

2. Purpose of the Undertaking

The purpose of the DMNP is to make an ecologically functional river mouth, remove flood risk, and provide opportunities to revitalize the Port Lands area of Toronto's waterfront. These are referred to as the three drivers of the DMNP. The following selected documents are referenced throughout the following sections as background to the problem and opportunity assessment:

- **Keating Channel EA Study**, The Metropolitan Toronto and Region Conservation Authority, 1983
- **Bringing Back the Don**, Task Force to Bring Back the Don, 1991
- **Regeneration: Toronto's Waterfront and the Sustainable City: Final Report**, Royal Commission on the Future of the Toronto Waterfront, Minister of Supply and Services Canada, 1992.
- **Forty Steps to a New Don**, Don Watershed Task Force, 1994
- **Unlocking the Port Lands: Directions for the Future**, City of Toronto, 1999
- **Toronto Waterfront Revitalization Task Force Report**, 2000
- **Central Waterfront Secondary Plan**, City of Toronto, 2003
- **Waterfront Scan and Environmental Improvement Strategy Study**, SENES Consultants Limited, 2003
- **Lower Don River West Remedial Flood Protection Class EA**, Toronto and Region Conservation Authority, 2005
- **Sustainability Framework**, Toronto Waterfront Revitalization Corporation, 2005

2.1 Problem Assessment

The configuration of the existing Don Mouth was engineered primarily for the purposes of achieving transportation efficiency and to create additional land for port and other urban uses. This has resulted in the current condition with lands vulnerable to flooding, a serious reduction in ecological function of the river mouth, and an area that is neither aesthetically pleasing nor available for public use and enjoyment. Thus, the problems to be addressed by the DMNP are the lack of ecological function at the river mouth, vulnerability to flood risk, and the derelict nature of this area of the Port Lands.

2.1.1 Ecologically Dysfunctional River Mouth

Naturalization of the Don Mouth is not a new idea, but rather embraces the concept initiated by the Task Force to Bring Back the Don in 1991. In its document **Bringing Back the Don** (Task Force to Bring Back the Don, 1991), the Task Force examined several concepts for restoring some of the river mouth functions lost when the river was straightened and Ashbridge's Bay marsh filled in between the late 1800s and mid-1900s to create the Port Lands. Its objectives for improving the Don Mouth included enhancement of the river mouth, creation of aquatic habitat, improvement of terrestrial habitats, encouraging appropriate uses of the valley, improving access to the valley and co-ordination of planning policy for the valley. This plan, while groundbreaking at the time, lacked an in-depth technical evaluation of the options and did not consider property limitations (**Regeneration: Toronto's Waterfront and the Sustainable City: Final Report**, Royal Commission on the Future of the Toronto Waterfront, 1992).

The report and the groundswell of public interest behind the lower Don soon led to the formation of the Don Watershed Regeneration Task Force, later to become the Don Watershed Regeneration Council. Their report, **Forty Steps to a New Don** (Don Watershed Task Force, 1994) continued this call for naturalization of the Don Mouth, as did ensuing report cards which served as a call to action (**Don Watershed Regeneration Council**, 1997, 2000 and 2003).

Since that time, a number of others have embraced this idea of a naturalized Don Mouth and incorporated the opportunity into planning activities for the Central Waterfront, the West Don Lands, and the Port Lands, ensconcing this notion firmly into plans for the waterfront (*Central Waterfront Secondary Plan*, City of Toronto, 2003a). The naturalization of the Don Mouth with associated flood protection was considered one of four priority projects for Waterfront Toronto in its first five-year plan.

Numerous efforts have been and continue to be undertaken by the TRCA, municipalities, non-governmental organizations, and local communities within the Don watershed to:

- Improve the quality of water entering the river;
- Reduce the quantity of water entering the river during storm events;
- Improve aquatic and terrestrial habitats;
- Provide improved recreational opportunities;
- Protect source water resources; and
- Provide linkages throughout the watershed that will be necessary to support a new river mouth.

2.1.2 Flood Risk Vulnerability

Flood protection for the lower Don River is a key component of Toronto's waterfront revitalization. The Don River was identified in the TRCA 1980 Watershed Plan as the number one priority location requiring flood protection within TRCA's jurisdiction. This ranking was based upon an assessment of the extent of area flooded under the Regulatory Flood, and the risk to life and property that it represented. The *Keating Channel EA* (Acres, 1983) identified three different Spill Zones for the Lower Don River. The Keating Channel EA assessed the need for and consequences of dredging the Keating Channel. The study concluded that to avoid an additional increase in flood risk to the surrounding areas of the Lower Don River, annual maintenance dredging and disposal activities were necessary to offset sediment infilling of the Keating Channel. This would also serve to reduce the volume of contaminated sediment in the channel.

The activities outlined in the Keating Channel EA reduced the frequency under which flooding occurs within the Port Lands area. However, it was recognized that portions or zones of the area would remain flood vulnerable. These zones are: Spill Zone 1 – the Port Lands, Spill Zone 2 – east of the Don River and north of Lake Shore Boulevard East, and Spill Zone 3 – the lands west of the Don River. Through the process of this project, the extent of flood risk area has been updated, as shown in **Figure 2-1**.

The Lower Don River West Remedial Flood Protection Project and its associated Class EA addressed the area of Spill Zone 3. The DMNP addresses the alleviation of flood risk for Spill Zones 1 and 2.

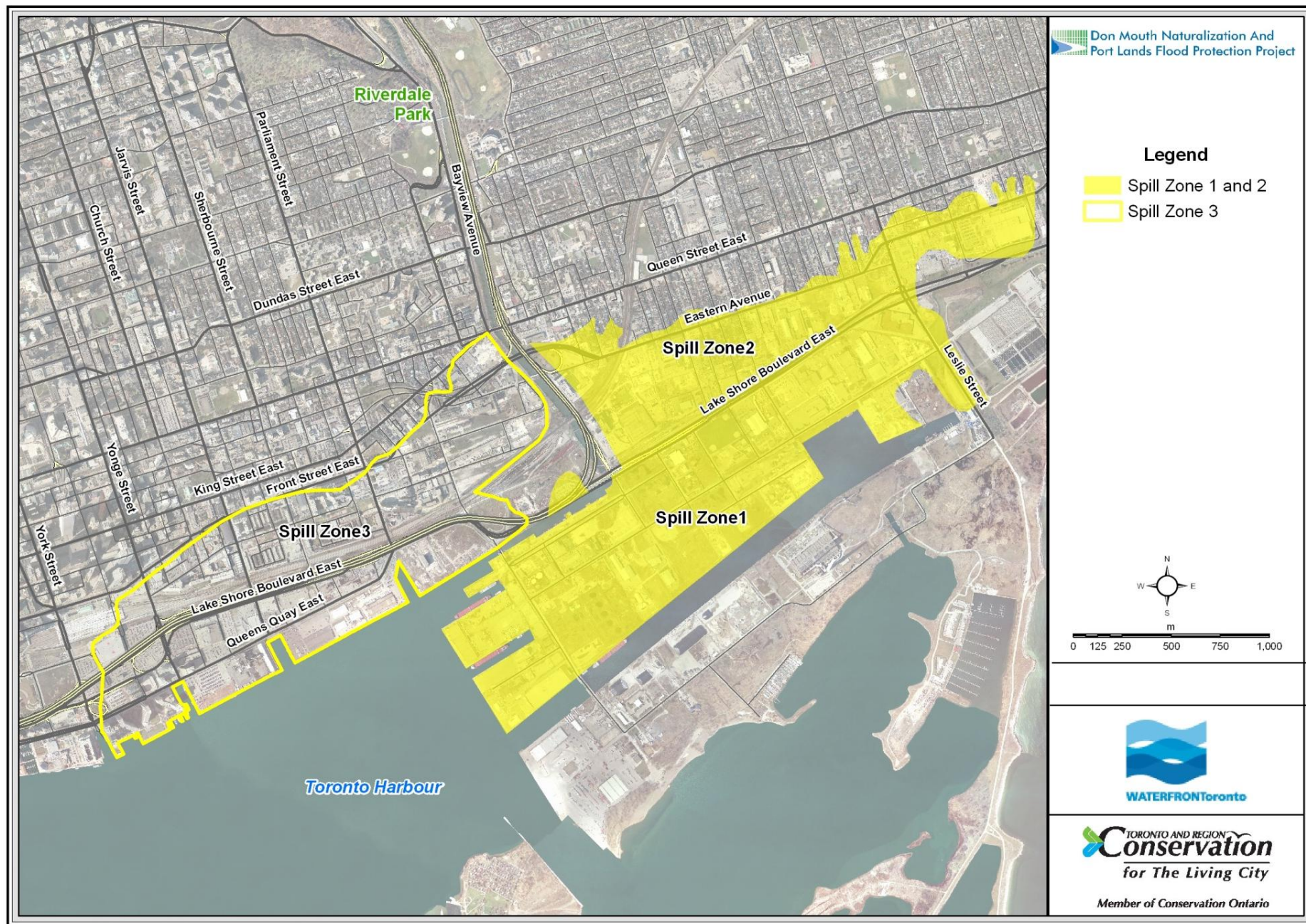


Figure 2-1 Regulatory Flood Spill Zones for the Lower Don River

Computer models have been used to define the extent of the area of land that is anticipated to be flooded if a storm the size of Hurricane Hazel (the Regulatory Flood) were to occur over the Don watershed. The Regulatory Floodplain would cover approximately 290 hectares of land in the Port Lands, south and east of the Don River, and an area east of the Don River north of Lake Shore Boulevard East, based on modelling undertaken as part of this EA. Factors that influence the extent of flooding within this area and that need to be taken into account include:

- Several low-lying structures (road and rail) crossing the Don River that impede higher flows;
- An absence of a confining valley around the Don River;
- A ninety degree corner where the Don River enters the Keating Channel resulting in increased flood water levels overflowing the southeast wall of the Keating Channel;
- A wide range of water levels in Lake Ontario (across seasons and years);
- Heavy sediment deposition in the Keating Channel that increases flood risk if not managed; and
- Ice jams during the winter and spring, and debris jams throughout the year, which could exacerbate flooding to adjacent areas.

All of these issues must be managed if the flood risk is to be managed and eliminated, which would then permit redevelopment.

2.1.3 Derelict Waterfront

The Port Lands area of the Toronto Waterfront has a long history of industrial and port use and includes extensive areas of underused and vacant lands left behind by past industrial, shipping and railway uses. These past uses have left a legacy of problems and issues, such as contaminated land, that have rendered the area undesirable from a development perspective. The **Toronto Waterfront Revitalization Task Force Report** (the Fung Report) was released in March 2000 and outlined a plan to revitalize the Toronto waterfront. This was the starting point for the work Waterfront Toronto has been undertaking over the last 10 years. Planning efforts to date have focused on the opportunity created by large areas of mostly public-owned, underused or vacant land adjacent to the city core and intermodal transportation links, and endowed with a location between the central core, Lake Ontario, and existing parks and natural areas. The DMNP and the planning efforts for the Lower Don Lands have set the direction and created the planning context for the revitalization efforts in the Port Lands area.

2.2 Opportunity Assessment

2.2.1 A Naturalized River Mouth

The naturalization of the river mouth is yet another step toward revitalizing and enhancing the quality and function of the Don River at its mouth. It represents an exciting opportunity to naturalize the area of the Don River valley as it connects to Lake Ontario and upstream reaches, and create an area that is welcoming and enjoyable to the public while improving natural river mouth functions.

The naturalization of the Don Mouth will provide opportunities to establish a floodplain within the lower reaches and Don Mouth which will, over the long-term:

- Improve aquatic and terrestrial ecological functions and provide enhanced linkages to upstream habitats;
- Address sediment deposition, debris and ice jams;
- Accommodate changes in precipitation, water flow, and Lake Ontario water levels resulting from climate change;

- Enhance recreation opportunities and local aesthetics;
- Provide natural habitat, pedestrian and bicycle trail linkages between Lake Ontario and the Don watershed;
- Manage significant sources of soil and groundwater pollution from lands adjacent to the Keating Channel; and
- Enhance the low flow habitat conditions within the Don Narrows while not increasing flood risk elsewhere. The Don Narrows extends from Riverdale Park to the north side of the CN Railway and refers to the river channel in this area.

2.2.2 Flood Protection

The Flood Protection Area is the area currently at risk during the Regulatory Flood. The Flood Protection Area encompasses lands in Spill Zones 1 and 2 as defined by TRCA. The Spill Zones were defined based on the extent of area flooded under the Regulatory Flood and the risk to life and property that this flooding represents. The DMNP is an opportunity to alleviate the flood risk to over 290 hectares in Spill Zones 1 and 2 without exacerbating flood risk elsewhere. The alleviation of flood risk frees portions of this area for more intensive development. Leaving the flood risk in place is a detriment to the revitalization of these lands.

2.2.3 Revitalized Waterfront

Since the release of the Fung Report in 2000, a number of reports and planning documents have informed the alternatives available for the revitalization of the waterfront. The City of Toronto approved “**Central Waterfront Secondary Plan**” in 2003 (City of Toronto, 2003a). The Secondary Plan created a framework for waterfront planning for the next several years, and established four “Core Principles” for waterfront revitalization, which include:

- Removing barriers/making connections;
- Building a network of spectacular waterfront parks and public spaces;
- Promoting a clean and green environment; and
- Creating dynamic and diverse new communities.

Similarly, Toronto’s Official Plan (2006) emphasizes “increased public enjoyment and use of lands along the water’s edge...” and that “private development and public works will improve public spaces in the waterfront; and maintain and increase opportunities for public views of the water, and support a sense of belonging to the community” (City of Toronto, 2007b, p. 2-25). The Official Plan sets in place a mixed use community for the waterfront including residential and economic development.

For the Port Lands area specifically, the revitalization of derelict lands has been guided by Waterfront Toronto’s Sustainability Framework, and an International Design Competition held in 2007.

2.2.3.1 Waterfront Toronto’s Sustainability Framework

As mentioned in **Section 1.2**, one of the objectives of the DMNP (Objective 7) addresses issues of sustainability of the DMNP, as directed by Waterfront Toronto’s Sustainability Framework. The Framework provides the overarching corporate policy which provides guidance for the waterfront’s sustainable community transformation and integration of sustainability principles into all facets of decision-making and project delivery.

The Sustainability Framework is organized into a series of five outcomes that reflect the desired characteristics of waterfront communities. The various components of the DMNP either strongly support or do not prevent achievement of the Waterfront Toronto's sustainability vision, and link to the five outcomes in the following ways:

1. *Sharing the Benefits: NET PLUS*
Changes brought about by the activities of the DMNP will improve the waterfront in a way that provides potential benefits to the city, region, province and country as a whole. These include creating the opportunity for re-urbanization of underutilized 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.
2. *Global Hub of Creativity and Innovation.*
The neighbourhoods surrounding the Project Study Area are creative districts and the DMNP does not preclude connecting to and building these opportunities in the future.
3. *The Urban Cottage*
The DMNP will result in enhanced recreational activities, a cleaner environment, and aquatic and terrestrial habitat, closer resembling a northern lakeside cottage with year-round recreational and cultural opportunities and green spaces.
4. *Feels Like Home*
The DMNP will create the opportunity for a network of public transit to ease transport, live/work options, and the development of neighbourhoods and communities open to Canadians of a variety of backgrounds.
5. *Strength through Diversity*
The new, naturalized river mouth will include a greater diversity of plants and wildlife, and the removal of land from flood risk will allow for mixed-use land development leading to a more diverse economic base.

The Sustainability Framework recognized the EA process as an effective means of achieving sustainability for relevant projects. Through the EA process, the development and assessment of alternatives is informed by the sustainability vision, and implementation, mitigation and monitoring following the EA process confirm the achievements in sustainability.

2.2.3.2 International Design Competition

Within the ToR for the DMNP EA, a five-step process for the development and evaluation of "alternative methods" was presented (see **Chapter 5** for a full description of this process). These steps are:

- **Step 1** – Development of Long List of Alternatives
- **Step 2** – Technical Feasibility Assessment of Long List
- **Step 3** – Refinement of Short List
- **Step 4** – Evaluation of Short List Alternatives
- **Step 5** – Evaluation and Refinement of Preferred Alternative

In the fall of 2006, Steps 1 and 2 of this process were completed, and the results were presented to the public in a forum on December 5, 2006. Early in January 2007 work began on Steps 3 and 4.

During this time, Waterfront Toronto, with the support of TRCA and the City of Toronto, launched an International Design Competition recognizing the link between naturalization, flood protection, infrastructure and land use potential of the area.

The goals of the competition were to create an iconic identity for the Don River that accommodates crucial flood protection and habitat restoration requirements, and to develop a bold and comprehensive concept design that integrates development, transportation infrastructure and the re-naturalized river mouth into a harmonious whole. The objective of this competition was to provide fresh ideas for integrating the various potentially competing project objectives under a unifying vision for the area, whereby a naturalized mouth of the Don would provide a key focus for the future communities within the Lower Don Lands area. The intended outcome of the Design Competition was to identify a design team that would build these ideas into the alternatives that were evaluated through the EA process.

Waterfront Toronto and TRCA worked together to develop the Competition Brief for the Design Competition that identified the goals and objectives, as well as the review and selection procedures. The two proponents also collaborated to brief the teams selected for the Design Competition on the requirements of the DMNP EA ToR, and to evaluate the ideas presented by the teams. This involvement helped to ensure that the submissions, especially the submission from the winning design team, were consistent with the goals and objectives of the EA and reflected the work that had been completed to date for the EA.

The study team was approaching completion of the Step 4 evaluation when the results of the Design Competition became known. Work on Step 4 was put on hold in order to take the opportunity to integrate the results of the competition with the on-going EA work.

Design Brief – Design Elements

Each team in the Design Competition was required to incorporate the following design elements into their schemes:

1. Naturalize the Mouth of the Don River;
2. Create a Continuous Riverfront Park System;
3. Provide for Harmonious New Development;
4. Extend Queens Quay Eastward and Enhance the Road Network;
5. Prioritize Public Transit;
6. Develop a Gateway into the Port Lands;
7. Humanize Existing Infrastructure;
8. Enhance the Martin Goodman Trail;
9. Expand Opportunities for Interaction with the Water; and
10. Promote Sustainable Development.

Ultimately, the Design Competition was a successful application of integrated sustainability thinking to develop planning solutions for an intensely complicated area of Toronto's waterfront. It involved the application of new environmental approaches and infrastructure solutions to address the significant infrastructure and natural deficits of the area. The result was a series of highly integrated, sustainably oriented design solutions for urban development and ecological restoration.

Competition Results

On Tuesday May 8, 2007, Waterfront Toronto selected the Michael Van Valkenburgh Associates Inc. (MVVA) team as the winners of the Design Competition. Key elements arising from their competition design as it relates to the DMNP EA included:

- The retention of most of the Keating Channel;
- A new river channel that flows south and then west into the Inner Harbour with an approximate location halfway between the Ship Channel and Keating Channel;
- A flood spillway into the Ship Channel;
- The integration of park space and natural areas along the river corridor;
- The retention and incorporation of the Gardiner Expressway into their design;
- A project build-out, and soil remediation and management plan; and
- A vision for the establishment of transportation infrastructure connecting Toronto with the Port Lands.

Effects of the Design Competition on the EA Process

Following the selection of the MVVA team, a number of elements arising from their competition design were reviewed, evaluated and modified to ensure that the design was consistent with the goal and objectives of the DMNP EA.

The design competition created three key changes for the ongoing EA work. First, the design competition created *the vision for integrating the naturalized Don mouth with the surrounding community design*. This led to the re-evaluation of criteria and indicators against which various alternatives were measured. Second, this more evolved integration required that *a larger study area be examined* in order to ensure that the integration could occur effectively for all of the alternatives being considered. Third, it led to a *re-examination and refinement of the previously developed alternatives* in terms of the area available for naturalization, the composition and optimization of naturalized areas, and the area available for development and parkland. The EA work had to be re-examined in light of these changes, and this re-examination will be made clear throughout this report.

2.3 Study Areas

Two specific study areas have been defined for the DMNP. The Project Study Area is the area available for the development of naturalization and flood protection alternatives. The Impact Assessment Study Area is a broader area in which direct and indirect effects of the DMNP construction and establishment may be felt.

2.3.1 Project Study Area

The Project Study Area for the DMNP EA was defined in the ToR as follows:

The Project Study Area consists of two parts: the Don Mouth from the CN railway bridge to the harbour/lake and lands adjacent to the Lower Don River, and the Don Narrows from the CN railway bridge north to Riverdale Park. Within the Don Narrows, only improvements within the river channel are to be considered. The Project Study Area is the area in which project components will be constructed and operated and the area in which we are proposing alternatives. Therefore, it is in this area that the majority of the direct effects will occur.

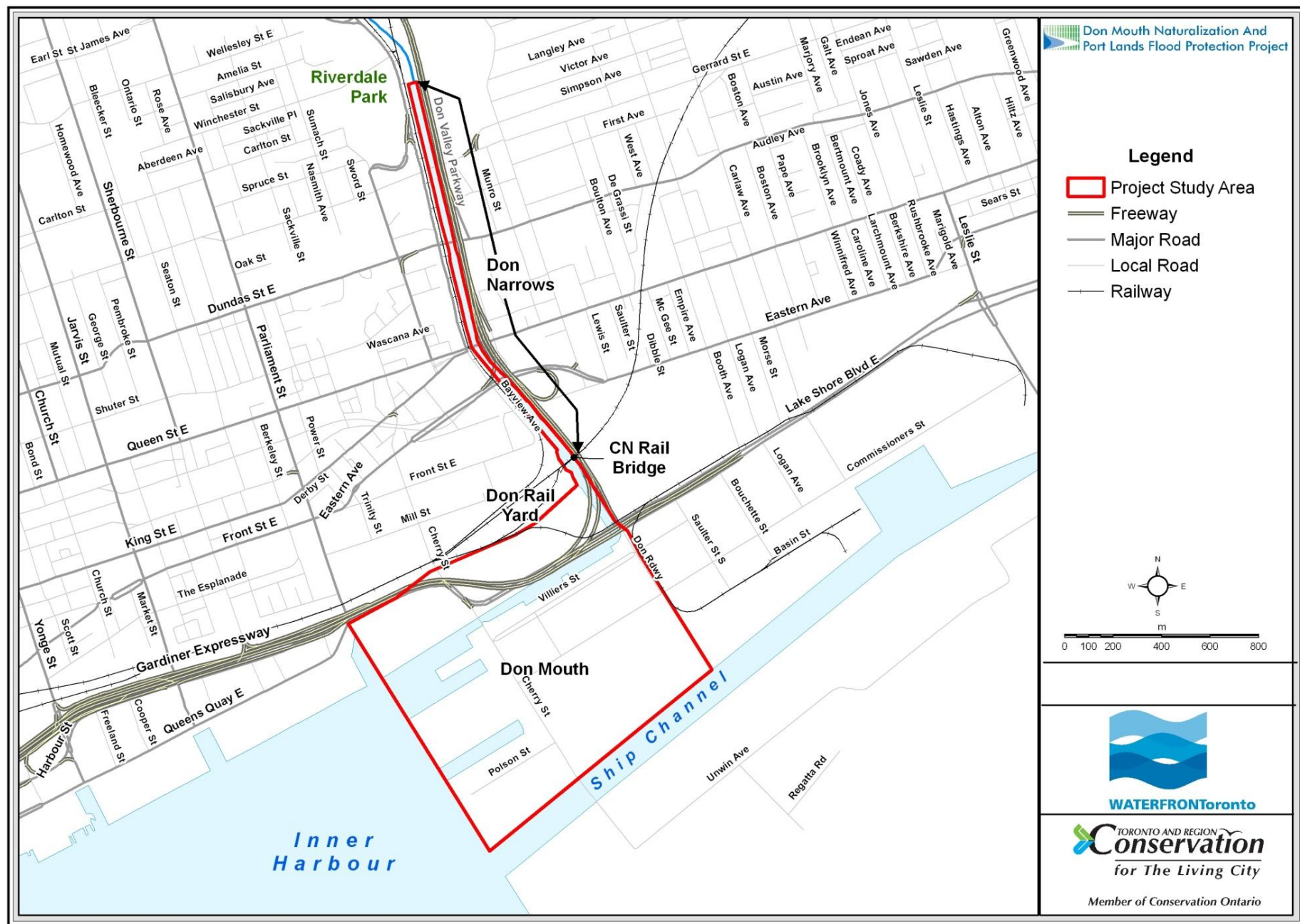
The Project Study Area is constrained by fixed infrastructure such as roads and rail lines, the result of the Lower Don River West Remedial Flood Protection Project, and opportunities for reuse of the land as identified by other planning studies and initiatives. The lands east of Parliament Street and south of Lake Shore Boulevard, commonly known as the 'Home Depot lands', and the small quay at the entrance to the Keating Channel have been included to ensure that there is sufficient area to look at options for the Don Mouth. A 300 metre wide corridor immediately west of and parallel to the Don Roadway, which includes the area for the proposed Don Greenway, connects the Keating Channel to the Ship Channel to address previously identified alignments for the Don River.

During the Design Competition, the four design teams recognized the need to expand the Project Study Area for the integration of the river mouth within built communities along with the necessary infrastructure. This change was supported by Waterfront Toronto, TRCA and the City; therefore, the Project Study Area for the DMNP EA was revised to reflect the more diverse integration opportunities available once a broader area is considered.

All four design teams considered the area bordered by the Don Rail Yard to the north, the Don Roadway to the east, the Inner Harbour to the west, and the northern edge of the Ship Channel to the south to be the area in which the naturalized river mouth, new communities and infrastructure need to be integrated together. Within this area the plans put forward included the naturalized river mouth, the development of a prescribed number of residential units, employment areas, recreational facilities, community facilities, transit, and commercial and retail areas.

Given the recognition of the need for integration within the larger area, the Project Study Area (**Figure 2-2**) for the DMNP EA was revised¹ and presented to the public at Public Forum No. 2 in March, 2008. The Don Narrows remains as part of the Project Study Area. The area defined as the Don Mouth was revised to be an area envelope available for naturalization assuming that all of the other components of the urban fabric would be provided around this envelope. It is also noted that, as a result of the design competition, some of the infrastructure previously constraining the Project Study Area and opportunities for naturalization might be moved or reoriented, thus removing the constraint.

1. The ToR allowed for some flexibility in the Project Study Area, stating: "As the consideration of alternatives and environmental effects proceeds during the EA and as opportunities are identified to cooperate with other planning initiatives, adjustments may be made to the Study Area."



2.3.2 Impact Assessment Study Area

The Impact Assessment Study Area (**Figure 2-3**) encompasses the entire Inner Harbour, Outer Harbour, Toronto Islands, Ashbridges Bay, Tommy Thompson Park and central waterfront areas. This study area includes the near shore waters of Lake Ontario that may be affected by the project and existing operations and infrastructure such as rail lines, rail yards, road networks, utilities, port operations and other existing and proposed uses that might be affected by the DMNP or affect the design and establishment of the DMNP. It reflects a broader area that may be affected directly, indirectly and cumulatively by construction and establishment of project components particularly with respect to the extent of a sediment plume, recreational linkages, property values, connectivity with other area planning, and wildlife linkages. The Impact Assessment Study Area has been defined in greater detail in relevant sections of the EA for the evaluation of alternatives and the detailed effects assessment of the preferred concept design.

Legend

- Impact Assessment
Study Area

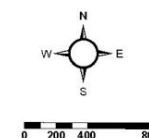


Figure 2-3 Impact Assessment Study Area

2.4 Temporal Boundaries

The temporal boundaries for the DMNP which will be used as the basis for the effects assessment are as follows:

- **Detailed Design, Permit Approvals, Land Acquisition, and Construction/ Implementation:**
approximately 10 to 20 years – timing subject to funding (anticipated EA approval: Fall 2011);
- **Establishment:**
defined as the timeframe for monitoring and adaptive management of the naturalization project (approximately the first 15 years after construction); and,
- **Post-Establishment Monitoring:**
timeframe for monitoring and operational management (sediment, ice and debris) to identify further intervention if naturalized system cannot manage on its own (onwards from the establishment phase).