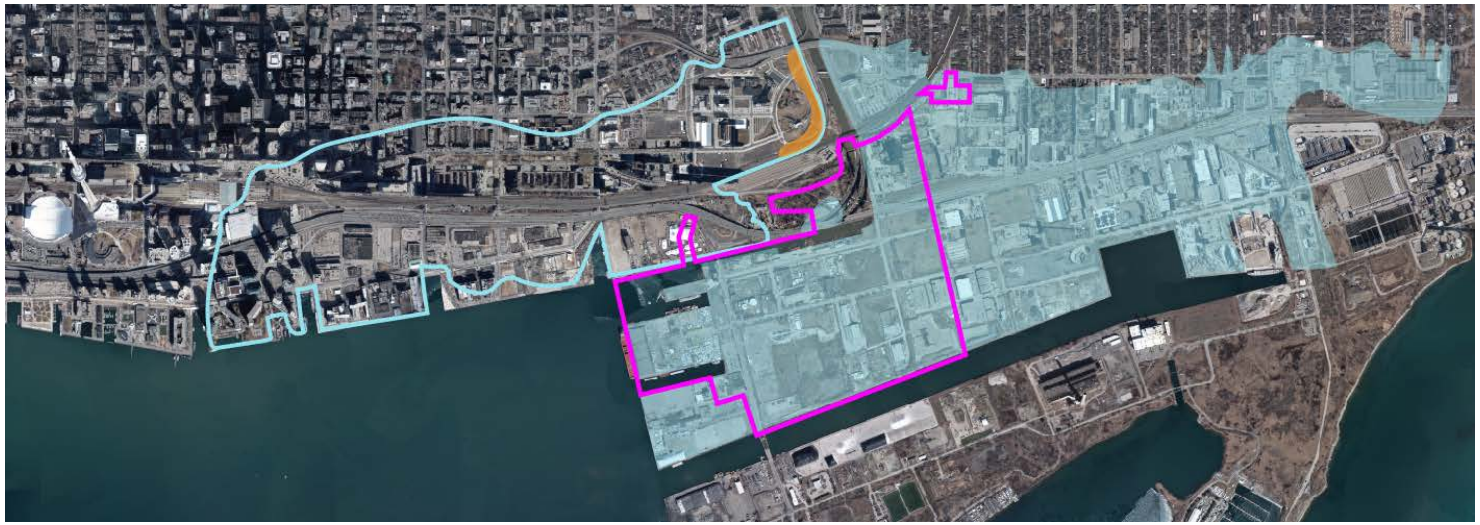
Port Lands Flood Protection: Parks and River, Bridges, Roads and Municipal Infrastructure

Review Stage: Schematic Design

Proponent: Waterfront Toronto

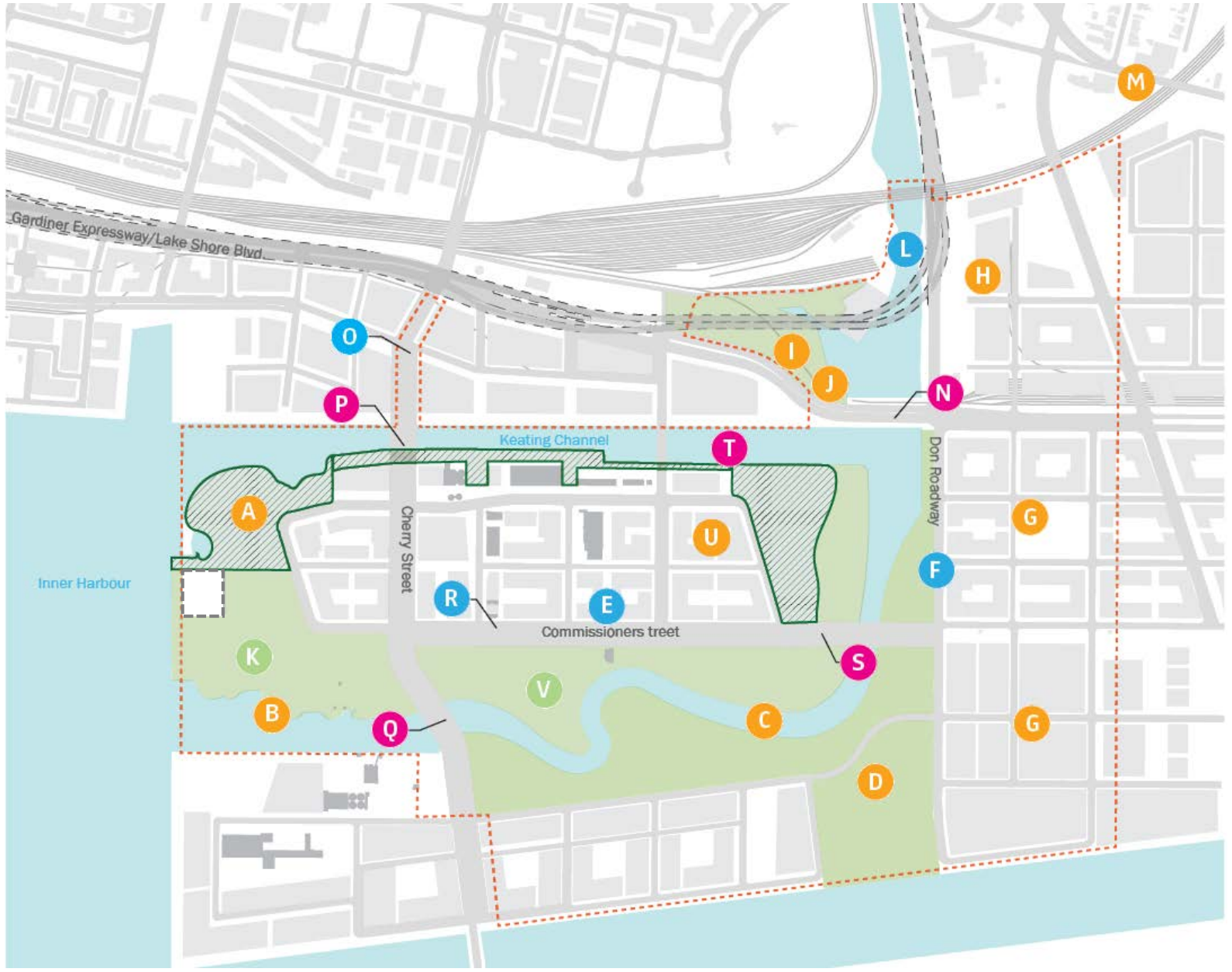
Design Team: MVVA (Parks and River) WSP with DTAH (Roads), Entuitive with Grimshaw and SBP (Bridges)

- 290 hectares of southeastern downtown Toronto are at risk of flooding from the Don River watershed
- The Port Lands Flood Protection and Enabling Infrastructure Project is a comprehensive solution to flood protection
- The three items that will be presented today:
  1. Parks and River Valley
  2. Roads and Municipal Infrastructure
  3. Bridges



What are we building?

- A Cherry Street Stormwater and Lakefilling
- B Polson Slip Naturalization
- C Flood Protection: River Valley
- D Don Greenway (Spillway & Wetland)
- E Site Wide Municipal Infrastructure
- F Don Roadway
- G Don Roadway Valley Wall Feature
- H East Harbour Flood Protection Land Form
- I Sediment and Debris Management Area
- J Flow Control Weirs
- K Promontory Park
- L Hydro One Integration
- M Eastern Avenue Flood Protection
- N Lake Shore Road and Rail Bridge Modifications
- O Cherry Street Re-alignment (Incl. BRT)
- P Cherry Street Bridge North (incl. BRT)
- Q Cherry Street Bridge South (vehicular only)
- R Commissioners Street
- S Commissioners Street Bridge (vehicular only)
- T Keating Channel Modifications
- U Villiers Island Grading
- V River Park



Earthworks/Flood Protection

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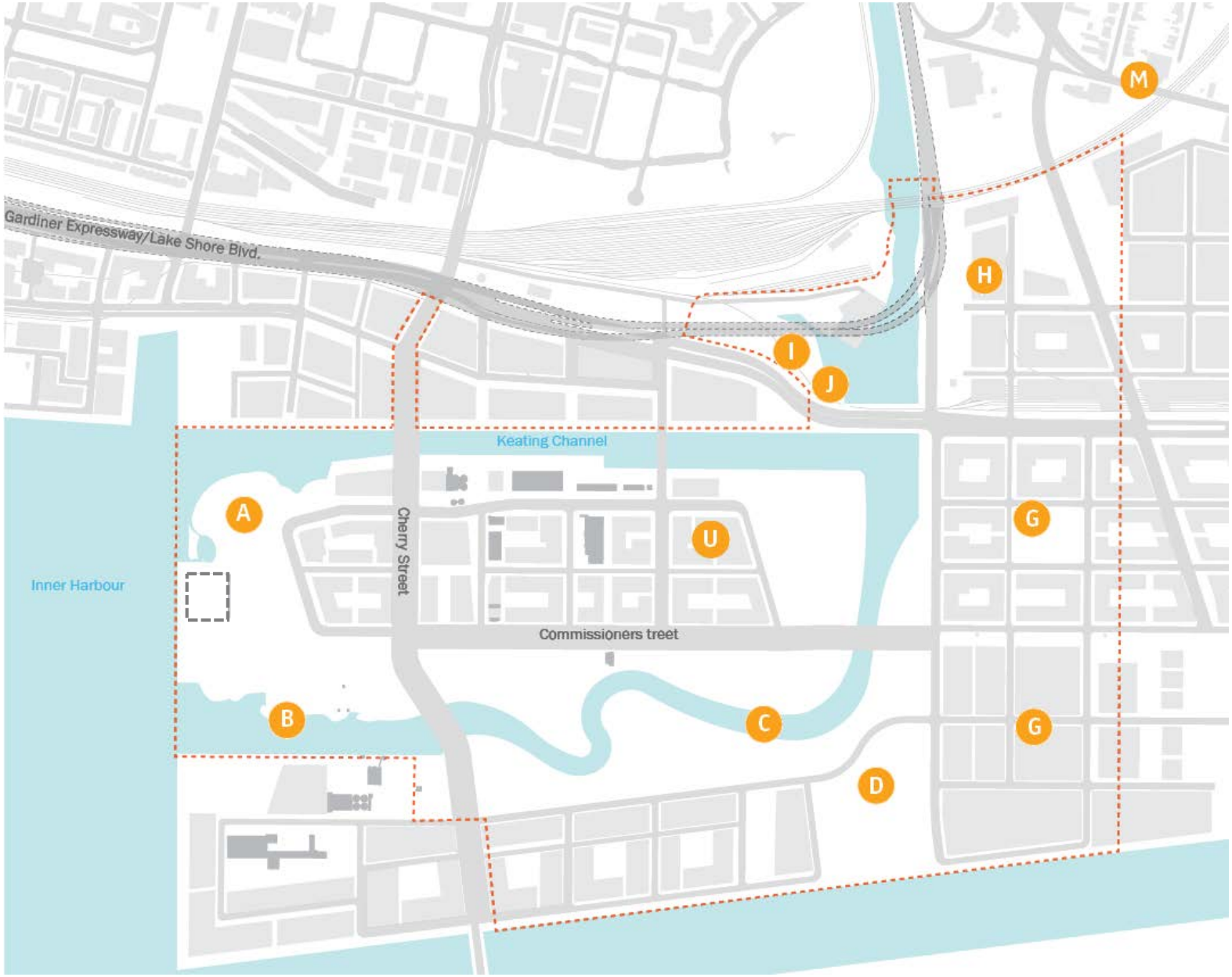
- Port Lands Flood Protection and Enabling Infrastructure Boundary
- Parks
- Roads and Municipal Infrastructure
- Bridges & Structures
- Earthworks/Flood Protection



Bridges and Structures

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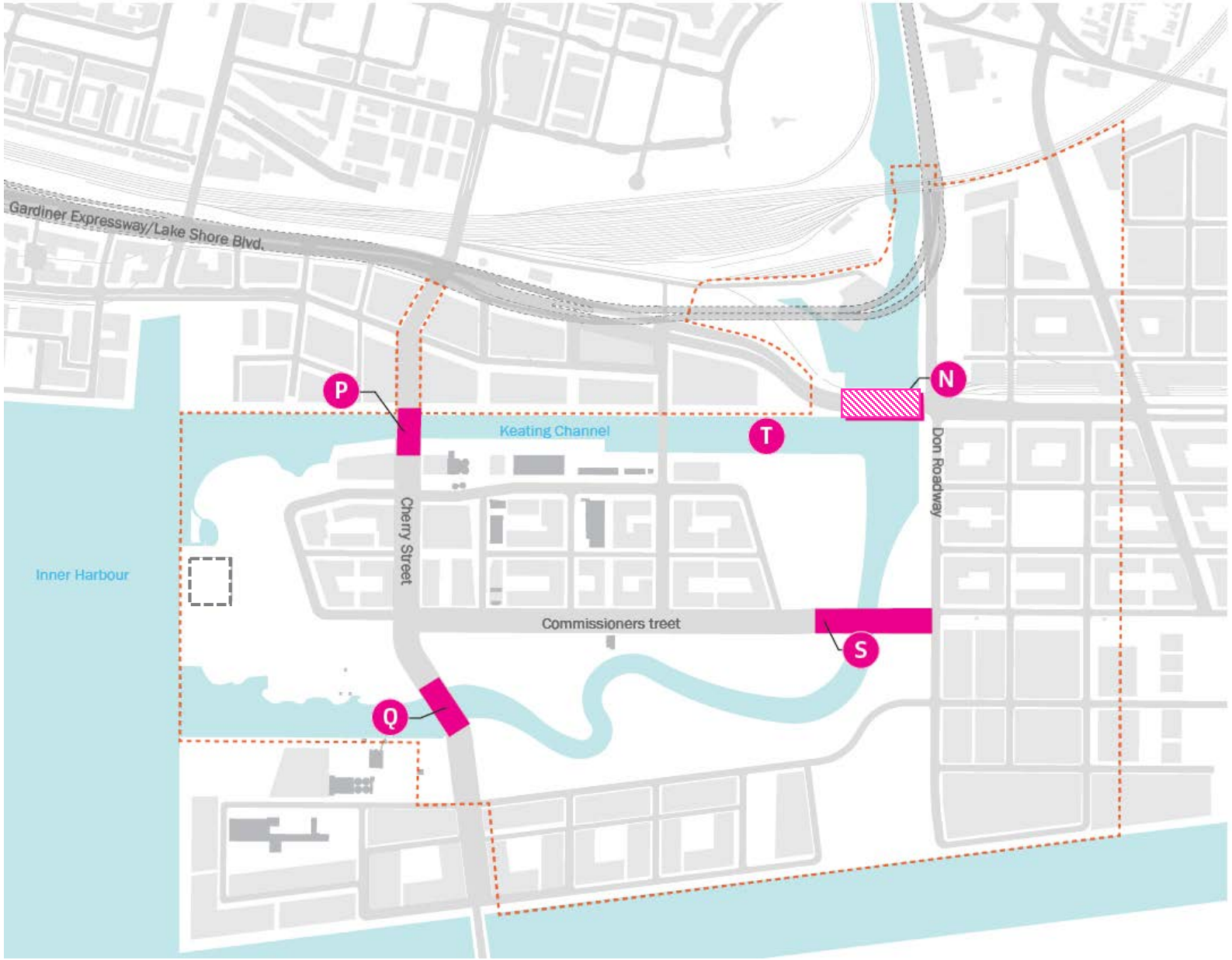
- Roads and Municipal Infrastructure
- Bridges & Structures
- Earthworks/Flood Protection



Roads and Municipal Services

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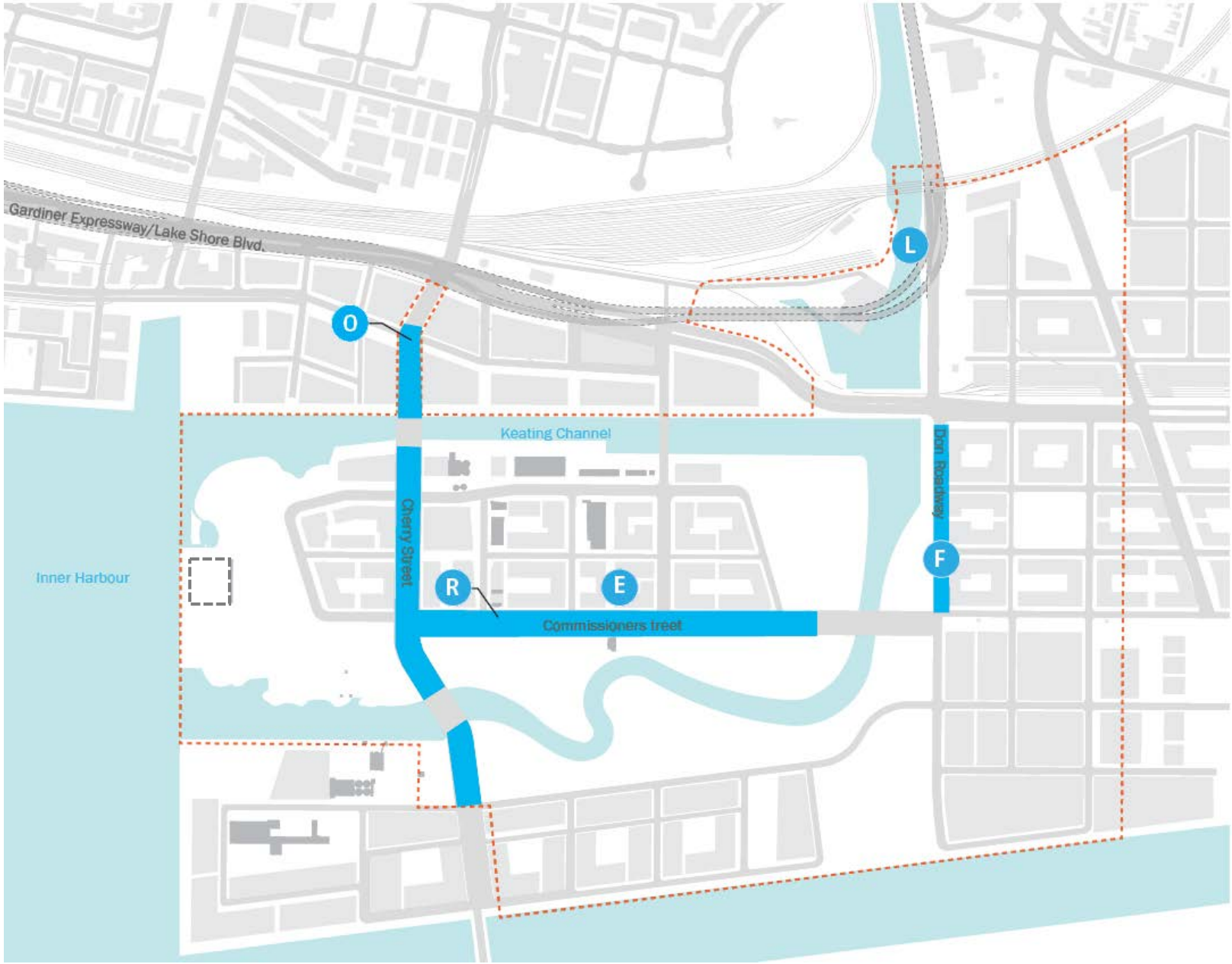

Parks

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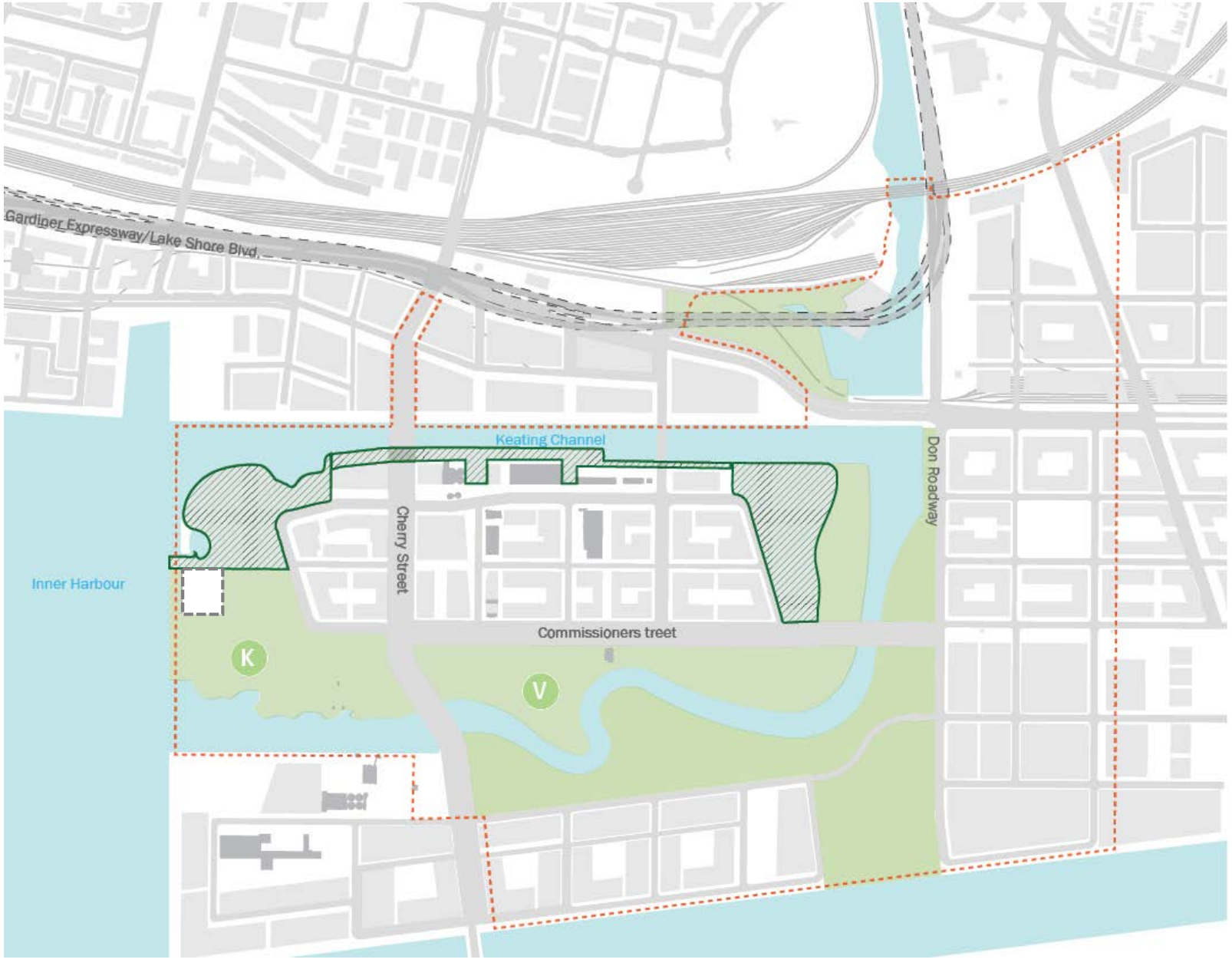

Team Structure

Parks, Flood Protection & River Valley

- All flood protection elements
- Park and wetland design
- Integration of all four streams

MVVA

Roads and Municipal Infrastructure

- Public realm design
  - Cherry Street
  - Don Roadway
  - Commissioners Street
- All municipal services

WSP with DTAH

Bridges

- Cherry Street North Bridge
- Cherry Street South Bridge
- Commissioners Street Bridge
- Lake Shore Bridge
- Integration with roads and municipal services

Entuitive with Grimshaw & SBP

Environmental

- Environmental permits
- Baseline environmental information and modeling
- Soil and groundwater remediation and risk management design
- Environmental monitoring plans

Jacobs (CH2M)

Policy Context –
Central Waterfront Secondary Plan

C21_The mouth of the Don River will be rerouted through lands south of the rail corridor. This will improve the ecological function of the river, provide flood protection for the Port Lands and East Bayfront and attract new wildlife to the area. The renaturalized mouth of the river will also become a key open space and recreational link to the Don Valley, West Don Lands, Port Lands and waterfront park system. This enhanced river setting will provide a gateway to the new urban communities in the Port Lands. Pedestrian and cyclist's bridges over the river mouth will be designed as signature entrances of beauty and inspiration

(P28) Lakefilling will be considered only for stabilizing shorelines, improving open spaces, creating trail connections, preventing siltation and improving natural habitats and is subject to Provincial and Federal Environmental Assessment processes. Consideration will be given to the impact of such lakefilling on recreational uses.

D22_OPENING UP THE PORT LANDS TO URBAN DEVELOPMENT - The vast Port Lands, an area more than 14 times the size of London's Canary Wharf, will be cleaned up and opened to a range of urban development opportunities. The Port Lands will become Toronto's springboard to the future, a place for wealth creation, originality and creativity in all aspects of living, working and having fun. The Port Lands will be transformed into a number of new urban districts set amid the hustle and bustle of Toronto's port activities. An enticing environment conducive to the creation of an international Centre for Creativity and Innovation for knowledge-based industries, film and new media activities will be nurtured. It will be a part of the city where "green" industries can be incubated and thrive. The new Port districts will be supported by a rich infrastructure of recreational, cultural and tourist amenities.

Port Lands Planning Framework Plan: Parks and Open Space

Port Lands Flood Protection: Parks and River, Bridges, Roads and Municipal Infrastructure

Review Stage: Schematic Design

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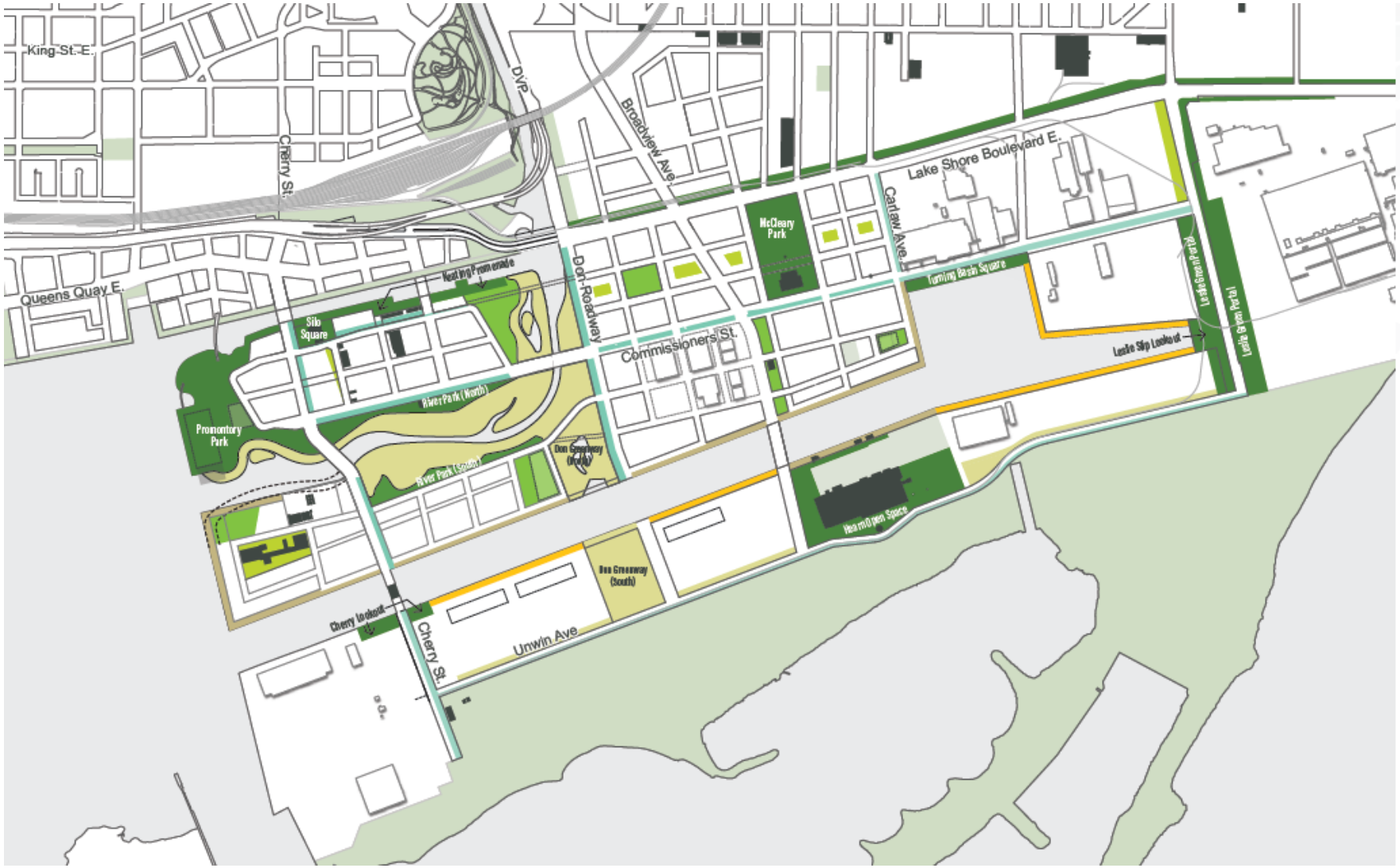

- Major Public Parks and Open Space
- Natural Open Space and Don Greenway
- Future Naturalization
- Parks and Open Spaces in Context Area
- Local Parks and Open Space*
- Public Promenade
- Future Public Promenade
- Publicly Accessible Open Spaces (POPs)*
- Linear Green within ROW
- Hydro

*Local parks and open spaces and POPs are conceptually shown. Precinct planning or concept planning would define the location, size and programming for these spaces

Port Lands Planning Framework Plan: Community Infrastructure

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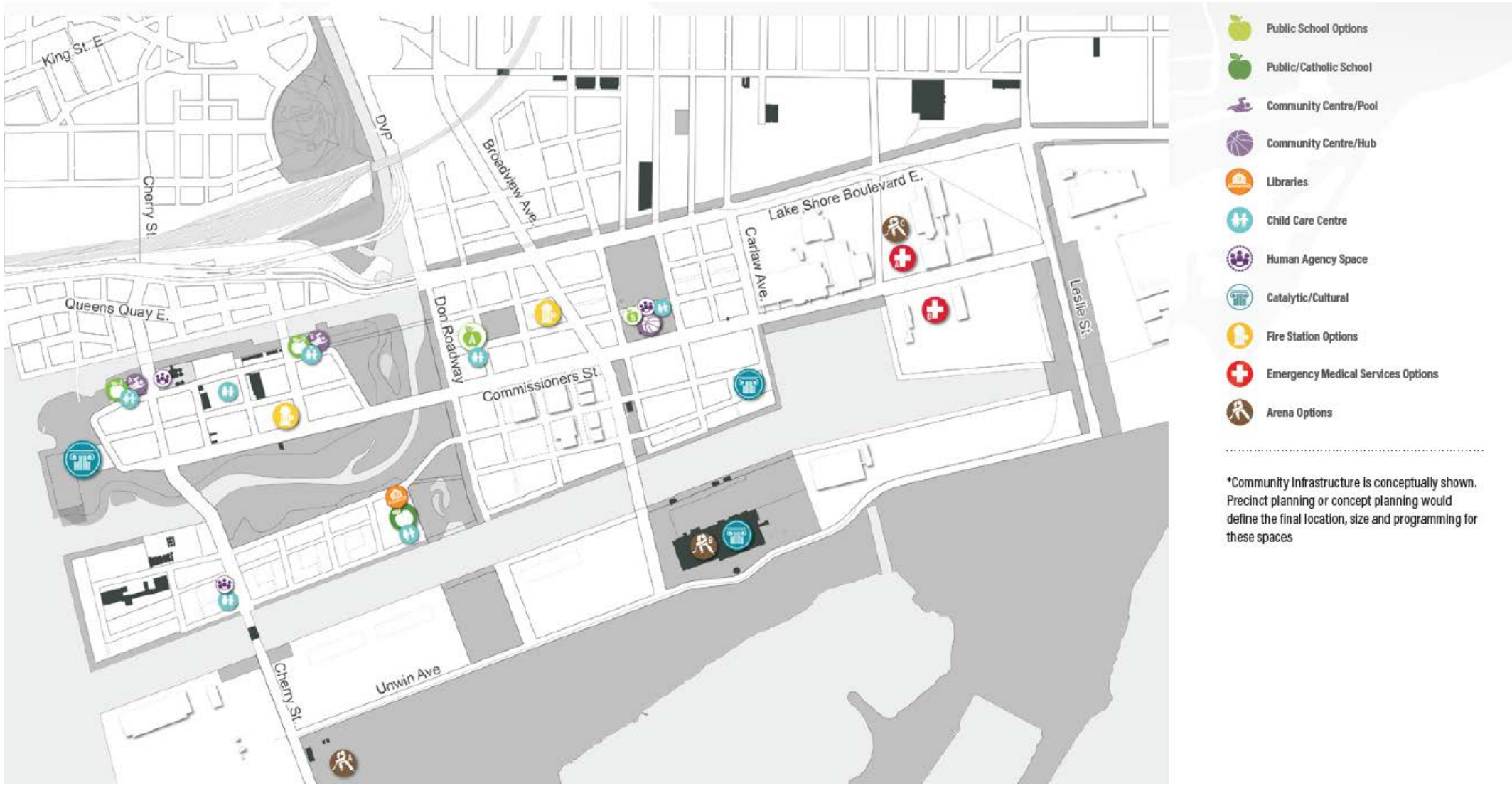
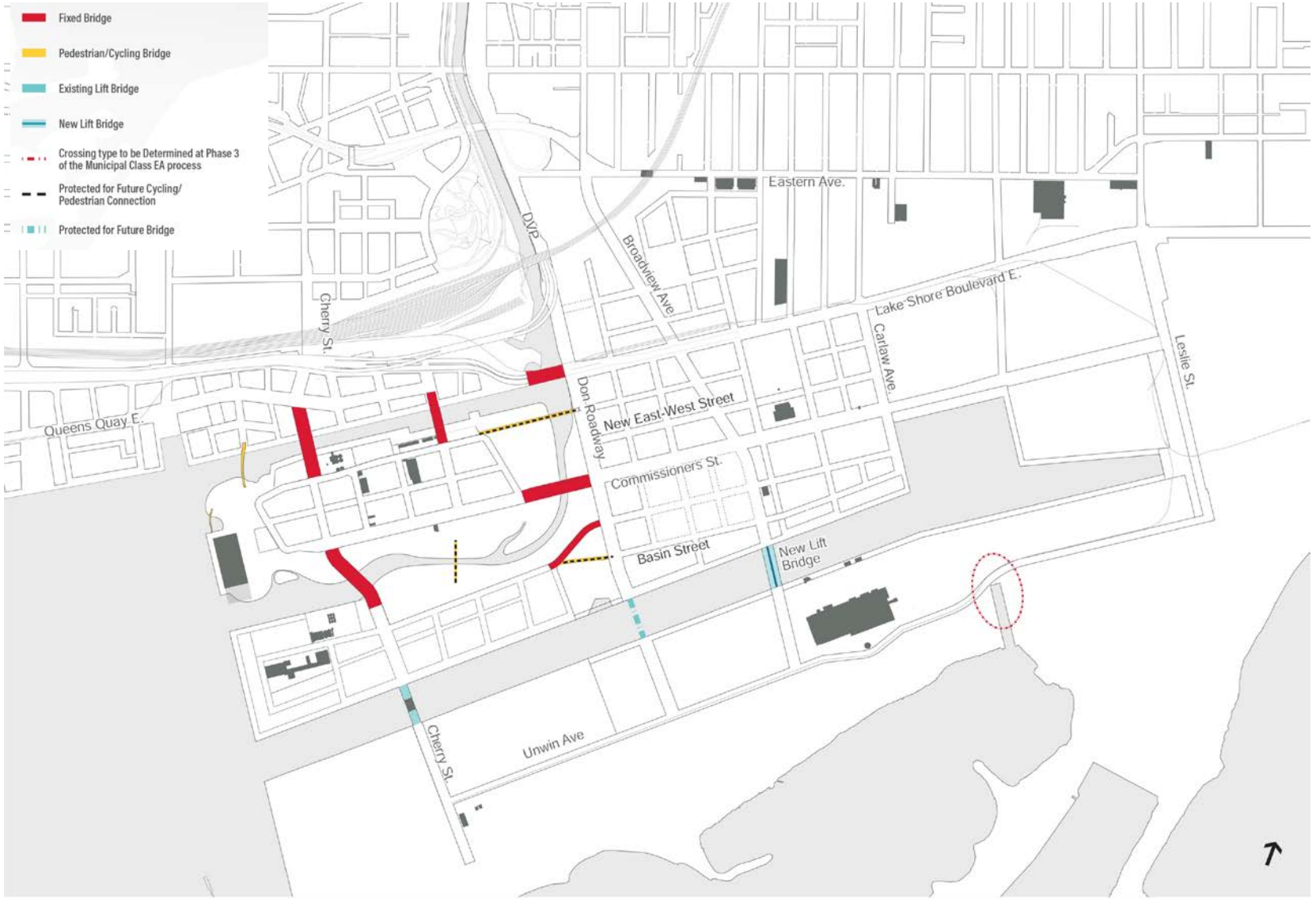


Port Lands Framework Plan: Bridges

- Bridges will be important elements of the overall transportation system, providing connection across the Port Lands' many utilitarian and naturalized waterways.
- The bridges will reflect appropriate levels of utility and design excellence to complement the unique characteristics and qualities of the accompanying river and park system.
- Space will be provided to accommodate dedicated higher order transit lanes on Cherry Street and Commissioners Street and within the new bridge across the river at Cherry Street.



Port Lands Framework Plan - Roads

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Complete Street Principles

Transit Prioritization through the use of dedicated transit rights-of-ways will improve the reliability of transit routes and convenience for passengers.

Minimum Lane Widths will assist in making streets safer and more pedestrian friendly. Narrower pavement widths contribute to safer vehicle speeds.

Bicycle Lanes + Cycle Tracks provided on all major streets will create a well-connected, robust and safe cycling network enabling active transportation as a primary means of moving in and through the area.

Wide Sidewalks with unobstructed, accessible pedestrian clearways will encourage walking and contribute to the overall vibrancy of in the Port Lands and South of Eastern public realm.

Accommodation of Goods Movement to ensure the continued economic vitality of live-industry. Critical goods movement corridors will be designed with suitable conditions for truck access balanced with other complete street objectives.

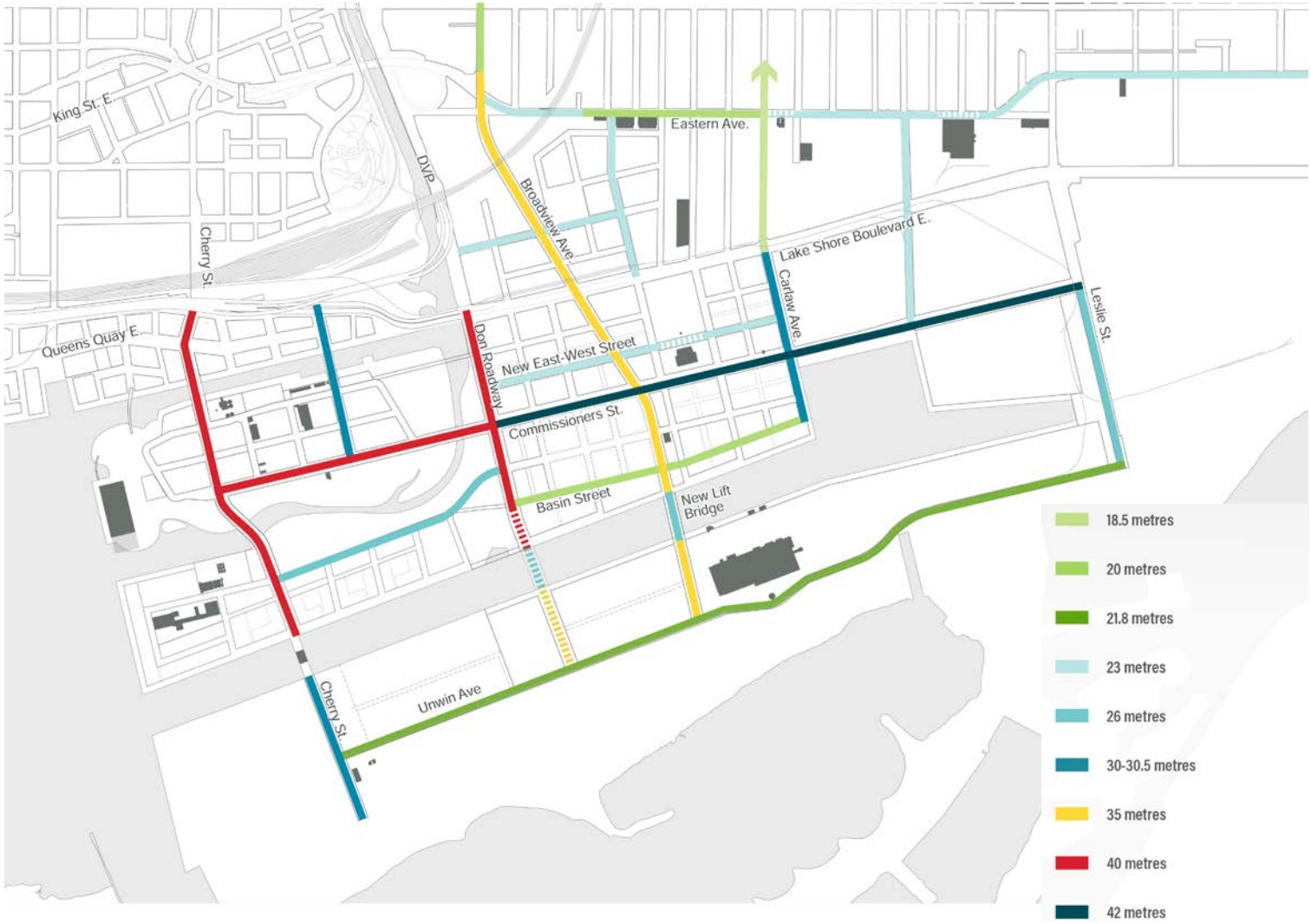
Water as a Community Resource and other greenscape elements will divert stormwater and allow for infiltration while also improving air quality, providing habitat and adding visual interest to an area. Streets celebrate and embrace stormwater as a valuable resource and provide access for LIFE!

Permeable Surfaces for roadways and sidewalks will reduce flooding, preserve capacity in storm drains and sewers where provided and add visual interest in the overall street design.

Street Trees with adequate room to grow and high-quality soil conditions provide shade, beauty and wildlife habitat. They also reduce air pollution and energy consumption.

Pedestrian + Cycling Amenities are important elements to be considered in the design of streets and encourage people to be on our streets. Benches, bike rings, pedestrian-scaled lighting, weather protection, garbage and recycling receptacles and public art, among others, will be provided.

Innovative Features such as the port / industrial / infrastructural qualities of the study area will contribute to the character of the area. Other features like electric vehicle charging stations, bicycle and car sharing stations and renewable energy features will contribute to a sustainable future for the area.



Ongoing Coordination and Feedback from City Staff

River Valley System and Parks

- The sediment management area is a technically complex component of the project with operational challenges, Waterfront Toronto is working closely with TRCA (future operator) to develop the design and this remains a work in progress. The phasing of this area with the current and future alignments of the Gardiner Expressway adds a level of complexity which is still being coordinated with Engineering Construction Services at the City of Toronto.
- The team continues to explore opportunities for minimizing soil handling, managing in-situ soil, maximizing soil reuse, balancing cut and fill and optimizing the staging of the river valley excavation. This work is in accordance with the CBRA process and Ministry of the Environment and Climate Change Risk Assessment practices and policies and the regulators are engaged in reviewing the developing approaches.

Roads and Municipal Services

- Team continues to explore and optimize the bicycle network to create both an efficient commuter network and a connected trail system for recreational users. This work continues in collaboration with City of Toronto Cycling Department
- The team continues to explore options for sustainable storm water management and will work closely with Toronto Water to establish opportunities for innovation where possible.

Bridges

- The feasibility of the current bridge design continues to be worked through with City of Toronto Bridges and Expressways Department. Design optimization to meet agree upon budgets, bridge code and operational challenges is an ongoing process.

Design Optimization

- Team continues to optimize the design of all elements to align with budgets set during the Due Diligence phase of the project. This is an ongoing process and design will evolve so that all elements are delivered within their approved budgets.

Areas for Panel Consideration

Parks & River

- Appropriate mix of space devoted to park programming for passive and active recreation as related to space allocated for high functioning ecological habitat
- Feedback on experiential qualities of Promontory Park
- Appropriateness of methods of commemoration of MT35

Roads

- Feedback on the developing character of the roads
- Feedback on the ‘next’ practices developed
- Appropriateness of the proposed for the overall network as related to all modes
- Assessment of the connectivity to public realm and the river

Bridges

- Feedback on the design development of the bridge for the city of the future
- Assessment of the connectivity to public realm and the river afforded by the bridges.
- Assessment of the character of the bridges as a family
- Assessment of bridge typology as related to ability to create gateways into the Port Lands and to provide landmarks within the wider landscape