

West Don Lands Class Environmental Assessment Master Plan

Toronto Waterfront Revitalization Corporation
City of Toronto

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1 INTRODUCTION

1.1 Overview

Toronto's waterfront includes approximately 800 hectares of mostly underdeveloped land that has been identified as offering an unprecedented opportunity for the City of Toronto, the Province and Canada. Revitalization of the waterfront includes opportunities to create more parks and recreational destinations, an opportunity for growth, tourism, and residential development and ultimately to improve the quality of life for this vibrant region and the country.

The Toronto Waterfront Revitalization Corporation (TWRC) along with the City of Toronto are proceeding with revitalization based on a mission to transform the Toronto waterfront into a series of sustainable, mixed-use, urban precincts integrated with parks, institutions, and open space. They plan on doing this by creating a series of connections and future gateways through parkland, the development of new precincts and an extension of the transit system from the downtown to the lake and the Don River corridor.

Four areas, the West Don Lands, East Bayfront, Lower Don Naturalization Project and Commissioners Park located in the Portlands, are currently proceeding through the planning process. These precincts are closely connected to each other and as a result are closest to completion.

The TWRC and the City have worked closely in the development of the Central Waterfront Secondary Plan, and the West Don Lands Precinct Plan. In order to expedite the delivery of public infrastructure to support revitalization, the TWRC and the City worked as co-proponents to prepare this Class Environmental Assessment Master Plan (Class EA Master Plan).

Changes to the West Don Lands road network will include the realignment, extension and closure of several streets within the study area. However, the existing street network will remain largely intact. Safe and convenient road systems will be provided for pedestrians, cyclists and transit vehicles. The Precinct Plan will link the Distillery District and Corktown, promoting street continuity of the precinct to the north and west. Sustainability objectives for the transportation system include making public transit, cycling and walking the primary modes of travel.

Several alternatives have been considered to upgrade the municipal infrastructure system, installed between 1876 and 1950, so that it will be able to service the area as future development takes place. Sustainability objectives for the water system involve

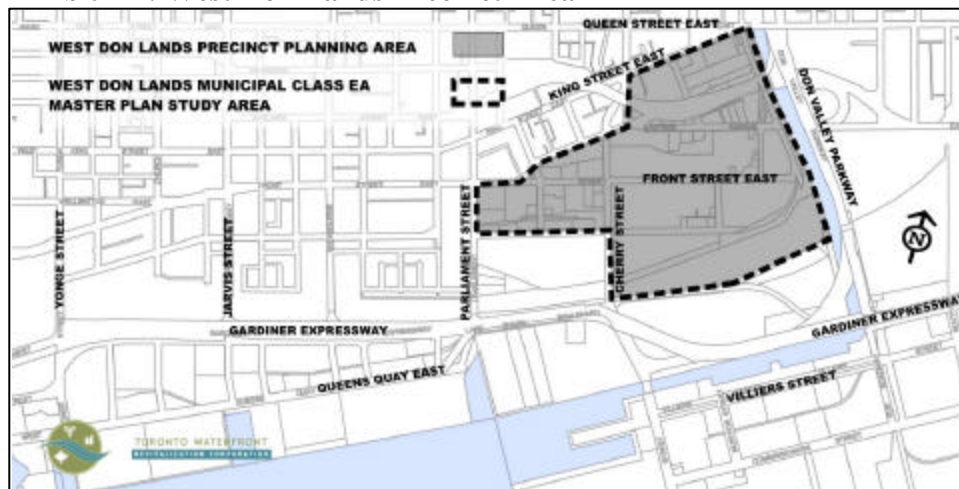
the active use of water conservation and water efficiency strategies and compatibility with the Toronto's Water Pollution Solution ("Wet Weather Flow Management Master Plan"). The wastewater collection system will be designed to integrate with the City's existing system.

This Class Environmental Assessment Master Plan (Class EA Master Plan), prepared under the Municipal Class Environmental Assessment June 2000, is being carried out to support the West Don Lands precinct and is being completed with the TWRC and the City of Toronto as co-proponents for the project.

1.2 The West Don Lands Precinct Plan

The West Don Lands precinct is a 32 hectare area located generally east of Parliament Street, south of King Street, west of the Don River and north of the Gardiner Expressway (**Exhibit 1-1**).

Exhibit 1-1: West Don Lands Precinct Area



The West Don Lands is a large precinct that will be implemented over a number of years, with full build-out estimated to take fifteen years. The development of the West Don Lands will be integrated with the neighbourhoods surrounding it in character and quality, but will be distinguished by a new major park on the Don River. The precinct is designed to strengthen north/south connections to benefit neighbourhoods east of the Downtown.

The West Don Lands is expected to be the gateway neighbourhood from the Downtown to the Portlands and will be a collection of districts offering a variety of housing types from townhouses to condominium blocks. The West Don Lands will consist of a collection of five districts:

- The Mill Street District will consist of the Distillery District and extend east of Cherry Street into the West Don lands on Mill Street. It will contain loft style living and live/work opportunities.
- The Front Street District will extend into the West Don Lands forming the urban core of the neighbourhood with shops, restaurants, offices and residences. Buildings will be predominantly eight floors or 31 meters in height. Larger towers will punctuate critical street corners. Front Street between Trinity and Cherry Streets will form the retail core of the community.
- River Square would include an extension of River Street south to a new square at the Don River Park. Mid-rise residential buildings would line the Don River corridor and a cluster of townhouses would extend the character of Corktown into the district. The Richmond Adelaide ramps would be encased by buildings reducing their impact on adjacent properties. River Square is located south of King Street East and west of Bayview Ave.
- In the Don River Park District, Front Street will widen east of Cherry Street into eight story residential buildings. The Don River Park will form a focus to the urban neighbourhood edged by a curving wall of residential buildings.
- The Don River Mews District will extend Corktown south behind which there will be a series of courts and mews offering garden settings for family living. (TWRC, 2004b)

1.3 *Elements of the Master Plan*

This Class EA Master Plan addresses water, sanitary, stormwater, and transportation infrastructure servicing requirements necessary to support the proposed land uses (including new and improved parks and public spaces) that are proposed as part of the revitalization of the West Don Lands precinct. The Class EA Master Plan process, applies to projects currently contemplated that are considered Schedule A, B & C projects. This is described further in Section 2.

1.4 Elements Not Included in the EA Master Plan

This EA Master Plan makes provision for transit along designated roads but does not address the requirements under the Environmental Assessment Act for completing transit projects. Any transit facilities² required in the precinct will be subject to EA processes that will be completed separately from this EA Master Plan.

In addition there is a pedestrian crossing of the Don River and an underpass south of the Distillery District proposed in the Precinct Plan. Although they are an important element of the public space framework, they are conceptual at this time. When the concept evolves further, separate Environmental Assessments (EA) will commence for these crossings. The TWRC has requested the Minister of Environment (Ontario) to issue a Declaration Order under the *Environmental Assessment Act* for major parks on the Waterfront. This Order, if approved, would include the proposed underpass under the CN Bala Rail subdivision.

The Toronto Region Conservation Authority (TRCA) has completed a Class Environmental Assessment for the Lower Don River West Remedial Flood Protection (LDRW Project). The objective of the LDRW Project is intended to ensure the city's safety and security by providing permanent flood protection along the west bank of the Don River (between the CN Railway embankment and Queen Street East) in order to remove 210 hectares of the City of Toronto located within the Regulatory Floodplain. A key component of the LDRW Project's preferred alternative for flood protection includes the establishment of a flood protection landform (FPL) situated 40 m from the west bank of the Don River and extending from Queen Street West to the CNR's Kingston Line.

² Transit facilities include new streetcar lines, and a potential new GO Transit shoulder station in the vicinity of Cherry Street, identified in the Central Waterfront Secondary Plan.

2 OVERVIEW OF THE PLANNING PROCESS FOLLOWED FOR THIS PROJECT

2.1 *Environmental Assessment Act*

The Ontario *Environmental Assessment Act* (EA Act) identifies two types of environmental assessment planning and approval processes; Individual Environmental Assessments and Class Environmental Assessments. The Municipal Class Environmental Assessment, June 2000, provides a process in accordance with the EA Act, for municipal infrastructure projects. Once approved, the Class EA establishes a process whereby the municipal projects as defined in the Municipal Class EA and any subsequent modifications, can be planned, designed, constructed, operated, maintained, rehabilitated and retired without having to obtain project specific approval under the EA Act, provided the approved environmental assessment planning process is followed.

2.2 *Overview of the Municipal Class Environmental Assessment Process*

The Municipal Class EA process is completed following a five phase process (**Exhibit 2-1**). The process addresses projects by classifying them into three schedules according to their environmental significance (Schedule A, B or C). The level of complexity and the potential impacts of a project will determine the Schedule of the project that in turn will determine which phases will need to be addressed. Projects undertaken in the West Don Lands precinct will vary as to their potential environmental effect(s).

The five phases of the Class EA process are summarized as follows:



Exhibit 2-1: The Class EA Process

Schedule A projects are limited in scale, have minimal adverse effects and include the majority of municipal road maintenance and operational activities. These projects are approved and may proceed directly to Phase 5 for implementation, without following Phases 2 to 4 of the Class EA process.

Schedule B projects generally include improvements and minor expansions to existing facilities. These projects have some potential for adverse environmental impacts, and consultation with those who may be affected is required. Examples of Schedule B

projects include: the installation of traffic control devices, smaller road-related works or the extension of certain types of municipal water/wastewater infrastructure. These kinds of projects require completion of Phases 1 and 2 of the Class EA process.

Schedule C projects generally include the construction of new facilities and major expansions to existing facilities. The West Don Lands Class EA Master Plan Report may also include Phases 3 and 4 for certain Schedule C projects, such as larger projects involving road-related works, construction of underpasses or overpasses, or construction of stormwater treatment systems (MEA, 2000).

2.3 *Municipal Class EA Master Plan Process*

Class EA Master Plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. The Class EA Master Plan process examines infrastructure system(s) or groups of related projects in order to outline a framework for implementation of subsequent projects and/or developments with environmental protection and mitigation measures integrated into the project.

It is beneficial to begin the planning process by considering a group of related projects, or an overall system, e.g., water, wastewater and/or roads network, or a number of integrated systems, e.g., infrastructure master plan, prior to dealing with project specific issues. By using this process, the need and justification for individual projects and the associated broader context are better defined.

The Class EA Master Plan typically differs from project specific studies in several key respects. Long range infrastructure planning enables the proponent to comprehensively identify need and establish broader infrastructure options. The combined impact of alternatives is also better understood, possibly leading to other more positive solutions. The opportunity to integrate with land use planning also enables the proponent to consider different perspectives when looking at the full impact of decisions (MEA, 2000).

Once complete, the West Don Lands Class EA Master Plan Report is adopted by the TWRC and Toronto City Council. It is then filed and made available for review by the public and any public agency that expressed interest in the study. Requests to the Minister of Environment for a Part II Order (to require an Individual EA) are possible only for specific projects identified in the Master Plan, not the Plan itself.

2.4 Relationship to the Canadian Environmental Assessment Act (CEAA) Requirements

The *Canadian Environmental Assessment Act* (CEAA) sets out responsibilities and procedures for the environmental assessment of projects involving the federal government. In addition to satisfying the Provincial EA process by completion of the EA Master Plan, the West Don Lands Precinct Plan is subject to the requirements of CEAA. Projects subject to CEAA include circumstances where the federal government holds decision-making authority, whether as a proponent, land administrator, source of funding, or regulator. The TWRC will trigger CEAA when funds are transferred from the Government of Canada to enable a project to proceed. The Act requires one (or more) federal agency to act as the Responsible Authority (RA) and it establishes a clear and balanced process that helps the RA determine the environmental effects of projects early in their planning stage.

The four stated objectives of the Act are:

- To ensure that the environmental effects of projects receive careful consideration before RA's take action;
- To encourage RA's to take actions that promote sustainable development thereby achieving or maintaining a healthy environment and a health economy;
- To ensure that projects to be carried out in Canada or on federal lands do not cause significant adverse environmental effects outside the jurisdictions in which the projects are carried out; and
- To ensure that there be an opportunity for public participation in the EA process.

In December 2004, the TWRC submitted a Project Description to the Canadian Environmental Assessment Agency to identify CEAA requirements for all infrastructure elements in this Master Plan. In March 2005, TWRC met with various federal agencies to discuss potential "triggers" for CEAA. There were no regulatory triggers identified, but it is expected that the funding of the project will trigger CEAA. Citizenship and Immigration Canada (CIC) would be the Responsible Authority (RA).

An EA-supplement will be prepared as a comparison document to this Class EA Master Plan. It will include any matters related to either CEAA or federal interests that are not covered in this report. It will be submitted to CIC once federal funding is confirmed.

2.5 The City of Toronto Central Waterfront Part II Plan

The City of Toronto Central Waterfront Secondary Plan acts as a framework for the activities associated with the Precinct Plan development. The Plan is built on four core principles, which are:

1. Removing Barriers/Making Connections;
2. Building a Network of Spectacular Waterfront Parks and Public Spaces;
3. Promoting a Clean and Green Environment; and
4. Create Dynamic and Diverse New Communities

2.5.1 Removing Barriers/Making Connections

If waterfront renewal is to be truly successful, the waterfront will have to feel like and function as part of the city fabric. The first principle of the Plan is to remove barriers and reconnect the city with the Lake Ontario and the lake with the city. This is the key to unlocking the unrealized potential of Toronto's waterfront. The new connections will be north/south and east/west. They are functional, thematic and symbolic in nature.

2.5.2 Building a Network of Spectacular Waterfront Parks and Public Spaces

The second principle of the Plan recognizes the significance of the public realm in transforming the Central Waterfront into a destination for international tourism, national celebration and local enjoyment. The Plan promotes the remaking of the Central Waterfront as a special place imbued with spectacular waterfront parks and plazas and inviting natural settings that please the eye and capture the spirit.

2.5.3 Promoting a Clean and Green Environment

The third principle of the Plan is aimed at achieving a high level of environmental health in the Central Waterfront. A wide variety of environmental strategies will be employed to create sustainable waterfront communities. The following "Big Moves" will showcase the City's commitment to a clean and green waterfront that is safe and healthy and contributes to a better environment for the city as a whole:

- Priority for sustainable modes of transportation
- Protecting the West Don Lands from flooding
- Renaturalizing the mouth of the Don River

2.5.4 Creating Dynamic and Diverse New Communities

The fourth and final principle of the Plan is focused on the creation of dynamic and diverse waterfront communities – unique places of beauty, quality and opportunity for all citizens. New waterfront communities will be acclaimed for their high degree of social, economic, natural and environmental health and cultural vibrancy, which collectively will contribute to the long-term sustainability of the area and the entire city.

2.5.5 Relationship to this EA Master Plan

The Secondary Plan identifies a number of policies, which helped to provide a framework for this EA. Key among these is the notion that future travel demand will be mainly met by non-auto means, and road capacity will be added only to meet local traffic needs. Required rights of way will accommodate road and transit network over time. The rights-of-way will be sufficient to accommodate travel lanes, transit, pedestrian and cycling requirements as well as landscaping and other urban design elements. This will include new surface transit routes operating in exclusive rights-of-way, in order to ensure efficient movement.

Other key policies include enhancing physical connections between the Central Waterfront, the downtown core and adjacent neighbourhoods through high quality urban design and landscaping on the north/south connector streets, more pedestrian friendly corridors in railway underpasses and view corridors to the lake. Building design, public and private spaces and street layouts will support view corridors and be of high architectural quality.

2.6 West Don Lands Precinct Plan

The Toronto Waterfront Revitalization Corporation is in the process of finalizing the proposed Precinct Plan for the West Don Lands. The Secondary Plan principles act as the primary planning context setting out the framework for renewal activities such as removing barriers, making connections and creating dynamic and diverse communities. The West Don Lands Precinct Plan takes these principles and refines them to provide a more detailed summary of proposed housing, developments and districts for example.

Precinct planning is now underway for two waterfront neighbourhoods – East Bayfront and West Don Lands. Precinct Plans build on the Central Waterfront Secondary Plan and set out the location, scale and character of all streets, buildings, parks and public

spaces. They include strategies for developing community facilities like schools, delivering a range of housing options and meeting affordable housing targets.

Key elements of the proposed West Don Lands Precinct Plan are:

- 23 acres of parks and public spaces, including a 17 acre park next to the Don River
- 1,300 affordable rental housing units
- 5,200 additional housing units that accommodate a range of family sizes and income levels
- mixed residential and commercial land use like the successful King/Spadina development
- building character that reflects surrounding communities – Distillery District, St. Lawrence and Corktown
- public transit within a five minute walk of all residences
- bikeways throughout the precinct and connecting to the wider city
- transit connections to the King streetcar and the Portlands
- pedestrian connections to East Bayfront via an extension of Trinity Street
- one million square feet of office and retail space
- flood protection for the downtown core

Sustainable development, including the construction of green, energy efficient buildings, together with affordable rental housing, are TWRC's top priorities for the first phase of development in the West Don Lands.

Development controls also need to be established before construction can start. TWRC and the City are working on mechanisms to ensure that height limits are not exceeded, design and sustainability standards are adhered to and that developers make appropriate contributions to infrastructure, affordable housing and community services.

TWRC started the West Don Lands precinct planning in December 2003. The proposed plan is being considered concurrently with this Class EA Master Plan. Public consultation has been an integral part of the precinct planning process. TWRC has held three stakeholder meetings and three public forums to obtain community input and feedback.

2.7 *Incorporating the TWRC Sustainability Framework*

Sustainable development is the key driver of the revitalization of Toronto's waterfront. The TWRC's Sustainability Framework identifies concrete short, medium and long-term actions that will lead to remediated brownfields, reduced energy consumption, the construction of green buildings, improved air and water quality, expanded public transit and diverse, vibrant downtown communities. An essential component of the framework also involves monitoring to allow the tracking of progress towards sustainability goals.

The City's Wet Weather Flow Management Master Plan addresses stormwater runoff impacts and focuses on issues such as protecting city infrastructure from stream erosion, cleaning up waterfront beaches that are healthy for swimming and recreation, restoring degraded local streams and improving stream quality. The proposed stormwater, wastewater and water systems discussed in this report address some of these goals.

The West Don Lands Precinct Plan is the first major step in the West Don Lands revitalization. The plan addresses street and block orientation for development and is generally consistent with the major goals of the TWRC's draft Sustainability Framework. It is important to note, however, that many of the TWRC's sustainability objectives and targets will not be realized at this high level planning stage because they are linked to decisions made at subsequent stages such as detailed building and site design, construction and/or community and educational program development.

Overall, the plan does not preclude opportunities for site specific sustainable activities such as green building design although it is not yet clear how sustainable infrastructure opportunities such as waterfront-wide renewable and alternative energy strategies or integrated waste management systems have been maximized by this plan. This is due, in part, to the currently incomplete status of certain components of infrastructure planning for the waterfront.

The various components of the West Don Lands Precinct Plan either strongly support or do not prevent achievement of the TWRC's sustainability vision. The vision includes five major desired outcomes and the Precinct Plan links to these outcomes as follows:

Sharing the Benefits: NETPLUS – Activities outlined in the Precinct Plan will improve the waterfront in a way that provides potential benefits to the city, region, province and country as a whole. These include re-urbanization of under utilized serviced urban lands, reduced car dependency, improved air quality through expanded parkland and enhanced tree canopy, stormwater management consistent with the City of

Toronto's Wet Weather Flow Management Master Plan, enhanced terrestrial and aquatic habitat and improved biodiversity.

The Urban Cottage - The West Don Lands Precinct Plan supports the sustainability goals of revitalization that result in a greater degree of tranquility, recreational opportunities, improved aquatic and terrestrial habitat through reduced auto dependency, contributions to improved air and water quality, expanded park land and improved access to the lake.

Feels Like Home – The Precinct Plan makes provisions for affordable and low-cost housing as well as flexibility in unit sizing and needs of different age groups. It also designates and will connect to an extensive parks and open space system, providing recreational opportunities. The plan focuses on dense compact urban form with mixed use emphasizing the ability for a work home environment.

Strength Through Diversity – Improved biodiversity, increased diversity in transportation options along with mixed land use strengthen the long-term viability of the precinct and the economic development of the area. Opportunities to make greater progress on this outcome will be presented during future decision-making on the mix of residential and commercial spaces as well as amenities to attract people year round to the waterfront.

Global Hub of Creativity and Innovation – The surrounding neighbourhoods are creative districts and the West Don Lands precinct does not preclude connecting to and building on these opportunities in the future.

There are ten themes or major areas of focus identified in the draft TWRC Sustainability Framework. The West Don Lands Precinct Plan addresses the sustainability themes in the following ways:

Energy – Energy efficiency opportunities have not been precluded by the precinct planning process and will be addressed during site development and occupancy phases. The transportation planning focuses on “transit first” and on integration of alternate modes of transportation, de-emphasizing the automobile and contributing to reduced green house gas emissions. Renewable energy opportunities are not precluded from site development or building design although large and medium scale options may be constrained by appropriate environmental conditions (e.g. ambient wind speeds that are too low). Future alternative energy developments in adjacent sites may contribute to the energy demand in this precinct. Energy benefits associated with parks and open spaces will be addressed at a later date.

Land Use – The dense development and mixed use offered by the precinct plan support sustainable development patterns and infrastructure development largely based on recapturing the value of abandoned and under used sites. The design further contributes to a vibrant street life with planned squares and boulevards, reasonable walking distances between uses and an attractive walking environment. The plan offers significant opportunity in maintaining and enhancing terrestrial and aquatic habitat. Opportunities for use of renewable energy have not been maximized however future site development can support this objective.

Transportation – The transportation plan has focused on transit supportive development with rights-of-way incorporating cycling and dominant pedestrian mobility. The plan includes no new capacity for automobiles and addresses minimum walking distances between planned transit, parks and residences.

Sustainable Buildings – Site development issues related to building design will be addressed at a later stage. The Precinct Plan has not excluded the opportunity for site-specific sustainable design. Maximizing opportunities through building site size is a unique opportunity in this precinct due to the fact that most of the precinct is held by a single landowner. The TWRC may propose guidelines for building design to advance sustainable design through site development.

Air Quality – The emphasis on mixed use and transit contributes to a local pedestrian oriented environment, which will reduce concentrations of ground level ozone. Mitigation proposed in the EA Master Plan will address short-term air quality concerns associated with construction. Tree plantings and open space will contribute to improved local air quality conditions. Reduced airborne emissions from contaminated sites will be addressed through the remediation plans for contaminated sites.

Water – Stormwater Management for the study area addresses the City's Wet Weather Flow Master Plan objectives. Aquatic habitat enhancements will contribute to improved water quality and site remediation will improve groundwater conditions. Water efficiency will be addressed at the site development phase.

Human Communities – The mixed use environment will contribute to accessibility to the area year round. This precinct is not directly on the water and, therefore, will not necessarily have tourist related facilities, however these and other community involvement initiatives will be addressed at the site development phase. The linkages for parks and the open spaces associated with the Don River Landform will provide a vast area contributing to a peaceful and relaxing environment. The plan does not preclude community gardens or other opportunities for growing food.

Innovation – This precinct is adjacent to creative communities and will attract similar activities. Site development provides opportunities to showcase innovative sustainability achievements and integration of technological advances have not been precluded.

Materials and Waste – Reclamation of materials through site redevelopment will be encouraged and City initiatives for re-use and recycling will be implemented through site development and occupancy.

Natural Resources – Increased open spaces and habitat improvements will contribute to strengthened biodiversity. Remediation of sites will improve soil conditions.

Lessons learned in sustainability from the West Don Lands Precinct Planning exercise and different opportunities in other portions of the waterfront will allow the TWRC to continue to advance the development of sustainable urban communities throughout the waterfront.

3 PLANNING CONTEXT AND OPPORTUNITY STATEMENT

3.1 Study Area

The West Don Lands Precinct Planning Area and Master Plan Study Area is defined as the lands east of Parliament Street, south of King Street, west of the Don River and north of the Gardiner Expressway. Exhibits 3-1 and 3-2 show the study area.

Exhibit 3-1: Study Area

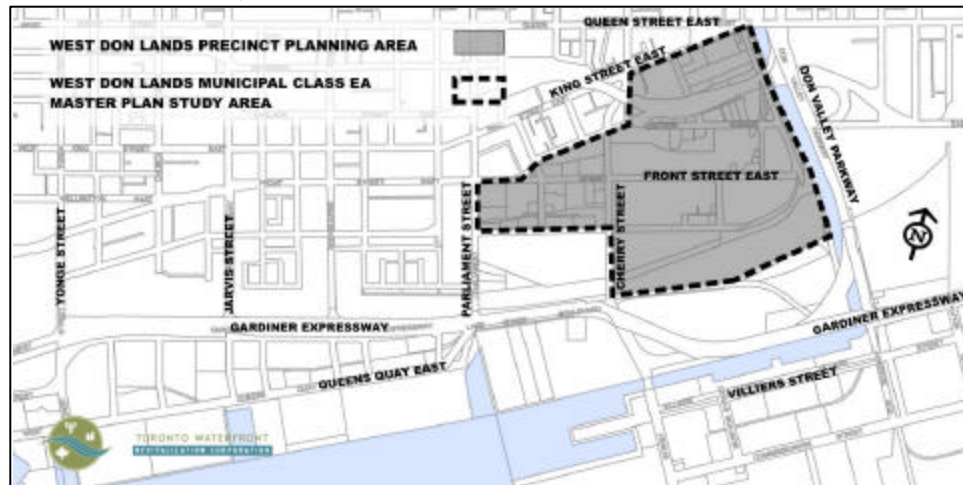


Exhibit 3-2: Aerial Photo of West Don Lands Class EA Master Plan Study Area and Precinct Planning Area



3.2 *Planning Horizon*

For implementation purposes the West Don Lands precinct has been divided into four development districts and the landform/Don River Park. The focus of initial development will be on the landform and District 1 – (Mill Street District) – the area south of Front Street and east of Cherry Street. This initial development area will allow for opportunities to incorporate a full range of neighbourhood uses – residential uses, park space and community space – at an early stage of development.

Development would then proceed northwards to Districts 2 (North of Front Street) and District 3 (North of Eastern Avenue). District 4, is that part of the West Don Lands west of Cherry Street and while it is intended that this area be developed in later phases, portions of the District may proceed in parallel with developments elsewhere in the West Don Lands.

The estimated schedule of the first phase of development in the West Don Lands (approx. 500 units) is summarized in **Exhibit 3-3** below. This schedule shows the anticipated timing for each stage of the first Phase of development (including both design and construction). The entire district development (**Exhibit 3-4**) is expected to take approximately four to six years. This is an estimated schedule and is dependent upon sufficient government funding and other approvals being obtained in a timely manner.

Exhibit 3-3: Estimated Project Schedule – Phase 1 of Development

| STAGE | APPROXIMATE TIMING OF CONSTRUCTION |
|--------------------------------|------------------------------------|
| Site Clearing and Remediation | Spring 2005 – Spring 2006 |
| Roads | Summer 2006 – Fall 2006 |
| Parks and Open Space | Spring-Summer 2007 |
| Servicing and Utilities | Summer – Fall 2006 |
| Stormwater Management | Summer – Fall 2006 |
| Site Development (First Phase) | Fall 2006 – Fall 2007 |

3.3 Opportunity Statement

The first phase of the Class EA is to define the problem or opportunity. The opportunity statement for this project is described as:

“To address sanitary, water, stormwater, and transportation infrastructure servicing requirements to support the proposed land uses including new and improved parks and public spaces that are proposed as part of the revitalization of the West Don Lands precinct of the Toronto Waterfront”.

As part of the Precinct Plan upgrades to the water, wastewater, stormwater and transportation services must take place in order to support the redevelopment of the area. More information on the Needs and Justification for the upgrades to these services can be found in sections 5.2 (Water Systems), 6.2 (Sanitary Servicing), 7.2 (Stormwater) and 8.2 (Transportation).

4 INVENTORY OF THE EXISTING ENVIRONMENT

The West Don Lands precinct study area is an extensively developed environment. It is an urban brownfield site containing some buildings occupied by industrial or commercial uses, with large areas of vacant or underused sites. There are no watercourses running through the area or features of natural environmental significance, however these are negligible batches of vegetation. The Don River Valley System is located immediately adjacent to the site on the east, although the Canadian National (CN) Rail Bala Subdivision divides the precinct area from the river.

4.1 Natural Environment

4.1.1 Aquatic Environment

There are no watercourses running through the West Don Lands. The nearest aquatic feature to the West Don Lands is the Don River located at the eastern boundary of the study area. The Don River originates north of Major Mackenzie Drive in the Region of York and eventually discharges into Lake Ontario through the Keating Channel. Aquatic habitat in the Lower Don River adjacent to the West Don Lands has been heavily impacted by urbanization throughout the watershed.

According to the Draft Don Watershed Fish Community and Habitat Management Plan (TRCA, 1997), the Lower Don River in the vicinity of the West Don Lands is classified as estuarine habitat with the water levels being directly influenced by Lake Ontario. The Toronto Region Conservation Authority (TRCA) considers the aquatic habitat in the Lower Don River to be poor as a result of limited in-stream cover, excessive sedimentation, the straightened channel and lack of riparian cover and buffer strips (MTRCA, 1994).

As water flows from the Lower Don River through the Keating Channel and further west, it continues to impact the quality of habitat in Lake Ontario due to suspended sediment transport that affects water clarity. Fish habitat including water clarity and cover provided by aquatic vegetation improves when further west from the Don River along the Lake Ontario shoreline (G. MacPherson, pers. comm., 2003). The high sediment load of the Lower Don River is likely impacting available aquatic habitat (water clarity, silt deposition) in Lake Ontario within the vicinity of the West Don Lands.

4.1.2 Fish Community

As part of their ongoing monitoring of the Lower Don River, the TRCA performs fish community sampling in the Keating Channel and Lower Don River in the spring, summer and fall of each year. Fish community sampling conducted during 2002 through 2004 resulted in the capture of alewife (*Alosa pseudoharengus*), emerald shiner (*Notropis atherinoides*), spottail shiner (*Notropis hudsonius*), threespine stickleback (*Gasterosteus aculeatus*), johnny darter (*Etheostoma nigrum*), northern pike (*Esox lucius*), Chinook salmon (*Oncorhynchus tshawytscha*), common carp (*Cyprinus carpio*), gizzard shad (*Dorosoma cepedianum*), rainbow smelt (*Osmerus mordax*), grass carp (*Ctenopharyngodon idella*) and yellow walleye (*Stizostedion vitreum vitreum*). According to the TRCA fish community sampling results, alewife and emerald shiners make up 90% of the fish community in the Keating Channel. This fish community is not typical of most north shore Lake Ontario river estuaries and is likely a result of lack of habitat features, regular dredging operations and poor water quality (TRCA, 2004a).

The TRCA classifies the Keating Channel morphology as having uniform depths, heavy channelization, degraded water and sediment quality, regular disturbances as a result of dredging and a lack of functional overhead and instream cover that all contribute to reducing species diversity. With the exception of northern pike that prefer sheltered bays with moderate to dense aquatic vegetation, the fish community associated with the Keating Channel consists primarily of species that are associated with open water in large lakes. The Keating Channel can be considered to be an open water habitat that is connected to the open water of the Toronto Harbour and Lake Ontario. These species may move into the channel and further upstream in search of shallower water for feeding. Similarly, northern pike may move upstream through the channel to areas of shallower water search of prey (white sucker, spottail shiner) (Scott and Crossman, 1998; Coad et al, 1995).

Common carp and grass carp are introduced species from Asia that are tolerant of a wide variety of conditions. They prefer warm, slow moving waters and were likely captured in the Lower Don River. These species are considered to be a nuisance in Southern Ontario due to feeding activity that uproots aquatic vegetation and decreases water clarity. According to the TRCA, there has been only one individual of grass carp captured in the Don River and that individual was likely an isolated case (Scott and Crossman, 1998; Coad et al, 1995; TRCA, 2004a).

4.1.3 Aquatic Habitat

The banks of the Lower Don River consist primarily of man made materials and include vertical steel and cement walls adjacent to the West Don Lands and the Don Valley Parkway with scattered riparian vegetation providing minimal canopy cover. Substrate consists primarily of silt with gravel and cobble. Habitat enhancements consisting of rip rap and vegetation plantings that have been installed along the banks of the Lower Don River to provide a greater in-water habitat diversity and improve riparian vegetation.

4.1.4 Terrestrial Environment

The West Don Lands precinct study area is an extensively developed environment that includes a rail corridor, roads, as well as industrial, commercial and residential buildings. As a result there are negligible terrestrial environment features that occur in this area. There are however, a number of natural areas adjacent to the study area. These include the Don River Valley System located immediately west of the site, Tommy Thomson Park (Leslie Street Spit) and the Toronto Islands located to the south of the study area.

The vegetation described is based primarily on investigations conducted by the TRCA in 2004. In the West Don Lands, vegetation communities have colonized embankments, fill areas, and rail corridors, and typically consist of cultural woodland, thicket, and meadow habitats within the disturbed environment of the lakeshore. The TRCA conducted fieldwork in 2000 to document existing vegetation communities in the West Don Lands. The communities were classified to the “ecosite” level of the Ecological Land Classification (ELC) system, with most identified to the “vegetation type” (TRCA, 2004). There were four communities identified. There is a Sumac Cultural Thicket (CUT 1-1) located in the southeast corner of the site immediately adjacent to the channellized portion of the Lower Don River. A Native Deciduous Cultural Woodland (CUW 1-A3) occurs in the north of the site just south of Eastern Avenue and north of Front Street. Small pockets of Fresh-Moist Poplar Deciduous Forest (FOD 8-1) occur in the northeastern corner of Front Street and Cherry Street. A small section of Native Forb and Old Field Meadow (CUM 1-A) is located in the northwestern corner of Front Street and Cherry Street (TRCA, 2004a).

Species found in the East Bayfront precinct study area are likely representative of species likely found in both study areas. These communities typically consist of a large proportion of non-native vegetation (Lee et al, 1998). The Native Deciduous Cultural Woodland (CUW 1-A3) may include cottonwood (*Populus deltoides ssp. deltoides*), tree of heaven (*Ailanthus altissima*), Manitoba maple (*Acer negundo*), Siberian elm (*Ulmus*

pumila), and red ash (*Fraxinus pennsylvanica*). The Fresh-Moist Poplar Deciduous Forest (FOD 81) site is dominated by trembling aspen (*Populus tremuloides*), and largetooth aspen (*Populus grandidentata*). This community typically represents a young, early successional forest that has followed a major disturbance (Lee et al, 1998). The Sumac Cultural Thicket (CUT 1-1) is dominated by staghorn sumac (*Rhus typhina*). The herbaceous vegetation communities including the Native Forb and Old Field Meadow (CUM 1-A) and the groundcover present in the other vegetation communities, would likely consist of old field species that were observed during field investigations by MMM in March 2004, in the adjacent East Bayfront precinct study area. The herbaceous vegetation includes Queen Anne's lace (*Daucus carota*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), ox-eye daisy (*Chrysanthemum leucanthemum*), fleabane (*Erigeron sp*), viper's bugloss (*Echium vulgare*), chickory (*Cichorium intybus*), common nightshade (*Circaea alpina*), and black bindweed (*Polygonum convolvulus*).

4.1.5 Wildlife Community

Small mammalian, herpetofaunal, and avian species that are tolerant of habitat disturbances and human activities typically characterize the wildlife community in this type of setting. It is expected that a low diversity of species would be expected at the site due to limited habitat diversity and availability.

Wildlife observations made during the site reconnaissance conducted by Marshall Macklin Monaghan (MMM) on March 29, 2004 in the adjacent East Bayfront precinct study area consisted of common species typical of urban landscapes and migratory species that likely use the area as stopover habitat. It is anticipated that due to the similar habitat conditions of the West Don Lands study area to the East Bayfront study area, similar wildlife species would be found in the West Don Lands study area. Species observed in the East Bayfront study area include common grackle (*Quiscalus quiscula*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), house sparrow (*Passer domesticus*), American robin (*Turdus migratorius*), bufflehead (*Bucephala albeola*), long-tailed duck (*Clangula hyemalis*), ring-billed gull (*Larus delawarensis*), and Canada goose (*Branta canadensis*). Ring-billed gulls and Canada goose would most likely use the terrestrial portion of the habitat but the bufflehead and long-tailed duck would use the adjacent Don River and Keating Channel for feeding but would not make use of the terrestrial habitat.

The study area resides in close proximity to Tommy Thomson Park (Leslie Street Spit), the Don River Valley and the Toronto Islands, which provide habitat for resident and migrating bird species. Many species of birds stop over at Tommy Thomson Park to

recuperate during migration continuing their journey after they have rested. Many would use the habitat provided by the adjacent Lower Don River corridor as a migratory travel route (TRCA, 2004a).

In 2003, several wildlife species were observed by the TRCA in the West Don Lands study area including northern rough-winged swallow (*Stelgidopteryx serripennis*), northern mockingbird (*Mimus polyglottos*), red-eyed vireo (*Vireo olivaceus*), woodchuck (*Marmota monax*), grey catbird (*Dumetella carolinensis*), spotted sandpiper (*Actitis macularia*), and eastern gartersnake (*Thamnophis sirtalis sirtalis*). The TRCA has developed a ranking system for species of concern in the TRCA jurisdiction. Species that are very sensitive to disturbance and rare in TRCA are designated as L1 and species tolerant of disturbance and stable in the urban matrix are designated as L5. The species above are identified as L4 rank. This rank identifies that these species are able to withstand some disturbance and are generally secure in the rural community but are considered of local concern in the urban matrix (TRCA, 2004a).

The northern rough-winged swallow is considered rare due to its low local occurrence. It normally associates with man-made structures along watercourses such as bridges and dams. The northern mockingbird is also considered rare within the TRCA due to the fact that their range lies almost entirely to the south of the TRCA region but has shown a marked increase in the TRCA in recent years. The red-eyed vireo, woodchuck and eastern gartersnake are fairly secure within the less urbanized northern section of the region. However in the southern, more urban portion that includes the study area, their distribution is becoming more scattered and therefore the species scarcer (TRCA, 2004a).

Mammals observed to use the area during the March 29, 2004 site reconnaissance were grey squirrel (*Sciurus carolinensis*), Norway rat (*Rattus norvegicus*), feral cats, and house mouse (*Mus musculus*). These species are likely to inhabit the area within and surrounding the West Don Lands study area, as these species are mobile and likely migrate between habitats. The beaver (*Castor canadensis*) is found to the far north of the West Don Lands study area (TRCA, 2004a). They show a requirement for the continuity of suitable habitat to facilitate movement.

The Don River Valleyland provides a seasonal migration corridor for birds moving to and from the lakeshore to breeding and wintering territories. It may provide for the movement of wildlife from Tommy Thomson Park and the Toronto Islands to more inland habitats. The natural cover within the Lower Don Valley provides an opportunity for migratory birds to rest, take cover and forage (TRCA, 2004a).

The area has the potential to provide habitat for herpetofaunal species. Eastern gartersnake was found within the study area (TRCA, 2004a). Amphibians and turtles may use the riparian habitat adjacent to the Don River, but may require higher quality habitat than is currently provided by the Keating Channel, and the channellized section of the Lower Don River.

4.1.6 Geology and Topography

The topography of Toronto results from natural and anthropogenic landforms. The waterfront, valley, and stream corridors form the backbone of the city's natural heritage resources. One of the City's valley corridors is the Don River and its associated tributaries that drain through the city. Along most of the shoreline of Lake Ontario the underlying shale bedrock is covered with a mantle of till, silt, clay and sand deposits from at least four glacial events covering the area over the past 100,000 years.

A layer of fill covers the entire site. It varies in thickness from 0.3 m to 6 m but is approximately 2 m thick in most areas (MacLarentech Inc., 1989). The deeper fill is found along the east side of the site where the West Don channel was moved eastward more than a century ago.

The composition of the fill is variable. Overall, it ranges from sand and gravel to clayey silt. Foreign material identified within the fill included brick, glass, porcelain, coal, cinders and metal. The upper portions are frequently coarse grained and contain predominately sand, gravel and some silt with cinders, coal and brick. Parts of the south boundary of the site were at one time at or near the original shoreline of Lake Ontario. Organic silt and silt interbedded with peat is found proximal to the former shoreline.

The total overburden thickness is generally 10 m thick. Brown silt and clayey to silty till underlie the fill materials and overlie the bedrock at most locations. Along the east boundary of the site, an ancient river eroded the shale bedrock to depths of approximately 30 m. The channel was filled with deposits of sand and silt which frequently contain peat.

4.1.7 Soil Conditions

Extensive subsurface investigations were undertaken in this area during the late 1980s and early 1990s. The current site manager, the Ontario Realty Corporation, and others have carried out additional work more recently but this information is not yet available. ORC representatives have indicated that the recent investigation findings have generally reflected the findings of the original investigations.

The Ministry of the Environment has developed generic remediation criteria that are based on assumptions that are necessarily conservative in relationship to the conditions encountered at many sites (Canadian Environmental Protection Act, 1999). These criteria are available to be used by site owners wishing to ensure that impacted media within the boundaries of their lands will not cause adverse affects and will be compatible with the intended use of the land. As an option, it is possible to develop criteria that specifically reflect the conditions that exist at the site (or will exist at the site if site redevelopment is planned). This optional approach is the one that the Toronto Waterfront Revitalization intends, in general, to follow (Toronto Waterfront Joint Venture, 2005). As explained below, the nature of the soil and groundwater impacts is generally amenable to this type of solution. The work required to establish the criteria that should apply and/or the risk management measures needed has yet been completed. In order to provide some appreciation of the degree to which the subsurface has been impacted by past industrial activities, some comparisons are drawn below between the results of past soil quality investigations and the current Ministry of the Environment generic criteria.

Soil impacted by environmental contaminants is found throughout the West Don Lands. However, as previously mentioned, the impacts are, for the most part, restricted to a patina of fill that was placed many years ago to elevate the land and allow development to proceed (Trow Dames & Moore, 1991; Angus Environmental Ltd., 1995). In general, the contaminants are not found as buried wastes or liquids that have flowed downward into the subsurface. The contaminants are usually absorbed to soil particles and are present at concentrations that sometimes exceed the currently applicable MOE criteria but usually not by a wide margin (Beak Consultants and Raven Bech Environmental Ltd., 1994). One measure of the degree of contamination is the proportion of the impacted soil that would classify as hazardous (leachate toxic) waste were it to be excavated and require disposal. While leachate toxic soil is known to exist, it is believed to represent only a small portion of the soil that has been impacted by environmental contaminants in this area (MacLarentech Inc., 1988).

Exhibits 4-1 and **4-2** set out, for each of the block designations used during the previous redevelopment planning exercises, various information relating to the condition of the soil in relationship to the current MOE criteria applied to residential and parkland development (Beack Consultants Ltd. And Raven Beck Environmental Ltd., 1994; Angus Environmental Ltd., 1995). It is emphasized that the soil volumes indicated do not represent the quantities of soil that require removal. They are the volumes of soil that contain contaminants at concentrations exceeding the MOE generic criteria, a benchmark used to allow readers to gain a general understanding of the extent of the soil impacted by environmental contaminants and the nature of the impacts. As previously

mentioned, the intention at this site is to develop criteria and/or risk management measures that reflect the conditions that will actually exist once the proposed development has taken place.

Exhibit 4-1: Types and Distribution of Contaminants

Types And Distribution Of Contaminants

| Block ID | Soil Thickness (m) | | Types of Contaminants Present | | Soil Volumes |
|----------|--------------------|--------|-------------------------------|-------------------------|------------------------------|
| | Fill | Native | Upper 1.5 m | At > 1.5 m | Full Depth (m ³) |
| A | 1.5 | 6.0 | Metals, PAHs, VOCs | Metals, PAHs | 27,300 |
| D | 2.0 | 7.0 | Metals, PAHs | Metals, PAHs (minor) | 9,100 |
| H | 2.0 | 7.5 | Metals, PAHs | Metals | 15,150 |
| M | 2.5 | 13.5 | Metals, PAHs | Metals, PAHs | 25,400 |
| E | 2.5 | 6.5 | Metals, PAHs | Metals, PAHs | 8,900 |
| G | 2.5 | 7.0 | Metals, PAHs | Metals, PAHs, VOCs | 79,300 |
| I | 2.0 | 7.5 | Metals, PAHs | Metals | 10,900 |
| J | 1.5 | 7.0 | Metals, PAHs | None | 1,100 |
| K | 3.0 | 12.5 | Metals, PAHs, VOCs | Metals, PAHs | 16,400 |
| L | 2.5 | 14.5 | Metals, PAHs | Metals, PAHs | 6,100 |
| NE | 3.0 | 12.5 | Metals | Metals | 21,200 |

Exhibit 4-2: Soil Analysis Results

Overview of Soil Analysis Results

| Parameters | MOE Table B Criteria | Sample size | Average | Minimum | Maximum |
|-----------------------------|----------------------|-------------|---------|---------|---------|
| <u>Metals or metalloids</u> | | | | | |
| antimony | 13 | 724 | 6 | nd | 400 |
| arsenic | (25) 20 | 747 | 13 | nd | 312 |
| barium | (1000) 750 | 754 | 520 | 15 | 2420 |
| beryllium | 1.2 | 753 | 3 | nd | 10 |
| cadmium | 12 | 747 | 3 | nd | 60 |
| chromium (hexavalent) | (10) 8.0 | 713 | 0.14 | 0.024 | 5 |
| chromium (total) | (1000) 750 | 767 | 60 | 1.19 | 1420 |
| cobalt | (50) 40 | 754 | 14 | nd | 120 |
| copper | (300) 225 | 767 | 151 | 2 | 29800 |
| lead | 200 | 767 | 230 | nd | 14000 |
| mercury | 10 | 750 | 0.22 | trace | 17.4 |
| molybdenum | 40 | 767 | 5 | 1 | 74 |
| nickel | 150 | 767 | 59 | nd | 10000 |
| selenium | 10 | 754 | 0.6 | 0.08 | 6.8 |
| silver | (25) 20 | 768 | 2.7 | nd | 31 |
| vanadium | (250) 200 | 770 | 79 | nd | 9200 |
| zinc | (800) 600 | 767 | 349 | 14 | 18900 |
| pH | 5.0 - 9.0 | 574 | 8.06 | 3.92 | 11.96 |

Overview of Soil Analysis Results

| Parameters | MOE Table B Criteria | Sample size | Average | Minimum | Maximum |
|-------------------------------|----------------------|-------------|---------|---------|---------|
| (mS/cm) | 0.7 | 574 | 0.619 | nd | >6.0 |
| SAR | 5 | 689 | 5.312 | 0.01 | 29.4 |
| <u>Petroleum hydrocarbons</u> | | | | | |
| Oil + grease | nv | 628 | 0.596 | nd | 18.4 |
| benzene | (25) 5.3 | 38 | 0.1 | nd | 0.8 |
| toluene | (150) 34 | 38 | 0.164 | nd | 0.9 |
| ethylbenzene | (500) 290 | 38 | 0.105 | nd | 0.367 |
| xylene | (210) 34 | 38 | 0.257 | nd | 1.3 |
| <u>PAHs</u> | | | | | |
| acenaphthene | 1000 | 33 | 2.42 | nd | 21.5 |
| acenaphthylene | 100 | 33 | 4.38 | nd | 60.7 |
| anthracene | 28 | 33 | 3.09 | nd | 38 |
| benzo(a)anthracene | 40 | 576 | 3.82 | nd | 194 |
| benzo(b)fluoranthene | 12 | 577 | 4.2 | nd | 162 |
| benzo(k)fluoranthene | 12 | 272 | 2.6 | nd | 51.69 |
| benzo(g,h,i)perylene | 40 | 33 | 3.93 | nd | 44.4 |
| benzo(a)pyrene | 1.2 | 578 | 4.08 | nd | 229 |
| chrysene | 12 | 33 | 4.37 | nd | 38.2 |
| dibenzo(a,h)anthracene | 1.2 | 580 | 1.16 | nd | 151 |
| fluoranthene | 40 | 33 | 10.23 | nd | 108 |
| fluorene | 350 | 8 | 5.03 | nd | 36 |
| indeno(1,2,3-c,d)pyrene | 12 | 579 | 2.28 | nd | 131.91 |
| naphthalene | 40 | 581 | 23.91 | nd | 7966.7 |
| perylene | nv | 8 | 0.57 | nd | 1.33 |
| phenanthrene | 40 | 581 | 13.25 | nd | 1342 |
| pyrene | 250 | 581 | 9.87 | nd | 648.1 |
| PCBs | 5 | 574 | 8.19 | nd | 2252 |
| <u>Dioxins and furans</u> | | | | | |
| Total PCDDs & PCDFs | nv | 13 | 0.906 | nd | 4.22 |

Notes:

nd – not detected

nv – no value available

MOE Table B Criteria – Ministry of the Environment “Guideline for Use at Contaminated Sites in Ontario” (revised 1997) Table B criteria for residential/parkland land use in a non-potable groundwater condition

() Criterion in brackets applies to medium and fine textured soils.

There are some localized parts of the West Don Lands where the subsurface conditions present challenges. Those known at this point are briefly described in the following paragraphs:

At some locations within the West Don Lands, most notably at some former scrap yards, soil containing PCBs at concentrations exceeding 50 ppm is known to exist. Under Ontario regulations, materials containing in excess of 50 ppm PCBs are classified as PCB Wastes. Such wastes required disposal at special facilities approved to receive wastes of this type (The Procter and Redfern Group, 1989).

At a number of locations, underground petroleum hydrocarbon fuel storage tanks are known to exist. In general, only single tanks are involved although, in some locations, two or three tanks may be found. It is not unusual to find subsurface liquids and impacted soil at installations of this type. However, the impacts are generally quite limited in extent. Prior to the redevelopment of the affected lands, it will be necessary to remove the tanks and any impacted media has presents unacceptable risks (MacLarentech Inc., 1989).

4.1.8 Groundwater Conditions

The depth to the water table generally varies between 0.3 m and 3 m (MacLarentech Inc., 1989; Golder Associates, 1988). In places, it resides in the fill materials and, in others, in the underlying silts and tills. It can be expected that little lateral groundwater flow occurs within the till unit between the bedrock and the fill materials. Lateral flow occurs within the fill materials and is likely much influenced by buried infrastructure such as deep sewers. In the east, the direction of flow tends to be toward the West Don River. In the west, the groundwater tends to flow toward Lake Ontario.

A small portion of the recharge occurring within the West Don Lands likely flows vertically downward to the fractured shale bedrock then laterally through the bedrock fractures. Regionally, groundwater flows through the fractured shale bedrock. The groundwater appears to flow toward the south and the east, reflecting the bedrock surface slopes (Trow, Dames & Moore, 1991).

While more groundwater quality information must be obtained before risks associated with the contaminants transported by the groundwater can be assessed, a reasonable appreciation of the general conditions can be gained by reviewing the available information. Some important findings are briefly described below. As with the soil quality data, the groundwater quality data were collected in the late 1980s and early 1990s.

Based on the available information, groundwater flowing through the overburden (in particular, the fill materials) generally does not contain contaminants at concentrations exceeding the applicable generic MOE criteria. In fact, the quality of the groundwater leaving the site was found to be very similar to the quality of the water entering the site. Exceptions to this general rule are the areas where liquids from industrial sources have entered the subsurface and sporadic incidents of impaired groundwater quality that are likely a reflection of minor, localized conditions (Trow, Dames & Moore, 1991).

The westernmost block, located between Parliament and Trinity Streets, was dominated by a coal gasification plant between the late 1840s and the early 1960s. Coal tar produced at the plant was stored in several tanks in the southwest corner of this block. Some of the coal tar entered the subsurface. As the tar is more dense than water, it has passed through the water table and signs of the tar have been observed within the weathered surface of the shale bedrock in this area. Coal tar contains considerable amounts of polycyclic aromatic hydrocarbons some of which are believed to be carcinogenic. Cyanide is also associated with coal gasification facilities. Cyanide-impacted groundwater has been detected downgradient of the former gasification facilities (The Proctor and Redfern Group, 1989).

Groundwater downgradient of the former gasification plant contains cyanide at elevated concentrations. Groundwater in the vicinity of the former tank farm contains PAHs and petroleum hydrocarbons at elevated concentrations (Trow, Dames & Moore, 1991). It is unlikely that groundwater downgradient of the site impacted by radium-226 will be an issue as radium-226 is virtually immobile in the environment (AECL, 2004). Impacted groundwater likely exists in isolated areas in the vicinity of underground fuel tanks and other relatively minor contaminant sources.

At one time, an extensive tank farm occupied lands in the southeast areas of the West Don Lands (MacLarentech Inc., 1989). Former investigations have revealed that past releases of petroleum hydrocarbons in that area entered the subsurface. As the density of the petroleum hydrocarbons is less than unity, the liquid fuels have, upon encountering the groundwater table at a depth of approximately two metres, formed a buoyant lens. While further investigations are planned, details of the extent of the lens are not available at present. However, buoyant lenses of this type can, under certain conditions, become mobile and significantly impact receptors in their path. Logically, were these particular liquids to become mobile, they would tend to flow toward the West Don River. There is no evidence at present that the liquids are discharging to the river.

Given the difficulty of predicting how buoyant liquid lenses of this type may behave in the long term, together with the fact that they represent a concentrated source of groundwater contaminants, and their propensity to enter buried infrastructure, it will likely prove prudent to remove the subsurface liquids at an early point. Dealing with the liquids before the flood protection berm is constructed will likely be preferable. However, extraction of the liquids after the berm has been constructed would also be feasible.

Based on sampling conducted at six deep wells installed around the perimeter of the site, water flowing through the bedrock aquifer does not contain contaminants at elevated concentrations (Angus Environmental Ltd., 1995).

Contaminant loading estimates prepared in the mid 1990s indicated that contaminants entering the Don River as a result of discharges of groundwater from the West Don Lands occur at rates that are negligible in relation to other inputs such as stormwater inflows and treatment plant discharges (Beak Consultants Ltd. and Raven Beck Environmental Ltd, 1994).

Studies were also conducted in 1989 into the effect that groundwater infiltrating storm sewers may have on the quality of water discharged to the Don River or to Lake Ontario. It was concluded that infiltration is not an important factor with regards to stormwater quality (Trow, Dames & Moore, 1991).

The Ontario Realty Corporation, on behalf of the TWRC, recently retained a consultant to undertake further groundwater studies that will build upon the understanding of groundwater flow and contaminant transport gained to this point. It is expected that the results of this work will provide important input to the assessment of risks associated with the subsurface contaminants that the TWRC and ORC intend to undertake.

4.1.9 Air Quality

There is currently no area-specific air quality information available for the West Don Lands. Air pollutants in the City of Toronto originate from a variety of source categories including industry, transportation, fuel combustion, and miscellaneous activities (primarily dry cleaning, painting, solvent use, and fuel marketing). There are five commonly recognized, standard primary air contaminants. They include volatile organic compounds (VOC), particulates (PM), carbon monoxide (CO), nitrogen dioxide (NO₂), and sulphur dioxide (SO₂) (City of Toronto, 2000).

Air quality in the City is influenced by a multitude of parameters, some of which are increasing in concentration while others are decreasing. For instance, while atmospheric concentrations of sulphur dioxide, lead and particulates have dropped significantly since 1970, while the number of Air Quality Advisories have increased from 1996 to 1999.

A recent study in Toronto suggests that in Toronto, nitrogen dioxide is the air pollutant with the greatest adverse impact on human health followed by carbon monoxide (City of Toronto, 2000). Downtown Toronto experienced 11 incidences of poor air quality between May 14, 2002 and November 11, 2002. Air quality warnings were issued due

to elevated concentrations of ground-level ozone with five incidences of poor air quality in July and three incidences in each of August and September. Due to Toronto's dense population, large number of vehicles, industry, light winds, and optimal summer temperatures, the city provides ideal conditions for the formation of ground-level ozone.

4.1.10 Noise

A noise control programme was adopted by City Council in December 1973 to ensure that future construction and development be evaluated in light of their impact on Toronto's acoustical environment. Major noise concerns found within the City of Toronto included noise from air conditioning units, construction, loud music, loading and unloading vehicles, industrial sources, security alarms, animals and public transit. Monitoring results from 1987 to 1993 indicate that for the West Don Lands study area, the 24 hour equivalent sound levels were in the range of 60 to 79 dBA. Noise levels in this range are in the moderately loud category and could be viewed as annoying.

Noise By-laws within the City restrict the time of day during which construction can take place. All major construction sites, public and private, are regularly inspected to make sure that excessive noise is not being generated from equipment on the site. The Noise By-Law is enforced by both the Toronto Police Services and the City of Toronto's Noise Control Branch.

4.2 *Social-Economic Environment*

4.2.1 Historical Land Uses

The West Don Lands district has been more commonly known as the Ataratiri lands through the 1980s to 1990s. Historically part of this area was known as the St. Lawrence Square. Details on the historical uses in the West Don Lands study area are derived from the archaeological and cultural heritage report prepared in 2004 by Archaeological Services Inc. (Archaeological Services Inc., 2004).

Uses in this area date back to 1793, when it was established as parkland, originally crown reserve. A municipal park developed at the intersections of Eastern Avenue, Sumac Street, and Cherry Street, the south boundary of which was known as Market Lane or Worts Avenue. This piece of land seems to have been used as a city market and contained a municipal weigh scale. In the 1830's, the lands were subdivided and sold for the purposes of financing a new provincial hospital. By 1890, the park had been converted into the park known as St. Lawrence Square. This park then disappeared into

the morass of railway yards and later became the site of the Dominion Foundry. The shoreline area was a promenade known as “Walks and Gardens”. This provided connection to the Garrison Reserve in the west where industrial use included early brickyards.

Iron-working mills were also a significant historical use in the area. Early operations included the Don Foundry at 511 King Street at Don River, in operation by 1853; the St. Lawrence Foundry, established in 1851 (outside the study area at Parliament and Front); and in 1873 a railway car wheel foundry at the northwest corner of Front and Cherry Streets was established and became the Toronto Car Wheel Company.

Throughout the late 1840s to the early 1960s, businesses in the western portion of the study area included a coal gasification plant, an ammonia company, a roofing company, a battery company, a barrel and bottle company, and a chemical/oil company.

At the southwest corner of Mill and Water Streets, the Toronto Rolling Mills were established in 1857. This facility was used to re-profile worn rails of the Grand Trunk Railway. The facility may have also been used to branch out into other iron products. The building and plant were demolished shortly after its closure in 1873.

The Toronto Street Railway (TSR), maintained horse stables within this area. The TSR was one of Toronto’s first urban transit services, being granted the first franchise for a street railway by the city in 1861. It came to own a large building plus outdoor storage yard on the south side of King Street at St. Lawrence Street. Along with the Toronto Civic Railways, the Toronto Street Railway Company was acquired by the city, and merged into The Toronto Transportation Commission in 1921. The Grand Trunk Railway, which became Canadian National Railway, occupied all the land south of Mill Street to the Don River. Over the years, this area contained cattle yards, a railway shop and the original site of the Don Station, as well as the company’s mainline from Toronto to Montreal.

The company also built a wharf along the north bank of the Don, east of Cherry Street, served by a railway spur. By 1910, all of these facilities had been removed, and the area became a local yard and freight sheds for the Grand Trunk Railway. The Grand Trunk Belt Line, built in 1892, turned northward from the mainline at Overend Street.

The Canadian Pacific and Canadian Northern (today Canadian National) Railways acquired permission to use the Don Valley and harbour front to build access lines to Union Station, changing the area dramatically. In 1903, the Canadian Pacific Railway purchased all the housing south of Front and north of the Grand Trunk. In 1905 the

Canadian Northern Railway applied to have access to Toronto over the same route, and it further purchased the residential and industrial properties bounded by Trinity, Eastern, Olive, and Front Streets. The railway tracks have historically separated residential and industrial development from the marshlands to the south. When the mainline was elevated during the viaduct construction of the 1920s, a new connection to the Belt Line was built between the Canada Packers abattoir and the Don River. The present day Canadian National Railway corridor leading to Union Station is the result of grade separation carried out in the 1920s. By the late twentieth century, the transportation and industrial functions of the area declined and much of the land had become derelict, however the rail corridor to Union Station remained intact.

The south-eastern part of the study area was historically occupied by industry, which included: food packaging operations; a soap manufacturer; a resin storage company; a chemical dye company; and an oil company. The original location of the Don River was along the east boundary of the area. In the 1880s, the river was relocated further east, and industrial/commercial operations including a tannery, railway yards, automotive repair shops, a construction company and scrap yards were developed on the reclaimed land. On the northeast portion of the reclaimed land, industries that developed included: a machine shop; textile and furniture manufacturing complex; coal yard; a varnish and paint manufacturing plant; and an oil company.

The largest industrial land user, apart from railways, was the pork packing plant of the Davies Meat Packing Company. The company established its first slaughterhouse at Front and Frederick Streets in 1861, later relocating to a site at the end of Front Street at the Don River. This plant expanded enormously until it occupied most of the property east of Overend Street. In 1927, it became Canada Packers. Most other prominent industrial land users were also those that required large amounts of open space, such as lumberyards.

By the 1990s, the district was largely comprised of commercial facilities, some industrial operations, and vacant properties. Current uses include film studio space and related industries, and outside storage (Archaeological Services Inc., 2004).

4.2.2 Land Ownership

The majority of the lands in the West Don Lands are owned by the Province of Ontario, and managed by the Ontario Realty Corporation (ORC). There are only a few privately owned parcels of land. **Exhibit 43** shows a breakdown of public versus privately-owned land.

4.2.3 Current Land Use Designations

Land Use designations in the West Don Lands are derived from the City of Toronto Central Waterfront Part II Plan. This includes three types of land use designations, which include:

- Parks and Open Space and Public Use Areas for parks, open space and plazas, and can include compatible community, recreation, cultural and entertainment facilities;
- Development Areas are blocks of land that may be subdivide into smaller areas for a wide variety of mixed-use development ranging from industries to housing to community services and parks, from offices to stores to hotels and restaurants. Heritage buildings within this designation can be used for Development Area uses. The Development Permit system is in place for Development Areas, allowing flexibility in land use.
- Existing Use Areas are currently covered by planning controls consistent with the direction of the Central Waterfront Plan. These lands continue to be governed by existing Official Plan and zoning controls.

Commercial land uses are currently included in the area of West Don Lands. This area is dominated by ground street oriented commercial development, including restaurants and galleries in redeveloped buildings. Many large industrial buildings are currently used for film industry activities.

There is no established residential community within the boundaries of the precinct. However, there are established residential communities to the west (the Distillery District and the St. Lawrence neighbourhood), and to the north (Corktown). (City of Toronto, 2001)

4.2.4 Business Activity

Within the West Don Lands area, there are a number of existing commercial and industrial enterprises that occupy buildings or land leased from the Ontario Realty Corporation (ORC). For several years, the ORC has only permitted short-term leases on these properties. Consequently, the vast majority of the businesses that are located in the area take advantage of its location benefits or advantageous lease arrangements, and are not particularly dependent on these sites. As the precinct's land uses begin to change, it is expected that businesses will relocate either within the district to newly developed buildings, to vacant sites that will be subject to later development, or out of the precinct. Current business activity is shown in **Exhibit 4-4**.

4.2.5 Built Heritage Resources

Built heritage resources fall into two categories: listed and designated. Designated properties have designation under the Ontario Heritage Act (OHA) and listed properties have been identified as having cultural and/or historical significance and are placed on the City of Toronto's Inventory of Heritage Properties.

For designated properties, if a property owner wishes to alter the features of the property they must receive approval from Council. For demolition of the property they must also receive approval from Council, however if Council refuses under the current OHA, the owner must only delay the demolition for 180 days to receive a permit for the replacement structure. The OHA is currently being reviewed to allow refusals to go before the Ontario Municipal Board and provide the Board with the final authority regarding heritage properties.

The City's Inventory of Heritage Properties allows preservation staff to monitor any applications that are made that could affect a listed property. If a listed property is threatened with either inappropriate alterations or demolition then Council is usually asked to designate it under the OHA if a compromise cannot be achieved.

There are number of built heritage resources within the West Don Lands that need to be considered. They are as follows:

- *153 – 185 Eastern Avenue (the Former Dominion Wheel and Foundries Company)*– This piece of land was used as a City Market until 1890 when it was converted into a park known as Laurence Square. The park disappeared into the network of railway yards to become the site of the Dominion Wheel and Foundries Company in 1914. The site consists of four heritage buildings whose historical attributes are found on the exterior walls and roofs in the form of red brick cladding and restrained classical detailing. The buildings consist of the former foundry (#153), a warehouse (#169), an office building (#171) and to the rear a machine shop (#185) that were constructed between 1917 and 1929. Collectively they represent historical and architectural examples of an industrial enclave. They are all listed on the City of Toronto's Inventory of Heritage Properties. (Archaeological Services Inc., 2004; City of Toronto, 2004)
- *Don River Train Station* – The Precinct Plan recommends relocating the original Don River Train station, once situated in the West Don Lands area, from its current location at Todmorden Mills. The new location is the proposed streetcar loop and adjacent historic railway switching station. The station is designated under the

Ontario Heritage Act as a representative of the early industrial development and settlement in East York.

- *Tank House (Distillery District)* – The property is located on the southwest corner of Cherry Street and Mill Street. In 1885, the Gooderham family (responsible for the Gooderham and Worts distillery) maintained a large residence on this property immediately north of the distillery. The house was eventually replaced by two tank warehouses and a multi-storied barrelhouse. It is designated under Part IV of the Ontario Heritage Act. (Archaeological Services Inc., 2004)



Tank House, Distillery District, southwest corner of Cherry St. and Mill St.

- *409 Cherry Street (Palace Street School; Cherry Street Hotel; Easter Star Hotel; Canary Restaurant)* – The property was initially developed as the Palace Street School in 1859 due to the growing residential population in the area. In 1890, the school was converted to the Cherry Street Hotel which was enlarged in 1900 and renamed the Easter Star Hotel. The hotel later became a warehouse until 1965 when it was redeveloped into the Canary Street Restaurant, which still stands today. The property is designated under the Ontario Heritage Act. (Archaeological Services Inc., 2004)



Canary Restaurant, Southeast Corner of Cherry St. and Front St. East (TRCA, 2004)

- *445 Cherry Street (CN Police Building)* – This property is currently being researched for possible inclusion on the City of Toronto’s Inventory of Heritage Properties.



Heritage Building,
Northeast corner of
Cherry St. and Front St.
East

- *18 Trinity Street (General Distilling Company Building)* – The General Distilling Company Building was constructed in 1902 according to the designs of the important Toronto architect, David Roberts Jr. It housed a still house and warehouses for the industrial-alcohol subsidiary of Gooderham and Worts, which produced acetone for munitions during World War One. The building is an example of the industrial architecture of the 20th century with its red brick surfaces and classical detailing. Important exterior features are the arrangement of the 3-storey centre block flanked by 2-storey wings. This property is designated under the Ontario Heritage Act as it is the last remaining remnant of the General Distilling Company and is linked historically and architecturally to the Gooderham Worts complex. (City of Toronto, 1996)

4.2.6 Archaeology

According to the Cultural Heritage Study prepared by the Toronto Region Conservation Authority’s Archaeological Resource Management Unit, the Thornton Blackburn site, located to the west of the Don River and north of eastern Avenue, is a homestead/schoolyard/outbuildings site with historic 19th century Euro-Canadian and Afro-American (relating to the Underground Railroad) cultural affiliations. This location also has a thin scatter of Late Woodland/Iroquoian campsite artifacts that were disturbed by 19th century land clearing and grading of the schoolyard. The presence of these Woodland period artifacts indicates that these Pre-Contact peoples inhabited the lower Don, as would be expected of such a vibrant river system at that time (TRCA, 2004).

Field investigations indicate that archaeological potential exists in vacant portions of the site that may yield the foundations of now-demolished distillery structures, once a part of the Gooderham and Worts distillery. The field investigations include an examination of features associated with the Worts family residence, rackhouses and early shoreline cribbing (City of Toronto, 2002). Recent discoveries confirmed the location of the windmill immediately north of the railway embankment at the southern edge of the property (TRCA, 2004).

A detailed Stage 1 archaeological assessment suggests that subsurface remains of an early rail mill established by Gzowski and partners, as well as the Grand Trunk Railway Shop, may exist. Deposits associated with individual structures in the area of the Palace Street School may be relatively intact. A piece of land used as a city market and containing a municipal weigh scale are unlikely to have survived in the subsurface remains given the extensive redevelopment in the area (Archaeological Services Inc., 2004).

A further Stage 1 Archaeological Assessment will provide a clear understanding of the soil stratigraphy throughout the study area in general and within the zones of potential. Depending on the outcome of the assessments within the proposed development impact areas, recommendations concerning the need for further archaeological assessment would be made. The additional assessments would be designed according to, and incorporated within, any development plans and schedules that are proposed for the study areas prior to the start of construction (Archaeological Services Inc., 2004).

4.2.7 First Nations Interests

From the end of the first millennium A.D. until the end of the 1600s the dominant aboriginal group in the Toronto area seems to have been culturally Iroquoian. After 1690, the Mississauga, took over the villages and camps of the Iroquoians and were the culture of record when the land treaties were enacted following 1788.

There are several references to the Mississauga occupation of the Humber, Don and Rouge Rivers and the use of the river systems as routes into and out of the back country and the Upper Lakes region. Although no sites have been identified, excavated or analyzed in the study area, there are late 18th and early 19th century references to the presence of persistent encampments between the forks of the Don and the lands around the mouth. (Archaeological Services Inc., 2004)

The Toronto Purchase (1787 and 1805) appears to be the only Treaty within the study area whereby the Mississauga Nation surrendered the lands north of Lake Ontario, not including the Toronto Islands. (www.newcreditfirstnation.com)

There is no apparent current use of the lands used by First Nations for traditional uses.

4.2.8 Population and Socio-Economic Profile

The City of Toronto Community Profiles includes the West Don Lands study area in part of Ward 28 Toronto Centre-Rosedale Profile (**Exhibit 45**). The population of Ward 28 grew by 7.9% between 1996 and 2001. The total population of this ward is 59,160 and in 2001 it consisted of 28,585 households, almost entirely outside of the West Don Lands Precinct Plan area.



28 Toronto Centre-Rosedale

Exhibit 4-5: Ward 28 Map

Age and Gender

Population, age and gender in this ward reflected growth changes of 7.9% respectively from 1996-2001. The greatest increase in population in Ward 28, in 2001, was in the 25-35 age group of 21.9%. The largest decrease in population for Ward 28 occurred in the ages of 10-14 and 15-19 age group by 4.5%.

Growth Projections

The population by period of migration for Ward 28 has shown some fluctuation over the last two decades. The 1996-2001 information indicates that 28.7% of the Ward's total population are immigrants to Canada, which is slightly up from 25.8% in 1991-1995. Ward 28 has also experienced some fluctuation in its immigrant population.

Ward 28 also showed the majority of the population as being non-movers (80.1%) for the first year. The five-year study shows a definite split of the population into non-movers and movers. In Ward 28, 57.5% of the population were movers, while 42.5% were non-movers.

Household Type

Ward 28 comprised the highest population of occupied private dwellings that rent at 76.2%. The number of dwellings owned in Ward 28 is much lower at 23.8% which relates to the number large number of households spending 30% or more of their income on rented shelter.

The number of occupied private dwellings was at 3.0% for semi-detached houses, 7.0% for row houses and 3.3% for single-detached houses in 2001. High-rise apartment buildings were at an occupancy high of 75.8% with an occupancy of 10% for low rise apartments.

Income

Ward 28 seems to have a relatively uneven population distribution between the various income levels. The largest percentage of income levels was at 17.2% (2001) for household incomes of \$10,000 - \$19,999. The lowest percentage was 2.7% (2001) for a household incomes of \$90,000 - \$99,999. The average household income for ward 28 was \$59,424.

Education

Levels of education between the Wards within the waterfront area are fairly comparable. There is a slightly higher percentage of the population that has a university level education in Ward 28 (44.3%).

Household Size

Private households by size in Ward 28 was the highest at 44.8% for one person households while the lowest was 2.1% for households with six or more people.

Family household by type in Ward 28 is 45.8% for one family households, 53.0% non-family households and 1.2% with multiple family households. (City of Toronto Ward Profile, 2001).

4.2.9 Employment

In Ward 28 the highest percentage of the population works in the Sales and Services sector (26.1%) with employment in the Business, Finance and Administration sectors at 20.1%. The lowest labour force by occupation was within the Unique to Primary Industry sector 0.3% and Health Occupations rating 3.9%. The other labour force make up the rest of the working force with Management at 13.2% and the rest in the low 3 to 9 percent range. The unemployment rate in Ward 28 was 9.2%.

In Ward 28, 67.7% of the population were in the labour force with 61.5% employed and 6.3% unemployed. Professional, Scientific and Technical services represent the highest labour force by industry with 14.0% in Ward 28, and agricultural, forestry, fishing, hunting, mining, oil and gas extension at 0.1%. Other major industries in this ward include finance and insurance (10.1%), Accommodation and Food Services (10.1%), Transportation and Warehousing (3.4%) and a low of 0.3% for utilities. (City of Toronto Ward Profile, 2001)

4.2.10 Tourism and Recreation

The West Don Lands precinct currently does not serve as a location for tourism or recreational activities, although the Distillery District immediately to the west is a significant heritage and tourism destination. There is a pathway located on the west side of the Don River (east of the precinct), that is an important component of Toronto's recreational trail system.

To create additional local park and recreation spaces and to help address flood protection and stormwater management issues, a flood protection landform is being studied through a parallel EA process adjacent to the Don River and will be integrated into the perimeter park. This open space, coupled with the proposed naturalization of the mouth of the Don River to the south, will introduce significant naturalized open spaces and active parklands to the District.

4.3 Infrastructure

The existing water system of the West Don Lands precinct is part of the City's Pressure District 1. Water pressure in general is considered very good because the area is in the lower part of the pressure district and because of limited development in the area at the present time. The majority of the local watermains are more than 100 years old, however the conditions of watermains is generally very good and very few watermain breaks have been recorded.

The majority of the West Don Lands are served by separate storm and sanitary sewer collection systems and only a relatively small portion of the West Don Lands along the northern limit of the study area is served by combined sewers that convey sanitary flow and stormwater in one sewer pipe. An inspection of the sanitary sewers in the West Don Lands showed that most require rehabilitation. Many of the sanitary sewers are under utilized at the present time because of the limited development in the area.

Storm drainage is provided by combined sewers on Front Street East and Eastern Avenue from Parliament Street to Cherry Street, and St. Lawrence Street. The remainder of the study area is serviced by storm sewers. Approximately 60% of the storm sewer system drains towards the Don River and approximately 40% of the West Don Lands storm drainage area is directed to the Inner Harbour. Inspection reports on the condition of existing storm sewers are not available, and some storm sewers that could be used as part of the future stormwater management system may require rehabilitation or replacement.

Section 5.1 profiles existing water services and Section 6.1 profiles existing sanitary services. Section 7.1 profiles existing stormwater services.

The West Don Lands is well-connected in the east/west direction, however, it is poorly connected in the north/south direction. Most east/west streets in the West Don Lands penetrate Downtown to the west; however, only Cherry Street to the south and Sumach Street and Bayview Avenue to the north connect to neighbourhoods beyond the site. Because the West Don Lands are essentially vacant, the existing transportation patterns are primarily regional; that is, most on-site traffic is through-traffic, and is not destined to, or originating from, the site itself, but to Downtown instead. Eastern Avenue is the most important commuter route as it collects travellers from the Don Valley Expressway and the east side of Toronto. Bayview Avenue is another important commuter route, as it collects travellers from the north and distributes them to either Front Street, Mill Street, or circles them back to Queen or King Streets.

The road network of the West Don Lands is able to support a much higher level of development than what currently exists. In the absence of much development, most of the roads in the precinct are generally under-utilized and are used primarily by commuter traffic. In addition, the condition of the streets is substandard and they will need to be completely rebuilt. More detail on the existing transportation conditions is found in Section 8.1.

5 WATER SYSTEMS

5.1 Existing Conditions

The water distribution system of the West Don Lands precinct is part of the City's Pressure District 1. Minimum static water pressures, according to fire flow tests obtained from City records, range between 70-85 psi, which is considered good water pressure. The majority of the local watermains in the West Don Lands area are more than 100 years old and are unlined cast iron pipes. Rust tubercles on the inside of pipes have reduced capacity.

The City of Toronto has a hydraulic model of the existing Pressure District 1 water distribution system and has conducted an analysis of the system based on current development and "average day consumption". An analysis of water pressures at key locations in the precinct are in the 100 psi range. However, the hydraulic model has not been calibrated in the field. The relatively high water pressure calculated by the model is not surprising since there is very little development and water use in the area at this time. In general, fire flow demands generate the greatest load in the local distribution system.

Water supply into the West Don Lands via the 600 mm watermain on Sumach Street and the 400 mm watermains on Front Street East at Cypress Street appears adequate to service the area in accordance with the development assumptions laid out in the Draft Precinct Plan. However further analysis of the entire Pressure District 1 water distribution system (District 1 extends approximately from Swansea in the west, to College Street in the north, Victoria Park Avenue in the east and the waterfront in the south) is required and should consider future development for the entire Waterfront Development area as well as the Regent Park redevelopment proposal to confirm adequate water supply and water pressures under fire flow as well as domestic/commercial/industrial demand conditions.

Low recorded watermain failure rates in the West Don Lands and observation of maintenance staff familiar with the condition of watermain pipes in the West Don Lands indicates that the pipes are generally in good (structural) condition.

5.2 Rationale for the Systems

The water distribution system is required to service the proposed development in the West Don Lands precinct. Servicing must be provided to meet the needs of the community while being sustainable, and delivered at the least overall cost.

Upgrades as well as new watermains are required to meet needs of the proposed development while meeting the municipal servicing standards of the City of Toronto and various provincial regulatory agencies.

The water distribution system must also be compatible with the West Don Lands flood plain land form and the flood protection scheme the TRCA is developing as part of the Lower Don River West Remedial Flood Protection Class EA Study. However specific designs for the water distribution system that may be necessary to protect the integrity of the flood plain landform will have to be addressed at the detailed design stage based on the adopted flood protection solutions for the Lower Don River.

Exhibit 5-1 shows the list of proposed infrastructure improvements and applicable Class EA Schedules for each of the water servicing options. The proposed infrastructure improvements would be on either existing watermains (rehabilitation) or the construction of new watermains as an extension of the existing water supply system.

Exhibit 5-1: Proposed Water System Improvements and Applicable Class EA Schedules

| Proposed Infrastructure Improvement | MEA Class EA Schedule | Rationale |
|---|---------------------------------|--|
| Rehabilitate existing watermains (cleaning and cement mortar lining) to re-establish design capacity and protect water quality. | Schedule 'A' | Normal or emergency operational activities includes the cleaning and/or relining of existing watermains. (#1, bullet 11) |
| Reconstruct and enlarge existing watermains in existing road allowances because of poor condition or because additional capacity is required. | Schedule 'A' | Establish, extend or enlarge a water distribution system and all works necessary to connect the system to an existing system or water source, provided all such facilities are in either an existing road allowance or are in an existing utility corridor. (#6) |
| Construct new watermains in new road allowances to service new development. | Schedule 'B' | Establish, extend or enlarge a water distribution system and all works necessary to connect the system to an existing system or water sources, where such facilities are not in either an existing road allowance or an existing utility corridor. (#1) |
| Abandon existing watermains no longer required as part of the existing water supply system. | Not subject to Class EA process | - |

5.3 Alternative Solutions

5.3.1 Alternative Solutions to the Problem

The water distribution system of the West Don Lands precinct is part of the City's Pressure District 1. Minimum static water pressures, according to fire flow test results obtained from City records, range between 70-85 pounds per square inch (psi) which is considered good water pressure.

Rehabilitation using cleaning and cement mortar lining would be required to re-establish pipe capacities. However, the reliability of the water system appears good based on the limited number of watermain breaks that have occurred within the precinct over the last 35 years (on average less than 2 watermain breaks or joint leaks per year have been recorded in the West Don Lands area).

More frequent watermain breaks have occurred at the following locations – on Eastern Avenue east of Sumach Street, Trinity Street between Mills Street and Front Street East, St. Lawrence Street north of Eastern Avenue and Mill Street east of Cherry Street – suggesting the need for replacement of these mains.

To address the existing and potential water supply services problems associated with the proposed development in the West Don Lands, the following table (**Exhibit 5-2**) lists the alternatives solutions that were identified.

Exhibit 5-2: Alternative Solutions for Water Systems

| ALTERNATIVE SOLUTIONS | DETAILS | CONCLUSIONS |
|-----------------------|--|--|
| DO NOTHING | - | <ul style="list-style-type: none"> No changes. Use the existing watermains. |
| ALTERNATIVE 'A' | Reconstruct / Rehabilitate Existing & Construct New | <ul style="list-style-type: none"> Reconstruct or rehabilitate existing watermains (e.g., cleaning and lining of pipes) and construct new watermains for new or realigned roads. |
| ALTERNATIVE 'B' | Combination | <ul style="list-style-type: none"> Implement water conservation/efficiency strategies. Use existing watermains where possible if capacity is sufficient to service the new development and the pipes are in good condition. Reconstruct or rehabilitate the existing watermains if pipe conditions are poor or if pipe capacities are insufficient to serve the new development. Construct new watermains for new and realigned roads or where insufficient capacities of existing watermains require twinning of pipes. |

5.3.2 Evaluation Criteria

In order to evaluate the alternative solutions, detailed criteria was developed based on general evaluation criteria was used representing the broad definition of the environment as defined in the EA Act (**Exhibit 5-3**). Within each category, the project-specific evaluation criteria were developed based on the existing characteristics of the Study Area, the alternative solutions, and the opportunity statement, as described in the following table.

Exhibit 5-3: Evaluation Criteria – Water System

| MAIN CRITERION | SUB-CRITERIA |
|---------------------------------------|--|
| NATURAL ENVIRONMENT | Having regard for protecting the natural and physical components of the environment, included consideration of terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping as: <ul style="list-style-type: none"> • Terrestrial Habitat • Land • Water |
| SOCIAL AND ECONOMIC | Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety as: <ul style="list-style-type: none"> • Cultural Heritage Resource • Traffic Disruption • Recreation and Tourism • Health and Safety • Employment • Noise and Vibration |
| OPPORTUNITY FOR REVITALIZATION | Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization is considered as: <ul style="list-style-type: none"> • Supports the planning and urban design goals |
| FEASIBILITY AND COST | Having regard for the cost associated with each alternative, and the capability of each alternative to adequately service the study area is considered as: <ul style="list-style-type: none"> • Feasibility of construction (implementation) • Cost – capital and operational |
| TECHNICAL | Having regard for the technical suitability, reliability, longevity and other engineering aspects of each alternative solution is considered as: <ul style="list-style-type: none"> • Reliability of Services • Flexibility to Provide Capacity for Future Growth and/or Improved Service Level • Life expectancy • Maintenance Requirements |

5.3.3 Assessment and Evaluation of the Alternative Solutions to the Problem

Using the evaluation criteria identified above, the three alternative solutions to the problem were subject to a net effects comparative evaluation. The advantages and disadvantages of each alternative were compared in order to establish a ranking of the alternatives and identification of the recommended alternative. This evaluation is summarized in **Exhibit 5-4**. The following alternatives are identified in order of best to worst along with a rationale for their ranking.

Alternative 'B' - Combination

The recommended solution was identified as a combination of implementing water conservation/efficiency strategies, using existing watermains (if in good condition and of adequate capacity), reconstructing or rehabilitating existing watermains (if in poor condition and capacities are sufficient), and to construct new watermains (existing capacity insufficient or new road). The Combination approach is recommended because it was the only alternative that fully provides the opportunity to revitalize the West Don Lands as proposed. This alternative satisfies the technical requirements, such as services reliability, future growth flexibility, life expectancy and maintenance, without significant adverse effects on other aspects of the environment. While its cost is higher than the “do nothing” alternatives, it is less than to reconstruct/rehabilitate the entire system. Overall, this alternative carries clear advantages over the other alternatives, while its impact on the remaining evaluation criteria was determined to be average or neutral.

Alternative 'A' - Reconstruct / Rehabilitate Existing & Construct New

The solution to reconstruct or rehabilitate the existing watermains and construct new watermains for new or realigned roads was ranked lower than Alternative 'B' because it did not have the same advantages as Alternative 'B' in regards to 'Do Nothing' on watermains that do not need to be replaced/rehabilitated. The financial costs associated with implementing Alternative 'A' are higher than Alternative 'B'. This Alternative does not address infrastructure sustainability issues as Alternative 'B' does.

“Do Nothing”

This alternative was ranked lower than both Alternative 'A' and Alternative 'B' because it does not satisfy the problem statement – it will not provide the opportunity to revitalize the West Don Lands. In addition, this alternative does not satisfy the technical criteria related to service reliability, future growth flexibility, life expectancy and maintenance requirements, and it does not provide employment. These disadvantages outweigh the financial advantage of this alternative when compared to the other two alternatives.

5.3.4 Preferred Solution

Water conservation/efficiency measures and practices shall be applied (to the extent feasible and practicable) in the West Don Lands development areas that are consistent with the City of Toronto polices. This is being addressed in the “TWRC’s Sustainability Framework”. However, it must be recognized that water conservation has no effect on the sizing of local watermains because, in general, flows to fight fires generate the greatest load in the local distribution system.

A total of 3,075 metres of existing watermains require rehabilitation (cleaning and cement mortar lining). In addition, reconstruction of 560 metres of existing watermains due to poor pipe condition or additional capacity requirements is proposed. Furthermore, 2,615 metres of new watermains are required within new road allowances to service new development.

Exhibits 5-5 to 5-7 and 5-8 show the proposed projects and the schedule of the project under the Class EA.

It is noted that the following new watermains are proposed to replace existing watermains that have a history of failures:

- Eastern Avenue from Bayview Avenue to Street #5
- Trinity Street from Mills Street to Front Street
- St. Lawrence Street from King Street to Eastern Avenue

**Exhibit 5-5: Water System Project Class Environmental Assessment Schedule
 Existing Watermains Requiring Rehabilitation (Cleaning and Cement Mortar Lining)**

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|----------------------------|-------------------|-------------------|---------------|------------|-------------------|
| Parliament Street | Mill Street | Front Street East | 150 | 140 | A |
| Parliament Street | Mill Street | Front Street East | 300 | 150 | A |
| Mill Street | Parliament Street | Trinity Street | 150 | 200 | A |
| Mill Street | Trinity Street | Cherry Street | 150 | 185 | A |
| Cherry Street | Front Street East | Mill Street | 150 | 160 | A |
| Cherry Street | Eastern Avenue | Railway Underpass | 300 | 460 | A |
| Cherry Street and Easement | Sumach Street | Front Street East | 600 | 200 | A |
| Front Street East | Parliament Street | Cherry Street | 600 | 410 | A |
| Front Street East | Cherry Street | Cypress Street | 150 | 455 | A |
| Eastern Avenue | Trinity Street | Sumach Street | 150 | 295 | A |

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|----------------|--------------------------|------------------|---------------|-------------|-------------------|
| Bayview Avenue | King Street East | New Street No. 9 | 150 | 95 | A |
| Trinity Street | Front Street East | Eastern Avenue | 150 | 65 | A |
| Eastern Avenue | New Street No. 5 | New Street No. 8 | 300 | 160 | A |
| Eastern Avenue | Realigned Bayview Avenue | Don River | 300 | 100 | A |
| TOTAL | | | | 3075 | |

Exhibit 5-6: Reconstructed and New Watermains in Existing Road Allowance

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|---------------------|--------------------------|----------------------------|---------------|------------|-------------------|
| Mill Street | Cherry Street | 25 m W of New Street No. 7 | 300 | 220 | A |
| Front Street | Realigned Bayview Avenue | Cypress Street | 400 | 105 | A |
| St. Lawrence Street | King Street East | Eastern Avenue | 300 | 235 | A |
| TOTAL | | | | 560 | |

Exhibit 5-7: New Watermains in New Road Allowance

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|-------------------|---------------------|--------------------------|---------------|------------|-------------------|
| New Street No. 1 | Parliament Street | Cherry Street | 300 | 415 | B |
| New Street No. 2 | Eastern Avenue | New Street No. 4 | 300 | 50 | B |
| New Street No. 3 | New Street No. 4 | Mill Street | 300 | 280 | B |
| New Street No. 4 | New Street No. 2 | New Street No. 5 | 300 | 90 | B |
| New Street No. 5 | Eastern Avenue | Mill Street | 300 | 315 | B |
| New Street No. 7 | Front Street East | Mill Street | 300 | 145 | B |
| New Street No. 8 | King Street East | Eastern Avenue | 300 | 275 | B |
| New Street No. 9 | St. Lawrence Street | Realigned Bayview Avenue | 300 | 215 | B |
| New Street No. 10 | New Street No. 8 | Realigned Bayview Avenue | 300 | 70 | B |
| New Street No. 11 | New Street No. 8 | Realigned Bayview Avenue | 300 | 70 | B |
| New Street No. 12 | Front Street East | New Street No. 8 | 300 | 95 | B |



| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|--------------------------|---------------------------|--------------------------|---------------|-------------|-------------------|
| Realigned Bayview Avenue | New Street No. 11 | Mill Street | 300 | 270 | B |
| Realigned Mill Street | 25 m W of New Street No.7 | Realigned Bayview Avenue | 300 | 165 | B |
| Trinity Street (Closed) | Front Street East | Mill Street | 300 | 160 | B |
| TOTAL | | | | 2615 | |

It is also noted that the existing 400 mm watermain on Front Street at Cypress Street is proposed to be extended westerly with connection to the proposed watermain on the new alignment of Bayview Avenue.

Furthermore, the replacement of the existing 150 mm watermain with a new 300 mm watermain on Mill Street between Bayview Avenue and Cherry Street is proposed to improve fire flow by looping the 300 mm watermain system.

6 SANITARY SERVICING ALTERNATIVE SOLUTIONS

6.1 Existing Conditions

The majority of the West Don Lands are served by separate storm and sanitary sewer collection systems. Local sanitary sewers vary in diameter from 300 mm to 450 mm. Most were built during the period from 1922 to 1942, and are of vitrified clay material. The capacity of these pipes was designed to service historic development in the area and many of the sanitary sewers are under utilized at this time because of the number of vacant properties in the area.

A relatively small portion of the West Don Lands along the northern limit of the study area is served by combined sewers which convey sanitary flow and stormwater in one sewer pipe (e.g., the areas along Front Street East and Eastern Avenue between Parliament Street and Cherry Street and the area along the St. Lawrence Street).

The City has recently undertaken a closed circuit television inspection of sanitary sewers in the West Don Lands to assess the condition of the sanitary sewer system. The inspection showed that most existing sanitary and combined sewers in the West Don Lands require rehabilitation (e.g., repairs, reaming or lining) or replacement.

The sanitary sewer on Cherry Street is subject to surcharging from the Low Level Interceptor (L.L.I.) sanitary trunk sewer on Eastern Avenue during rainstorms. Under current conditions the hydraulic grade line on Cherry Street in the vicinity of the approach to the railway underpass south of Mill Street reaches surface elevations. The additional flow from new development in both the East Bayfront and West Don Lands precinct will further increase the hydraulic grade line on Cherry Street and increase surcharge levels to above surface elevation in parts of the East Bayfront precinct that are connected to the Cherry Street sanitary sewer.

This Class Environmental Assessment project is focusing on the local and sub-trunk sanitary sewer system located within the West Don Lands precinct. The L.L.I. is a major sanitary trunk sewer serving a large section of Toronto's downtown area. The L.L.I. trunk sewer will be subject to a separate overall study undertaken by the City and the TWRC and the scope of this study is currently being developed.

The analysis of the surcharge condition from the L.L.I. into the local sanitary sewer system and the development of solutions to alleviate the problem must consider the configuration of the connection from the Scott Street pumping station to the L.L.I. and the operation of the control gates between the L.L.I. and the Victoria Street interconnecting sewer during both, dry and wet weather conditions.

We understand that during dry weather, all flow from the L.L.I. including flow from the Scott Street pumping station is directed into the Victoria Street interconnecting sewer. However, during wet weather, the control gate to the inter-connecting sewer on Victoria Street is closed and sanitary flow in the L.L.I. including flow from the Scott Street pump station is conveyed together with some storm flow in the L.L.I. easterly to the main sewage treatment plant.

Hence, increased sanitary flow from new Waterfront Development will increase the load on the L.L.I. and may increase surcharge levels. Increased loads on the L.L.I. may also increase the frequency of combined sewer overflow events to the Inner Harbour and increase the concentration of sanitary flow in the Combined Sewer Overflow (CSO) discharged into the Harbour.

6.2 Rationale for the System

The sanitary servicing system is required to service the proposed development in the West Don Lands precinct. Servicing must be provided to meet the needs of the City and Community while being sustainable, and delivered at the best value (accounting for environmental performance, cost to build and long-term maintenance).

Upgrades as well as new sanitary sewers are required to meet needs of the proposed development while meeting the municipal servicing standards of the City of Toronto and various provincial regulatory agencies. The sanitary servicing system must also be compatible with the West Don Lands flood plain land form and the flood protection scheme the TRCA is developing as part of the Lower Don River West Remedial Flood Protection Class EA Study. However specific designs for the sanitary servicing system that may be necessary to protect the integrity of the flood plain land form will have to be addressed at the detailed design stage based on the adopted flood protection solutions for the Lower Don River.

Exhibit 6-1 shows the list of proposed infrastructure improvements and applicable Class EA Schedules for the wastewater collection system. The proposed infrastructure improvements would all be extensions to the existing wastewater collection system.

Exhibit 6-1: Proposed Waste Water System Improvements

| Proposed Infrastructure Improvement | MEA Class EA Schedule | Rationale |
|---|---------------------------------|--|
| Rehabilitate (crack repairs, reaming or lining of pipes manhole repairs) or reconstruct existing sanitary sewers that are in poor structural conditions and/or permit infiltration/exfiltration | Schedule "A" | Normal or emergency operational activities include rehabilitation and reconstruction.(#1, bullet one and eight) |
| Construct new sanitary sewers in existing road allowances to provide capacity for new development. | Schedule 'A' | Establish, extend or enlarge a sewage collection system and all works necessary to connect the system to an existing sewage or natural drainage outlet, provided all such facilities are in either an existing road allowance or are in an existing utility corridor. (#9) |
| Construct new sanitary sewers in new road allowances to service new development. | Schedule 'B' | Establish, extend or enlarge a sewage collection system and all works necessary to connect the system to an existing sewage outlet where such facilities are not in an existing road allowance or existing utility corridor. (#1) |
| Construct new wastewater pumping station to alleviate surcharge condition in existing sanitary sewers (on Cherry Street) and provide additional capacity to service new development. | Schedule 'B' | Establish, extend or enlarge a sewage collection system and all works necessary to connect the system to an existing sewage outlet where such facilities are not in an existing road allowance or existing utility corridor. (#1) |
| Abandon existing sanitary sewers which are no longer required as part of the wastewater collection system. | Not subject to Class EA process | |

6.3 Alternative Solutions

6.3.1 Alternative Solutions to the Problem

To address the existing and potential wastewater servicing problems associated with the proposed development in the West Don Lands, the following alternatives solutions (**Exhibit 6-2**) were identified:

Exhibit 6-2: Alternative Sanitary Servicing Solutions

| ALTERNATIVE SOLUTIONS | DETAILS | CONCLUSIONS |
|-----------------------|---|--|
| DO NOTHING | - | <ul style="list-style-type: none"> No changes. Use the existing sanitary and combined sewers to service proposed development. |
| ALTERNATIVE 'A' | Reconstruct / Rehabilitate Existing & Construct New | <ul style="list-style-type: none"> Rehabilitate (e.g. crack repair, reaming of pipes, manhole repairs, lining of pipes) existing sanitary and combined sewers, reconstruct existing sanitary sewers and construct new sanitary sewers for new and realigned roads. |
| ALTERNATIVE 'B' | Combination | <ul style="list-style-type: none"> Implement water conservation/efficiency strategies to reduce sanitary flow and utilize existing sanitary sewers if capacity is sufficient to service new development and pipes are in good condition. Rehabilitate existing sanitary and combined sewers if pipe conditions are poor but have adequate capacity. Reconstruct existing sanitary sewers if the pipes are in poor condition and rehabilitation cannot be justified, or if pipe capacities are insufficient to serve the new development. Construct new sanitary sewers where new and realigned roads are proposed. |

6.3.2 Evaluation Criteria

In order to evaluate the alternative solutions, evaluation criteria were developed within the following categories of consideration representing the broad definition of the environment as defined in the EA Act. Within each category, the following project-specific evaluation criteria were developed based on a review of the Class EA document, the existing characteristics of the Study Area, the alternative solutions, and the problem / opportunity statement: (**Exhibit 6-3**).

Exhibit 6-3: Evaluation Criteria – Sanitary Sewer

| MAIN CRITERION | SUB-CRITERIA |
|---------------------------------------|---|
| NATURAL ENVIRONMENT | Having regard for protecting the natural and physical components of the environment, included consideration of terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping as: <ul style="list-style-type: none"> • Terrestrial Habitat • Land • Water |
| SOCIAL AND ECONOMIC | Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety, as: <ul style="list-style-type: none"> • Cultural Heritage Resource • Traffic Disruption • Recreation and Tourism • Health and Safety • Employment • Noise and Vibration |
| OPPORTUNITY FOR REVITALIZATION | Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization. <ul style="list-style-type: none"> • Supports the planning and urban design goals |
| FEASIBILITY AND COST | Having regard for the cost associated with each alternative, and the capability of each alternative to adequately service the study area. <ul style="list-style-type: none"> • Feasibility of construction (implementation) • Cost – capital and operational |
| TECHNICAL | Having regard for the technical suitability, reliability, longevity and other engineering aspects of each alternative solution. <ul style="list-style-type: none"> • Reliability of Services • Flexibility to Provide Capacity for Future Growth and/or Improved Service Level • Life expectancy • Maintenance Requirements |

6.3.3 Assessment and Evaluation of the Alternative Solutions to the Problem

Using the evaluation criteria identified above, the three alternative solutions to the problem were subject to a net effects comparative evaluation. The advantages and disadvantages of each alternative were compared in order to establish a ranking of the alternatives and identification of the recommended alternative. This evaluation is summarized in **Exhibit 6-4**. The following alternatives are identified in order of best to worst along with a rationale for their ranking.

Alternative 'B' - Combination

The best overall solution was determined to be a combination of implementing water conservation/efficiency strategies to reduce sanitary flow, using the existing sanitary and combined sewers (if capacity is sufficient and pipes are in good condition), rehabilitate existing sanitary and combined sewers (if pipe conditions are poor), and construct new sanitary sewers in new or realigned roads or where sewers have insufficient capacity.

The rationale for this is based on the fact that Alternative 'B' provides the opportunity to revitalize the West Don Lands while maintaining a positive effect on all technical requirements, and on the social/cultural environment (provides employment). The impact of Alternative 'B' on all other aspects of the environment is considered to be average or neutral, and no significant negative impact was determined that could not be effectively mitigated.

Alternative 'A' - Reconstruct / Rehabilitate Existing & Construct New

The solution to reconstruct or rehabilitate the sanitary and combined sewers, and construct new sanitary sewers for new or realigned roads or where there is insufficient sewer capacity was ranked lower than Alternative "B" because the cost of implementing the solution is higher than Alternative "B". This Alternative does not address sustainability objectives.

"Do Nothing"

This solution was ranked last because it does not address the problem statement, and therefore does not provide for the opportunity to revitalize the West Don Lands. In addition, it does not satisfy the technical requirements to provide adequate wastewater collection services, and does not provide employment.

6.3.4 Preferred Solution

Water conservation/efficiency measures and practices shall be applied in the new development (to the extent feasible and practicable) that are consistent with City of Toronto policies. This is being addressed in the TWRC's Sustainability Framework.

A total of 2,200 metres of existing sanitary sewers require rehabilitation (repairs, lining, reaming). Furthermore, 270 metres of new sanitary sewers are required within the existing road allowance, and 1,420 metres to service the new development. **Exhibits 6-5 to 6-7 and 6-8** list all the proposed projects with the appropriate Class EA schedule.

A new sanitary pump station may also be required at the intersection of Cherry Street and Eastern Avenue to alleviate the impact of surcharge conditions from the City's L.L.I. sanitary trunk sewer on the local sanitary sewer collection system in the West Don Lands and East Bayfront precincts. However, this needs to be confirmed by a separate comprehensive hydraulic analysis of the City's Low Level Sanitary Interceptor Sewer that is proposed to be undertaken by the TWRC in cooperation with the City of Toronto.

**Exhibit 6-5: Sanitary Sewage Project Class Environmental Assessment Schedule
 Proposed New Sanitary Sewers in New Road Allowance**

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|--------------------------|-----------------------|--------------------------|---------------|--------------|-------------------|
| New Street No. 1 | Parliament Street | New Street No. 12 | 300 | 90 | B |
| New Street No. 12 | New Street No. 1 | Front Street East | 300 | 90 | B |
| New Streets Nos. 2 & 3 | Eastern Avenue | Mill Street | 300 | 175 | B |
| New Street No. 5 | Eastern Avenue | Mill Street | 300 | 175 | B |
| New Street No. 7 | Eastern Avenue | Front Street East | 300 | 85 | B |
| Realigned Mill Street | New Street No. 7 | Realigned Bayview Avenue | 300 | 100 | B |
| Realigned Bayview Avenue | Realigned Mill Street | Eastern Avenue | 300 | 260 | B |
| New Street No. 8 | King Street East | Realigned Bayview Avenue | 300 | 280 | B |
| New Street No. 9 | New Street No. 6 | Bayview Avenue | 300 | 140 | B |
| Realigned Bayview Avenue | Bayview Avenue | Eastern Avenue | 300 | 25 | B |
| TOTAL | | | | 1,420 | |

Exhibit 6-6: Proposed New Sanitary Sewers in Existing Road Allowance

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|-------------------|------------------|--------------------------|---------------|------------|-------------------|
| Front Street East | New Street No. 3 | Realigned Bayview Avenue | 300 | 270 | A |

**Exhibit 6-7: Existing Sanitary/Combined Sewers Requiring Rehabilitation
 (Repairing, Reaming, Lining, as Required)**

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|-----------------------------|-------------------------------------|----------------------------|---------------|--------------|-------------------|
| Mill Street | Trinity Street | 100 m W of Overend Street | 300 | 410 | A |
| Cherry Street | Eastern Avenue | CNR Underpass | 450 | 450 | A |
| Front Street East | Trinity Street | 70 m east of Cherry Street | 300 | 265 | A |
| St. Lawrence Street | King Street East | Eastern Avenue | 375 | 220 | A |
| Front Street East | Parliament Street | Trinity Street | 350 x 525 | 185 | A |
| Eastern Avenue | Trinity Street | Sackville Street | 600 x 900 | 160 | A |
| Eastern Avenue | Sumach Street | Cherry Street | 600 x 900 | 75 | A |
| Eastern Avenue | 60 m E of Sumach Street | Realigned Bayview Avenue | 300 | 265 | A |
| Trinity Street | Mill Street | Front Street | 300 | 170 | A |
| Cherry St. and Eastern Ave. | New Sanitary Sewage Pumping Station | | | | B |
| TOTAL | | | | 2,200 | |

7 STORMWATER

7.1 Existing Conditions

Storm drainage for the West Don Land precinct is primarily provided by storm sewers. A small area along Front Street East and Eastern Avenue from Parliament Street to Cherry Street, and St. Lawrence Street is served by combined sewers. The remainder of the study area is serviced by storm sewers. There are no existing stormwater management facilities serving the West Don Lands at this time.

Approximately 60% of the storm sewer system drains towards the Don River. There are five outlet sewers located in the West Don Lands that discharge into the Don River as follows:

- A 1650 mm dia. storm sewer outlet on Queen Street East
- A 600 mm dia. sewer serving as CSO and storm sewer outlet on Queen Street East
- A 600 mm dia. storm sewer outlet underneath the (new) Eastern Avenue Bridge
- A 900 mm dia. sewer serving as CSO and storm sewer outlet on Eastern Avenue
- A 600 mm x 900 mm egg shaped storm sewer outlet on Front Street East

Approximately 40% of the West Don Lands storm drainage area is directed to the Inner Harbour via the 1,070 mm x 1,500 mm egg shaped brick CSO and storm outlet sewer on Parliament Street, and the 1,500 mm x 1,070 mm box culvert concrete CSO and storm outlet sewer on Cherry Street.

The age of the storm sewers in the study area varies. The oldest storm sewer, located on Front Street East between Cherry Street and Overend Street, was built in 1855, with the majority of the storm sewers built during the period 1907 to 1947.

The Cherry Street underpass under the railway corridor experiences floodings during periods of heavy rainfall. The underpass is depressed by approximately 1.0 m from the adjacent land and furthermore the existing combined overflow outlet sewer at the underpass has only approximately 1.0 m of cover. It is noted that the Cherry Street combined overflow outlet sewer not only serves a large combined sewer drainage area north of Eastern Avenue but also services a local storm drainage area in the West Don Lands and East Bayfront precincts.

The City of Toronto's sewer system analysis shows that the existing combined overflow outlet sewer on Cherry Street south of the underpass is surcharged under current development and the City's two year design storm loading resulting in flooding of the underpass. This situation is further aggravated during periods of high Lake Ontario

levels that result in backwater from the Lake extending into the existing outlet sewer on Cherry Street.

Inspection reports on the condition of existing storm sewers are not available, and some storm sewers that could be used as part of the future stormwater management system may require rehabilitation or replacement.

7.2 Rationale for the System

The stormwater management system is required to service the proposed development in the West Don Lands precinct. Servicing must be provided to meet the needs of the community while being sustainable, and delivered at the least overall cost.

Upgrades as well as new storm sewers and storm water treatment facilities are required to meet the needs of the proposed development in terms of convenience and safety while meeting the municipal servicing standards of the City of Toronto, the TRCA, and various provincial regulatory agencies. The stormwater management plan must be compatible with the West Don Lands flood plain land form and the flood protection scheme the TRCA is developing as part of the Lower Don River West Remedial Flood Protection Class EA Study. However specific designs for the stormwater management system that may be necessary to protect the integrity of the flood plain land form will have to be addressed at the detailed design stage based on the adopted flood protection solutions for the Lower Don River.

Furthermore the stormwater management system must be compatible with the City's Wet Weather Flow Management Master Plan (WWFMMP), including the proposal to construct CSO storage tunnels along the waterfront and the Don River. The WWFMMP's objectives, with respect to reducing stormwater run-off through infiltration and green space using stormwater as a resource and water quality standards for stormwater discharges to the Don River and Lake Ontario, must also be met. Furthermore the system must be compatible with the medium to high density development for the precinct and the plan must be adaptable to potential changes to the proposed development plan and its implementation schedule.

Exhibit 7-1 shows the list of proposed infrastructure improvements and applicable Class EA Schedules for the storm sewer system. The proposed infrastructure improvements would all be extensions to the existing storm sewer/stormwater management system.

Exhibit 7-1: Proposed Storm Sewer/Stormwater Management System Improvements

| Proposed Infrastructure Improvement | MEA Class EA Schedule | Rationale |
|--|---------------------------------|---|
| Reconstruct storm sewers in existing road allowances to increase capacity for new development. | Schedule 'A' | Establish, extend or enlarge a stormwater conveyance system and all works necessary to connect the system to an existing system , provided all such facilities are in either an existing road allowance or are in an existing utility corridor. (#6) |
| Construct new storm sewers in existing road allowances to increase capacity to service new development. | Schedule 'A' | Establish, extend or enlarge a stormwater conveyance system and all works necessary to connect the system to an existing system, provided all such facilities are in either an existing road allowance or are in an existing utility corridor. (#6) |
| Construct new storm sewers in new road allowances to service new development. | Schedule 'B' | Establish, extend or enlarge a stormwater conveyance system and all works necessary to connect the system to an existing system, where such facilities are not in either an existing road allowance or an existing utility corridor. (#1) |
| Construct new storm sewer outlet into Inner Harbor (Lake Ontario) to provide additional storm water flow capacity to service new development. | Schedule 'B' | Establish new stormwater retention/detention ponds and appurtenances or infiltration systems including outfall to receiving water body (#2) |
| Construct oil and grit separators to remove grit, floating matters and suspended solids from storm water (end of pipe facility). | Schedule 'B' | Establish new stormwater retention/detention ponds and appurtenances or infiltration systems including outfall to receiving water body (#2) |
| Install filters (e.g. high rate sand filters) downstream of the oil and grit separators to remove additional suspended solids and contaminants such as metals and phosphorus and install ultra violet disinfection facilities to destroy bacteria and viruses. | Schedule 'C' | Construct new or modify, retrofit or improve existing retention/detention facility or infiltration system for the purpose of stormwater quality control where chemical or biological treatment or disinfection is included, including outfall to receiving water body. (#7) |
| Abandon existing storm sewers no longer require as part of the storm sewer conveyance system | Not subject to Class EA process | - |

7.3 Alternative Solutions – Stormwater System

7.3.1 Alternative Solutions to the Problem

To address the existing and potential stormwater management service problems associated with the proposed development in the West Don Lands, **Exhibit 7-2** identifies the following alternatives solutions:

Exhibit 7-2: Alternative Stormwater Solutions

| | | |
|------------------------|--|---|
| DO NOTHING | - | <ul style="list-style-type: none"> No changes. Use the existing storm and combined sewers. |
| ALTERNATIVE ‘A’ | Reconstruct / Rehabilitate Existing & Construct New | <ul style="list-style-type: none"> Reconstruct or rehabilitate existing storm sewers (e.g., lining of pipes) and construct new storm sewers for new and realigned roads and where there is insufficient capacities of existing storm sewers. |
| ALTERNATIVE ‘B’ | Use As A Resource | <ul style="list-style-type: none"> Use stormwater for irrigation (e.g., lawn watering, roof top gardens, irrigation of park lands). |
| ALTERNATIVE ‘C’ | Infiltrate | <ul style="list-style-type: none"> Construct infiltration pits, trenches, ponds, swales or “leaking” stormwater pipes to infiltrate stormwater into the ground. |
| ALTERNATIVE ‘D’ | End Of Pipe | <ul style="list-style-type: none"> Construct stormwater management facilities to improve stormwater quality before discharge to the Inner Harbour or Don River (e.g., stormwater ponds, stormwater sedimentation tanks, oil and grit separators or disinfection facilities). |
| ALTERNATIVE ‘E’ | Combination | <ul style="list-style-type: none"> Utilize existing storm sewers if capacity is sufficient to service new development, pipes are in good condition and existing storm sewer system fit into the new stormwater servicing scheme (e.g., due to change in flow direction). Rehabilitate existing storm sewers if pipe conditions are poor and have sufficient capacity. Construct new storm sewers if pipe capacity is insufficient to serve the new development or if existing storm sewers do not fit into the new stormwater servicing scheme. Construct new storm sewers where insufficient capacity of existing storm sewers requires twinning of pipes and for areas of the West Don Lands that currently served by combined sewers only. Use stormwater as a resource for irrigation (e.g., lawn watering, roof top gardens, irrigation of park lands). |

| | | |
|--|--|---|
| | | <ul style="list-style-type: none"> Infiltrate stormwater into ground (e.g., construct infiltration pits, trenches, ponds, swales or “leaking” stormwater pipes). |
| | | <ul style="list-style-type: none"> Construct stormwater management facilities to improve quality of stormwater before discharge to Inner Harbour or Don River. |

7.3.2 Evaluation Criteria

In order to evaluate the alternative solutions, evaluation criteria were developed within the following categories of consideration representing the broad definition of the environment as defined in the EA Act: (**Exhibit 7-3**).

Exhibit 7-3: Stormwater Evaluation Criteria

| MAIN CRITERION | SUB-CRITERIA |
|---------------------------------------|---|
| NATURAL ENVIRONMENT | Having regard for protecting the natural and physical components of the environment, including terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping. <ul style="list-style-type: none"> Terrestrial Habitat Land Water |
| SOCIAL AND ECONOMIC | Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety. <ul style="list-style-type: none"> Cultural Heritage Resource Traffic Disruption Recreation and Tourism Health and Safety Employment Noise and Vibration |
| OPPORTUNITY FOR REVITALIZATION | Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization. <ul style="list-style-type: none"> Supports the planning and urban design goals |

| MAIN CRITERION | SUB-CRITERIA |
|-----------------------------|---|
| FEASIBILITY AND COST | Having regard for the cost associated with each alternative, and the capability of each alternative to adequately service the study area. Feasibility of construction (implementation) <ul style="list-style-type: none"> • Cost – capital and operational |
| TECHNICAL | Having regard for the technical suitability, reliability, longevity and other engineering aspects of each alternative solution. <ul style="list-style-type: none"> • Reliability of Services • Flexibility to Provide Capacity for Future Growth and/or Improved Service Level • Life expectancy • Maintenance Requirements |

7.3.3 Assessment and Evaluation of the Alternative Solutions to the Problem

Using the evaluation criteria identified above, the three alternative solutions to the problem were subject to a net effects comparative evaluation. The advantages and disadvantages of each alternative were compared in order to establish a ranking of the alternatives and identification of the recommended alternative. This evaluation is summarized in **Exhibit 7-4**. The following alternatives are identified in order of best to worst along with a rationale for their ranking.

Alternative ‘E’ - Combination

The recommended solution, Alternative ‘E’, is a combination of several solutions to provide for stormwater management services for the West Don Lands. Alternative “E” proposes to:

- Use the existing storm sewers providing they are in good condition of adequate capacity and can be integrated into the proposed overall storm sewer management system of the West Don Lands.
- Rehabilitate existing storm sewers if pipe conditions are poor but have sufficient capacity.
- Reconstruct existing sewers if capacities are insufficient or if existing storm sewers do not fit into the new storm water servicing scheme.
- Construct new storm sewers for new and realigned roads.
- Use stormwater as a resource.
- Construct end of pipe stormwater management facilities to improve water quality.

Alternative 'E' is rated as average/neutral if compared to the other alternatives with respect to its impact on traffic disruption, noise and vibration and cost. The impact of Alternative 'E' on all other evaluation criteria is good (positive), specifically, it provides for the protection of the natural environment, provides the opportunity to revitalize the West Don Lands, satisfies all technical evaluation criteria, and impacts positively on social/economic criteria. This alternative solution is also considered "feasible" from an implementation point of view.

Alternative 'B' - Use Stormwater as a Resource

Although the impact of Alternative 'B' is positive (good) on all of the social and economic considerations, this alternative is ranked behind the Alternative "E" when addressing potential effects on the terrestrial habitat, the aquatic environment, the opportunity to revitalize the West Don Lands, and the flexibility to accommodate future growth. This is because its maintenance requirements are high and it scores average or neutral with respect to service reliability, like expectancy, feasibility and impact on the land (natural) environment.

A storm sewer system will still have to be maintained/upgraded to meet the requirements of the larger storms which exceed the capacity of the irrigation water collection system.

Alternative 'A' - Reconstruct / Rehabilitate Existing & Construct New

The solution to only reconstruct or rehabilitate the existing stormwater system and construct new storm sewers for new or realigned roads or where existing storm sewers have insufficient capacities was rated behind the previous two alternatives because it does not provide for stormwater quality improvements. Therefore this alternative would not meet the City's, TRCA and Province of Ontario water quality objectives for discharges of stormwater into receiving waters and would not provide the opportunity to revitalize the West Don Lands.

Alternative 'D' - End of Pipe Control

Alternative 'D' is not recommended by itself without storm sewer improvements. This Alternative scored poor or average/neutral with respect to the impacts related to terrestrial habitat, land, the natural environment, cultural heritage, traffic disruption, noise and vibration, feasibility to implement, cost and maintenance requirements. The process to evaluate and select the preferred End of Pipe design alternative is described in Section 7.2 below.

Alternative ‘C’ - Infiltration of Stormwater

This alternative is valued lower than the previous alternatives because it scores poorly with respect to the impact of contaminants leached out by stormwater from the soil.

“Do Nothing”

Although the “Do Nothing” alternative scored positive (good) with respect to cost (lowest overall cost of implementation), noise and vibration from construction, traffic disruption and cultural heritage, it was ranked last overall because it does not address the problem statement or current stormwater quality policies/regulations, and it scores poorly with respect to its impact on the natural land and water environment, recreation and tourism, health and safety, and technical requirements.

7.3.4 Preferred Solution

Alternative “E”, the preferred solution, is a combination of several solutions as listed above.

Stormwater discharges from the West Don Lands currently flow untreated into the Don River and to the Lake Ontario waterfront. At the second public meeting for the West Don Lands the oil and grit separator with future disinfection was presented as the preferred solution. Based on stakeholder and agency meetings the new preferred solution is the provision of oil and grit separator facilities with disinfection. The provision of oil and grit separator facilities will provide an improvement to the stormwater discharges to the receiving water and with the addition of disinfection and filter facilities or connection to the CSO tunnel this will meet the City’s water quality objectives of the waterfront.

Stormwater shall be used as a resource to the extent feasible and practicable. While this will be addressed in TWRC’s Sustainability Framework, it is recommended that new developments in the West Don Lands use stormwater for irrigation of rooftop gardens and other green areas. Most buildings proposed for the West Don Lands are large and will have permanent building staff to maintain irrigation facilities. It is proposed to aim at using approximately 30% of the stormwater from private property during the growing season for irrigation purposes. This is based on using only stormwater from roof areas for irrigation purposes because it is generally cleaner than stormwater runoff from areas at grade that are subject to traffic and various debris. According to the draft Development Site Plan for the West Don lands, it is estimated that 60 to 80% of private properties will be covered by roofs. Furthermore it is estimated that it will be feasible to utilize stormwater runoff only from approximately 40 to 50% of the roofed areas for irrigation purposes. However, because storm events also occur during the non-growing

season when storm water is not required for irrigation, the stormwater management system will be designed adequately to convey and treat all stormwater from roads, private properties and parks.

A significant portion of the existing sewer system does not have sufficient capacity to serve the proposed high density development. Furthermore, the part of the West Don Land's sewer system currently draining to the Don River is proposed to be redirected to flow into the Inner Harbour. This will separate the West Don Land storm sewer system from potential backwater conditions during high water levels in the Don River and avoid interference of the storm outlet pipes with the expected flood protection works along the west shoreline of the Don River. As a result, a total of 550 metres of the existing storm sewers require reconstruction. In addition, 2,255 metres of new storm sewers are required in existing or new road allowances to serve new development.

A new 425 m long storm outlet sewer is required along Cherry Street from approximately 55 m south of Mills Street into the Inner Harbour at the Keating Channel. The new storm outlet will be 1.8 m in diameter. Because of traffic and soil condition as well as utility congestion (particularly within the Cherry Street underpass) it is expected that most, if not all of the sewer outlet will be built in tunnel.

Existing storm drainage areas connected to the existing combined overflow outlet sewer on Cherry Street south of Front Street East will be disconnected from the combined outlet sewer and reconnected to the new storm outlet sewer on Cherry Street. This will provide relief to the surcharge of the existing combined overflow outlet sewer and alleviate the flooding condition in the Cherry Street underpass under the railway corridor during heavy rainfalls.

Currently the West Don Lands generally slope south and east. Roads in the western part of the area provide overland flow routes for stormwater flows exceeding the capacity of the storm sewer system towards the Parliament Street and Cherry Street underpasses under the railway corridor and into the lake. The eastern part of the West Don Lands currently drains towards the Don River.

The TRCA proposes to construct a berm along the Don River to protect against floodwaters from the Don River and as a result, the overland flow route to the Don River will be blocked. To provide an alternate overland flow route for the eastern part of the West Don Lands, a continuous slope to the south along the realigned Bayview Avenue, west along Mill Street to Cherry Street and south along Cherry Street to the lake needs to be provided. This will require raising surface elevations along the southern section of the realigned Bayview Avenue (south of Front Street) and the eastern section of Mill

Street (to approximately 120 m east of Cherry Street). Storm flows which exceed the design capacity of the sewer system will then flow overland along roads to the Cherry Street underpass and from there toward the Inner Harbour.

The design of the TRCA flood protection berm along the Don River is conceptual at this time and a detailed design is expected to be completed later in 2005. At that time a detailed grading plan taking into account the proposed berm, the realigned and new roadways and the requirements for overland flow routes can be prepared.

It is noted that the depressed part of the Cherry Street underpass may flood to the depth of approximately 1.0 metre once the capacity of the sewer system is exceeded and stormwater flows overland. The preferred solution for the stormwater system, as described above, reduces the risk and frequency of flooding the underpass because all storm drainage from the West Don Lands that is currently connected to the existing combined overflow outlet sewer on Cherry Street will be disconnected from the combined overflow outlet sewer and directed to the new 1800 mm storm sewer outlet along Cherry Street. This will provide relief to the existing, combined overflow outlet sewer and alleviate potential flooding of the underpass. Furthermore the new 1800 mm storm sewer outlet on Cherry Street has been sized to provide stormwater drainage under the Cherry Street underpass without flooding from storm events with return frequencies of up to 25 years. The design of the new storm sewer outlet is also based on a Lake Ontario Level of + 75.60 m geodectic (as per City of Toronto design standard for sewer outlets) which is equivalent to a return frequency of approximately 100 years. During periods when the lake level is lower than + 75.60 m the new storm sewer outlet will provide stormwater drainage without flooding the underpass for storm events with return frequencies in excess of 25 years.

Exhibits 7-5 to 7-6 and 7-7 identify projects and Class EA schedules that are proposed to service the West Don Lands. It is noted that pipe diameters and pipe lengths provided in **Exhibit 7-5** are preliminary and will be refined at the design stage.

To improve the stormwater quality before discharge into the Inner Harbour, it is proposed to construct “End of Pipe” facilities for stormwater treatment to the north east of the Cherry Street railway underpass.

**Exhibit 7-5: Storm Sewer Project Class Environmental Assessment Schedule
 Proposed New Storm Sewers in New Road Allowance**

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|--------------------------|-----------------------------------|------------------------------------|---------------|------------|-------------------|
| New Street No. 1 | Parliament Street | New Street No. 12 | 375 | 80 | B |
| New Street No. 1 | New Street No. 12 | Trinity Street | 600 | 100 | B |
| New Street No. 1 | Trinity Street | Cherry Street | 750 | 200 | B |
| New Street No. 2 | Eastern Avenue | New Street No. 11 | 450 | 35 | B |
| New Street No. 3 | New Street No. 4 | Front Street East | 675 | 150 | B |
| New Street No. 3 | Front Street East | Mill Street | 825 | 150 | B |
| New Street No. 4 | New Street No. 3 | New Street No. 5 | 450 | 40 | B |
| New Street No. 5 | Eastern Avenue | 85 m S of Eastern Avenue | 450 | 85 | B |
| New Street No. 5 | Front Street East | Mill Street | 600 | 150 | B |
| New Street No. 5 | Front Street East | 65 m N of Front Street E | 525 | 65 | B |
| New Street No. 7 | 20 m S of Front Street | 70 m S of Front Street | 525 | 50 | B |
| New Street No. 7 | 70 m S of Front Street | Mill Street | 600 | 100 | B |
| New Street No. 8 | King Street | New Street No. 9 | 450 | 60 | B |
| New Street No. 8 | New Street No. 9 | Eastern Avenue Diversion | 600 | 50 | B |
| New Street No. 8 | Eastern Avenue Diversion | 40 m S of Eastern Avenue Diversion | 675 | 45 | B |
| New Street No. 8 | 40m S of Eastern Avenue Diversion | New Street No. 11 | 750 | 30 | B |
| New Street No. 8 | New Street No. 11 | Eastern Avenue | 750 | 50 | B |
| New Street No. 9 | 70 m W of Bayview Avenue | New Street No. 8 | 450 | 70 | B |
| New Street No. 9 | New Street No. 8 | St. Lawrence Street | 450 | 65 | B |
| New Street No. 10 | Eastern Avenue | Realigned Bayview Avenue | 750 | 60 | B |
| New Street No. 12 | Front Street E | New Street No. 1 | 450 | 80 | B |
| Realigned Bayview Avenue | New Street No. 11 | New Street No. 10 | 375 | 40 | B |
| Realigned Bayview Avenue | New Street No. 10 | Front Street East | 900 | 110 | B |
| Realigned Bayview Avenue | Front Street East | Realigned Mill Street | 1050 | 110 | B |

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|-----------------------|--------------------------|----------------------------|---------------|--------------|-------------------|
| Realigned Mill Street | Realigned Bayview Avenue | 20 m W of New Street No. 7 | 1050 | 130 | B |
| TOTAL | | | | 2,105 | |

**Exhibit 7-6: Project Class Environmental Assessment Schedule
 Reconstructed or New Storm Sewers in Existing Road Allowance**

| Location | From | To | Diameter (mm) | Length (m) | Class EA Schedule |
|-------------------------------|--------------------------------|--|---------------|--------------|-------------------|
| Cherry Street | Front Street East | New Street No. 1 | 675 | 100 | A |
| Cherry Street East | New Street No. 1 | Mill Street | 900 | 50 | A |
| Front Street East | 75 m W of Cherry Street | Cherry Street | 600 | 75 | A |
| Eastern Avenue | 20 m E of St. Lawrence Street | New Street No. 5 | 450 | 75 | A |
| Eastern Avenue | St. Lawrence Street | New Street No. 10 | 525 | 40 | A |
| Eastern Avenue Extension | Bayview Avenue | New Street No. 8 | 450 | 100 | A |
| Mill Street | 20 m W of New Street No. 7 | New Street No. 5 | 2x975 | 90 | A |
| Mill Street | New Street No. 5 | New Street No. 3 | 2 x 975 | 80 | A |
| Mill Street | New Street No. 3 | Cherry Street | 2 x 1050 | 900 | A |
| Cherry Street | Mill Street | 55 m S of Mill Street | 2 x 1050 | 55 | A |
| Cherry Street and Mill Street | Stormwater Management Facility | | | | B |
| Cherry Street | 55 m S of Mill Street | Inner Harbour (Keating Channel Outlet) | 1800 | 425 | C |
| TOTAL | | | | 1,180 | |

7.4 Identification and Evaluation of the Alternative End of Pipe Storm Water Management Facility Designs

7.4.1 Constraints

The proposed new storm sewer outlet along Cherry Street will discharge into the outlet of the Keating Channel immediately east of the Inner Harbour. The proposed End of Pipe (EOP) facility should therefore meet Ministry of the Environment (MOE) Level 1 (Enhanced) stormwater quality control and City of Toronto Wet Weather Flow Management Master Plan (WWFMMP) Guidelines requirements.

MOE and TRCA Level1 (Enhanced) stormwater quality control guidelines, as described in their Stormwater Pollution Prevention Handbook (2001), require infiltration of stormwater or EOP treatment facilities. As described in Section 7.1.4 above, infiltration of stormwater into the ground is not desirable in the West Don Lands because the soils is known from previous studies to be contaminated and infiltration may leach out pollutants. EOP treatment described in the MOE and TRCA handbook include wetlands, wet ponds and hybrid wet pond/wetlands facilities. The handbook also provides water quality facility sizing criteria and specifies for “enhanced” level of protection the long term removal of 80% of total suspended solids.

City of Toronto WWFMMP (interim) Guidelines distinguish between:

- SWMM Facilities within the interior of the City, and
- Waterfront SWMM Facilities

For waterfront SWMM facilities, the City guidelines specify that clean groundwater be conveyed directly to the lake and that EOP facilities reduce E-coli concentrations in storm water discharges to the lake to 500-1000 counts per millilitre during the swimming season. Conveying clean groundwater (pumped foundation drainage) separately to lake would require a separate pipe system. Considering the distance to the lake and the relative small amount of pump foundation drainage expected from new development in the West Don Lands, conveying this flow directly to the lake in a separate sewer system is not recommended.

7.5 Evaluation Criteria

In order to evaluate the alternative end of pipe treatments, evaluation criteria (**Exhibit 7-8**) were developed within the following categories of consideration representing the broad definition of the environment as defined in the EA Act:

Exhibit 7-8: Evaluation Criteria – End of Pipe

| MAIN CRITERION | SUB-CRITERIA |
|---------------------|--|
| NATURAL ENVIRONMENT | Having regard for protecting the natural and physical components of the environment, including terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping. <ul style="list-style-type: none"> • Terrestrial Habitat • Land • Water |

| MAIN CRITERION | SUB-CRITERIA |
|---------------------------------------|---|
| SOCIAL AND ECONOMIC | Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety. <ul style="list-style-type: none"> • Cultural Heritage Resource • Traffic Disruption • Recreation and Tourism • Health and Safety • Employment • Noise and Vibration |
| OPPORTUNITY FOR REVITALIZATION | Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization. <ul style="list-style-type: none"> • Supports the planning and urban design goals |
| FEASIBILITY AND COST | Having regard for the cost associated with each alternative, and the capability of each alternative to adequately service the study area. <ul style="list-style-type: none"> • Feasibility of construction (implementation) • Cost – capital and operational |
| TECHNICAL | Having regard for the technical suitability, reliability, longevity and other engineering aspects of each alternative solution. <ul style="list-style-type: none"> • Reliability of Services • Flexibility to Provide Capacity for Future Growth and/or Improved Service Level • Life expectancy • Maintenance Requirements |

7.5.1 Assessment and Evaluation of the End of Pipe Stormwater Management Design Alternatives

The following EOP stormwater management alternative have been identified and evaluated. **Exhibit 7-9** also displays the evaluation of each alternative.

Alternative ‘A’ - No End of Pipe Treatment Provided and Direct Discharge to the Inner Harbour

This Alternative does not meet current policies of the City and TRCA for stormwater quality. Therefore, this Alternative was not reviewed any further.

Alternative 'B' - Stormwater Management Pond

The SWM Pond would be designed to provide an Enhanced Level 1 water quality improvement, which includes requirements for 80% long term removal of total suspended solids and is based on water quality storage requirements as per Exhibit 3-2 of the MOE and TRCA Handbook for Stormwater Pollution Prevention (2001). MOE and TRCA Design Guidelines in terms of depth, side slopes, and length to width ratio will also be applied. The pond requires a storage capacity of 6,100 cubic metres and a footprint of approximately 5,200 square metres (0.52 ha).

The estimated construction cost including landscaping, but excluding land cost and groundwater and soil remediation or disposal of contaminated soil, amounts of approximately \$700,000.00.

The pond would be located to the north east of the Cherry Street underpass beside the CN Rail viaduct.

Alternative 'C' - Oil/Grit Separators

The technology to provide stormwater treatment using hydrodynamic separators to remove total suspended solids, grit, oil and floating matter has significantly advanced in recent years. There are several proprietary systems available such as the Vortech Inc., Stormwater Management Inc., and the StormSceptor Systems.

The systems include a grit chamber that is designed to create a vortex and settle out grit and suspended solids, a chamber to separate oil and other floating matter and a flow control chamber. Vortech Inc. for example, claims to remove 80% of Total Suspended Solids (TSS) with their system. Other tests have shown that removal rates of 70% of TSS can be achieved. The City of Toronto classifies oil and grit separators as providing a total suspended solids removal efficiency of 60%.

The advantage of oil and grit separators such as the Vortech Inc. System are the relatively small space required and low cost. The foot print required for a Vortech Inc. System at Cherry Street south of Mills street requires approximately 200 square metres. The construction cost of a system in the vicinity of Cherry Street south of Mill Street is estimated to be in the order of \$500,000.00.

Oil and grit separators must be regularly inspected and sediment and floating matters must be removed. This can be achieved using a vacuum truck. It is anticipated that deposits from oil and grit separators can be disposed of in a similar manner as the material from storm catchbasins in City roads.

For the West Don Lands, it is proposed that oil and grit separators provide treatment for stormwater flow up to a two year return frequency design storm and that flows in excess of the two year storm bypass the facility and flow directly to the lake. A detailed comparison of the available proprietary systems needs to be undertaken at the design stage in order to determine detailed specification with respect to actual performance rates for removal of suspended solids and other contaminants.

Alternative 'D' - Settling Tanks

It is proposed that a stormwater settling tank include a grid chamber that requires periodic clean out (e.g., once or twice a year) and a main chamber that would be pumped out 12-24 hours after each rainfall event (the actual detention period would require confirmation by water quality modelling as part of the pre-design). The facility must also include a flushing system (e.g., tipping bucket flushing system) to remove sediments after the rainstorm and a second pump to convey flushing water to the sanitary sewer system. The facility would be designed to remove 80% of total suspended solids. The required storage capacity for the tank is estimated to amount to approximately 5000 cubic metres, slightly more than the permanent storage requirement of the SWM pond option, however detailed stormwater modelling is required to confirm the actual tank volume required. The footprint of the facility amounts to 2200 square metres and the estimated cost amounts to approximately \$6.0 million.

The space above the tank can be utilized as open space area (e.g., green area) or for other municipal uses such a Toronto Transit Commission (TTC) streetcar turn around. It may also be possible to place the tank underneath a parking lot or parking garage. The capital cost for a settling tank are high while the maintenance cost (e.g. energy servicing/repairing mechanical equipment, controls and pumps) are considered moderate. Flushing water with its sediment load from the tank would be conveyed to the sanitary sewage system and add to the load of the Sewage Treatment Plant.

Alternative 'E' - Oil/Grit Separator with Filters and Disinfection

Additional treatment processes are proposed to be added to the performance of the oil/grit separator described in Alternative "C" such as stormwater filters and UV disinfection to increase the removal rates of suspended solids, metals and nutrients and to provide for disinfection and destruction of bacteria and viruses.

Oil and grit separators in combination with stormwater filters and ultra violent disinfection will achieve stormwater quality improvements that will meet the objectives of the WWFMMP objectives in terms of removing contaminants, total suspended solids and bacteria. The schedule for constructing the new storm sewer collection system, the new storm sewer outlet on Cherry Street, the oil/grit separator, stormwater filters and

disinfection facilities will be determined by the TWRC in cooperation with the City as part of developing the implementation plan for the West Don Land development.

7.5.2 Assessment and Evaluation of End of Pipe Stormwater Management Design Alternatives

Using the evaluation criteria identified above, the alternatives were subject to a net effects comparative evaluation. The advantages and disadvantages of each alternative were compared in order to establish a ranking of the alternatives and identification of the recommended alternative. The following alternatives are identified in order of best to worst along with a rationale for their ranking.

Alternative 'E' - Oil and Grit Separator with Filters and Disinfection

Despite having high capital cost and high maintenance cost, Alternative 'E' was determined to be the recommended design for EOP stormwater treatment because it is the only alternative that provides disinfection, and thereby meets the objectives of the City of Toronto WWFMM plan to reduce concentration of bacteria and virus in stormwater before discharge to the waterfront and the Inner Harbour.

Furthermore, Alternative 'E' removes floating matter and suspended solids and therefore improves the quality of stormwater. This has a positive impact on aquatic life and recreation in the Inner Harbour and supports the ability to revitalize the waterfront.

Alternative 'C' - Oil and Grit Separator

Although oil and grit separators have a low capital cost, they remove floating matter and suspended solids from stormwater and thereby improve water quality (which has positive effects on aquatic habitat and recreation in the Inner Harbour), this alternative has been ranked behind Alternative 'E' because oil and grit separators without disinfection facilities do not meet the objectives of the City's WWFMM plan to reduce the concentration of bacteria and viruses in stormwater.

Alternative 'D' - Settling Tank

An underground settling tank will remove floating matter and suspended solids and therefore would have a positive impact on stormwater quality and aquatic habitat and recreation in the Inner Harbour; however, a settling tank has the highest overall capital cost if compared to the other alternatives. While the life expectancy of such a facility is good since it is concrete structure and only requires standard mechanical and control equipment, a settling tank does not provide for disinfection, and therefore does not meet the objectives of the WWFMM plan. As a result, this alternative was ranked lower than the previous two.

Alternative 'B' - Stormwater Management Pond

A stormwater management pond will also remove floating matter and suspended solids and positively impact the quality of stormwater discharged to the Inner Harbour. It also benefits recreation in the Inner Harbour, supports the ability for waterfront wide revitalization, and capital costs and maintenance costs for ponds are moderate. However, ponds are extremely land intensive, and a pond may not be compatible with certain land uses in the West Don Lands. Additional land for future expansion, if required, may also not be available. Finally, a stormwater pond would not provide for disinfection and therefore will not meet the objectives of the WWFMM plan to reduce the concentrations of bacteria and viruses in stormwater before discharge to the waterfront.

Alternative 'A' - No end of Pipe Treatment Provided and Direct Discharge to the Inner Harbour

Alternative 'A' was ranked last in comparison to the other alternatives because it does not provide for any water quality improvements for storm water and therefore would result in adverse impacts on aquatic habitat and recreation in the Inner Harbour once the West Don Lands are developed. It also would not meet municipal and provincial stormwater quality objectives and would not meet the objectives of the City of Toronto WWFMM plan.

8 TRANSPORTATION ALTERNATIVES

8.1 Existing Environment

8.1.1 Road Network

The existing road network is illustrated in **Exhibit 8-1** and the key features of the roads in the West Don Lands are summarized in **Exhibit 8-2**.

Exhibit 8-2: Existing Roads in the West Don Lands

| Street | From | To | Classification | Right-of-Way (m) |
|--------------------------|--------------------------|------------------------|----------------|------------------|
| Eastern Avenue Diversion | Front St. | East across the Don R. | Major arterial | Not Defined |
| King St. East | Parliament St. | Queen St. East | Major arterial | 20 |
| Eastern Avenue | Eastern Avenue Diversion | Bayview Avenue | Minor arterial | 20 |
| Front St. East | Parliament St. | Bayview Avenue | Minor arterial | 20 |
| Bayview Avenue | King St. | Front St. | Collector | 15 |
| Cherry St. | King St. | Lake Shore Blvd. | Collector | 20 |
| Mill St. | Parliament St. | Overend St. | Local | 20 |
| Overend St. | Front St. | Mill St. | Local | 20 |
| St. Lawrence St. | King St. | Eastern Avenue | Local | 20 |
| Cypress St. | Eastern Avenue | Front St. | Local | 12 |
| Sumach St. | King St. | Eastern Avenue | Local | 20 |
| Trinity St. | Eastern St. | Mill St. | Local | 20 |

The existing lane configurations for each intersection within the West Don Lands are shown in **Exhibit 8-3**. Although Cherry St. at Eastern Avenue, Front St. and Mill St. is marked as only one northbound and one southbound lane, the pavement is wide enough to support two lanes in each direction. This was confirmed by observing traffic on Cherry St.

8.1.2 Existing Traffic Conditions

In September 2004 IBI Group prepared a Travel Demands Forecast Preliminary Findings report that examined the road options being proposed to improve access to and from the City core along the Waterfront. These options focused on transforming the road

system to support the new development vision with the existing road capacity into and out of the waterfront approximately maintained.

The report's study area was based on Planning District 1, which includes Downtown Toronto, the Central Business District and the Waterfront. Travel to, from and within the study area was captured using a Demand Forecasting Model through a detailed travel movement, travel behaviour and transportation network representation of the entire GTA. The travel demand was based on the 2001 Transportation Tomorrow Survey (TTS) data and was sensitive to transportation and transit system connectivity, level-of-service, cost, socio-economic/demographic and land use inputs.

A horizon year of 2021 was used to reflect the approximate timing for full build-out of Waterfront development. For this planning period the Waterfront population is projected to increase from approximately 14,200 persons in 2001 to approximately 103,900 persons in 2021. In terms of employment, the number of jobs is projected to increase from 38,200 to 78,200 over this same twenty-year period.

The preliminary results indicate that all of the road options examined will generate high levels of congestion on the road facilities leading to the Central Area from the east and west, with manageable demand levels at central sections of the Waterfront corridor.

Trips originating from the Waterfront in the a.m. peak period are projected to increase from 8,800 to 60,100 from 2001 to 2021. The modal split in 2021 is broken down as 45% auto, 26% transit, 20% walk/cycle and 0% GO Rail.

Trips destined to the Waterfront are projected to increase from 28,700 to 75,200 from 2001 to 2021. In 2021 the modal split is projected as 43% auto, 26% transit, 22% walk/cycle and 9% GO Rail.

These numbers indicate that an increase in resident population in Planning District 1 (which includes the Waterfront) will help reduce the amount of individuals commuting into this area while more than doubling the amount of internal trips within the area from 2001 to 2021. Very significant growth in travel will occur due to the increases in employment that are projected (32%) in the study area. The total person trips to Planning District 1 will increase by approximately 38% for the am peak period. The bulk of this growth is projected to be accommodated by public transit and walk/cycle modes.

Existing Traffic Volumes in the West Don Lands

Existing traffic volumes at the key intersections in the West Don Lands were assembled from the most recent counts conducted by the City of Toronto and by LEA Consulting Limited for the *West Don Lands Transportation Review*, which was carried out for the City in 2000. Some of these counts were updated with the results of surveys conducted at the following intersections in March 2004:

- Bayview Extension and Eastern Avenue (7:00 to 9:00 a.m.)
- Front St. E. and Overend St. (7:00 to 9:00 a.m.)
- Eastern Avenue Diversion and Cherry St. (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.)
- King St. E. and Cherry St. (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.)
- Front St. E. and Parliament St. (4:00 to 6:00 p.m.)

The City of Toronto last counted traffic at the intersection of Front St. and Parliament St. in June of 2003. The traffic volumes from this survey are similar to the volumes at the adjacent intersections in the a.m. peak hour. However, the volumes on all four approaches for the p.m. peak hour are significantly higher than the volumes counted in March 2004 as well as the approach volumes at adjacent intersections. For the purpose of this study, it was decided to use the average of the two counts for the east and westbound approaches (i.e., Front St.). The through traffic on Front St. was partially balanced with the approach volumes on Eastern Avenue at Cherry St.

The existing traffic volumes at the main intersections on the road network serving the West Don Lands are shown in **Exhibit 8-4** for the weekday a.m. and p.m. peak hours. The most heavily travelled street in the precinct is the Front St./Eastern Avenue Diversion, which carries about 1,600 vehicles during the a.m. peak hour through the West Don Lands toward the downtown (westbound) and about 1,600 vehicles from the downtown (eastbound) during the p.m. peak hour.

South of the Queen St. Bridge over the Don River, about 520 vehicles enter the West Don Lands from the north via the Bayview Extension during the a.m. peak hour. Although some of these vehicles are destined for the businesses on Eastern Avenue, most of this traffic passes through the precinct to Lake Shore Blvd. via Front St. or Mill St. to Cherry St. and then south on Cherry St. to Lake Shore Blvd. During the p.m. peak hour about 650 vehicles filter through the West Don Lands to the Bayview Extension (northbound) via Front Street.

The existing levels of service were calculated for all of the signalized intersections in the precinct using Synchro/Simtraffic version 6. Adjustments were made to the saturation flow rates on King St. to account for the impact of streetcar operations. As summarized in **Exhibit 8-5**, all of the intersections in the precinct are operating at an acceptable level of service during the weekday a.m. and p.m. peak hours. The volumes of traffic passing through the other intersections in the West Don Lands are generally low.

Exhibit 8-5: Levels of Service for Existing Traffic Conditions

| Intersection | Level of Service | Critical Lanes | Degree of Sat. ≥ 0.85 |
|-------------------------|------------------|----------------|----------------------------|
| A.M. Peak Hour | | | |
| • Parliament/King | B | - | - |
| • Parliament/Front | B | - | - |
| • Parliament/Mill | A | - | - |
| • Parliament/Lake Shore | C | WB T | 0.87 |
| • Cherry/King | A | - | - |
| • Cherry/Eastern | B | - | - |
| • Cherry/Lake Shore | B | - | - |
| • River St./Queen | B | - | - |
| P.M. Peak Hour | | | |
| • Parliament/King | B | - | - |
| • Parliament/Front | B | - | - |
| • Parliament/Mill | A | - | - |
| • Parliament/Lake Shore | C | NB T | 0.88 |
| • Cherry/King | A | - | - |
| • Cherry/Eastern | A | - | - |
| • Cherry/Lake Shore | B | - | - |
| • River St./Queen | B | - | - |

In summary, the road network of the West Don Lands is able to support a much higher level of development than what currently exists. In the absence of much development, most of the roads in the precinct are generally under-utilized and are used primarily by commuter traffic.

8.1.3 Existing Transit Services

The TTC operates several bus and streetcar routes through the West Don Lands. Since development in the West Don Lands is relatively sparse, most of these routes are located on the periphery of the precinct. These existing routes are described below.

- **Parliament (65):** Provides bus service between the Castle Frank subway station on the Bloor-Danforth subway line and the downtown line via Front St. The **Parliament (65D)** provides extended service during the summer (mid-June to Labour Day) along Mill St. and Eastern Avenue.
- **Pape (72A):** Provides bus service between Union Station and Pape Station via Commissioner St. through the Port Lands. In the West Don Lands this route uses Cherry St. from the Port Lands to Mill St., Mill St. between Cherry St. and Parliament St. and Parliament St. between Mill St. and Front St.
- **Downtown Beach Express (143):** Offers express bus service along Queen St. through the Beaches community across the Don River to Eastern Avenue Diversion and Front St. There are no stops near the West Don Lands.
- **King (504) Streetcar:** Connects the north edge of the West Don Lands to downtown Toronto. To the east the King streetcars cross the Don River on the Queen St. bridge to Broadview Avenue where they connect to Broadview station on the Bloor-Danforth subway line.
- **Kingston Road (503) Streetcar:** Operates on Kingston Rd., Queen St. and King St. between Victoria Park Avenue and York St.
- **Lake Shore (508) Streetcar:** Provides service on King St. from Long Branch, through the downtown area to Parliament St.

The frequency of service on each of these routes during the weekday a.m. and p.m. peak periods is summarized in **Exhibit 8-6**.

Exhibit 8-6: Frequency of Existing Transit Services

| Route | Peak Period Frequency | |
|--------------------------------|------------------------|------------------------|
| | A.M. | P.M. |
| Bus Routes: | | |
| • Parliament (65) | 14 min. 10 sec. | 13 min. |
| • Pape (72A) | 16 min. | 18 min. |
| • Downtown Beach Express (143) | 6 westbound buses | 5 eastbound buses |
| Streetcar Routes: | | |
| • Kingston (503) | 12 min. | 15 min. |
| • King (504) | 4 min. | 4 min.12 sec. |
| • Lake Shore (508) | 3 eastbound streetcars | 4 westbound streetcars |

8.1.4 Existing Bicycle and Pedestrian Facilities

To the north of the West Don Lands there are bicycle lanes on River St. from Gerrard St. to King St. and on Shuter St. from River St. to Victoria St. There is also a shared roadway facility (i.e. no pavement markings that allocate part of the pavement to cyclists) on Sumach St. and Cherry St. from Shuter St. through the West Don Lands to Lake Shore Blvd. and on Mill St. between Cherry St. and Parliament St. These routes are part of a pilot project for a route signage/numbering system. The route on Mill St. crosses Parliament St. and continues west along the Esplanade where it connects to the bicycle lanes on Sherbourne St.

There is also an off-road, multi-use trail (the Lower Don Trail) located between the west side of the Don River and the existing railway tracks. The trail extends north in the Don Valley where it connects to other trails. To the south, the trail passes under the rail bridge over the Don River and connects to another off-road path that extends east across the Don River and west to Cherry St. on the south side of the rail corridor. At Cherry St. the trail crosses Lake Shore Blvd. and connects to the Martin Goodman Trail on the south side of Lake Shore Blvd. Which extends to Queens Quay East.

Aside from this multi-use trail, the existing pedestrian facilities are limited to sidewalks on some streets in the precinct and crosswalks at signalized intersections. Road sections without sidewalks include:

- South side of Mill St. east of Trinity St.
- West side of Cherry St. south of Mill St.

- Overend St. (both sides)
- West side of Cypress St.
- North side of Front St. east of Cherry St.
- South side of Front St. east of Overend St.
- East side of Bayview Avenue and the west side of Bayview Avenue south of Eastern Avenue
- Short section on the south side of Eastern Avenue west of Cypress St.
- East side of St. Lawrence St.
- East side of Sumach St. off Eastern Avenue
- North side of Eastern Avenue diversion east of Sumach St.

With few exceptions, there are no boulevards separating the existing sidewalks from the curb and most sidewalks are in poor condition. There are sidewalks on both sides of the Cherry St. and Parliament St. structures under the mainline rail corridor. They are located behind structural elements supporting the bridge above and are separate from the travelled lanes. The problem with the sidewalks is that they are narrow, the lighting is poor and there are poor sight lines across the raised concrete islands at Lake Shore Blvd. Consequently, these facilities are generally regarded as inhospitable and a barrier between the Waterfront and the West Don Lands.

8.2 Rationale for the Transportation Improvements

8.2.1 Future Demand

Appendix C is an analysis of future transportation conditions. This information supports the analysis that follows, and is an additional commentary on the comparison of alternatives.

8.2.2 Proposed Development

The Central Waterfront Part II Plan includes a number of policies that support broader transportation and revitalization objectives. These include:

- (P2) Required rights-of-way to accommodate the proposed waterfront road and transit network [...] will be sufficient to accommodate travel lanes, transit, pedestrian and cycling requirements as well as landscaping and other urban design elements [...].
- (P4) New streetcar and some bus routes will operate in exclusive rights-of-way on existing and proposed streets to ensure efficient transit movement.
- (P5) Waterfront streets will be remade as “phases” with distinct identities. Streets will act as lively urban connections as well as traffic arteries. The needs

of motorists will be balanced with efficient transit service and high-quality amenities for pedestrians and cyclists.

- (P18) As part of the strategy to reduce car dependence and shape people’s travel patterns early, a comprehensive range of efficient and competitive transportation alternatives will be provided in tandem with the development of new waterfront communities. These include a new transit system [...] as well as pedestrian, cycling and water transportation opportunities [...].
- (21) Pedestrian and cycling rates will be safe, attractive, comfortable and generously landscaped (City of Toronto, 2001).

The proposed transportation system includes the provision of facilities for other modes of transportation, as well as roads, as an integral part of the overall network that will serve the West Don Lands. **Exhibit 8-7** shows the list of proposed infrastructure improvements and applicable Class EA Schedules for the transportation network.

Exhibit 8-7: Proposed Transportation Improvements

| | Proposed Infrastructure Improvement | MEA Class EA Schedule | Rationale |
|----|---|------------------------------|--|
| 1. | Bayview Avenue realignment and extension: two lanes plus left turn lanes at Front St. and Eastern Avenue; on-street bicycle lanes and parking; landscaping; realignment of east end of Eastern Avenue; and extension south of Mill Street | C | Construction of new road (#21); Estimated cost of construction: \$1,240,000 |
| 2. | Reconfiguration of the Eastern Avenue/Eastern Avenue Diversion intersection (i.e. the west end of Eastern Avenue Diversion) | A | Construction of localized operational improvements at specific locations (#12). Estimated cost of construction: less than \$1.5 million |
| 3. | Reconfiguration of the Front St/Eastern Avenue/Trinity St. intersection (including new turning lanes) | A | Construction of localized operational improvements at specific locations (#12). Installation and construction of traffic control devices (i.e. signalization) (#13). Total estimated cost of construction: \$790,000 |

| | Proposed Infrastructure Improvement | MEA Class EA Schedule | Rationale |
|----|--|------------------------------|---|
| 4. | Widening of Front St. E., 105m west of Cherry St. to Bayview Avenue (proposed new alignment) from two lanes plus parking on one side (9.7m) to four lanes (15.0m) | B | Reconstruction or widening where the reconstructed road will <u>not</u> be for the same purpose, use, capacity or at the same location as the facility being reconstructed (#20). Estimated cost of construction: \$1,340,000 |
| 5. | Widening, realignment and extension of Mill St. from Cherry St. to re-aligned Bayview Avenue from two lanes plus parking on one side (9.8m) to (15.0m) to incorporate bicycle lanes and parking on the north side. | B | Reconstruction or widening where the reconstructed road will <u>not</u> be for the same purpose, use, capacity or at the same location as the facility being reconstructed (#20). Estimated cost of construction: \$960,000 |
| 6. | Widening of Cherry St. from King St. E. to the south side of Mill St. to provide for a 12 to 13m wide landscaped median | C | Reconstruction or widening where the reconstructed road will <u>not</u> be for the same purpose, use, capacity or at the same location as the facility being reconstructed (#20). Estimated cost of construction: \$1,470,000 |
| 7. | Widening of Cherry St. from Mill St. south to the rail corridor | C | Reconstruction or widening where the reconstructed road will <u>not</u> be for the same purpose, use, capacity or at the same location as the facility being reconstructed (#20). A Class C Environmental Assessment will be carried out when implemented |
| 8. | Local Streets ('A' to 'H' as identified in Exhibit 8-11. | A | Construction of local roads which are required as condition of approval on a site plan, consent, plan of subdivision or plan of condominium which will come into effect under the Planning Act prior to the construction of the road (#22). |

| | | | |
|-----|--|---|---|
| 9. | Extension of River St. from Eastern Avenue to Bayview Avenue | A | Construction of local roads which are required as condition of approval on a site plan, consent, plan of subdivision or plan of condominium which will come into effect under the Planning Act prior to the construction of the road. (#22) |
| 10. | Retirement of eastern end of Eastern Avenue (required as part of the re-alignment of Bayview Avenue) | B | Retirement of existing roads and road related facilities (#38). |
| 11. | Retirement of eastern end of Front St. E. (required as part of the re-alignment of Bayview Avenue) | B | Retirement of existing roads and road related facilities (#38). |
| 12. | Retirement of Overend St. (required as part of the re-alignment of Bayview Avenue) | B | Retirement of existing roads and road related facilities (#38). |
| 13. | Trinity pedestrian/bicyclist underpass (under the rail corridor west of Cherry Street). | C | Construction of underpasses or overpasses for pedestrian, recreational or agricultural use (#27). Only Phases 1 and 2 are being completed at this time. |
| 14. | Richmond Hill GO Rail pedestrian/bicyclist underpass | C | Construction of underpasses or overpasses for pedestrian, recreational or agricultural use (#27). Only Phases 1 and 2 are being completed at this time. |
| 15. | Pedestrian/bicyclist bridge over the Don River | C | Construction of underpasses or overpasses for pedestrian, recreational or agricultural use (#27). Only Phases 1 and 2 are being completed at this time. |
| 16. | Retirement of Cyprus Avenue (required as part of Justification) | B | Retirement of existing roads and road-related facilities (#3e) |

8.2.3 Needs and Justification

At full build-out it is estimated that the West Don Lands will contain about 6,200 new residential units, 85,000m² gross floor area (gfa) of commercial development and institutional uses such as an elementary school and a recreation centre.

Although the roads are probably the most “visible” elements of the transportation system, the provision of facilities for other modes of transportation is critical. One of the main objectives of the transportation plan is to reduce the demand for auto travel by

providing new infrastructure that will encourage people to take other modes of transportation. These include new facilities for transit services, cyclists and pedestrians.

The individual infrastructure elements that collectively comprise the West Don Lands transportation system are described below along with a discussion of their function in meeting the transportation needs of the West Don Lands.

NEW LOCAL ROADS

As shown in the Streets and Blocks Plan (**Exhibit 8-11**), there are a number of new roads proposed for the West Don Lands. The roads designated 'A' to 'H' would be classified as "local" roads. A typical cross-section allows for one lane of traffic in each direction, plus parking on one side of the street. Sidewalks will be provided on both sides of each street and they will be separated from the roadway by landscaped boulevards. Parking on both sides of the street, as well as sidewalks and landscaped boulevards separating the sidewalks for the roadway, will also be incorporated.

Need/Function:

The primary function of these neighbourhood streets is to provide direct vehicular and pedestrian access to new development abutting both sides of the street. These roads will carry low volumes of traffic and the sidewalks will encourage residents to walk to and from destinations and transit stops in the West Don Lands.

The spacing of the local roads is intended to be similar to that found in the Corktown community to the north and in the St. Lawrence community to the west. The spacing will help to create efficiently sized parcels for development.

CHERRY STREET FROM KING ST. TO MILL ST.

To meet the needs of vehicular traffic, transit users and pedestrians, it is proposed to widen Cherry St. to provide space for the following elements:

- Two lanes in each direction for mixed traffic;
- An exclusive right-of-way for streetcars. Streetcar service would extend from King St. to the south side of Mill St. in the short term, and in the long term it would be extended under the rail corridor and into the Port Lands; and,
- Sidewalks on both sides of the street.

Need/Function:

Cherry St. is designed to meet the demands of both through and locally generated traffic. Currently, Cherry St. is a four-lane road and carries some "through" traffic (i.e. traffic

that has neither an origin nor a destination in the West Don Lands). It is anticipated that when development occurs in the Port Lands, Cherry St. will become an important link between the neighbourhoods to the north of the West Don Lands and the Port Lands for vehicular traffic as well as cyclists. With connections to King St. E., Eastern Avenue and Lake Shore Blvd., Cherry St. also provides locally generated traffic access to the external road network.

Sidewalks on both sides of Cherry St. are considered necessary to provide:

- Access to the proposed streetcar service on Cherry St.,
- Pedestrian connections to communities to the north and south of the West Don Lands, and
- Access to land uses abutting Cherry St.

As stated previously, one of the objectives of the transportation system serving the West Don Lands is to reduce dependence on automobile travel by encouraging the use of transit. Currently the King St. streetcar lines provide the most transit frequent service to and from the West Don Lands. To limit walking distances for new development, it is proposed to extend the King St. streetcar service into the West Don Lands. It is also planned to create an exclusive right-of-way for transit in the middle of Cherry St. to reduce travel time and provide reliable service.

CHERRY STREET FROM MILL ST. UNDER THE RAIL CORRIDOR

The Central Waterfront Secondary Plan makes allowance for a new streetcar line on Cherry St. to connect the West Don Lands to the proposed streetcar lines on Queens Quay East and to the Port Lands. Furthermore, there are sidewalks on both sides of the Cherry Street structure located behind the structural elements supporting the bridge above. These sidewalks are narrow, the lighting is poor and there are poor sight lines across the raised concrete islands at Lake Shore Blvd.

These facilities are generally regarded as inhospitable and a barrier between the waterfront and the West Don Lands. Subject to further work in a Transit EA study, the existing structure under the CN mainline rail corridor may need to be widened to provide sufficient space for new streetcar service.

BAYVIEW AVENUE

As shown in the Streets and Blocks Plan (**Exhibit 8-11**), a realignment of Bayview Avenue is proposed so that it forms the western edge of the large area of open space next to the Don River and separates the open space from the eastern limits of built

development in the West Don Lands. The profile of Bayview will also be changed because of the landform.

As it is at present, Bayview Avenue will be connected to Eastern Avenue and Front St. E. It is proposed to extend Bayview southwards so that it connects to the east end of Mill St. This new link will replace Overend St., which will be closed.

Bayview Avenue currently has one lane in each direction. The new alignment would have one lane in each direction ; however, it is proposed to provide a northbound left turn lane at Front St. and at Eastern Avenue. Therefore the capacity of Bayview will not be increased except for localized operational improvements at two intersections. Bicycle lanes, sidewalks and on-street parking will also be provided. **Exhibit 8-13** is the proposed cross-section for Bayview.

Need/Function:

The need to re-align Bayview Avenue is discussed in terms of: plans to control flooding of the lower Don River, urban design objectives, the number of lanes required to provide a good level of traffic service, connections to other roads in the West Don Lands and the needs of cyclists and pedestrians.

An Environmental Assessment is being carried out in parallel with the Precinct Plan to identify and evaluate various flood control options for the lower Don River. Although the preferred alternative has not yet been determined, guidelines prepared by the TRCA include the construction of a wedge-shaped landform on the west side of the river to contain floodwaters.

A setback from the western edge of the Don River would be required for all new development. An integral part of the Precinct Plan is the proposal to create a large area of open space between the Don River and the setback limit.

The existing alignment of Bayview Avenue is located in the floodplain. It is proposed to realign Bayview Avenue so that as much of Bayview as possible is located on the “dry side” of the landform where it will be protected from flooding.

Re-alignment and closure of the east ends of Front St. and Eastern Avenue are also considered essential to satisfy urban design objectives, namely to form the boundary of the park created by the landform and to separate the open space from the eastern limits of built development.

Bayview Avenue is currently used primarily as a commuter route. Most of the southbound traffic on Bayview in the weekday morning peak period passes through the

West Don Lands to Lake Shore Blvd., via Front St. or Mill St., to Cherry St. and then south on Cherry St. to Lake Shore Blvd. In the afternoon peak period most of the traffic flows in the opposite direction. It is expected that Bayview will continue to function as a commuter route after it is realigned.

Since the capacity of Bayview Avenue is restricted to one lane in each direction, the volume of traffic it can potentially carry is not significantly more than the 500 to 700 vehicles it currently carries during the weekday peak hours. Therefore providing one lane in each direction is considered adequate even when traffic generated by the full build-out of the West Don Lands is taken into account.

Two concepts were considered for addressing the commuter traffic that passes through the West Don Lands:

- Diverting “through” traffic around the West Don Lands and
- Dispersing traffic through the West Don Lands by providing connections to east-west streets.

Given the relatively low volume of commuter traffic, dispersing traffic through the West Don Lands was considered preferable to providing a separate road to take traffic around the West Don Lands. For this reason retaining connections to Eastern Avenue, Front St. E. and to Mill St. is considered essential.

Currently there are bicycle lanes on River St. from Gerrard St. to King St. To encourage cycling and to connect to the City’s bicycle network outside the West Don Lands, it is proposed that Bayview Avenue will become part of the bicycle network along with the extension of River St. south of King St. and Mill St. (Bayview to Cherry) through the West Don Lands.

Finally, sidewalks will be provided to service new development planned for the west side of Bayview Avenue and to provide access to the open space on the east side of Bayview. On-street parking will also be provided on Bayview Avenue.

FRONT STREET EAST

East of Cherry St. Front St. E. will be widened to four lanes, most of which will be separated by a 16.6m landscaped median. The curb lanes (4.0m) for the benefit of cyclists could be used for on-street parking during off-peak periods. Sidewalks will also be provided on each side of the street. The right-of-way will be considerably narrower near Cherry St. (20m) to avoid the existing heritage buildings on the northeast and southeast corners of Cherry St. and Front St. E.

West of Cherry it is proposed to widen the right-of-way from Front St. E. to provide enough width for four lanes of traffic, including “bicycle-friendly” curb lanes and sidewalks. Again, the curb lanes could be used for on-street parking during off-peak periods. Alternatively, the centre lanes could be dedicated for the exclusive use of streetcars.

Need/Function:

As is does at present, Front St. E. between Cherry St. and Bayview forms part of an important route for traffic passing through the West Don Lands to and from the downtown area. Front St. E. will also provide connections to Cherry St. and Bayview Avenue for local traffic as well as access to abutting properties. To provide an acceptable level of service for all road users, four lanes are considered necessary east of Cherry St.

West of Cherry St., Front St. serves as an important entrance to the West Don Lands from downtown Toronto and will provide access to the retail core of the community. As stated above, the right-of-way could be configured to accommodate four lanes of traffic, two of which could be used for parking, or two lanes of traffic and an exclusive right-of-way for streetcars. Travel demand analyses are being carried out as further input to the merits of diverting the King St. streetcar through the West Don Lands on Front St. A separate Environmental Assessment also will be required.

MILL STREET

East of Cherry St. it is proposed to widen Mill St. to two lanes and to provide bike lanes, on-street parking and sidewalks on each side of the street.

To the west of Cherry St. it is proposed to retain the existing right-of-way. This includes one lane of traffic and a bicycle lane in each direction with parking and a sidewalk on the north side of the street.

Need/Function:

Mill St. will continue to form part of the road network through the West Don Lands that will carry through traffic. In addition, Mill St. will provide connections to Cherry St. and Bayview Avenue for local traffic, as well as access to abutting properties. To provide an acceptable level of service for all road users, only two lanes are considered necessary east of Cherry St.

It is planned that Mill St. will form part of the network of bicycle lanes through the West Don Lands, connecting to bicycle lanes outside the precinct. The bike lanes will continue to the west side of Cherry St. to Parliament St.

Sidewalks are considered necessary to provide access to the open space at the east end of the precinct and abutting land uses, including the Distillery District.

EASTERN AVENUE

Eastern Avenue, River St. and Bayview Avenue will converge on a public square. To regulate traffic flow a one-way system is proposed on the two sides of the square connecting to Bayview Avenue

At the west end of Eastern Avenue the road is re-aligned so that it forms the south leg of a four-way intersection at the Eastern Avenue Diversion opposite the original Sumach St. This re-alignment has a significant impact on the indoor storage business located on the private property on the south side of Eastern Avenue. If the re-alignment proves to be infeasible, then Eastern Avenue would revert to its existing configuration where it intersects the Eastern Avenue Diversion. However, as explained in Section 8.4.3 of this report, since all of the land in this part of the West Don Lands is owned by the Ontario Realty Corporation (ORC), it is considered public land. Many of the businesses in the West Don Lands operate on relatively short term leases and it is expected that those businesses directly affected by the re-alignment of Bayview Avenue will relocate.

Need/Function:

Reconfiguration of the existing Eastern Avenue/Bayview Avenue intersection is required as part of the re-alignment of Bayview Avenue Eastern Avenue will also frame one side of the proposed urban park (“River Square”).

A re-alignment of the west end of Eastern Avenue is considered desirable to allow left turns to be made from Eastern Avenue on to the Eastern Avenue Diversion, a movement that cannot be made at present.

RIVER STREET

The Streets and Blocks Plan includes a proposal to extend River St. south of King St., under the Richmond St./Adelaide St. ramps to River Square. The right-of-way will contain space for one lane of traffic in each direction, parking on one side of the street, bike lanes and sidewalks.

River Street will be extended in the future once the southerly portion (north of Eastern Avenue) is created through the land division process under the *Planning Act*. The connecting piece under Richmond and Adelaide will be constructed only when the southerly portion is completed.

Need/Function:

While it is generally acknowledged that the West Don Lands is well connected to downtown Toronto, the only significant links to the community to the north are Parliament St. and Cherry St./Sumach St. The River St. extension will enhance the north-south continuity of the street system and provide access for the neighbourhood to the north to the large area of open space at the east end of the precinct.

The Precinct Plan also includes a proposal to close the existing road connection between Bayview Avenue and River St., immediately to the west of the point where King St. E. and Queen St. E. converge. This space will be transformed into an urban park, serving as a gateway, landmark and improved linkage between the surrounding neighbourhoods and open space on the banks of the Don River.

Finally, the extension of River St. will form part of the bicycle network through the West Don Lands. A pedestrian crossing is also identified over Cherry Street on the north side of the rail corridor.

FRONT STREET/EASTERN AVENUE/TRINITY STREET INTERSECTION

This intersection is considered an important gateway to the West Don Lands. To enhance its appearance it is proposed to create a public plaza or parkette square in the southwest quadrant of the intersection. To do this the one-way eastbound roadway off the south side of Front St. E. will be closed and integrated with the design of the rest of the triangular island. The configuration shown in the Streets and Blocks Plan (**Exhibit 8-11**) does not include allowance for streetcars. It may be preferable to extend a streetcar line on Front St. straight through the intersection following the existing alignment, creating a large island similar to what currently exists. Alternatively, the streetcar line could pass around the parkette. In both options, the existing boundaries of the property designated by the north side of Front St., the south side of Eastern Avenue and the east side of Trinity St. (between Front St. and Eastern Avenue) would remain unaltered. The only significant impact would be on the size of the parkette.

Need/Function:

Although traffic flows freely between Eastern Avenue and Front St., drivers can experience delays making a left turn from Trinity St. on to Eastern Avenue (westbound)

during the weekday peak hours. Furthermore, there are no pedestrian crossing facilities at this location. With the development of the West Don Lands, the demand for better external connections to the arterial road network beyond the West Don Lands to the rest of the City will increase.

Aside from the urban design objectives, the reconfiguration of this intersection is planned to achieve, traffic signals will facilitate turning movements from the West Don Lands and assist pedestrians to cross the Eastern Avenue Diversion.

NEW PEDESTRIAN/BICYCLE GRADE SEPARATIONS

In addition to improving the pedestrian facilities under the rail corridor at Cherry St. the Precinct Plan includes new three grade separations for pedestrians and cyclists (**Exhibit 8-8**):

- A bridge across the rail corridor and the Don River near Eastern Avenue, including a ramp to the existing off-road trail on the west side of the river;
- A tunnel under the rail corridor used by the Richmond Hill GO rail line;
- Off-road bicycle route on north side of railway corridor; and,
- A new passage under the rail corridor at Trinity St.

Need/Function:

Currently pedestrian and cyclist links between the West Don Lands, the east side of the Don River and across the rail corridor to Lake Ontario are limited. With new development in the West Don Lands additional connections are considered necessary to encourage people to walk and cycle as much as possible to the communities and recreation facilities surrounding the West Don Lands. These connections will also benefit residents to the north of the precinct.

8.3 Alternative Design Solutions

8.3.1 Transportation Alternatives

Ten improvement strategies (**Exhibit 8-9**) were identified and presented which include three alternatives that implement measures outside of the subject lands to address the transportation needs of the West Don Lands precinct.

Exhibit 8-9: Summary of Transportation Alternatives

| | | |
|------------------------|--------------------------------|---|
| ALTERNATIVE 'A' | Do Nothing | <ul style="list-style-type: none"> Retain existing transportation infrastructure |
| ALTERNATIVE 'B' | New Roads | <ul style="list-style-type: none"> Provide new roads within the West Don Lands precinct |
| ALTERNATIVE 'C' | | <ul style="list-style-type: none"> Provide new roads outside the West Don Lands precinct |
| ALTERNATIVE 'D' | Road Widenings | <ul style="list-style-type: none"> Widening existing roads within the West Don Lands precinct |
| ALTERNATIVE 'E' | | <ul style="list-style-type: none"> Widening existing roads outside the West Don Lands precinct |
| ALTERNATIVE 'F' | Road Realignments | <ul style="list-style-type: none"> Realign existing roads and intersections within the West Don Lands precinct |
| ALTERNATIVE 'G' | Transit | <ul style="list-style-type: none"> Improve existing bus service to/from the West Don Lands precinct |
| ALTERNATIVE 'H' | | <ul style="list-style-type: none"> Construct new and/or extend existing rapid transit within the West Don Lands precinct |
| ALTERNATIVE 'I' | | <ul style="list-style-type: none"> Construct new and/or extend existing rapid transit lines outside the West Don Lands precinct |
| ALTERNATIVE 'J' | Bicycle Spaces/ Pedestrians | <ul style="list-style-type: none"> Construct new and/or extend and improve existing bicycle and pedestrian facilities to/from and within the West Don Lands precinct |

Do Nothing

This alternative involves no changes to the existing transportation network within the West Don Lands precinct (Alternative A).

New Roads

These alternatives include construction of new, or extensions of existing, public roads within (Alternative B) and outside (Alternative C) of the West Don Lands precinct to support development within the West Don Lands precinct.

New public roads within the precinct would provide additional street connections to / from and within the precinct, define new development parcels, provide development access and address, as well as provide the opportunity to enhance the transportation infrastructure facilities available (road, transit, pedestrian and cycle) to appropriately serve the precinct.

The construction of new public roads outside of the precinct area to support the Precinct Plan would provide additional transportation capacity to meet increased travel demands arising from development within the subject area.

Road Widenings

These alternatives include widening existing roads within (Alternative D) and outside (Alternative E) of the West Don Lands precinct to support development within the West Don Lands.

Widening roads (rights-of-way and / or road pavements) within the precinct would improve the ability of the existing transportation infrastructure to meet increased travel demands arising from the development of the West Don Lands Precinct Plan. Such widenings would provide opportunities to increase existing transportation capacity through a combination of enhancements of roadway, transit, pedestrian and cyclist provisions within the precinct.

Widening roads outside of the precinct area to support the Precinct Plan would, similar to providing new roads, provide additional capacity to meet increased travel demands arising from development within the subject lands.

Realign Existing Roads and Intersections

Alternative F involves realigning roadways and intersections within the precinct to better facilitate the Precinct Plan development and urban design objectives, to normalize intersection configurations, facilitate other transportation infrastructure improvements and enhance access opportunities within the precinct.

Transit

These alternatives include improving existing surface bus services (Alternative G) to and from and within the precinct, provision for new rapid transit service through and within the precinct area (Alternative H) and provision for new rapid transit lines outside of the precinct area (Alternative I). New rapid transit lines would be constructed within their own rights-of-way to minimize delays to transit service. These alternatives would enhance transit service capacity to better support development within the West Don Lands precinct.

The provision of enhanced transit service is an integral component of the Waterfront transportation solution and would provide, once established, an alternative to car dependent travel that would serve to suppress automobile use.

Pedestrian and Bicycle Facilities

These alternatives include construction, extension or improvement of existing pedestrian and bicycle facilities to and from the West Don Lands precinct (Alternative J), and will enhance the provisions made for these non-auto travel modes.

As is the case for transit, encouraging people to walk or to use their bicycles is another key component of the Waterfront transportation strategy that seeks to reduce auto-dependency. These facilities could be located along existing or new roads within the precinct, or along the water's edge for instance.

8.3.2 Evaluation Criteria

A number of evaluation criteria were identified which were used in establishing which of the alternative strategies were carried forward for a more detailed review.

8.3.2.1 Transportation Service

The ability for an alternative solution to address the transportation needs of the West Don Lands precinct from a transportation service standpoint has been evaluated based upon the following:

- Road Safety;
- Ability to satisfy travel demands of local and through traffic;
- Access;
- Ability to accommodate/encourage transit;
- Service to bicyclists;
- Service to pedestrians;
- Promotion of goods movement; and
- Support Police and Emergency service operations.

8.3.2.2 Natural Environment

Having regard for protecting the natural and physical components of the environment, including terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping, has been evaluated based on the following:

- Terrestrial habitat;
- Vegetation;
- Availability of land;
- Existing bodies of water; and,
- Air quality.

8.3.2.3 Socio-Economic Environment

Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety. This was evaluated based on:

- Employment;
- Cultural and heritage resources; and,
- Noise and vibration.

8.3.2.4 Opportunity for Revitalization

Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization.

- Ability to support development objectives of the West Don Lands Precinct Plan;
- Ability to meet the urban design objectives of the West Don Lands Precinct Plan;
- Ability to support waterfront wide revitalization; and
- Ability to support the policies of the Central Waterfront Secondary Plan.

8.3.2.5 Cost Effectiveness

The feasibility and potential costs that may be involved in implementing a solution are evaluated against the potential benefits that a solution may present in terms of meeting the transportation needs of the West Don Lands precinct.

8.3.3 Assessment and Evaluation of the Alternative Solutions to the Problem/Opportunity

The alternative solutions were evaluated (**Exhibit 8-10**) based on four ratings defined as follows:

Good - A solution has a positive impact in regard to the evaluation criteria.

Neutral - A solution has neither a positive or negative impact in regard to the evaluation criteria.

Poor - A solution has a negative impact in regard to the evaluation criteria.

Rejected - A solution is rejected because it has an extremely negative impact on an evaluation criteria.

Alternative 'A' – Do Nothing

While the existing transportation infrastructure may be functioning adequately today, the “Do-Nothing” solution will not address the long term transportation needs of the West Don Lands precinct nor of a revitalized Waterfront more generally.

From a transportation service perspective, the existing transportation infrastructure poorly addresses the need to 1) meet the increased traffic demands of the precinct, 2) provide appropriate vehicular and pedestrian access to new development within the precinct, 3) promote and support transit use within the precinct and 4) provide for pedestrian facilities within the precinct.

The “Do-Nothing” solution has no impact from a natural and socio-economic environment perspective. When considering the revitalization opportunities provided by the “Do-Nothing” solution, it is clear that this alternative provides no benefit in achieving the overall development or urban design objectives of the Precinct Plan.

Alternatives ‘B’, ‘D’, ‘F’ - New Road, Widening Roads and Realignments Within the Precinct

From a transportation service perspective, the construction of new roads and the widening or realignment of existing roads within the precinct will, either in combination or separately, 1) provide additional roadway capacity to meet increased travel demands of the precinct, 2) enhance access opportunities to new development areas within the precinct and 3) provide opportunities to improve pedestrian facilities within the precinct. They also offer opportunities to provide for new rapid transit rights-of-way within the precinct and facilitate the construction of new roads.

None of these alternatives have a greater impact relative to any other solution from a natural and socio-economic environment perspective. These alternatives present great opportunities to meet the revitalization goals of the West Don Lands Precinct Plan, and across the Waterfront more generally.

From a feasibility and cost perspective these alternatives are practical, viable and cost effective solutions that will assist in meeting the overall transportation needs of the West Don Lands precinct.

Alternatives B, D and F are, based upon the foregoing, recommended as part of this evaluation as alternative solutions that should be taken forward for further consideration in the Class Environmental Assessment process. The next step would involve a review of the alternative design solutions based on a comparison against criteria similar to those used in this analysis.

Alternatives 'C', 'E' - New Roads and Widening Roads Outside of the Precinct

While the construction of new roads and the widening of certain existing roads outside of the precinct area may have benefits in terms of meeting other needs, they would not address the transportation needs of the West Don Lands precinct itself.

From a transportation service perspective, neither alternative provides 1) additional roadway capacity within the precinct, 2) access to development within the precinct, 3) an opportunity to promote transit use within the precinct or 4) improved service to pedestrians within the precinct. Furthermore, they do not support the realization of any of the development and urban design objectives of the precinct plan and are basically the “Do-Nothing” alternative in this regard.

Alternatives C and E have been rejected as options for further consideration.

Alternative 'G' - Improved Bus Service to / from the Precinct

From a transportation service perspective, improved bus service will have little impact on access and service to pedestrians / cyclists but may assist in satisfying travel demands of the precinct. The provision of improved bus service will promote and support transit use in an effort to reduce auto-dependency.

It is likely, however, that improvements to bus services (“neutral” ranking) alone will not be able to fully satisfy transit travel demand with build-out of the West Don Lands precinct. Studies undertaken by the City of Toronto have concluded that more robust systems (higher order transit) would be required to provide the necessary transit capacity.

From a natural and socio-economic environment perspective, Alternative G is not expected to have a greater impact relative to any other solution and has been ranked as “neutral”. Issues relating to air quality with respect to increased bus activity, will be offset by the increasing use of “clean” technology and reductions in car volume that increased transit use affords.

Improvements to bus service to / from the precinct are supportive of the development and urban design objectives of the plan. As noted above, with full build out, a more robust transit system will likely be required to fully support these objectives.

Improvements to bus service to / from the precinct (Alternative G) is a cost effective strategy that can be implemented without the need for much in the way of new supporting infrastructure. The improvement of bus transportation services to / from the West Don Lands precinct will assist in meeting, particularly in the short term, the

transportation needs of the Plan and has been recommended for further consideration as part of this preliminary evaluation.

Alternative 'H' - New Rapid Transit Lines Within the Precinct

Provision for new rapid transit facilities through the West Don Lands precinct is an important component of the long term transportation solution for not only the West Don Lands but for the revitalization of the entire waterfront.

From a transportation perspective, new high capacity transit facilities within the precinct that link to downtown Toronto and across the GTA will not only meet the transit travel demands of the precinct but also, by providing a high-quality alternate travel mode, will serve to reduce automobile usage within the West Don Lands precinct and assist in addressing traffic capacity requirements within the precinct. The provision of transit will have little impact on access, safety and service to pedestrians / cyclists within the precinct.

From a natural and socio-economic environment perspective, this alternative is not expected to have a greater impact relative to any other solution and has been ranked as “neutral” in this regard save for potential air quality benefits given that the rapid transit system is electrically powered.

The construction of new rapid transit lines within the precinct is supportive of both the development and is generally compatible with urban design objectives of the Precinct Plan and Waterfront Revitalization Plan.

Construction of a new rapid transit line is an expensive proposition. However, the benefits in terms of accommodating future travel demands, reducing automobile dependency and facilitating revitalization across the waterfront are considered to be great and could be weighed against the likely levels of expenditure.

Alternative H has been recommended, as part of this preliminary evaluation, for further consideration as part of the next stage of the Class EA Master Plan. Improvements to the transit system within the Precinct will form an essential component of the overall transportation system serving the West Don Lands. Since these types of improvements require approval under a separate EA, they will be examined separately from the Master Plan EA. As explained later in this chapter, the Master Plan identifies corridors within the right-of-way which should be protected for the potential future use of transit vehicles.

Alternative 'I' - New Rapid Transit Line Outside of the Precinct

The Central Waterfront Secondary Plan contains several improvements to the transit network serving the West Don Lands. Transit plans outside the Precinct include improvements to the transit service along Queens Quay East and King Street East.

When combined with improvements to service in the West Don Lands the resulting network will help meet the travel demands generated by new development in the West Don Lands in a manner that is consistent with the objectives and policies of the Secondary Plan. Similarly new rapid transit lines outside the Precinct will at least indirectly help achieve the development and urban design objectives of the Precinct and will directly support the revitalization of the waterfront.

In terms of the impacts on the natural and socio-economic environment, this alternative is not expected to have a greater impact relative to any other solution and has been ranked as neutral in this regard, except for potential air quality benefits, inasmuch that it is planned that improvements to the rapid transit system will be electrically powered.

The types of initiative presented in the Secondary Plan are an integral part of the transportation system serving the West Don Lands. However, as stated for Alternative 'H', they will be examined under a separate EA process.

Alternative 'J' - Improve Pedestrian and Bicycle Facilities

Alternative J would be pursued in combination with any of the other solutions to address existing deficiencies and discontinuities in the existing pedestrian and bicycle infrastructure and to provide new facilities that support the West Don Lands Precinct Plan. The encouragement of non-auto modes of travel is an important component of the waterfront wide and West Don Lands precinct transportation solution.

This alternative is generally considered as “good” with respect to each of the evaluation criteria and has no negative impact in any circumstance.

This alternative is recommended, as part of this evaluation, for further consideration as part of Phase 3 of the Class EA Master Plan.

8.3.4 Preferred Solution

Based on public and agency feedback, a total of seven alternative solutions (out of the 10) were identified as being carried forward for public and agency review and for further consideration as part of the Class EA Master for the West Don Lands precinct. The preferred solutions included:

- Construction of new, or extensions of existing, public roads within the West Don Lands precinct;
- Widening of existing roads within the West Don Lands precinct;
- Realigning existing roads and intersections within the West Don Lands precinct;
- Improving existing bus services to / from and within the precinct;
- Provision of new rapid transit lines outside and within the precinct area; and
- Construction, extension or improvement of existing pedestrian and bicycle facilities within the West Don Lands precinct.

Exhibit 8-11 shows the resulting classification of proposed road improvements according to the schedules of the Municipal Class EA (as described in Section 2.2). It is important to note that the preferred solution will be a balance between road improvement projects and transit projects. The transit projects however must be dealt with in a separate EA process.

8.4 Identification and Evaluation of Alternative Designs – Bayview Avenue

8.4.1 Constraints

An integral part of the Precinct Plan is the proposal to create a large area of open space at the east end of the West Don Lands adjacent to the west bank of the Don River. The West Don Lands EA was prepared in conjunction with the Lower Don Flood Protection EA and design alternatives were prepared in close consultation with the TRCA. The size and shape of this area is determined in large part by the wedge-shaped landform on the west side of the Don River recommended to control flooding. To accommodate this landform, a setback of 160 m from the western edge of the Don River is required for all new development.

It is proposed to realign Bayview Avenue so that as much of Bayview as possible is protected from flooding by the landform. The profile of Bayview will also be changed because of the landform. The maximum slope on the east, or “wet”, side of the landform has been set at 10%. On the west, or “dry” side of the landform, the maximum allowable slope is 3%. As part of the development of the open space plan, the realignment of Bayview Ave will form the western edge of the open space and separate the open space from the eastern limits of built development in the West Don Lands.

As it is at present, Bayview Avenue will be connected to Eastern Avenue and Front St. E. It is also proposed to extend Bayview southwards so that it connects to the east end

of Mill Street. This new link replaces Overend St., which will be closed (**Exhibit 8-12**). Plan and Profile drawings are included in **Appendix B**.

Along with the realignment of Bayview Avenue there are several other changes to the existing roads in the West Don Lands:

- Closing the east end of Eastern Avenue and realigning part of the remaining length of Eastern Avenue so that it intersects Bayview Avenue at approximately 90 degrees;
- Closing the easternmost end of Front St. (i.e. from Overend St. easterly); and
- Closing Overend St.

Bayview Avenue currently has one lane in each direction. The existing pavement is about 10.5m wide north of Eastern Avenue and about 7.7 m wide south of Eastern Avenue. The new alignment of Bayview Avenue would also have one lane in each direction as shown in cross-section 17-17 (**Exhibit 8-13**). Therefore the capacity of Bayview will not be increased except for localized operational improvements at Front St. and Eastern Avenue.

Bayview Avenue is used primarily as a commuter route. Most of the traffic in the weekday morning peak period passes through the West Don Lands to Lake Shore Blvd. via Front St. or Mill St. to Cherry St. and then south on Cherry St. to Lake Shore Blvd. In the afternoon peak period most of the traffic flows in the opposite direction. It is expected that Bayview will continue to function as a commuter route after it is realigned. However, with the development of the West Don Lands precinct, Bayview will also be used by traffic with an origin or destination in the West Don Lands.

Therefore, with respect to the Class Environmental Assessment process, it is planned that the new Bayview Avenue will continue to be used for the same purpose and will have the same capacity; however, by virtue of its realignment it will be reconstructed in a new location.

8.4.2 Evaluation Criteria

The criteria listed in the following section are similar to those used in Phase 2 of the EA (**Exhibit 8-14**).

The three alternatives were evaluated in terms of:

- Ability to provide transportation service;
- Impacts on the natural and socio-economic environments;

- Opportunities they creates for revitalization of the West Don Lands and, more generally the waterfront; and
- Feasibility and cost.

To be consistent with the approach used in Phase 2 of the Class EA Master Plan, each alternative was rated according to whether it will:

- Have a positive or negative impact on the criterion being evaluated;
- Have neither a positive nor a negative impact on the criterion being evaluated (i.e. is neutral); or
- Have such a negative impact that the alternative should be rejected.

The method used to indicate the ratings for each alternative for Phase 2 of the Master Plan EA was adopted for this Phase of the Class EA; namely:

- A large green dot: Positive impact
- Blue medium size dot: Neutral or no impact
- Small yellow dot: Negative impact
- A red “x”: Rejected

8.4.2.1 Transportation Service

Having regard for the transportation suitability, reliability and longevity of each alternative design solution. This is evaluated in terms of:

- Road safety;
- Ability to satisfy travel demand for local and through traffic;
- Access to abutting land use;
- Traffic operations;
- Ability to accommodate/encourage transit;
- Service to bicyclists and pedestrians;
- Facilitation of goods movement; and
- Support police and emergency service operations.

8.4.2.2 Natural Environment

Having regard for protecting the natural and physical components of the environment, including terrestrial habitat, aquatic habitat, surface water quality, ground water quality, aesthetics and landscaping. This was evaluated based on:

- Terrestrial habitat;
- Vegetation;

- Aquatic habitat;
- Air quality; and
- Soil and groundwater.

8.4.2.3.Social and Economic

Having regard for the potential impact related to private property, archaeological and cultural heritage resources, employment activity, noise and vibration, traffic disruption, and health and safety. This was evaluated based on:

- Noise and vibration;
- Business;
- Employment;
- Cultural and heritage resources;
- Impacts on private property; and
- Recreation.

8.4.2.4 Opportunity for Revitalization

Having regard for the extent to which each alternative supports the planning and urban design goals of the waterfront revitalization. This was evaluated based on the:

- Ability to support the development objectives of the Precinct Plan;
- Ability to meet the urban design objectives of the Precinct Plan (as articulated on pages 22 to 23 of the Precinct Plan); and
- Ability to support the policies of the Central Waterfront Secondary Plan.

8.4.2.5 Cost Effectiveness

Having regard for the cost associated with each alternative design and the capability of each design to adequately service the study area. This was evaluated based on:

- Capital cost of improvements; and
- Maintenance cost.

8.4.3 Assessment and Evaluation of Design Alternatives

A wide range of alternative alignments has been produced by previous planning exercises. In general, the alignments vary primarily in terms of the degree to which Bayview Avenue is realigned to the west of its existing location and the manner in which Bayview Avenue connects to the east-west roads in the precinct. From a road network perspective, each of these essentially provides the same degree of connectivity and transportation service.

The only alternatives that differ significantly from the concept advanced in the Precinct Plan are those that follow the existing alignment of Bayview Avenue. The major issues in this case are the impacts on the existing connections from Bayview to Eastern Avenue, Front St. and, indirectly, to Mill Street. To retain any of these connections the existing roads need to be lifted so that they clear the top of the landform.

A variation of this alternative would involve the following:

- Retaining Bayview Avenue on its current alignment on the wet side of the landform and connecting it directly to Mill St. instead of Front St.;
- Terminating Eastern Avenue and Front St. at the western edge of the proposed open space area; and
- Extending River St. to connect Eastern Avenue, Front St. and Mill St. and to separate the open space from the proposed eastern limits of built development.

Therefore, for the purpose of this EA, three “families” of alternatives are evaluated:

- Design Alternative A: Bayview follows the existing alignment, crosses the landform and connects to Front St. The existing alignment of Eastern Avenue is retained; however, the profile would be raised to accommodate the proposed flood proofing.
- Design Alternative B: Bayview follows the existing alignment but connects only to Mill St. The east ends of Eastern Avenue and Front St. are truncated and a new parallel road on the west side of the landform (i.e. an extension of River St.) connects Eastern Avenue and Front St. to Mill St.
- Design Alternative C: Bayview is re-aligned so that it forms the western edge of the large area of open space on the west side of the Don River and connects to Eastern Avenue, Front St. and Mill St.

These are illustrated in **Exhibit 8-15**.

Transportation Services

Each alternative was evaluated in terms of the following sub-criteria:

- **Road Safety:** Lane widths, turning radii and sight lines will be constructed to meet City of Toronto safety standards for all alternatives.
- **Ability to Satisfy Travel Demand for Local and Through Traffic:** As stated previously, Bayview Avenue is used as a commuter route. However, since the capacity of Bayview Avenue is restricted to one lane in each direction, the volume of traffic it can potentially carry is not significantly more than the 500 to 700 vehicles it currently carries. Two concepts were considered for addressing the commuter traffic that passes through the West Don Lands:
 - Divert “through” traffic around the West Don Lands; or

- Disperse traffic through the West Don Lands by providing connections to several east-west roads.

Given the relatively low volume of commuter traffic, dispersing traffic through the West Don Lands was considered preferable than providing a separate road to take traffic around the West Don Lands. In this respect Alternatives A and C provide several opportunities to disperse traffic, whereas in Alternative B most of the through traffic would be concentrated on Mill St. Since it is planned that Mill St. will also carry locally generated traffic, this could lead to conflicts between local and through traffic.

With Alternative B there is also the possibility that some traffic coming from the north on the Bayview Extension may divert to River St. to get to Eastern Avenue or Front St. This could adversely affect the abutting land uses on River St., north of King St.

- **Access to Abutting Land Uses:** Each of the three alternatives will provide adequate access to the open space and the built development to the west of the open space. It is anticipated that the existing land uses in this part of the precinct will relocate as the area is developed. Depending on the timing of new development and the re-alignment of Bayview, the access of some existing developments may need to be adjusted.
- **Impact on Traffic Operations:** It is anticipated that none of the alternatives will have a significant impact on existing traffic operations.
- **Ability to Accommodate/Encourage Transit:** None of the alternatives will have an impact on existing or planned transit services in the precinct.
- **Service to Bicyclists:** Currently there is a bicycle route on River St. from Gerrard St. to King St. This route could be extended south of King St. and through the West Don Lands on the road networks shown in any of the three alternative design concepts. However, Alternatives B and C would provide a more direct routing than Alternative A.
- **Service to Pedestrians:** Each alignment would include sidewalks. However, Bayview Avenue in Alternatives A and B is located some distance from the proposed residential and commercial development in the West Don Lands. Consequently, it is not conveniently located for pedestrians, unlike Alternative C.
- **Facilitation of Goods Movement:** Alternatives A and C provide direct connections between Bayview Avenue and Eastern Avenue, Front St. E. and Mill St. for commercial vehicles. With Alternative B most of the commercial traffic coming from/going to Bayview Avenue would be concentrated on Mill St., which could have a negative impact on the abutting land uses, particularly the school which is proposed for the southeast corner of Bayview (re-aligned) and Mill St. There is also the possibility that some commercial vehicles going to Eastern Avenue or Front St. may use River St. north of King St. to get to or from the Bayview Extension.

- **Support Police and Emergency Service Operations:** None of the alternatives will have a significant impact on the level of service required for the Police and other emergency services.

Natural Environment

Each alternative was evaluated in terms of the following sub-criteria:

- **Terrestrial Habitat:** There is no terrestrial habitat of any significance along the alignments of any of the roads shown in Alternatives A, B or C.
- **Vegetation:** There is no vegetation habitat of any significance along the alignments of any of the roads shown in Alternatives A, B or C.
- **Aquatic Habitat:** There are no existing bodies of water affected by the alignments of any of the roads shown in Alternatives A, B or C.
- **Air Quality:** None of the alternatives are located near any sensitive receptors. While Alternatives A and C provide no additional road capacity, the road network shown in Alternative B does include additional capacity.
- **Soil and Groundwater:** There is some potential that soil and/or groundwater contamination will be encountered. To minimize the impacts, soil and groundwater management plans will be required for all alternatives.

Social and economic

Each alternative was evaluated in terms of the following sub-criteria:

- **Noise and Vibration:** None of the alternatives will be moved closer to any sensitive receptors.
- **Businesses:** The existing businesses in this part of the West Don Lands are located on land owned by the Ontario Realty Corporation (ORC). Many of these businesses involve outdoor storage of vehicles and equipment. Since they operate on short-term leases, it is expected that when the area is redeveloped, these businesses will relocate. Depending on the timing of new development and the re-alignment of Bayview Avenue some of these businesses may be affected in the short-term. In some cases businesses would be forced to relocate, whereas in other cases the impact is relatively minor and only the existing access would have to be modified.
 - **Design Alternative A:** The office buildings occupied by two businesses are located in the proposed right-of-way of the realignment of Mill St. and the new connection linking Front St. E. and Mill St. Access to the properties occupied by three other businesses would have to be adjusted.
 - **Design Alternative B:** The office buildings occupied by three businesses are located in the proposed right-of-way of the realignment of Mill St. and the

extension of River St. Access to two other businesses would have to be adjusted.

- **Design Alternative C:** The office buildings occupied by four businesses are located in the proposed right-of-way of the realignment of Bayview Avenue, Mill St. and Eastern Avenue. Access to three other businesses would have to be adjusted.

- **Employment:** As stated above, there could be some loss of employment because of the impacts of the alternatives on any existing businesses that are not able to relocate elsewhere.
- **Cultural and Heritage Resources:** There are no cultural or heritage features in the West Don Lands that are affected by any of road networks shown in Alternatives A, B or C.
- **Impacts on Private Property:** As stated previously, since all the land affected by the re-alignment of Bayview Avenue is owned by the Ontario Realty Corporation, there are no impacts on private property.
- **Recreation:** By retaining the existing connections to Eastern Avenue and Front St. East, the road network represented by Alternative A divides the open space at the east end of the precinct into three non-contiguous areas. In contrast, in Alternatives B and C, the road network facilitates the creation of one large area of open space. This provides more flexibility in terms of the types of recreation facilities and activities allocated to the open space and eliminates potential conflicts created by pedestrians walking from one area of open space to another.

Opportunity for Revitalization

Each alternative was evaluated in terms of the following sub-criteria:

- **Ability to Support the Development Objectives of the Precinct Plan:** Aside from the differences identified previously, there is little, if any, difference among the three alternative alignments for Bayview Avenue in terms of their ability to support the development objectives of the West Don Lands Precinct Plan.
- **Ability to Meet the Urban Design Objectives of the Precinct Plan:** Similar to the impacts on recreation, Alternative A carves the proposed area open space at the east end of the precinct into three smaller areas. In Alternative C, and to a lesser extent in Alternative B, the road network does not intrude into the area of open space and helps separate the open space from the eastern limits of built development.
- **Ability to Support the Policies of the Central Waterfront Secondary Plan:** The alternatives do not differ significantly in their ability to support revitalization of the waterfront.

Cost effectiveness

Each alternative was evaluated in terms of the following sub-criteria:

- **Capital Costs (including property acquisition):** Since the land affected by the re-alignment of Bayview Avenue is considered publicly owned, there are no property acquisition costs. The capital costs differ mainly in terms of the length of road that would need to be re-constructed. In Alternatives A and B a total of 640m and 730m of reconstruction would be required, whereas for Alternative C the amount of new construction is only 480m. Therefore options in which Bayview is reconstructed on the existing alignment could cost significantly more than re-aligning Bayview to the dry side of the proposed flood proofing landform.
- **Maintenance Costs:** Similarly, the maintenance costs for Alternative C should be significantly less than for Alternatives A and B.

8.4.4 Preferred Design

Based on the evaluation presented above, the main differences among the alternatives are summarized as follows:

- The extent to which Bayview Avenue is located in the floodplain:
 - Alternatives A and B follow the existing alignment; and
 - Alternative C is located primarily outside the floodplain with a vertical alignment set by the Lower Don River.
- The impacts on the creation of a large area of open space at the east end of the precinct:
 - Alternative C maximizes the size of this area of open space and creates a clear separation of open space and built development.
- The capital and maintenance costs of the road network:
 - The costs of alternative C are significantly less than the other two alternatives.

For these reasons Design Alternative C is recommended as the preferred alternative. A more detailed plan of this alternative is shown in **Exhibit 8-12**.

8.5 Identification and Evaluation of Alternative Designs – Cherry Street

8.5.1 Constraints

One of the primary objectives of the transportation plan for the West Don Lands is to reduce dependence on the automobile by providing a high level of transit service. To provide a high level of transit service in terms of travel time and reliability, it is the

TTC's policy to construct all new streetcar lines in an exclusive right-of-way. The West Don Lands Precinct Plan makes provision for the possibility of transit service in an exclusive right-of-way on Cherry St. between King St. E. and the rail corridor north of the Gardiner Expressway and Lake Shore Blvd. Another alternative that will be considered in a future Transit EA is to have transit in an exclusive right-of-way on Front Street between Parliament and Cherry Street (**Exhibits 8-16 to 8-19**). Plan drawings are included in **Appendix B**.

The existing Cherry St. right-of-way is 20m and the typical pavement width is 14m. Although the existing pavement markings indicate that Cherry St. consists of only one lane in each direction, the pavement width is sufficient to support four lanes of traffic. From observation Cherry St. appears to function as a four-lane road, particularly at intersections. To formalize this arrangement, the existing pavement could simply be re-stripped to provide four 3.5m lanes.

The right-of-way proposed by the Central Waterfront Secondary Plan for Cherry St. (south of Front St.) is 40m. As a result of work undertaken in this EA, it is proposed that the right-of-way be narrower than what is proposed in the Secondary Plan. This decision takes into account functionality (i.e. the need to provide facilities for vehicular traffic, on-street parking, cyclists and pedestrians and provide space that may be used in the future for transit), urban design considerations and the preferences of the community.

During the course of this EA there was concern that the rights-of-way required to satisfy all of these functions compromised urban design objectives. Some of the residents in the surrounding communities also expressed concerns that the rights-of-way presented at the Public Information Centres were too wide and catered too much to vehicular traffic at the expense of pedestrians and cyclists. The rights-of-way recommended in the EA Master Plans represent a balance between functionality on the one hand, and urban design and community interests on the other.

In the EA Master Plan the proposed right-of-way is 36m between Eastern Ave. and Mill St. North of Eastern Ave. the right-of-way narrows from 35m to the existing limits to match the right-of-way between the columns supporting the Richmond St./Adelaide St. ramps. Until such time that the EA for a streetcar line is carried out, it is proposed to retain the existing cross-section on Cherry St. from the south side of the ramps to King Street. South of Mill St. the proposed right-of-way narrows to match the existing right-of-way at the railway bridge.

The Secondary Plan proposed a 40m right-of-way. In terms of function, the primary differences between the 40m and the 36m rights-of-way are the bicycle lanes and dedicated parking lanes that have been included on Cherry St. As previously explained in the EA Master Plan, it is proposed that bicycle lanes are provided on the extension of River St., Bayview Ave. and Mill St. rather than on Cherry St. However, bicycle lanes are proposed on Cherry St. south of Mill St. where a 37m right-of-way will be provided. Similarly no provision is made for dedicated parking lanes. However, depending on the traffic volumes on Cherry St. there is the option to allow on street parking during off-peak periods.

In summary, it is acknowledged that there is some loss of functionality for cyclists due to the narrower right-of-way on Cherry Street north of Mill Street. Provision of off-street parking can assist in maximizing the utility of the right-of-way for cyclists as well as vehicular traffic. Alternatives, which can be explored during detailed design, include narrowing the sidewalks slightly to accommodate reserved bike lands, or application of a colonnade system for wider pedestrian space in combination with wide pavement to accommodate reserved bike lanes.

Within the 36m a right-of-way varying from 12m to 13m is required for streetcars to operate exclusively in the middle of the road. This includes space for the tracks, platforms and left turn lanes for mixed traffic at intersections. For the purpose of this Class EA Master Plan, that portion of the right-of-way allocated for a potential exclusive streetcar service is shown as a landscaped median because a separate EA must be undertaken for transit facilities.

As indicated previously the proposed right-of-way width for Cherry St. varies between King St. and the rail corridor. Three alternative alignments for the proposed widening of Cherry St. as described above were identified and evaluated:

- Widening entirely on the west side of Cherry Street;
- Widening entirely on the east side of Cherry Street; and
- Widening selectively on either the west or east side of Cherry St.

Widening equally on both sides was not considered given that widening exclusively to one side would reveal the maximum impacts, given that there are significant physical constraints.

These are illustrated in **Exhibit 8-20**.

8.5.2 Evaluation Criteria

A number of sub-criteria were identified to evaluate the alternatives in more detail with respect to transportation service (**Exhibit 8-21**). The criteria are the same as those used for the evaluation of Bayview Avenue and can be referred to in Section 8.4.2.

8.5.3 Design Alternatives

Transportation Services

Each alternative was evaluated in terms of the following sub-criteria:

- **Road Safety:** The geometric design of each alternative will conform to City of Toronto design standards regarding lanes widths, turning radii at intersections, horizontal and vertical curvature and sight lines. Therefore, there is no difference between the three alternatives in terms of their impact on road safety.
- **Ability to Satisfy Travel Demand of Local and Through Traffic:** Two lanes of traffic will be provided in each direction. Currently there are traffic signals at Eastern Avenue and it is anticipated that ultimately signals will be warranted at Front St. E. and at Mill St. Based on forecasts of the traffic that could be generated by the full build-out of the development proposed for the West Don Lands, it is estimated that the existing capacity of Cherry St. will be adequate to accommodate both local and through traffic.

Since the three alignments have the same configuration they will satisfy this criterion equally.

- **Access to Abutting Land Uses:** With the construction of the median, those land uses that have access on to Cherry St. will be restricted to right-in/right-out. Two businesses currently use an access off of Cherry Street. The three alternative alignments will have the same impacts in this regard.
- **Impact on Traffic Operations:** Since access on to Cherry St. for new uses will be limited to right-in/right-out, more traffic will have to pass through the intersections on Cherry St., which will have a negative impact on the level of service at these intersections. However, the degree of the impact is likely to be similar for the three alternatives. Limiting access on main streets improves the overall performance of the road network. This is also consistent with the City's planning and design objectives which encourages vehicular service to main streets from the side streets.
- **Ability to Accommodate/Encourage Transit:** All three alternatives incorporate a 7m wide median, which is wide enough in the future to accommodate two-way streetcar service operating in an exclusive right-of-way. There is no difference

between the alternatives. Until streetcar service is extended to the West Don Lands, the median will be landscaped.

- **Service to Cyclists:** Currently there are designated bike lanes on Cherry Street. Signs are posted along the route to guide cyclists; however there are no pavement markings that allocate part of the pavement to cyclists. To avoid widening the right-of-way beyond 36m, it is proposed that the bicycle route through the West Don Lands be relocated to the proposed extension of River St., Bayview Avenue and to Mill St. (Bayview to Cherry). Therefore, none of the design alternatives to widen Cherry St. will provide any special facilities for cyclists.
- **Service to Pedestrians:** Sidewalks will be provided on both sides of Cherry St. for each of the three alignments and traffic signals will be provided at intersections. However, the median will increase the distance that pedestrians would require to cross Cherry St.
- **Facilitation of Goods Movement:** Although there are impacts on traffic operations described above, none of the alternatives will have a significant impact on the current level of service for goods movement.
- **Support Police and Emergency Service Operations:** The proposed median would hinder direct access to properties on Cherry St.

In summary, there are no significant differences between the three alternative alignments in terms of the level of transportation service they will provide.

Natural Environment

Each alternative was evaluated in terms of the following sub criteria:

- **Terrestrial Habitat:** There is no terrestrial habitat of any significance in the Cherry Street corridor.
- **Vegetation:** There is no vegetation habitat of any significance in the Cherry Street corridor.
- **Aquatic Habitat:** There are no existing bodies of water in the Cherry St. corridor affected by any of the alternatives.
- **Air Quality:** The road capacity for all three alternatives is no different than provided by the existing configuration of Cherry St. Furthermore none of the alternatives are located near any sensitive receptors.
- **Soil and Groundwater:** There is some potential that soil and/or groundwater contamination will be encountered. To minimize the impacts, soil and groundwater management plans will be required for all alternatives.

Based on this evaluation, the three alternative design concepts will have little impact on the natural environment.

Socio-economic

Each alternative was evaluated in terms of the following sub-criteria:

- **Noise and Vibration:** None of the alternatives will be moved closer to any sensitive receptors.
- **Businesses:**
 - **Design Alternative A:** Widening Cherry St. entirely on the east side would have an impact on four existing businesses: on the northeast corner (an auto body shop) and southeast corner (the office of a storage company) of Cherry St. and Eastern Avenue and on the northeast and southeast corners of Cherry St. and Front St. E. (an office and the Canary Restaurant respectively). While it may be possible to relocate the office of the storage company elsewhere on the same property, the other businesses would have to be relocated.
 - **Design Alternative B:** Widening Cherry St. on the west side would affect use of the building located on the southwest corner of Cherry St. and Mill St. in the Distillery District. This alternative would also have a relatively minor impact on part of the property located at the northwest corner of Cherry St. and Front St. E. that is used for vehicular storage and a vacant lot on the southwest corner of Cherry St. and Front St.
 - **Design Alternative C:** Widening selectively on both sides of Cherry St. would have the same impact on existing businesses as Design Alternative B.
- **Employment:** As stated above, widening Cherry St. on the east side (Alternative A) would have a significant impact on the employment of three businesses. The other two alternatives are unlikely to have much of an impact, if any, on employment in the West Don Lands.
- **Recreation:** No recreational activities would be affected by any of the three alternative alignments.

Design Alternative B will have the greatest negative impact on the social and economic environment and Design Alternative C will have the least impact.

Opportunity for Revitalization

Each alternative was evaluated in terms of the following sub-criteria:

- **Ability to Support the Development Objectives of the Precinct Plan:** Aside from the differences identified previously, there is little, if any, difference among the three alternative alignments for Cherry St. in terms of their ability to support the development objectives of the West Don Lands Precinct Plan.
- **Ability to Meet the Urban Design Objectives of the Precinct Plan:** The wider right-of-way proposed for Cherry St. provides increased space for pedestrians and landscaping as well as meeting the demands for vehicular capacity. Since the cross-sectional elements of the three alternatives are identical, there are no differences

with respect to their ability to meet the urban design objectives of the West Don Lands Precinct Plan.

- **Ability to Support Policies of the Central Waterfront Secondary Plan:** Similarly, the alternatives do not differ in their ability to support revitalization of the waterfront.

Cost Effectiveness

Each alternative was evaluated in terms of the following sub-criteria:

- **Capital Costs (including property acquisition):** There will be some difference in the capital costs of the three alternatives with respect to utility relocation and property acquisition:
- **Utility Relocation:** From a visual inspection, it is estimated that the costs of relocating existing above grade utilities for Design Alternatives B and C will be higher than for Design Alternative B.
- **Property Acquisition:** All the alternatives will require the acquisition of property. There are more buildings on the east side of Cherry St. that would have to be acquired and demolished than on the west side, which suggests that the property costs for Design Alternative A will be higher than for B and C. However, a more detailed assessment would be required to quantify the differences.
- **Maintenance Costs:** There will be no differences in the road maintenance costs of the three alternatives.

Preliminary indications are that the capital costs of Design Alternative A will be the highest and those for Design Alternative C will be the lowest.

8.5.4 Preferred Design

Based on the evaluation presented above the differences among the three alternatives in terms of their impacts on transportation service, the natural environment and opportunities for revitalization are insignificant.

There will be some differences in the capital costs of the three design alternatives, specifically the relocation of utilities and acquisition of property.

The alternatives differ primarily with respect to their impacts on the social and economic environment. Widening entirely on the east side will have significant impact with respect to these criteria. In contrast, widening selectively on both sides of Cherry St. will have the least impact on existing businesses and will have no impact on existing heritage buildings.

For these reasons Design Alternative C is recommended as the preferred alternative because by widening on both sides of the street there will be limited impact to the surrounding area. Although the capital costs may differ among the alternatives, in our opinion, these differences are unlikely to have any effect on this recommendation.

The preferred alternative is shown in more detail in **Exhibits 8-16**. As described previously, the existing right-of-way between King St. and Eastern Ave. varies from about 28m north of the Richmond St./Adelaide St. ramps to about 22m just south of the ramps. As shown in cross-section 1-1 of **Exhibit 8-17**, there is no raised median north of the ramps. South of the ramps a median is provided along with one lane of traffic in each direction (Cross-section 2-2). Proceeding south towards Eastern Ave. the right-of-way widens progressively to accommodate a southbound left turn lane and to match the right-of-way south of Eastern Avenue.

Between Eastern Ave. and Front St. the right-of-way increases to almost 36m as shown in cross-sections 3-3 and 4-4 (**Exhibits 8-17 and 8-18**). The additional width beyond 35m is required to avoid the heritage buildings on the northeast and southeast corners of Front St. and Eastern Avenue.

From Front St. to Mill St. a right-of-way of 35m is provided as shown in cross-sections 5-5 and 6-6 of **Exhibits 8-18 and 8-19**. South of Mill the proposed right-of-way is 37m as shown in cross-section 7-7 **Exhibit 8-19**. The additional width is required to provide bicycle lanes that will connect the proposed bicycle lanes on Mill St. to the bicycle facilities on the south side of the rail corridor.

8.6 Other Road Modifications

The other road modifications are considered Schedule B projects because they fall within the cost limit for projects approved as a Schedule B. Descriptions of other road modifications can be found below.

Front Street East

The Central Waterfront Secondary Plan includes a new streetcar line from King St. through the West Don Lands via Parliament St. and Front St. and returning to King St. via St. Lawrence St., which would be extended from Eastern Ave. to Front Street. To accommodate transit in an exclusive right-of-way, the right-of-way for Front St. East in the Secondary Plan has been widened to 40m. A separate EA will be carried out to determine the need for an exclusive transit way on Front Street.

- **East of Cherry Street**

The plan for Front St. to the east of Cherry St. in this EA is shown in **Exhibits 8-22, 8-23 and 8-23a** and is based on the assumption that the transit EA for the West Don Lands will determine that an exclusive streetcar right-of-way on Front St. is not required.

The existing heritage buildings on the northeast and southeast corners of Front St. and Cherry essentially prevent widening the existing right-of-way beyond 20m. Within this short section of Front St. the right-of-way could be configured in several ways. As shown in cross-section 13A-13A (**Exhibit 8-24**), for example, provision could be made for two westbound lanes (a left turn lane and a shared through/right turn lane) and one eastbound lane.

To the east of the 20m right-of-way, the design of Front St. changes dramatically. It is proposed to widen the right-of-way to 42m, similar to that shown in the Secondary Plan. As shown in cross-section 14-14 (**Exhibit 8-24**), Front St. will contain four lanes, separated by a 17m-landscaped linear park. The curb lanes will be 4.0m wide for the benefit of cyclists and could be used for on street parking during off-peak periods.

All turning movements will be permitted where Front St. intersects with the north-south local streets except at the intersection where it is proposed to widen the right-of-way from 20 to 42m. At this intersection it is proposed to extend the median slightly to the west thereby restricting turning movements to/from the north-south local street to right-in/right-out. This is considered necessary to minimize potential conflicts caused by vehicles crossing Front St. or making left turns from the local street on to Front St.

- **West of Cherry Street**

To protect for the possibility that the transit EA will determine that there should be an exclusive right-of-way for streetcars on this section of Front St., the EA Master Plan has provided for a 30m right-of-way. In addition to a separate right-of-way for streetcars, two travel lanes have been provided in each direction (7.5m). Near Cherry St. a westbound streetcar platform will be provided, which would reduce westbound travel to one lane near the platform.

Similar to Cherry St., the narrower right-of-way proposed for this section of Front St. takes into account the need to provide facilities for transit vehicles, other vehicular traffic, on-street parking, cyclists and pedestrians), urban design considerations and the preferences of the community. Functionally the main differences between the typical 30m section shown in cross-section 11-11 (**Exhibit 8-25**) and the 40m right-of-way

proposed in the Secondary Plan are the absence of bicycle lanes and dedicated parking lanes.

Although no bicycle lanes will be provided on Front St., some provision for cyclists has been made by specifying 4.0m curb lanes. Similarly, while no allowance has been made for dedicated parking lanes, parking could be permitted in the curb lanes during off-peak periods depending on traffic volumes.

Therefore, similar to Cherry St., by providing shared lanes for cyclists and motorists and off-peak parking, the narrower right-of-way on Front St. addresses urban design and community concerns with relatively little loss of functionality.

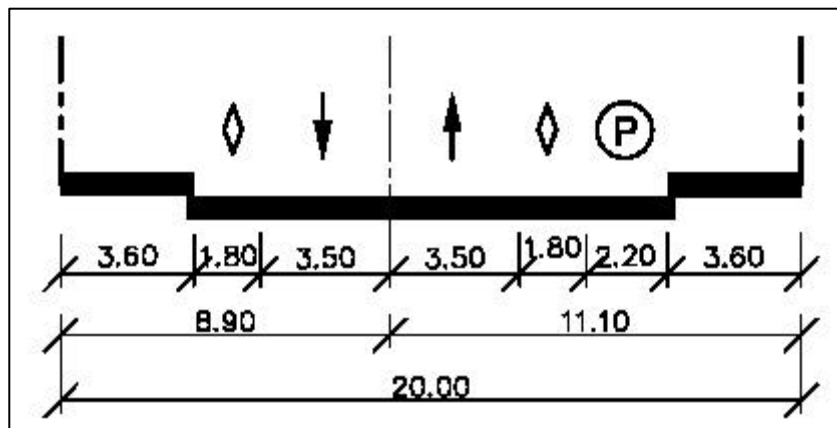
The only existing land use that could be directly affected by the reconfiguration of the Front Street/Eastern Avenue/ Trinity Street intersection shown in Exhibit 8-22 is the Chrysler dealership located on the southwest corner of Front Street and Trinity Street, on land owned by the Ontario Realty Corporation (ORC). Currently the main driveway for this land use is located on Front Street to the Eastern Avenue Diversion. This is an all access entrance allowing vehicles to turn left and right to access or exit the site. To preserve these movements some small adjustments may be required at this driveway. If, on the other hand, an exclusive right of way is provided for transit vehicles on Front Street between Parliament Street and Trinity Street, as determined by a separate EA, then access would be limited to right-in/right-out.

If the separate transit EA for the West Don Lands determines that an exclusive streetcar right-of-way on this part of Front St. is not required, then the right-of-way could be reduced to 26m, as shown in cross-section 12-12 in **Exhibit 8-24**.

River Street

The proposed extension of River St. south of King St. will result in a right-of-way that will contain space for one lane of traffic in each direction, parking on one side of the street, bike lanes and sidewalks (**Exhibit 8-26**).

Exhibit 8-26: River Street Extension Cross Section (19-19)



Mill Street

Exhibit 8-26a shows a road cross-section for Mill Street, east of Cherry Street.

Local Roads

The most visible change to the road network will be the character of the roads themselves. The new road system will create urban streets that allow safe and convenient movement for pedestrians as well as accommodating cyclists and transit vehicles. New local roads will provide a safe and convenient environment for cyclists and pedestrians as well as provide vehicular access for new development.

9 ENVIRONMENTAL EFFECTS AND MITIGATION

9.1 Overview

This chapter discusses the potential impacts of the various projects that form part of this Class EA Master Plan. It examines the potential interactions between the projects and the environment and describes potential resulting environmental effects and it also describes environmental management measures to eliminate or reduce those effects. It is recognized that the West Don Lands Precinct Plan involves a series of individual projects that have their own impacts which may also act in combination to create greater impacts.

In this section the environmental impacts (**Exhibit 9-1**) are assessed based on the four major infrastructure projects including improvements to the transportation, stormwater, sanitary and waste water systems.

Exhibit: 9-1: Criteria Used for the Assessment

| Environmental Component | Criteria |
|--------------------------------|--|
| Terrestrial | <ul style="list-style-type: none"> • Species • Habitat |
| Aquatic | <ul style="list-style-type: none"> • Species • Habitat |
| Air | <ul style="list-style-type: none"> • Air Quality • Noise |
| Geophysical | <ul style="list-style-type: none"> • Soil • Groundwater • Surface Water |
| Socio-Economic | <ul style="list-style-type: none"> • Businesses and Employment • Built Heritage • Archaeology • Traffic and Movement of Goods and Services and Emergency Services • Private Property • Recreation • Health and Safety • Traditional Use of Land and Resources by First Nations |

9.2 Potential Interactions

To assess the impacts of the infrastructure work proposed for the West Don Lands precinct matrices (**Exhibits 9-2 to 9-4**) show the project activities and their potential interactions with the environment based on environmental criteria described above. The

matrices show that there will be positive interactions on business and employment, private properties, and soil and groundwater. There will be minimal potential negative interactions on the terrestrial environment, aquatic environment and air during construction.

9.3 *Potential Environmental Effects and Mitigation*

Exhibit 9-5 provides additional detail on the potential environmental effects and illustrates the potential environmental management practices used to mitigate the effects due to infrastructure development. If the proposed mitigation measures are implemented there should be no adverse residual effects on the environment.

The effects to terrestrial species and habitat are minimal, and generally limited to site clearance activities. Since the area was previously developed, there are no significant terrestrial features to be affected. Migratory bird habitat should be protected during key migration periods. Limiting construction activities from spreading to adjacent natural areas, and adding new vegetation through landscaping (with an emphasis on native materials) will mean that there is no residual adverse effect.

Aquatic habitat can be affected by construction related sedimentation, and accidental spills. Appropriate sediment control measures and spill response plans should mitigate these effects. Once implemented, the new stormwater management measures (consistent with the WWFMMP) for the precinct should contribute to improved aquatic conditions.

Air quality effects may arise from construction activities and site remediation activities. Construction related effects can be mitigated through appropriate dust and emission controls. There may be minor incremental increases in emissions from vehicles using an enhanced road system, but this is likely balanced by the improvement to the system for other modes of travel.

Noise and vibration effects are primarily associated with construction. Appropriate equipment controls and conformity with local noise control by-laws will mitigate any adverse impacts.

Soil and groundwater quality will improve overall as a result of remediation of infrastructure corridors and adjacent development sites. Surface water quality should improve with the implementation of new stormwater quality management measures, consistent with the WWFMMP.

The redevelopment of the district may result in the relocation of some businesses. This is a result of the broader land use changes. The City's Economic Development group working with ORC can assist businesses to find new locations. Temporary disruptions during construction can be managed through construction staging plans.

The preferred solutions avoid impacts to built heritage resources. Although archeological finds are not expected, a Stage 2 Archaeological Assessment is recommended for works in the vicinity of the Thornton Blackburn Site.

Private property impacts have been avoided. Nuisance impacts associated with construction can be mitigated. Lands will be required from the Ontario Realty Corporation, and this is discussed in Chapter 12.

The plan should have a substantial positive impact on recreation. The improved infrastructure will create new linkages for cycling and walking.

There will be short-term effects to transportation due to construction-related lane closures. Route detours and minimizing land closures through construction staging should minimize effects on traffic, the movement of goods and services and emergency services.

In summary, there are no adverse effects that cannot be mitigated. On this basis, there are no significant adverse residual effects on the environment.

10 PUBLIC AND AGENCY CONSULTATION

Public consultation was conducted in accordance with the Class EA requirements. Notices were published in local newspapers (The Toronto Star and The St. Lawrence Community Bulletin) and letters were sent out to stakeholders and residents within the surrounding study area to ensure widespread public awareness (Appendix A). This informed affected residents, property owners, and stakeholders regarding the project.

From December 2003 to May 2004, a comprehensive public consultation program was implemented as an integral part of the West Don Lands precinct planning process. Consultation events were held at strategic points in the planning process to give the design team, led by Urban Design Associates, an opportunity to communicate their vision and design concepts for West Don Lands to participants and to receive feedback. Municipal Class EA Master Plan consultations were held during the same period and were an important part of the precinct planning process.

10.1 *Public Forums*

In addition, the TWRC maintains a database of all stakeholders who send letters, emails or attend meetings. The database currently has approximately 3,000 names. Prior to every TWRC public meeting, an email is sent to every stakeholder in the database.

Public forum sessions were large open public meetings that attracted between 100 – 200 participants. Each meeting was intended to serve as an opportunity to communicate ideas about West Don Lands with the broader community and to receive their feedback on the design team's work. Notification for each forum was provided through the media, direct e-mail invitation, and via the TWRC website.

Public Forum #1 was held on December 1st, 2003 and was designed to give the public an opportunity to help the design team understand the area's strengths and weakness, and to share their visions for West Don Lands. The event was advertised in the East Toronto Community news on November 20, 2003, and in The Mirror on November 21, 2003. Ninety-eight people, representing 52 organizations, participated in this meeting.

The second public forum was held on February 12th, 2004 and was part of an intensive week-long charrette, which was hosted by the design team. Different design alternatives and solutions were developed throughout the week in consultation with stakeholders and representatives from local and provincial governments and their agencies. On February 12th, the design team presented a set of design principles and two alternative precinct planning concepts for the broader public to consider. Over 200 people attended this

forum and were given the opportunity to share what they liked and disliked about the design alternatives. The design team used this information to refine the design alternatives and to develop a draft Master Plan.

On May 6th, TWRC held the third and final public forum for West Don Lands. The purpose of this forum was for the design team to present the draft Master Plan, and for TWRC to present the implementation and phasing plan, as well as the sustainability and affordable housing strategies. Approximately 170 people attended this forum and were given the opportunity to share their thoughts on what they considered the most important parts of the draft Master Plan as well as any concerns they had.

10.2 Environmental Assessment Open Houses

The first EA Open House was held on February 12th, at the Novotel Hotel in the Champagne Ballroom prior to Public Forum #2 and 64 people participated. A Notice of the meeting was placed in the Toronto Star on February 4, 2004 and February 8, 2004, the East Toronto Community news on January 28, 2004 and the St. Lawrence Community Bulletin on January 30, 2004. Letters were also sent to Agencies and interested members of the public that could potentially be affected by this project advising them of the meeting. A sample of this letter and the Notice can be found in **Appendix A**. There were 98 interested members of the community in attendance at this meeting.

Participants were asked to review a series of displays related to the EA process in general and the four types of infrastructure that EA approvals are being sought, including:

- Transportation
- Water
- Wastewater
- Stormwater

Participants were asked to comment on the process and to provide feedback on the proposed infrastructure strategy and to provide suggestions of their own.

At the PIC, display boards were provided identifying the study area, opportunity statement, description of the Master Plan process, the criteria used and the next steps in the Municipal EA Master Plan process. Study Guides were also made available for those in attendance.

A comment sheet was made available at this meeting in order to receive input from the public regarding their opinion on the importance of the proposed alternatives in order to use this input later in the study.

Responses were sent to those people that requested further information on the project. A copy of the letters that were sent can be found in Appendix A.

The second PIC was held in the Distillery District on May 6, 2004 and 74 people participated. The event was advertised in the Toronto Star on April 22, 2004 and May 5, 2004, as well as The Community Bulletin (May 2004 edition). The purpose of the meeting was to provide an opportunity for the public to discuss and provide input on the design details for the preferred alternatives for the Schedule C projects. A Notice of the meeting was placed in two papers and letters were also sent to Agencies and interested members of the public that could potentially be affected by this project advising them of the meeting. A sample of this letter and the Notice can be found in Appendix A.

Participants were asked to review displays of alternative design concepts for the four types of infrastructure noted above. They were also asked to provide comments on what they like and dislike about the proposed design alternatives for the four types of infrastructure. Comments from both Open Houses are in Appendix A with the Public Forum materials.

At the PIC, display boards were provided identifying the study area, evaluation criteria, further EA work, project schedules, transit facilities and next steps. A comment sheet was made available in order to receive input from the public.

10.3 Stakeholder Roundtables

Stakeholder roundtables were designed to ensure local issues and concerns were addressed during the precinct planning process and involved no more than 25 participants who represented a range of local interests. Notification of Stakeholder Roundtables was provided by e-mail invitation to participants. The group was established in consultation with the local City Councillor and the West Don Lands Committee (an established community group).

The purpose of the first Stakeholder Roundtable, held on January 7th, 2004, was to receive feedback from the December 2nd Public Forum and to develop a set of design principles to guide future stages of the precinct planning process.

The second Stakeholder Roundtable was held on February 10th and was part of the week-long charrette. This Roundtable was intended to get feedback on the design principles and alternative design concepts from stakeholders prior to the February 12th Public Forum.

The next Stakeholder Roundtable was held on April 1st and was used to give the design team an opportunity to present a refined version of the Master Plan. The final Stakeholder meeting was held on October 18, 2004 and was used as a wrap-up session to distribute copies of the planning report to participants.

Exhibit 10-1 lists the issues and/or comments from the public and the response provided by the technical team.

Exhibit 10-1: Comments and Responses

| 1.0 Water | | | | |
|------------------|------------------|-------------------|---|---|
| | Topic | Source | Issue/Comment | Response |
| 1.1 | Water Collection | EA feedback forms | Use rooftop collectors & green roofs | As part of the Sustainability Framework for the development of the waterfront, the TWRC is committed to utilize stormwater as a resource. This will include negotiating with individual developers the use of rooftop collectors and green roofs to the extent feasible. |
| | | EA feedback forms | Use multiple ponds to contain all types of water (i.e. water, wastewater, and stormwater) | <p>The use of wastewater ponds in residential areas does not meet provincial and municipal regulations because of health concerns.</p> <p>The use of stormwater ponds has been considered as one of several alternatives for stormwater management and treatment of stormwater. However the evaluation of the alternatives, as described in the Class EA Master Plan, has determined that an oil and grit separator facility in combination with stormwater filters and an ultraviolet disinfection facility provides the highest level of treatment and is better suited for a medium to high density development than a stormwater pond and therefore has been selected as the preferred alternative for stormwater management.</p> |

| | | | | |
|-----------------------|--------------------------|-------------------|--|--|
| 1.2 | Other | EA feedback forms | The park should relate to the water's edge - both visually and functionally | We agree. This is being considered in the park design. |
| | | EA feedback forms | Why use a berm when a seawall with a promenade flanking Bayview would be visually appealing? | The Toronto and Region Conservation Authority is in the process of undertaking a Class Environmental Assessment Study to determine the preferred solution for the protection of the West Don Lands from flooding during high Don River water levels. A number of flood protection alternatives were evaluated and a landform was determined as the preferred alternative. A promenade along Bayview Avenue would not provide the required flood protection. |
| 2.0 Wastewater | | | | |
| | Topic | Source | Issue/Comment | Response |
| 2.1 | Grey Water | EA feedback forms | Grey water should be used on green roof tops | See comments in Item 1.1. It is not expected that grey water in addition to stormwater will be required to irrigate green roof tops. |
| 3.0 Stormwater | | | | |
| 3.1 | Accommodating Stormwater | EA feedback forms | Use overland flow routes | Overland flow routes (major system flow routes) are proposed to be implemented. |
| | | EA feedback forms | Use curbless roads | Curbless road are not suitable for medium to high density urban developments such as proposed for the West Don Lands. |
| | | EA feedback forms | The riverside park should be in the flood plain | It is proposed that the riverside park will accommodate the flood protection landform (see comments under Item 1.2). The part of riverside park east of the landform will be in the flood plain. The part of the park west of the landform will be outside of the flood plain. |

| | | Design Workshop | I'm concerned about the amount of stormwater that will be generated from the neighbourhood. It seems like it is being diverted to Ashbridges Bay Treatment Plant - which is often over capacity | Stormwater is proposed to be treated in the West Don Lands (see comments under Item 1.1) and it is not proposed to divert stormwater to the Ashbridges Bay Treatment Plant. |
|--------------------|---------------|-------------------|---|---|
| 4.0 Transportation | | | | |
| | Topic | Source | Issue/Comment | Response |
| 4.1 | Cherry Street | EA feedback forms | Do not like the plans to widen Cherry St. to accommodate a transit way. Cherry St., between King and the embankment is already too wide. We are looking for ways to knit this area back into the community and to create a strong new neighbourhood. The proposed width of Cherry St. seriously impairs the coherence and intimacy we are hoping to establish. This needs to be reconsidered and subject to more consultation | To provide a high level of transit service in terms of travel time and reliability, it is the TTC's policy to construct all new streetcar lines in an exclusive right-of-way. This is considered necessary to achieve the mode split targets set by the City and to reduce dependence on the automobile. It is also considered necessary at this stage to preserve the existing lanes for other traffic to accommodate traffic generated by new development in the West Don Lands. Also, Cherry St. will be an important link to the East Bayfront and the Port Lands as well as to the community to the north. For these reasons, it is proposed to widen Cherry St. This issue will be re-examined during the upcoming EA of alternative transit improvements serving the West Don Lands. |
| | | EA feedback forms | It isn't necessary to widen Cherry St. | See response to first comment. |
| | | EA feedback forms | Don't widen Cherry St. | See response to first comment. |
| | | Design Workshop | Don't want transitway on Cherry St. - Don't want another Spadina fiasco | See response to first comment. |

| | | | | |
|-----|---------------------------|-----------------|--|---|
| | | Design Workshop | Do not put a streetcar on Cherry St. It will divide the neighbourhood. | See response to first comment. |
| | | Design Workshop | Will the Cherry St. turnaround be a viable route? | A separate study is being carried out for the TWRC to forecast the transit ridership generated by alternative transit improvements (e.g., transit routing and level of service) that will serve the West Don Lands. This will be followed by a separate Environmental Assessment that will examine the impacts of alternative alignments, including their capital and maintenance costs. |
| | | Design Workshop | I vigorously oppose streetcar routing through Virgin's Place lane to join Cherry St. if it involves demolishing a building I own at 501 King St. | Based on the evaluation of the Virgin Place and Cherry St. alignments, it is concluded that the Virgin Place alignment does not appear to provide any transportation benefits over the Cherry St. alignment. Furthermore, there are potentially significant negative impacts in terms of property requirements and traffic operations associated with the Virgin Place alignment. Therefore, the Cherry St. alignment is preferred and is recommended in the Precinct Plan. |
| | | Design Workshop | I like the line down Cherry St. and the turnaround at the south end | This is the preferred alignment to extend streetcar service into the West Don Lands. |
| 4.2 | Transit on Parliament St. | Design Workshop | There should be a streetcar route along Parliament St. | To provide a high level of transit service in terms of travel time and reliability, it is the TTC's policy to construct all new streetcar lines in an exclusive right-of-way. This cannot be achieved on Parliament St. without widening the road or sacrificing road capacity for other vehicles. Widening the road would have significant impacts on abutting properties. This issue will be re-examined during the EA of alternative transit alignments. |

| | | | | |
|-----|------------------------|-----------------|--|---|
| 4.3 | Road Alignment/ Design | Design Workshop | Bayview Avenue / Mill Street treatment is great - it's a huge improvement | Noted. The need and justification of these improvements are presented in the Class EA Master Plan. |
| | | Design Workshop | I like that all the main streets feed into the park | Noted. The need and justification of these improvements are presented in the Class EA Master Plan. |
| | | Design Workshop | Good solution to the Richmond/Adelaide fly-over | Noted. |
| | | Design Workshop | The Richmond/Adelaide fly-overs have not been addressed | Richmond and Adelaide St. are very important roads that serve the downtown. However, substantial improvements to these roads are not within the scope of this Class EA Master Plan. |
| | | Design Workshop | Good connective roads and realignment of Bayview and reconfiguration of Eastern/Trinity/Front and Cherry/Eastern | Noted. The need and justification of these improvements are presented in the Class EA Master Plan. |
| | | Design Workshop | Eastern is a busy thoroughfare, which makes it difficult to link West Don Lands to the area north of it. | Reconfiguring and installing traffic signals at the Front/Eastern/Trinity intersection and extending River St. into the West Don Lands will provide better links to the community to the north. |
| | | Design Workshop | Keep minimum street widths at 16 metres. Reducing it simply makes a cheap little street | This is the minimum width considered for local streets. It will allow for two lanes of traffic, parking on one side of the street, sidewalks and landscaped boulevards. |
| | | Design Workshop | The streets should have bicycle lanes | It is recommended that bicycle lanes be provided on the extension of River St., Bayview Avenue and Mill St. Other bicycle facilities include extra-wide curb lanes on several streets, new off-road bicycle trails and new connections for cyclists under the rail corridor |
| | | Design Workshop | Good alignments and block patterns | Noted. |

| | | | | |
|--------------------------------|--|-------------------|--|---|
| 4.4 | Working with transportation agencies/companies | Design Workshop | The TTC needs to participate at this stage | Several discussions were held with the TTC during the preparation of the Class EA Master Plan. The TTC will formally be invited to provide comments on the Class EA Master Plan and will participate in an upcoming EA to evaluate alternative streetcar alignments serving the West Don Lands. |
| | | Design Workshop | Transit must be truly connected | The proposed streetcar line on Cherry St. will connect to the King St. streetcar line and ultimately will be extended under the rail corridor and connected to streetcar lines on Queens Quay East and serving the Port Lands. |
| | | Design Workshop | Must work with the rail companies to build a series of tunnels under the railway | Proposals to construct underpasses for pedestrians and cyclists and to improve the existing underpasses at Parliament and Cherry St. will be the subject of future EA's and will involve the railways companies. |
| 4.5 | General | Design Workshop | The integration of the King streetcar line looks like a good idea. | Noted. |
| 5.0 Additional Comments | | | | |
| | Topic | Source | Issue /Comment | Response |
| 5.1 | Energy Efficiency | EA feedback forms | Your green buildings could be made greener (i.e. consume about 1/2 the energy) if you incorporate integrated energy systems (district, heating/cooling, etc.) This would require an energy plan and should be part of the EA process | This comment is being reviewed as part of the TWRC's Sustainability Strategy. If additional energy initiatives are adopted, this plan can be amended, if required, to address works covered by the Municipal Class EA. |

| | | | | |
|-----|---------|-----------------|---|---|
| 5.2 | General | Design Workshop | Didn't see presentation, but work on the berm and willingness to move forward is good | We agree. |
| | | Design Workshop | What about windmills? | Windmills are not projects covered by the Municipal Class EA. |
| | | Design Workshop | Water recycling and conservation features and overall energy consumption must be state of the art with the possibility of geothermal and other green energy | These measures are being considered as part of the Sustainability Strategy. |
| | | Design Workshop | Do create design guidelines | Noted |
| | | Design Workshop | The little presentation boards are hard to understand | Noted for future meetings |
| | | Design Workshop | I'm not really familiar with all of these aspects of the plan, however, I do like the way the plan has evolved | Noted |
| | | Design Workshop | I don't know enough about this. | More information is provided in this report and the TWRC's web site. |

10.4 Agency Comments

Appropriate government review agencies (**Exhibit 10-2**) were notified of the undertaking to solicit comments. Additional federal agencies are being contacted through the CEAA process. Letters were sent to commenting agencies announcing the project initiation and outlining the purpose, schedule and contact persons for the project. Notification letters requested comments and invited review agencies to the public meetings. A Notice of Completion will be distributed upon release of this report to the same agencies. **Exhibit 10-3** identifies agency comments and responses.

Exhibit 10-2 - List of Review Agencies

| | |
|--|--|
| Ministry of Natural Resources | Toronto Hydro Corporation |
| Ministry of Citizenship and Immigration | Toronto Public Health – Toronto Office |
| Ministry of Municipal Affairs and Housing | Works and Emergency Services |
| Ministry Culture | Toronto District School Board |
| Ministry of Tourism | Toronto Catholic District School Board |
| Ministry of the Environment | Emergency Medical Services Toronto |
| Ministry of Health and Long-Term Care | Toronto Police Service |
| Ministry of Transportation | Toronto Fire Services Headquarters |
| Department of Fisheries and Oceans | Toronto and Region Conservation Authority |
| Works and Emergency Services | City of Toronto |
| Ministry of Culture, Heritage Operations | Ontario Realty Corporation |
| Union Gas | Transport Canada |
| Toronto Hydro Corporation | Enersource Corporation |
| Ontario Native Affairs Secretariat – Ministry of the Attorney General | Bell Canada |
| Association of Iroquois and Allied Indians | Anishinabek Nation/Union of Ontario Indians |
| Mississaugas of New Credit First Nations | HydroOne |

Exhibit 10-3: Agency Comments

| Date | Source | Issue/Comment | Response |
|------------------|--|---|--|
| March 4, 2004 | Ontario Realty Corporation - Letter | <ul style="list-style-type: none"> • ORC has a Class EA that pertains to realty activities, in particular the undertaking of selling, severing or transferring land is provisionally a Category B undertaking. • We understand that as an outcome of the Municipal Class EA and precinct planning process a requirement for land (or easements) from ORC may be required. • A key component of ORC’s Class EA, with respect to selling/transferring land or creating easements, is that natural and cultural heritage features are identified and protected. Furthermore if contamination is identified on a property, the potential for adverse effects is to be addressed and mitigated. | <ul style="list-style-type: none"> • Noted, and refer to Section 12.3.3 |

| Date | Source | Issue/Comment | Response |
|------------------|--|---|---|
| | | <ul style="list-style-type: none"> • To avoid delays and duplication we would like to ensure that the current process is covering the same elements as our Class EA. • It should be noted that TWRC is addressing contamination in a number of studies that should suffice for our Class EA process. | |
| February 4, 2004 | Ministry of Health and Long-Term Care – letter | <ul style="list-style-type: none"> • Although the Public Health Branch is interested in the public health aspects of this EA, we recommend that you request input from the local Medical Officer of Health for the health unit in which the EA is located. Therefore, we have forwarded your letter to the Medical Officer of Health. • We appreciate you taking the time to bring this EA to our attention and have no further comment at this time. | <ul style="list-style-type: none"> • Noted |

11 PROCESS TO AMEND THE MASTER PLAN

During the time that the West Don Lands Precinct Plan is implemented, it may be necessary to amend this Class Environmental Assessment Master Plan, for the following reasons:

- Extend the applicability of the Class EA Master Plan beyond five years from the date of the filing of the Notice of Completion, if there is a delay in implementing a project
- Major changes to the original assumptions
- Significant changes to components of the Class EA Master Plan
- Significant new environmental effects
- Major changes in the proposed timing of projects within the Class EA Master Plan

The Municipal Class Environmental Assessment does not define “significant changes to components” of the EA Master Plan. However, for the purposes of this Class EA Master Plan, significant changes will include:

- New infrastructure elements not shown in the original Class EA Master Plan;
- A change in the location of a stormwater facility, sewer or watermain where such a change would take the infrastructure outside of a public road allowance or publicly-owned land (i.e., where it would require the taking of private property);
- A change in the location of a road or that would require the taking of private property;
- Changes in the diameters of underground services, provided the location of the service is not substantially changed, is not a significant change to this EA Master Plan.

Where an Addendum is required, the following process will be followed:

- The TWRC and the City of Toronto will review the planning and design process to ensure that the project and the mitigation measures are still valid given the current planning context.
- The TWRC and the City of Toronto will document the circumstances necessitating the change, the environmental implications of the change, and what, if anything can and will be done to mitigate any negative environmental effects.
- Notification to interested stakeholders and agencies is mandatory for any amendments to this Class EA Master Plan.
- The TWRC and the City will issue a Revised Notice of Completion to all potentially affected members of the public and review agencies. Members of the public have

the opportunity under the Environmental Assessment Act to request the Minister to issue a Part II order for those elements of the project that are the subject of the addendum, in accordance with the 30-day review period in the Municipal Class EA.

12 NEXT STEPS FOR PROJECT IMPLEMENTATION

12.1 *Further Study Requirements*

Based on the findings of this Class EA Master Plan, the following further studies are required:

- TWRC is preparing a remediation strategy for the West Don Lands. This will provide further detail for environmental management of soil and groundwater issues associated with infrastructure development: A specific remediation strategy for infrastructure development will be included in this overall district strategy.
- A Stage 2 Archaeology Assessment is required for projects in the vicinity of the Thornton-Blackburn Site.
- TWRC is working with the City of Toronto to prepare an infrastructure phasing plan.
- Schedule A roads require approval through Plan of Subdivision, Condominium or Consent, or other appropriate *Planning Act* approvals as dictated by the City.
- Actual pipe sizes for water and wastewater services will be confirmed through detailed design.
- The decision to replace versus rehabilitate individual segments of buried infrastructure will be confirmed through detailed design.
- The Precinct Plan identifies the desirability of establishing a highline trail adjacent to the rail line, to create a linear green system linking Don River Park and the Distillery District. This requires further study to establish the technical feasibility, and to obtain all environmental and railway approvals.

12.2 *Elements Requiring Further EA Approvals*

12.2.1 Transit Projects

Further EA approvals are required for work in the West Don Lands on transit projects. Space requirements for future potential public transit facilities have been made in the road allowances on Cherry Street and Front Street west of Cherry Street. New public transit facilities will be evaluated and approved as separate studies under the EA Act.

12.2.2 Ontario Realty Corporation Class EA

The following additional steps are required to satisfy the ORC Class Environmental process.

Category A undertakings are minor in scale and have minimal or no adverse environmental effects. This Category does not require mandatory contact with other agencies or groups. However, all ORC undertakings do require the completion of Sections 1 and 2 of the “ORC Consultation and Documentation Report”.

Category B undertakings have some potential for adverse environmental effects. For Category B undertakings, directly affected parties must be consulted. A seven-point site-specific analysis will have to be completed that examines:

- Municipal Official Plan
- Zoning designations;
- Contaminants;
- Environmentally Significant Areas (ESAs);
- Cultural heritage;
- Servicing capacity; and
- Distinctive environmental features.

Based on the analysis of potential environmental effects and public concern, ORC may voluntarily elevate the undertaking to a Category C or D. Requirements for mitigation and monitoring programs will be documented in the Consultation and Documentation Report or attached as an Appendix. *Planning Act* approvals may also be required for projects in this Category. A Sign-Off Declaration at the end of the Consultation and Documentation Report is to be signed by the reviewer after careful consideration of the conditions listed in the seven-point site specific analysis, and the undertaking is confirmed as a Category B.

Category C projects have greater potential for significant environmental effects. Due to the nature of the activities of the ORC, the assessment of alternatives to an undertaking is not, in most cases, an option to be examined under the Class EA process. Often the assessment of alternatives has taken place within another planning framework or policy process. There are four mandatory points of contact with Category C projects – Project Announcement, Consultation with Agencies and the Public (2) and the Notice of Completion. For the start-up of a Category C project the ORC must announce as a minimum the project in three of the following ways:

- As a posting on the Environmental Bill of Rights (EBR) Environmental Registry
- A letter of notification to the affected and/or interested parties
- A public announcement in at least one newspaper of wide circulation in the study area
- Sending a copy of the Notification to the Regional Office of the MOE for the region in which the undertaking will occur

12.2.3 Pedestrian Connections

Further EA approvals are required for the pedestrian crossing of the Don River at Eastern venue and the railway underpass at Trinity Street. These approvals will follow a detailed feasibility analysis and the development of preliminary design concepts. Federal and Provincial EA's will likely be required for both projects.

The pedestrian underpass under the Bala rail subdivision has been included in a request to the Ontario Minister of the Environment for a Part II Order for Park Projects (see Section 1.4).

12.3 *Other Approvals*

The following approvals will also be required for the implementation of the West Don Lands EA Master Plan infrastructure:

12.3.1 Ontario Regulation 158

In accordance with Ontario Regulation 158 (our Fill, Construction, and Alteration to Waterways Regulation), a permit would be required from the TRCA prior to the:

- construction of any building or structure (culverts, bridges, asphalt roads) in an area susceptible to flooding during a Regional Storm;
- placing or excavation of fill with a Fill Regulated Area;
- Straightening, changing, diverting or interfering in any way (culvert installation, coffer damming) of the existing channel of a river, creek stream or watercourse.

The project is within a Fill Regulated Area. As such, a permit is currently required from the TRCA.

12.3.2 Department of Fisheries and Oceans (DFO) Authorization

On July 24, 1998 the TRCA signed a Level 3 Agreement with the DFO which established a streamlined approach to addressing issues pertaining to the Federal Fisheries Act. Through this agreement, TRCA staff, in consultation with the DFO staff, is responsible for co-ordinating the review of proposed works that may potentially result in the harmful alteration, disruption or destruction (HADD) of a fish habitat. TRCA staff reviews development proposals and works with the proponents/project consultants to mitigate any harmful impacts caused by the interference of watercourses. Reports are

periodically sent to DFO to determine if a proposal has been mitigated in a way that will prevent a HADD from occurring.

Prior to the development of detailed designs TRCA requests a review of the final stormwater discharge design and location, as well as the proposed pedestrian bridge which has been identified. The potential redesign of the stormwater discharge at Cherry Street falls within TRCA's regulatory area.

12.3.3 OWRA/EPA

Certificates of Approval will be required for water, wastewater and stormwater facilities under the Ontario Water Resources Act and/or the Environmental Protection Act.

12.4 *Five Year Review Requirements*

A time lapse may occur between the filing of the Master Plan and the implementation of the project. In such cases, the proposed project and the environmental mitigation measures proposed may no longer be valid.

If the period of time from filing of the Notice of Completion of the Master Plan in the public record to the proposed commencement of construction for the project exceeds five years, the proponents shall review the planning and design process and the current environmental setting to ensure that the project and the mitigation measures are still valid given the current planning context. The review shall be recorded in an addendum to the Master Plan which shall be placed on the public record.

Notice of Filing of Addendum shall be placed on the public record with the ESR and shall be given to the public and to the review agencies; a period of 30 calendar days shall be provided for review and response. The Notice shall include the public's right to request a Part II Order during the 30-day addendum review period. If no request is received, the proponent is free to proceed with implementation and construction.

13 CONCLUSION

The revitalization of the West Don Lands presents an enormous opportunity to improve the City by addressing derelict brownfield sites and the associated infrastructure. It is expected that there will be short-term construction-related nuisance effects. However, these can be mitigated. Long term improvements to soil, groundwater, surface water and socio-economic conditions will result from the implementation of the infrastructure projects in this Class EA Master Plan.

In conclusion, the repair and development of new infrastructure in the West Don Lands will have an overall positive effect on the environment, and no significant adverse residual effects. It will positively support the Toronto Waterfront Revitalization initiative.

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