



0M 25M 50M 100M 200M



# FOUR FLOWS

## GARDINER - EXPRESSWAY

The reconfiguration of the Gardiner Expressway and Keating Channel Precinct strives to create an innovative and economically-sound vision for the revitalization of this vital piece of Toronto's waterfront and infrastructure. AS+GG recommends removing the elevated Gardiner Expressway and replacing it with:

1. A new Gardiner Tunnel, which will serve through-traffic travelling north on the Don Valley Parkway, and;
2. A new Lake Shore Boulevard, an innovative and sustainable addition to Toronto's downtown roadway network.

"Four Flows: The Evolution of Gardiner Expressway" implies definitive change, yet offers the possibility of a relatively seamless transition and a metamorphosis into something better. This proposal offers these possibilities and much more to the people of Toronto.

"Four flows" refer to four distinct elements that are integral to the reinvention of the Gardiner: 1) People, 2) Transportation, 3) Natural Systems, and 4) Development. The harmonious "flow" of these elements throughout the site is the basis of this design and the linchpin to the creation of a sustainable, successful 21st century district for Toronto.

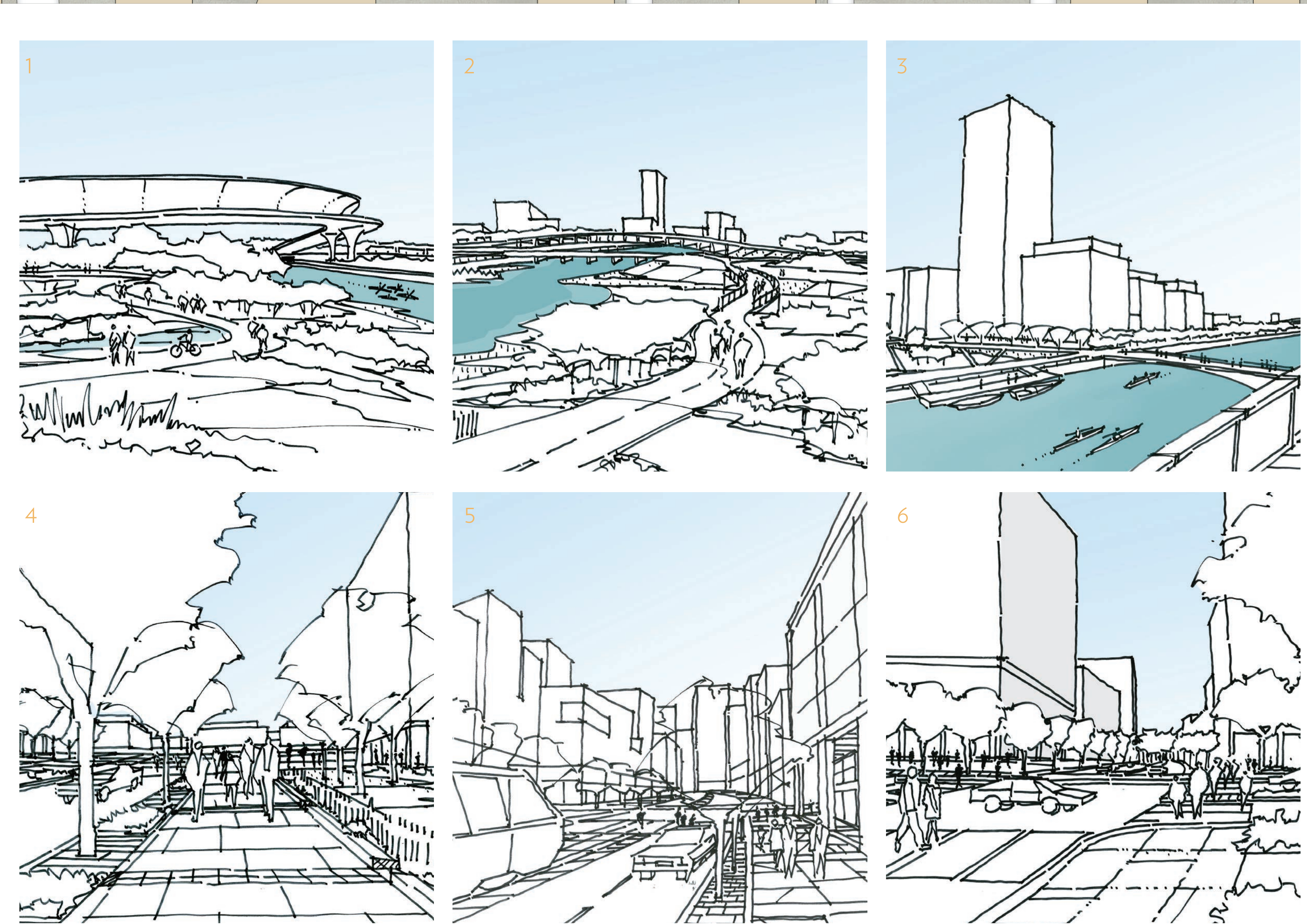
Flow 1: People. The seamless movement of people to the water's edge will create a vibrant waterfront district and enhance the quality of life for Toronto's citizens.

Flow 2: Transportation. Roads and transit systems must promote access to the new Gardiner Expressway while also providing the necessary capacity for those traveling through Gardiner as a central thoroughfare in the city.

Flow 3: Natural Systems. Environmental assets such as the waterfront, Don River and new public parks will create a rich landscape environment.

Flow 4: Development. An expanded tax base will encourage development that creates long-term benefits for the citizens of Toronto.

"Evolution" describes a proposed metamorphosis of the Gardiner Expressway. It is neither desirable nor possible to remove all vestiges of the Gardiner. As with all things, it is time for the Gardiner to move into the next phase of its existence, thus requiring an evolution into the Gardiner Tunnel.



**Systems Diagrams**

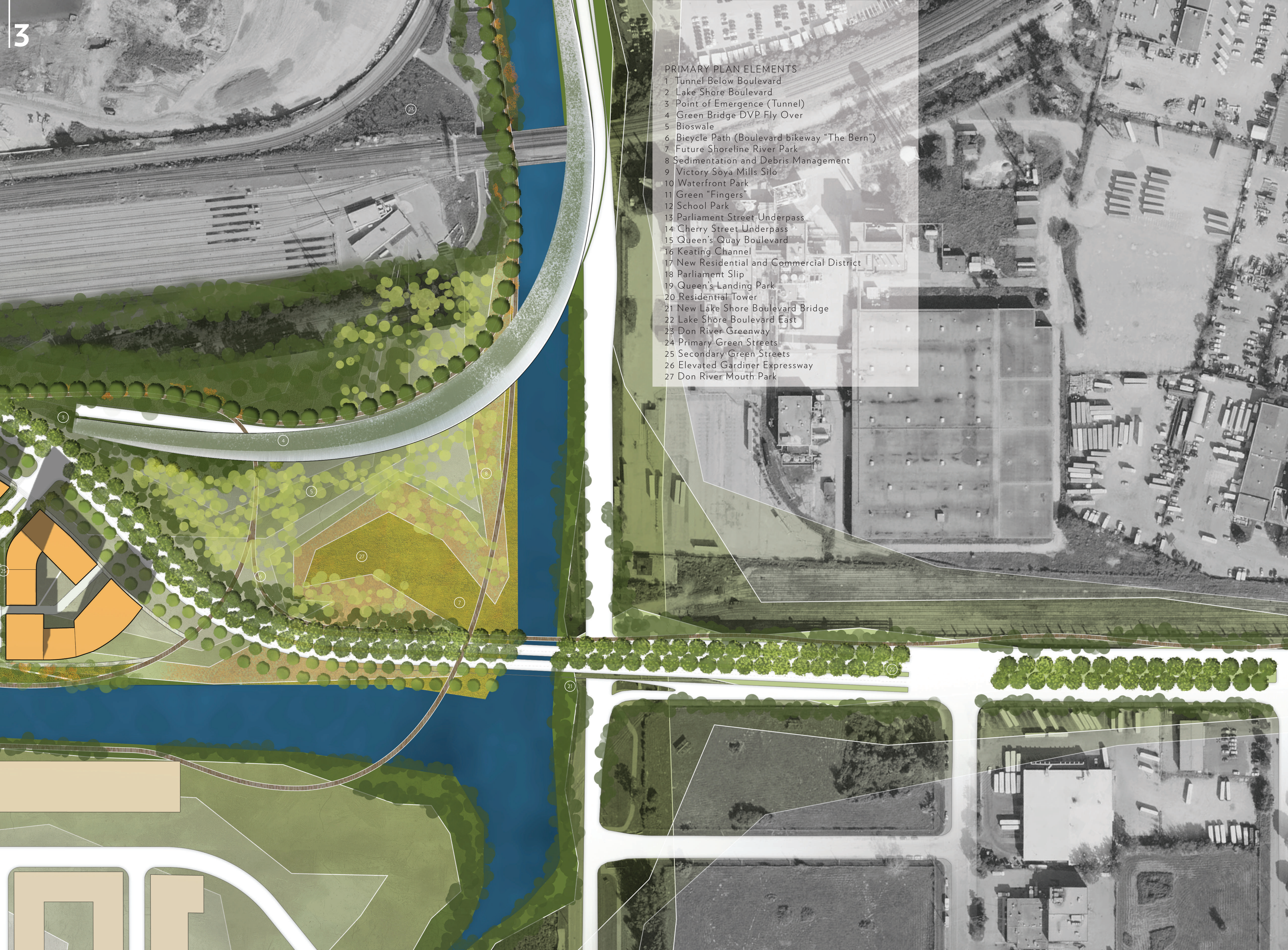
"Four Flows" acknowledges the importance of the Keating Channel District and the Lower Don Lands engaging with the Don River ecosystem. Flows of natural systems, people, transportation, and development come together, creating a distinctive terminus for the eastern edge of the downtown core. The Don River ecosystem is the defining characteristic of this area, with its unique flora and hydrologic systems.

An understanding that the Keating Channel District as the eastern edge of the downtown core, requires land uses that express this unique condition: both residential and commercial. The confluence of City and Natural systems at this eastern edge is expressed through a new residential and commercial community and Park system.

The seasonal fluctuations of the Don River, as it passes the site, is acknowledged through the creation of floodplains and plant species that thrive in these areas.

**Design Strategies**

- 1 Develop a Signature Don River Crossing
- 2 Complement Existing Plans
- 3 Increase Redevelopment Potential
- 4 Strengthen View Corridors to Water
- 5 Transform the Ground Plane
- 6 Beautiful and Effective Roadway Infrastructure



- PRIMARY PLAN ELEMENTS
- 1 Tunnel Below Boulevard
  - 2 Lake Shore Boulevard
  - 3 Point of Emergence (Tunnel)
  - 4 Green Bridge DVP Fly Over
  - 5 Bioswale
  - 6 Bicycle Path (Boulevard bikeway "The Bern")
  - 7 Future Shoreline River Park
  - 8 Sedimentation and Debris Management
  - 9 Victory Soya Mills Silo
  - 10 Waterfront Park
  - 11 Green "Fingers"
  - 12 School Park
  - 13 Parliament Street Underpass
  - 14 Cherry Street Underpass
  - 15 Queen's Quay Boulevard
  - 16 Keating Channel
  - 17 New Residential and Commercial District
  - 18 Parliament Slip
  - 19 Queen's Landing Park
  - 20 Residential Tower
  - 21 New Lake Shore Boulevard Bridge
  - 22 Lake Shore Boulevard East
  - 23 Don River Greenway
  - 24 Primary Green Streets
  - 25 Secondary Green Streets
  - 26 Elevated Gardiner Expressway
  - 27 Don River Mouth Park



North-South Connections

All north-south streets are aligned with current or proposed Toronto streets, ensuring complete and clear access to the waterfront.

A hierarchy of streets, including 1) north-south "green finger" streets that lead residents to the water from northern neighborhoods; 2) Secondary, internal streets for service and local access; and 3) Two east-west boulevards (Queen's Quay and Lake Shore) to connect the Precinct to adjacent development and roadways.

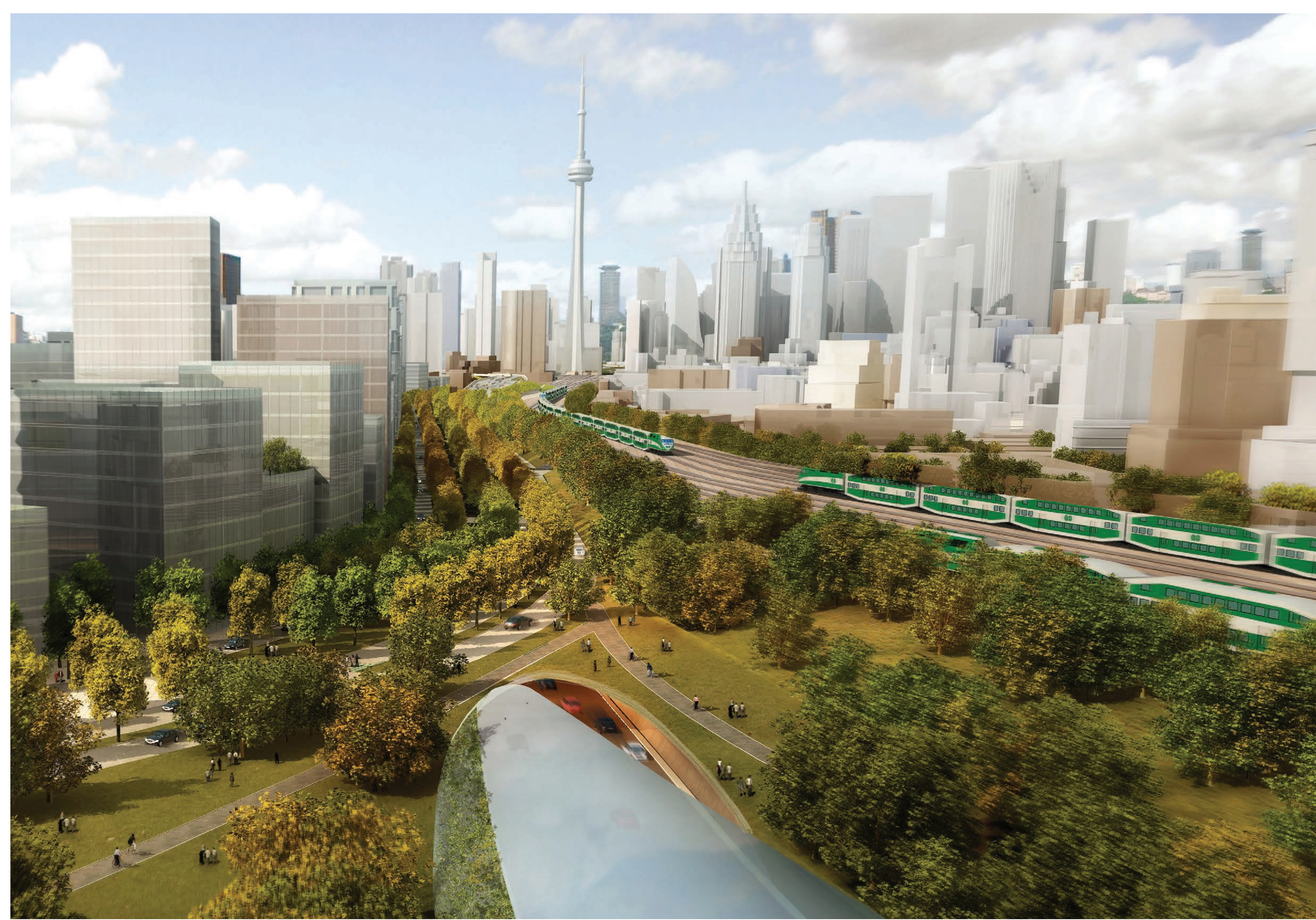
Cityscape

The development character of the project will be one of variety at the street-level, enhanced with elegant consistency in the architecture. We recommend the development of simple, yet focused design guidelines to control the materials, massing and fundamental urban principles of the plan. A modern and innovative design standard can be established that is consistent with the classic principles of great urbanism: holding street edges, a consistent materials palette, front doors on primary street, and service through alleys behind buildings. Toronto must be the beneficiary of a stable implementation of development of the highest character.



#### Streetscape

The development character of the Keating Channel Precinct, as with all successful urban districts, is predicated on walkability, appropriately scaled infrastructure, and rich mix of land uses.



#### Don River Mouth Park

The absence of the massive structure on the top of the channel wall will create new opportunities for use and experience of the Keating Channel waterfront and extend Toronto's waterfront potential the complete length of the Keating Channel east to the Don River.

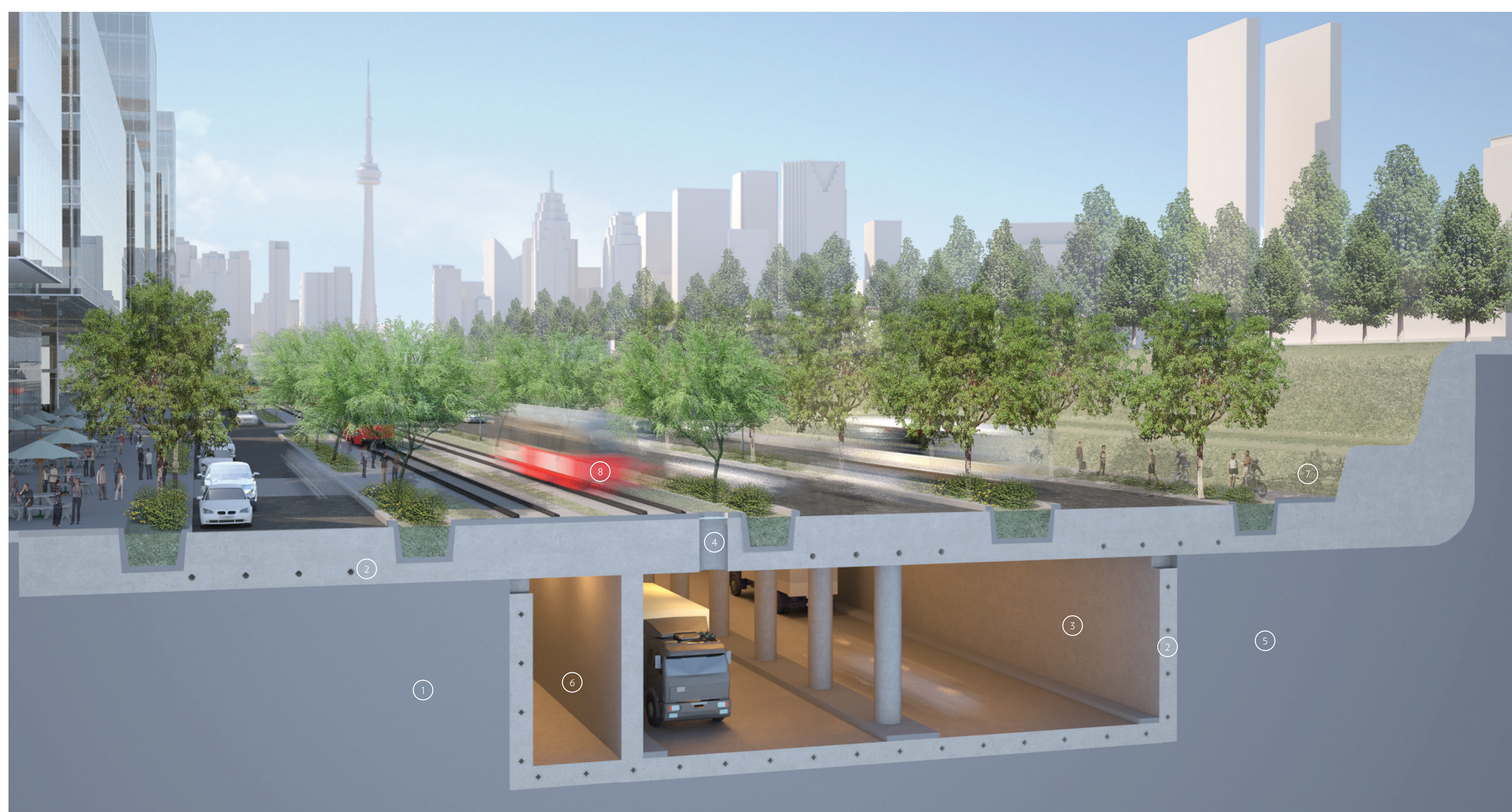
This dramatic change allows the addition of regenerative green features to the previous design for the Keating Channel Waterfront: Open rows of trees will mirror the waterfront planned at East Bay Front Precinct. Waterfront park space will visually connect to the Don River Flood Plain green open space by the introduction of infiltration strips of wetland, woodland and permeable pavement.



**Green Bridge**

The new Don River Bridge will be a modern landmark for the city, gracefully arcing from the Gardiner Tunnel to the Don Valley Parkway. The bridge is formed by a wing-shaped cross-section, providing structural rigidity while sheltering cars from prevailing northwest winds.

Open to the south and east, the bridge will offer views to Lake Ontario and to the city skyline. Plants may cover the wire-mesh screen above the roadway. The new landmark will provide adequate clearance over the CN rail lines and meet the north-bound DVP before the Richmond Street overpass.



**Smart Boulevard**

A new "smart" Lake Shore Boulevard is the technological and transportation foundation of our proposal. A 45-meter (ROW) boulevard that not only is beautiful and functional but also provides many sustainable attributes, with the resulting combination raising this boulevard to truly new levels of intelligence.

**The Tunnel**

The tunnel will be built to the greatest extent possible using recycled materials (concrete, asphalt etc.). As much as possible of the tunnel will be pre-cast to allow for the use of supplementary cementitious materials (such as blast furnace slag or fly ash cement) to reduce the embodied carbon of the built structure. Minimizing the amount of

excavation spoil is a priority, as the haulage, and treatment, in case of contamination, is both expensive and has an environmental impact. Opportunities to reduce this impact include re-use of spoil to build up the embankment, minimizing the cross-sectional area of the tunnel and minimizing the depth below grade. The tunnel will be illuminated through a combination of light tubes (punched through the boulevard above) as well as LED lighting, sensors within the tunnel will ensure that the lighting intensity responds to traffic flows and natural lighting intensity, much in the way that smart lighting sensors work in offices. Ventilation will be driven by the air movement of traffic, carbon monoxide sensors will control mechanical ventilation systems so that energy consumption is minimized.

**Sustainable attributes include:**

1. Excess heat from building can be used to warm road surfaces and assist snow melt
2. Embedded heating elements
3. Concrete walls function as thermal conductive heat exchange
4. Light tube
5. Modular HDPE rain water infiltration Chambers will provide a sustainable drainage solution for water run off from the Boulevard and bicycle paths
6. Utility Access Chamber
7. Bicycle Path (Boulevard bikeway "The Bern")
8. Future Tram/Street Car