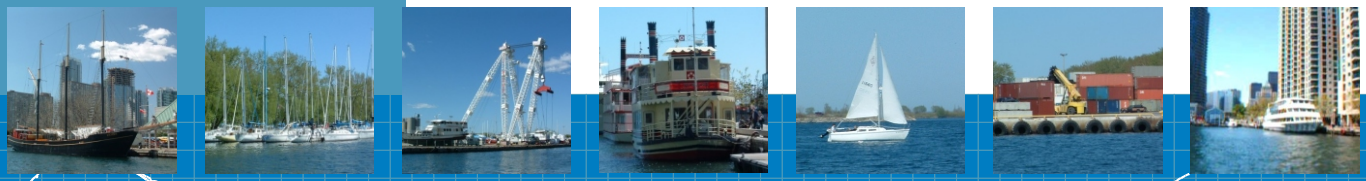
TORONTO WATERFRONT
REVITALIZATION CORPORATION



Marine Strategy
Resource Guide

FINAL - MARCH 2006

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Introduction

This Marine Strategy Resource Guide has been prepared for the Toronto Waterfront Revitalization Corporation (TWRC) by a multi-disciplinary team of professionals in consultation with the project steering committee, the TWRC and representatives of Toronto's marine community. The Guide is a compendium of information accumulated during an extensive program of research and consultation completed during the Marine Use Strategy process. The Resource Guide informs and provides support for the vision, objectives and strategies presented in the *Marine Use Strategy Final Report*, and is intended to be read in conjunction with that report. It also serves as a resource providing key information required for effective implementation of the Marine Use Strategy.

Content Summary
The Resource Guide provides a comprehensive inventory and analysis of marine activities on the Toronto Waterfront, including detailed information about marine uses and users, issues and priorities identified by Toronto's marine community, current and future marine facility needs, and a condition assessment of the city's marine infrastructure. It includes the following chapters:

Part 1-1: Waterfront History and Revitalization Context
The first section provides a brief overview of the historic and current context as well as the overall waterfront revitalization framework within which the Marine Use Strategy has been undertaken. Within the overall revitalization initiative, there are a number of plans and projects that have been undertaken by the TWRC, the City, the Toronto Port Authority (TPA), and the Toronto Region Conservation Authority (TRCA) to guide the redevelopment of the waterfront. A detailed review of these plans and initiatives is included in the background research.

Part 1-2: Marine Use Issues and User Information
This section provides an overview of the range and type of marine uses and related facilities and services that currently exist along Toronto's 46-km waterfront. It summarizes the marine issues affecting the Toronto Waterfront which were given detailed consideration in the development of the marine strategy. The analysis incorporates the input received from marine stakeholders, consultation with the TWRC, TPA and the City of Toronto and background research completed during Phase 1 of the Marine Use Strategy Study.

Part 1-3: Stakeholder Consultation Summary
Over 40 marine user groups and organizations participated in the Marine Use Strategy study process, including representatives of a wide range of recreational, commercial and industrial users. The process also included ongoing consultation with the City of Toronto, the Toronto Port Authority (TPA), the Toronto and Region Conservation Authority (TRCA) and the Toronto Economic Development Corporation (TEDCO). This section provides a summary of the issues, priorities and ideas identified by stakeholders and the marine community.

Part 2-1: Recreational Boating on the Toronto Waterfront
The Toronto waterfront is home to a wide range of recreational marine users ranging from large yachts, sail boats and power boats to rowers, dragon boaters, canoeists, kayakers and small sailing craft. This section of the Resource Guide provides a detailed inventory of the activities and facilities of the various recreational boat clubs on the Toronto Waterfront, and an assessment of future growth in participation and related facility needs.

Part 2-2: Charter and Tour Boat Business on the Toronto Waterfront
More than 30 charter/tour boats currently operate in the Toronto Harbour with a total capacity for over 8,000 passengers. This section provides a detailed inventory of the charter and tour boat business on the Toronto Waterfront, including operational details, boat sizes, passenger capacities, mooring locations and other details, as well as an assessment of future growth potential for this sector of marine activity.

Part 2-3: Cruise Ship Activity on the Toronto Waterfront
This section provides a market assessment of the cruise ship business on the Toronto Waterfront, including a look at historical and current trends and future growth potential for this sector of marine activity. An inventory of ship visits, dimensions, capacities and other information is also provided.

Part 2-4: Industrial Shipping Activity on the Toronto Waterfront
This chapter of the Resource Guide reviews and analyses facts and figures of the industrial shipping sector on the Toronto waterfront. It looks at the history of cargo shipping, the current situation and associated trends, and also provides an inventory of cargo movement and ship traffic at the Port of Toronto.

Part 3-1: Dockwall Condition Assessment
The final chapter of the Guide reviews the types and conditions of existing shoreline and shore structures along the water's edge. Based on information available on current conditions and further research undertaken during the Marine Use Strategy study process, a discussion of required repairs and related costs is also provided.

Maps
As a visual supplement and representation of the information provided in the chapters above, a series of maps are included at the back of the Resource Guide, including:

Map 1: Existing Use Map
Map 2: Existing Water Usage
Map 3: Inventory of Tour and Charter Boats
Map 4: Shoreline Structure Types

TORONTO WATERFRONT
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PART 1

Marine Use Issues, Context and User Information

1-1 : Waterfront History and Revitalization Context

1-2 : Marine Use Issues and User Information

1-3 : Stakeholder Consultation Summary

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 1-1

Waterfront History and Revitalization Context

PART 1-1: WATERFRONT HISTORY AND REVITALIZATION CONTEXT

Marine Use Strategy: Context

The Marine Use Strategy is one component of a much broader waterfront revitalization initiative and covers an area with a long history of planning and marine use. This section provides a brief overview of the historic and current context as well as the overall waterfront revitalization framework within which the Marine Use Strategy is undertaken.

Historical Context: The Toronto Waterfront: Marine History and Background

Over the past 200 years, Toronto's waterfront has undergone significant physical transformation and marine uses have evolved from pre-contact Aboriginal use to early colonization, military occupation and trade, to port expansion, industry and transportation to recreation and commerce[1]. In the late eighteenth century, the North-West Company used the lower Don as part of their fur trade route to Lake Simcoe and Georgian Bay, and Fort York was established to control entry to the town's harbour[2]. By the early nineteenth century, there was considerable traffic of schooners and smaller vessels as water was the most efficient way to move bulk goods, and the waterfront became the obvious location for industry[3]. From the 1820s to the 1840s, the first harbour facilities, including commercial wharves and piers, were constructed at several locations to the east of John Street, while the British military continued to dominate use of the waterfront to the west[3].

In the 1850s, the railroads were constructed along the water's edge[3], and the filling of the harbourfront associated with the development of the Esplanade (between Spadina and the Don River) as the major rail corridor resulted in significant changes to the water's edge[2]. Commercial and industrial development of Toronto's waterfront intensified into the second half of the nineteenth century, and by the mid 1870s shipping interests were promoting a dry dock for Toronto, since at that time the nearest repair facilities were at Port Dalhousie on the Welland Canal, or in Kingston[2]. In 1881, the Toronto Dry Dock Company was formed to construct the harbour's first dry dock[2].

Today's Harbourfront was created by lake-filling in the late 19th and early 20th centuries for shipping and industrial uses[4], and alterations to other pre-existing natural features such as sand spits, marshes and the peninsula led to the formation of the present day Toronto Islands[2]. In 1912, the Toronto Harbour Commissioners' plan for a waterfront industrial park initiated the conversion of one thousand acres of marsh and shoreline into an industrial zone, an engineering feat that included channeling the Don, constructing concrete dockwalls, and dredging up millions of tons of sand to create the Port Lands[3].

Following the development of the railways and Port Lands, the waterfront became home to large industrial plants such as Victory Soya, Canada Malting, and Redpath Sugar[3]. Recreational uses

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[1] SOURCE: Toronto and Region Remedial Action Plan. 2001. Clean Waters, Healthy Habitats. Progress Report 2001. Waterfront Regeneration Trust.

[2] SOURCE: Stage 1 Archaeological Assessment of East Bayfront, West Donlands and Portlands Areas, 2004. City of Toronto. Archaeological Services Inc. and Historica Research Limited.

[3] SOURCE: City of Toronto. 2005. On the Waterfront. Toronto Culture: A Division Report.

[4] SOURCE: City of Toronto Web Site. 2005. Harbourfront Parks and Open Space. www.city.toronto.on.ca/harbourfront/historical.htm

also played a major role in the history of the waterfront, with several yacht clubs and rowing clubs established in the late 19th and early 20th centuries, some of which still exist today[4].

The 1912 landfill plan was finally completed when all of East Bayfront south of Queen's Quay was filled in 1952[5]. In the mid to late1950s, Toronto's harbour became increasingly important as a result of the completion of the St. Lawrence Seaway[5]. The Harbour Commission anticipated a huge increase in port activity and built extensive dock facilities to accommodate growth in ship traffic, however ocean shipping never developed as a significant business in Toronto harbour[5]. The construction of the Gardiner Expressway and the Leslie Spit occurred in the 1960s[5].

As trucks replaced freight trains and cargo ships as the preferred mode of transport, industry moved away from the waterfront to cheaper land located along major highways[6]. In the early 1970s, Toronto's Harbourfront lands were assembled by the Government of Canada and placed under the management of the Harbourfront Corporation with the intent to develop a wide range of cultural and recreational opportunities along the City's waterfront[7]. The City of Toronto passed Official Plan documents in the 1980s providing direction for the use and density of each major development site associated with these lands[7]. In 1984, the then Metro Toronto Region Conservation Authority undertook a study to assess the demand for recreational boating in the Greater Toronto Area; the study identified a serious shortfall in meeting both short and long term needs for a range of boating facilities[8]. Today, the City's waterfront continues to accommodate a mix of marine uses, including recreational boating, commercial and industrial shipping, and water-based transportation and tourism uses.

Current Context: Waterfront Revitalization

In 1999, the City of Toronto released *Our Toronto Waterfront: The Wave of the Future!,* a broad vision for renewing Toronto's 46-kilometre waterfront. At the same time, the Toronto Waterfront Revitalization Task Force was formed by the three levels of government. In 2000, the Task Force released *Our Toronto Waterfront: Gateway to the New Canada*, which added strategic detail to the original vision as well as a financial and operational plan for steering the renewal, with particular emphasis on the Central Waterfront. Later in 2000, the three governments pledged their financial support to revitalizing Toronto's waterfront.

The Toronto Waterfront Revitalization Corporation (TWRC) was formally established in the fall of 2001. In 2002, the TWRC and the City of Toronto further defined the waterfront revitalization initiative by completing a *Development Plan and Business Strategy* and the *Central Waterfront Secondary Plan "Making Waves",* respectively. These plans provide a comprehensive vision for the redevelopment of Toronto's Waterfront over the next 30 years. Major redevelopment areas comprise almost 800 hectares of land and include the Railway Lands and Exhibition Place in the western section and the West Don Lands, East Bayfront and Port Lands to the east. The City's Central Waterfront Secondary Plan anticipates over 40,000 new housing units for over 68,000 people in the Central Waterfront alone. Other components of the waterfront revitalization initiative include hundreds of acres of new and improved parks and open spaces, including Lake Ontario Park along the Outer Harbour, 7.6 million square feet of commercial space, and

[5] SOURCE: Stage 1 Archaeological Assessment of East Bayfront, West Donlands and Portlands Areas, 2004. City of Toronto. Archaeological Services Inc. and Historica Research Limited.
[6] SOURCE: City of Toronto. 2005. On the Waterfront. Toronto Culture: A Division Report.
[7] SOURCE: City of Toronto Web Site. 2005. Harbourfront Parks and Open Space. www.city.toronto.on.ca/harbourfront/historical.htm
[8] SOURCE: Toronto Port Authority. Land Use Plan.

environmental restoration. Maintaining and expanding public access to the waterfront has been identified as a priority for all revitalization projects.

Within the overall revitalization initiative, there are a number of plans and projects that have been undertaken by the TWRC, the City, the Toronto Park Authority (TPA), and the Toronto Region Conservation Authority (TRCA) to guide the redevelopment of the waterfront. The implementation of these plans may have impacts on the current and future use of the waterfront for the marine activities identified in this report. A detailed review of these plans and initiatives was undertaken as part of the background research completed for the Marine Use Strategy Study. Table 1-1 provides a summary of the ongoing waterfront planning initiatives and projects related to waterfront revitalization and their implications, opportunities and constraints for marine uses.

TABLE 1-1: Waterfront Revitalization: Summary of Marine Use Implications

Plan/Initiative/Project	Description	Implications for Marine Uses

Central Waterfront Secondary Plan & Central Waterfront Part II Plan
 	
MAKING WAVES: PRINCIPLES FOR BUILDING TORONTO'S WATERFRONT
 	
(City of Toronto, 2003)
	- establishes the strategic plan for the redevelopment of three key precincts: East Bayfront; West Don Lands; and the Portlands, into mixed-use communities;
	- sets the framework for future land use of major redevelopment areas within and adjacent to Toronto's Central Waterfront, including almost 800 hectares of land;
	- anticipates over 40,000 new housing units for over 68,000 people
	- sets out the specific land use and development policies that apply to all areas of the waterfront
	- addresses the role of the public realm in transforming the Central Waterfront into a destination for international tourism, national celebration and local enjoyment
	- priority: reserving the water's edge for public use – a continuous and highly accessible water's edge promenade connecting a series of parks, open spaces, squares and plazas
	- components:
	  - re-designing the Gardiner – a major physical barrier that cuts off the Lake
	  - waterfront transit network – LRT extensions and GO Transit
	  - completing the waterfront trail
	  - network of waterfront parks and public spaces
	  - areas:
	  - Yonge Street Pier
	  - Harbourfront Centre
	  - Lake Ontario Park
	  - The Ship Channel
		<u>Opportunities</u>:
		- Yonge Street Pier will provide a gateway to the City – a water-based transportation system utilizing water taxis and ferries will become another way of moving people from one end of the waterfront to the other
		- the Ferry Docks will be revitalized as the hub of water-based transportation activities
		- Harbourfront Centre includes a nautical centre for marine activities on John Quay
		- Lake Ontario Park - recreational boating will continue with the new park system
		- The Ship Channel – the needs of existing industries for dockwall space will be balanced with the opportunity to capitalize on the channel as a unique amenity – use of the channel for boating will be expanded
		
		<u>Constraints</u>:
		- removal of Gardiner may affect accessibility to waterfront for marine users traveling by automobile
		- lake-filling will only be considered for stabilizing shorelines, improving open spaces, creating trail connections, preventing siltation and improving natural habitats
		- a highly accessible public water's edge promenade for passive enjoyment of the shoreline (views, vistas, trails, etc.) and the creation of public places on the Quays will impact use of the dockwall for marine activities if required facilities are not provided for marine uses

Plan/Initiative/Project	Description	Implications for Marine Uses
Central Waterfront Public Space Framework (TWRC)	- provides a framework for the development of 500 acres of new and improved waterfront parks and public spaces and implementation of the public space elements of the Central Waterfront Secondary Plan; - provides a plan for a network of public spaces creating a continuous, publicly accessible water's edge	Opportunities: - recommends the preparation of a boating strategy (ie. Marine Use Strategy Study) to coordinate the water usage and supporting land base to maximize the economic, recreational and environmental asset of Lake Ontario and to ensure dockwall and facility needs are met for marine activity
East Bayfront Precinct Plan (TWRC)	- provides design concepts and development guidelines for the implementation of public infrastructure (streets, parks and trails, and community facilities) as well as the built form of new development in East Bayfront - extends from Jarvis Street in the west to Cherry Street in the east, between the lakefront and the Gardiner Corridor - a plan for a new urban waterfront community composed of mixed uses - place of living, employment, recreation, entertainment and public/cultural activities - emphasis on public access to the water's edge for viewing and appreciation - full build-out within the next 10-15 years, with first development proposal call by 2006	Opportunities: - potential to accommodate new marine uses on Queen Elizabeth Docks Constraints: - impacts on existing marine uses, such as the RCYC boat launch/ferry service to the Island Club House (Parliament Street Slip) and current Redpath Sugars location (Jarvis Street Slip) - not clear how commercial and industrial cargo shipping and recreational boating can be integrated into this concept for future development - Plan states that no external service and loading bays will be allowed – could impact marine uses - Refers to floating vessels such as a floating stage, restaurant or health club, but no mention of boating or other marine facilities/opportunities; - Public consultation for East Bayfront identified boating as an issue and the need to provide areas where canoes can be launched and people can learn to sail, but these opportunities are not clear in the Plan; - Another issue raised during consultation for East Bayfront is that industrial users have a right to stay and take advantage of water access. The noted response/ strategy is to integrate local residents into the work force. It is not clear how existing marine-based industrial uses will be dealt with.
Port Lands Implementation Plan (TWRC)	- a 400 hectare district bounded by the Keating Channel/Don River and Lakeshore Boulevard in the north, the Toronto Inner Harbour in the west, Ashbridges Bay in the east and Lake Ontario and Tommy Thompson Park in the south - the purpose of the Port Lands Implementation Plan is to develop a strategy for Port Lands revitalization over the next thirty years - in progress – work on the Plan is scheduled to be complete in early 2006	- there are many existing marine uses based in the Port Lands, including the TPA Marine Terminal and facilities, existing industries/storage uses and recreational uses (e.g. Outer Harbour Marina, Bayside Rowing, etc.) that may be impacted by revitalization of the Port Lands - Concrete Campus - a recent Port Lands initiative involving the consolidation of concrete works at the east end of the Ship Channel

Plan/Initiative/Project	Description	Implications for Marine Uses

Harbourfront – Water's Edge (TWRC & Harbourfront Centre)	- water's edge revitalization project between York and John Quays
	- components:
	  - increase the size of the water's edge promenade
	  - allow the public better access to the lake through the construction of boardwalks and finger piers
	  - improve the overall quality of the public realm through the installation of new lighting systems, furniture and better landscaping
	- construction started in early-2004 and is scheduled to be completed by 2005
		Opportunities:
		- floating pier at the head of the slip will provide convenient mooring for water taxis
		- 2 floating finger piers extending perpendicularly from the boardwalk into the lake will be able to accommodate the majority of tour boats while improving the view of the lake
		- a series of Harbour Beacons located along the promenade will serve as harbour markers and will be programmed to allow lighting to be tailored for seasonal and special events
		- docking at Marina Four (100 slips), Marina Quay West (200 slips) and John Quay (dockwall)
		- Nautical Centre – offers a range of activities and rental opportunities – Queens Quay Yachting, Toronto Brigantine, Harbourfront Canoe and Kayak, and Disabled Sailing Program

A Conceptual Design for Commissioners Park Plan (TWRC)	- 16.7 hectare site located along Keating Channel at the intersection of Cherry St and Commissioners St currently consists of multiple parcels of industrial land owned by various public and private entities - active and passive recreation – basketball, bocce, water play, playgrounds - park concept proposes an accessible water's edge by introducing steps and a lower level boardwalk that provides access to the park from the water	Opportunities: - the proximity of the Keating Channel will provide a water's edge and recreation opportunities for the park, that will support its role as a regional destination - could include a public boat launch - Keating Channel wall could be maintained to provide a structured edge for water related recreational activities Constraints: - existing businesses operating on the site and the Toronto Port Authority works yard may have to be relocated
Lake Ontario Park (TWRC)	- several hundred acres of parkland around the Outer Harbour - master planning process will begin in 2006	Opportunities: - will include continued opportunities for recreational boating and other water-based leisure activities - the current community sailing clubs will be incorporated into the park - opportunity to address and resolve current issues related to the requirement for ongoing dredging of Coatsworth Cut and Ashbridges Bay. Potential expansion of marine facilities in Ashbridges Bay and relocation of the harbor entrance from the current West side to a more Southerly direction should be included in the Lake Ontario Park Planning process in order to mitigate the requirement for ongoing dredging

Plan/Initiative/Project	Description	Implications for Marine Uses
Western Beaches Water Course Facility (TWRC & City of Toronto)	- EA Study for construction of a 'flat water' training and competition centre for rowing and paddling - immediate goal of the Project is to provide a 650 metre long, 135 metre wide site to host the 2006 International Dragon Boat Federation World Crew Championships (IDBDWCC) in the summer of 2006 - 650 metre long (500 m long racing lanes with staging areas at either end), 135 metre wide paddling course - approximately 650 metres of new breakwater, removal of existing breakwater - ancillary facilities, both permanent and temporary event based (i.e. judging tower, lane markers) - consultation in progress	Opportunities: - the facility will remain as a permanent training and competition venue for Toronto's paddling and rowing community - watercourse facility components such as in-water staging areas (at launch and at finish area), lighting, timing facilities, dock systems, lane marking buoys, launching ramps and other ancillary components will be implemented as part of this Project

Toronto Port Authority Land Use Plan (TPA) (2001)	- provides a policy framework for the management and use of TPA property
	- Plan required under the Canada Marine Act
	- in 1999 economic impact estimated at over $422 million annually and over 15,000 jobs (Mariport Group)
	- TPA Goals/Responsibilities:
	  - accommodate industries – import of sugar, salt and cement – which are highly dependent on access to marine services
	  - accommodate growth in recreational and tourism boating
	  - meet market demands for marine transportation services
	  - collection and disposal of all floating debris that is discharged at the river mouth
	  - ensure that development near dockwall areas within the central waterfront take into account the impact on marine related uses and navigation in the harbour
	  - ensure the continuation of the TPA Works Yard in an appropriate location to effectively meet port needs
		Opportunities:
		- indicates that the Outer Harbour Marina (the largest public marina on Toronto's waterfront) has on-site capacity to almost double in size
		
		Constraints:
		- dredging of Keating Channel
		- additional storage space for marine cargo is required (TPA has had to turn away cargo)
		- Atlas and mobile heavy lift cranes, the only facilities of their type on the Great Lakes, may be impacted by waterfront revitalization
		- TPA receives frequent complaints regarding loud music and other noise from the residents of buildings near charter boat berths
		- permanent facilities for the embarkation and disembarkation of passengers are required
		- restoring the mouth of the Don River to its natural delta formation – issues:
		  - the need to relocate the TPA works yard;
		  - a need to plan for the relocation of the Wilson Rail Yard and associated rail spurs.

Plan/Initiative/Project	Description	Implications for Marine Uses
Toronto Waterfront Design Initiative (TWRC) (2002)	The Toronto Waterfront Design Initiative (TWDI) brought together some of the world's most talented architects and urbanists to develop ideas and solutions for Toronto's waterfront. The architects were organized into six teams and assigned to one of six districts located in the East Bayfront and the western portion of the Port Lands.	Opportunities: - Parliament Slip as a future area for mooring boats, ferries and water taxis - a water transportation hub to reach points in the Port Lands, the Toronto Islands, downtown and beyond - preserve the area around the Essroc Pier for marine uses - create a small canal connection from the Ship Channel to the Outer Harbour to permit small watercraft to circulate and to animate the channel with boats and marine activities - remove the proposed waterfront drive across Polson and Cousins Quay, in order to preserve the integrity of the slip for marine uses and not to disrupt the continuous waterfront promenade Constraints - suggests the creation of a continuous public, water's edge promenade around all piers – could limit marine accessibility to the water and from the water to land-side services
Our Common Grounds (City of Toronto) (2004)	Toronto Parks and Recreation's strategic plan that received unanimous approval by Toronto City Council in July 2004.	- need to survey sea walls and ferry docks - goal/strategy: to work with the Toronto Waterfront Revitalization Corporation to ensure that active recreation opportunities are included in waterfront development plans
Our Toronto Waterfront *Gateway to the New Canada* (Toronto Waterfront Revitalization Task Force) (2002)	- strategic business plan for the revitalization of the Toronto waterfront, prepared by the Toronto Waterfront Revitalization Task Force as a report to the 3 levels of government	- Task Force recommendation: that "Transport Canada enter into a consultative process with the City of Toronto, the present users of the Port and other interested parties, to consider and make recommendations to the Government of Canada with respect to the future of the Port of Toronto and specifically whether the Port should remain in its present location, or should be moved to a different location in the Toronto Harbour or elsewhere. A decision by the Government of Canada is of critical importance to a full determination of the utilization of the Portlands area."

TWRC Development Plan and Business Strategy (2002)	- sets out the financial and development assumptions within which the overall regeneration of the waterfront is to take place
	- components:
	  - 500 acres of new and improved parks and open spaces
	  - 250 acre Lake Ontario Park along Outer Harbour
		Opportunities:
		- Plan seeks to accommodate both land and water-related recreational amenities
		- revitalizing the ferry docks
		- provide boat moorings adjacent to housing
		
		Constraints:
		- waterfront promenades and trail system may impact accessibility to the water for marine activities

Plan/Initiative/Project	Description	Implications for Marine Uses
TWRC Development Plan and Business Strategy (2002) (cont'd)	- 7.6 million sq. feet of commercial space - 40,000 new residential units including affordable housing - open up access to the lake - cleaner and healthier environment - 30,000 jobs - extensive public access to the waterfront - maintaining and expanding access to the waterfront will be a priority in all revitalization projects Goals/Objectives/Directions: - an accessible, attractive and enjoyable waterfront for the benefit of Toronto, Ontario and Canada - a waterfront of dynamic and diverse new communities - a waterfront with a globally recognized Portlands District for Creativity and Innovation - a waterfront with a cleaner and healthier natural environment - taking advantage of the location's special opportunities to create and protect significant parks, public spaces, water-related recreational uses and environmental restoration - increased use of mass transit and transit-friendly development - completed waterfront trail system Development Areas: - Exhibition Place and Ontario Place District: 5,183 units - East Bayfront: 6,610 units - West Donlands: 8,622 units - Portlands: 20,998 units	- introduction of new residential and commercial development, parks and open spaces could create new conflicts with established marine activities - re-development of the Port Lands as a District for Creativity and Innovation will need to consider existing Port functions, industries and recreational uses

In addition to the waterfront plans and initiatives summarized in Table 2-1, a number of other studies related to the natural environment and sustainability have been completed or are currently underway that may also have implications for the Marine Use Strategy Study, including the following:

- EA Study for the Lower Don River West Remedial Flood Protection Project;
- Don Mouth Naturalization and Port Lands Flood Protection Project;
- City of Toronto Wet Weather Flow Management – Master Plan Overview and 25 Year Implementation Plan;

- TRCA Draft Compendium of Habitat Techniques for the Toronto Waterfront Aquatic Habitat Restoration Strategy;
- Waterfront Scan and Environmental Improvement Strategy Study (City of Toronto);
- Toronto Waterfront Aquatic Habitat Restoration Strategy: Bio-Physical Processes along the Waterfront (TRCA);
- Natural Heritage Program – Aquatic Habitat Restoration Strategy (TRCA).

These studies identify current issues related to the natural environment, the impacts of development on aquatic and terrestrial natural features and functions, as well as improvement targets and restoration techniques.

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 1-2

Marine Use Issues and User Information

PART 1-2: MARINE USE ISSUES AND USER INFORMATION

Summary of Existing Marine Uses

At present time, Toronto's waterfront accommodates a wide variety of marine uses and users ranging from major industrial port users to leisure boating activities. This section characterizes the range and type of marine uses and related facilities and services that currently exist along Toronto's 46-km waterfront. Map 1 provided at the end of this report identifies the location of existing marine uses along the Toronto waterfront, and Map 2 identifies existing water usage.

The Port of Toronto

The Toronto Port Authority (TPA), a federal agency with legislated responsibility for port activities related to marine shipping, navigation, transportation and storage/handling of cargo, owns and operates the Port of Toronto. The Port, located in the Central Waterfront area in the Port Lands district, is Toronto's waterway connection to the Great Lakes and the St. Lawrence Seaway, a link that enables ships to travel over 3,700 km to the head of Lake Superior[1].

The TPA's terminal operations occupy about 20 hectares of land and include facilities for the transhipment and storage of goods, including:

- a marine terminal building (Terminal 51) with 13,935 sq. m. of storage (Warehouse 52);
- a container distribution center with 9,290 sq. m. of heated storage, inside rail loading dock, inside truck docks, and container bays;
- 7 marine berths to St. Lawrence Seaway depth;
- connections to road and rail service;
- paved, fenced, customs bonded container yard facilities with 24 hour security;
- cargo handling equipment, including the Atlas and mobile heavy lift cranes (the only facilities of their type on the Great Lakes) with a wide range of attachments for handling various products such as steel, woodpulp, forest product rolls, drums, etc.
- a maintenance centre for maintaining/repairing the equipment[2].

The Port also provides berthing for passenger cruise vessels and tour boats visiting Toronto Harbour[10]. The Port's navigation season runs from the end of March to mid-December[10].

Industrial Cargo Shipping

Existing waterfront industries are primarily located in Toronto's Port Lands, and include the storage, shipment, and/or processing of bulk products such as sugar, cement, steel, lumber, aggregate and road salt (see Part 2 of this Report). The Toronto Port Authority (TPA) has indicated that at least 14 companies in Toronto are highly dependent on marine access, and that many more benefit from this low cost form of transportation. Redpath Sugars, Akzo Salt, Essroc, Lafarge Cement and Innoco Cement are a few of the industries dependent on access to the dockwall.

[1] SOURCE: City of Toronto Web Site. 2005. Doing Business. www.toronto.ca/toronto_overview/transportation.htm
[2] SOURCE: Toronto Port Authority Web Site. 2005. Port Facilities. www.torontoport.com/port_facilities.asp

Commercial Tour Boats

Approximately 17 companies own and operate 34 charter/tour boats in the Toronto Harbour with a total capacity for over 8,000 passengers. Charter boat operations are primarily located along the dockwall and marine slips of the Central Waterfront from Bathurst Quay in the west to the Parliament Street Slip in the east. Map 3 found at the end of this report provides a visual inventory of the current mooring/dockwall location of the tour and charter boats operating along Toronto's waterfront. The industry builds on the attractiveness of the City's waterfront for tourism by providing a variety of services such as sightseeing, public cruises, private charters for hosting conferences, conventions, weddings and other special events, educational sail training as well as catering and event planning services. The charter companies operate from April through October, with offices that are active throughout the year. An inventory of the Commercial Tour Boat operations currently existing on Toronto's waterfront is provided in Part 2.

Cruise Boats

The passenger cruise line business in Toronto has grown from zero in 1994 to a total of 15 cruise line visits planned for 2005, with each visit introducing up to 700 people into the City[3]. Increased cruise operations on the Great Lakes add to the potential of Toronto's waterfront as an attractive tourism destination.

Ferry Vessels

The Toronto Harbour is home to local and international ferry transportation services. Locally, the City of Toronto provides ferry services to Centre Island, Hanlan's Point and Ward's Island, including five boats located at the Toronto Ferry Terminal at the foot of Bay Street and Queens Quay. The City's island ferries operate year round, with more frequent service from April to October than during the winter months, and have a total capacity for 3,500 passengers. In total, the City's ferries transport between 1.1 and 1.3 million people across the Harbour each year.

The Toronto Port Authority Ferry provides ferry service to the City Centre Airport located on the Island, including two passenger and vehicle ferries ("Maple City" and "Windmill Point") which cross the Western Gap every 15 minutes during airport operating hours.

Island ferries are also operated by the Royal Canadian Yacht Club (RCYC) at the Parliament Street Slip, the Island Yacht Club, the Queen's City Yacht Club and the Island Marina for use by club members and other recreational boaters and program participants. The RCYC ferry carries 200,000 passengers across the harbour every year.

A fast-ferry service to Rochester (New York) is accommodated by a new passenger terminal and customs facility operated by the Toronto Port Authority at the south side of Pier 51. This facility will also accommodate visiting cruise vessels.

[3] SOURCE: Toronto Port Authority Web Site and Canadian Sailings Magazine "Port of Toronto – Welcoming world travellers." 2005. www.torontoport.com/PortAuthority/port_cruising.asp

Recreational Boaters & Clubs

The Toronto waterfront is home to a wide range of recreational marine users ranging from large yachts, sail boats and power boats to rowers, canoeists, kayakers and small sailing craft. Dragon boating, windsurfing and personal watercraft are other popular marine recreation activities. Currently the boating facilities under lease with the City range from small community sailing clubs to long established clubs with significant permanent facilities. There are over 50 boat clubs and marinas stretched along Toronto's waterfront, providing over 5,258 boat moorings and serving over 15,000 club members and public recreational water users. An inventory of the facilities and location of these clubs and marinas is provided in Part 2.

Emergency Services

The City of Toronto provides marine police, fire protection and emergency response services from the marine police unit located at the Simcoe Street Slip (Marina Four) and the marine fire station located at the Peter Street Slip. The Toronto Police Marine Unit boathouse includes 9 slips that house the majority of the police boats as well as facilities including a mechanical and wood shop for maintaining the boats[4]. The marine police unit provides enforcement of various laws related to boating such as the Canada Shipping Act, Liquor License Act, Criminal Code of Canada and the Toronto Harbour By-laws, police service to the Toronto Islands, 79 seasonal lifeguard staff to patrol the City's beaches and swimming areas, and a variety of community services such as educational training on boating regulations and marine safety[12]. Recently, the Toronto Police Service launched the first Police/EMS Marine Unit in North America[5]. Fire Station #334 is home to the City's fire service boat (The William Lyon Mackenzie).

Other Uses

Another marine use on Toronto's waterfront includes water taxis, which operate in a variety of locations and do not have a permanent or designated base of operations for passenger embarking/disembarking.

Dredging activities are also a current and ongoing marine use and include the removal of silt and other deposits from the ship channels to maintain adequate water depth, as well as clearing of aquatic vegetation that poses risks to safe boating. Locations requiring ongoing dredging include the mouth of the Keating Channel, the Coatsworth Cut and Ashbridges Bay. Opportunities to mitigate the requirement for ongoing dredging need to be considered in planning the location and configuration of new or expanded marine facilities.

Additional leisure activities such as sport fishing and radio-controlled model boating also exist along the waterfront. The City's waterfront parks provide opportunities for on-shore fishing and the public boat launch facilities provided at some of these parks also allow for off-shore fishing. A pond in Humber Bay Park East is used for radio-controlled boating. There are approximately 70 active members in two clubs/divisions who are the principal users of the pond, including a sail division and fast electric division. Competitions are held which attract visitors to the City, contributing to waterfront tourism.

[4] SOURCE: Toronto Police Service Web Site. 2005. www.torontopolice.on.ca/marine/
[5] SOURCE: City of Toronto Web Site. 2005. www.toronto.ca/ems/operations/marine.htm

Marine Issues Affecting the Waterfront

In order to develop strategies for marine uses on the Toronto waterfront, an understanding of the key issues impacting current and future marine activities and users is required. This section provides a summary of marine issues affecting the Toronto Waterfront identified during the marine strategy process. The analysis incorporates the input received from marine stakeholders, consultation with the TWRC, TPA and the City of Toronto and background research completed during Phase 1 of the Marine Use Strategy Study. For a detailed summary of the specific issues identified through consultation with marine stakeholders during the Marine Strategy Study, refer to Part 1-3.

Access

Consultation with Toronto's waterfront and marine users indicates that access is a primary issue for all stakeholders. One participant in the consultation process compared the issue of access to an hourglass: if the land is at the top of the hourglass and the water at the bottom, access is seen as the "pinch point". There are two components of this issue: access to the *waterfront* and access to the *water*. Most waterfront and land use planning activities focus on how to bring people to the waterfront in the context of providing opportunities to enjoy the water's edge (beaches/swimming, cycling, viewing the water, waterfront parks and trails, etc.). For marine users, access does not stop at the water's edge. A medium of access is required along this interface that allows marine users to get to the place of their primary activity, on the water. Both land-side and water-side facilities, services and infrastructure are needed to provide and support this access to the water.

Within the broader issue of access, there are many specific facility-related issues that have been identified through consultation with marine users and stakeholders, including issues ranging from insufficient launch and haul-out facilities for major recreational boating events to problems providing supplier access to commercial charter boats to a lack of vehicle and trailer parking and slips for visiting boats. These issues are discussed in greater detail in the summary of issues related to required marine infrastructure and facilities.

Another issue affecting access to the water for marine use and opportunities for participation in water-based activities is the issue of economic accessibility. Recreational boat clubs in the City operate as not-for-profit organizations and offer programs and activities at low cost. Some clubs also offer facilities (e.g. clubhouses) for free use by the public for community functions and allow open public participation in events and programs. However, costs for parking, membership, docking and other fees can be an economic barrier to water access for some marine users. Consultation with marine stakeholders indicates that preventing or reducing economic barriers to water access should be a priority in planning for water-based uses (e.g. do not charge for parking). Ensuring economic accessibility is also important for non-marine recreational waterfront users, and there are public expectations for unimpeded access to waterfront parks, trails and other amenities.

A common and central concern among many marine users is that providing waterfront access for non-marine uses (e.g. waterfront parks, trails, etc.) will interfere with the functioning of marine activities. For instance, waterfront trails could impact access to the water by impeding the ability to transfer boats from dry storage and parking areas into the water, as well as the movement of trailers and related marine supplies. There is a concern among marine users that planned parks and trails (e.g. Martin Goodman Trail) along the waterfront will effectively create a "parkland barrier" that will prevent or hinder access to the water by existing and future marine

users. A suggestion from the City's boat clubs is that the waterfront parks and trails do not need to "cling" to the water's edge and should be worked around the boat clubs to avoid future conflicts of use, safety and liability issues between "water users" and "non-marine waterfront users".

If both marine and non-marine uses are not carefully planned, managed, and appropriately located, intensifying the level of activity and introducing new land uses along the waterfront could significantly impact access to the water by existing and future marine users. In planning for the City's waterfront, a clear priority that emerged from consultation with marine users is to ensure that increasing public access to the water's edge does not interfere with the safe and efficient functioning of recreational and commercial boating and other water-based uses. Balancing public access to the waterfront with maintaining access to the water by existing and future marine users will assist in alleviating access restrictions.

The issue of direct public access to boat clubs, which operate under lease agreements with the City of Toronto, is also a concern for both the boat clubs and the City. A concern from the City's perspective is that there is a lack of continuous, year round, unimpeded access to the waterfront and boat club facilities by members of the public. However, there are a number of issues relating to unimpeded access to the properties used by the boat clubs, including security of the clubs' assets and members; adequate safety supervision and the dangers associated with accidental immersion in the water by non-members and visitors; the risk management issues associated with the fact that the City requires these clubs to post adequate insurance which requires control of the access; and the property valuations which, if converted to uniformly publicly accessible areas, would erode property assessment and adversely affect tax revenues[6].

To address the issue of public access, the City in consultation with the Council of Commodores has reviewed the current level of access and charitable activities at many of the clubs as part of the lease renewal process. Boat clubs are providing a variety of access opportunities and charitable activities to the public, such as:

- providing to high needs communities, at no cost, access to the youth sailing schools operated by the clubs including bursaries for two-month training sessions at the Olympic level; community and unrelated to membership;
- in the sailboat racing programs, hundreds of non-members participate weekly as crew, including many young adults who would have no other access to boating;
- various events – over 70 percent of the 900 paying students in schools offered by the boat clubs learned about boating from open houses, discover boating days, art fairs, etc., where the clubs, facilities and boats are open to the public and they are encouraged to attend and participate;
- facilities and services are made available to neighbourhood and community groups for meeting and activity space;
- hosting events which welcome general public participation; and
- the clubs annually raise over $650,000.00 and donate 25,000 volunteer hours to charities and community organizations[7].

[6] SOURCE: City of Toronto Economic Development and Parks Committee, Report No. 7, 2003.
[7] SOURCE: City of Toronto. Economic Development and Parks Committee, Report No. 7. 2003.

In order to maximize the specific public access opportunities at each location, individual access issues should be negotiated with the Council of Commodores and the boat clubs to assist in providing public access in a way that will not compromise the operation and assets of the clubs. A balance between organized public access to the water (ie. controlled by boat clubs) for active water-related recreational uses, and unorganized public access to active and passive waterfront amenities such as public parks, urban beaches and trails will help to maximize access and the functional use and enjoyment of Toronto's waterfront without benefiting one type of activity at the expense of the other.

Location

Location is a significant factor for most types of marine uses and is inherently related to the issue of providing access to the water for recreation, commerce and industry since no access to a particular type of marine use can be provided if there are no suitable locations for that use. Furthermore, some marine uses along Toronto's waterfront are located where the facilities are inappropriate to the operation. As an example, Toronto Brigantine currently operates out of an underground parking garage due to a lack of alternative location opportunities. In order to optimize the use of the water for marine activities, strategies are needed for matching marine uses to appropriate locations that provide the facilities and services required. New location opportunities for marine uses should be identified and planned for by integrating the facility and location requirements of marine uses into planning for the development of the water's edge.

Through consultation with a variety of marine stakeholders, it became clear that the various types of marine uses have different location requirements and issues. Table 1 provides a summary of the location requirements of some of the types of marine uses identified along Toronto's waterfront.

Table 1: Location Requirements of Marine Uses

Type of Marine Use	Location Requirements
Boat Clubs (e.g. power boaters, personal watercraft, small sail boats, wind surfers, etc.)	- direct water access for launching/retrieving boats - boat launch and parking, trailer parking - secure dockage/mooring and dry storage areas - sheltered water for novice sailors and learn-to-sail - access to pump-out, shore power and fuelling facilities - road access (and ferry access for island clubs) - land for club house and training facilities
Commercial Tour Boats/ Charter Companies	- close to downtown (exposure to tourists) - land for parking for staff and clients - nearby sales/administrative office - nearby access to garbage disposal, sanitary sewer connection (pump-outs), shore power, fuelling and maintenance facilities - dockwall space and dockage/mooring facilities - access and loading space for delivery of food, beverages and supplies
Commercial/ Industrial Shipping	- commercial port facilities - safe, navigable water - separation from sensitive land and water uses - access to rail and truck routes - land for storage, facilities for loading and unloading, etc. - dockwall space for lakers - nearby administrative office space

Type of Marine Use	Location Requirements
Cruise Vessels	- proximity to land-based transit facilities and tourism amenities - safe, navigable water - berthing for large ships, fuelling facilities - facilities for passenger embarkation and disembarkation
Paddling Clubs/ Rental Outfits	- direct water access (docks or accessible shoreline) - sheltered water - land for secure boat storage - land for club house/training facility and secure lockers, change rooms facilities - complemented by nearby parks, trails and other recreational waterfront uses
Rowing Clubs	- calm, sheltered, flat-water location - straight course (2,300 m) with no obstacles - need facilities at either end of rowing course - docks (floating or fixed) - opportunities for ancillary recreation uses ideal - avoid mix with other paddling and boating uses (safety issues) - close to public transit and access by inner-city youth
Yacht Clubs (larger power and sail boats)	- land for parking – members, staff, visitors and boat trailers - land for club house and training facilities - road access (and ferry access for island clubs) - land for dry storage of boats, masts, etc. - dockwall space for crew and provisions, loading and unloading - secure dockage/mooring with shore power, nearby pump-out, fuelling and maintenance facilities - launching/haul-out facilities (e.g. dock-side cranes) - sufficient water depth for keel boats and boat slips for larger boats
Public Marina / Boat Launch	- land for parking – staff, visitors and boat trailers - road access to parking, docks and boat launch facilities - sheltered water, sufficient depth and structured shoreline/dockwall suitable for dockage/mooring/boat slips - connections to hydro and sanitary sewer and water facilities to allow provision of shore power, pump-out, fuelling and maintenance facilities, public washrooms, shower and change room facilities, etc. - public boat launches ideally incorporated as part of marina and/or public park offering additional leisure amenities
Public Canoe/Kayak Launch	- direct access to water with low docks and/or gradient shoreline/beach - proximity to areas of interest, nature appreciation and destinations (e.g. inlets, marshes, rivers, islands, rapids, etc. or open water/waves for sea kayaks) - road access, parking - sanitary sewer, water and hydro to allow provision of public washrooms, shower and change room facilities (ideal) - ideally incorporated into public park offering additional leisure amenities - secure storage facilities to allow seasonal storage of privately owned canoes and kayaks ideally enclosed storage for paddles, lifejackets, etc. and lockers for personal effects - facilities for rental of canoes, kayaks, life jackets to general public also ideal - transit access important but will only be used if adequate storage facilities provided

Understanding the location requirements of the various marine uses provides insight into evaluating current locations and determining appropriate marine and waterfront uses to be promoted into the future.

Marine and Land Use Compatibility/Mix

The introduction of new land uses along the waterfront can impact marine uses. During consultation with marine users, there was an indication that water users see themselves as "self-managing" and that conflicts arise only when land-based waterfront uses intervene. For example, new waterfront residential development has generated conflicts with commercial tour boat operations regarding noise levels (e.g. music, signalling horns, etc.). The TPA has indicated that it receives frequent complaints regarding loud music and other noise, especially from the residents of buildings near charter boat berths[8]. As described earlier, boat clubs and other marine uses may also be impacted by waterfront parks and trails and the associated increase in the number of land-based waterfront users (potential traffic and safety issues).

Although there is a "self-managing" mindset among water users, there are some identifiable conflicts between the various marine uses that currently exist in Toronto. Representatives of marine uses involving commercial and industrial shipping have indicated that the increasing levels of recreational boating in the harbour makes it difficult for waterfront business operations to continue. However, cargo ships play a very important role in transporting goods and reducing the impact of moving these goods along the highway: one cargo ship has the capacity of 800 to 900 transport trucks. For industry and commerce, Toronto's harbour is also the gateway to a global marketplace.

Consultation with marine stakeholders has also revealed some evidence of conflicts among the various types of recreational boating activities. For example, the wake created by faster-moving power boats is a problem and a nuisance for sailing activities and the use of the water by non-powered vessels. Safety was also noted as an issue by the marine community, including risks associated with unenforced speed limits on the water, increased boat traffic, and the mix of incompatible boating activities (e.g. safety issues created by mixing backward-facing rowing with forward-facing boating activities). Compatibility issues also relate to programming the use of the water, where a lack of coordination in the scheduling of events results in conflicts among marine activities, particularly at peak times of water use (e.g. evenings and weekends).

Despite these issues, marine users do not want to see particular types of boating activities excluded from the water and have indicated that Toronto's harbour can continue to accommodate mixed use. What is needed are strategies for directing marine and waterfront uses to appropriate locations to minimize conflicts between land-based uses and water-based uses and for programming the use of the water to minimize conflicts among different types of marine activities. These strategies will assist in optimizing the range and diversity of water- and land-based uses that can be accommodated along Toronto's waterfront without creating new conflicts.

Marine Infrastructure and Facilities

As indicated in the discussion of issues related to access, a range of land- and water-based facilities, services and infrastructure are required to facilitate and support access to and use of

[8] SOURCE: Toronto Port Authority. Land Use Plan. 2001.

the water by marine uses. Table 1 provides an indication of the types of facilities and infrastructure required by the various types of marine uses identified.

A lack of sufficient marine infrastructure, and problems with the condition of existing infrastructure, can create inefficiencies in water use as well as increase the costs and risks to the health and safety of marine users. As an example, some commercial charter boats currently order fuel delivery (by truck) due to a lack of available fuelling facilities. In addition to the inefficiency of arranging regular fuel delivery to the waterfront area, there may be greater risks associated with fuel spills and traffic that could be mitigated if a formal marine fuelling facility were provided. Similarly, some charter boat operations do not have available connections to the City's sanitary sewer system and, without access to these services, there is a greater risk that people will break the rules (e.g. pump out into lake), adversely impacting the health of the marine environment and its users.

Land-side facilities required by marine uses include parking, storage and maintenance areas, clubhouses and other facilities. Lack of sufficient lands for parking and dry storage can limit access to and use of the water for marine uses. Out of necessity, most water users travel to the waterfront by automobile because it is impractical to transport boats, provisions and other marine gear to the water by any other means (e.g. transit, cycling, etc.). Some refer to their vehicle as a "tool box" as this is often where they store repair equipment/tools for maintaining and repairing their boats. Similarly, commercial charter boats require parking to provide access to their boats for a clientele who are typically attending formal events (e.g. weddings, conventions) and travel by car rather than using alternative modes of transportation due to the formal nature of the event. For island boat clubs, parking is required at or near ferry terminals and services so that club members and visitors to the island facilities can bring necessary supplies, provisions and marine gear without having to move these items over long distances. Non-marine waterfront users also rely on parking since people often drive to waterfront destinations to use pedestrian and cycling trails, parks and other amenities located along the waterfront.

Transit facilities and other means of transportation access to the waterfront are also important for marine uses. As an example, the educational and training programs offered by many of Toronto's boat clubs are attended by youth and other participants who require an alternative to driving in order to access these programs. Since these and other local water users typically live in apartments or other accommodations having small associated land areas, public storage of boats and supplies at or near the water is a key element of providing water access to Toronto's marine community.

For cruise lines, charter boats, ferries and other passenger vessels, larger berths are required as well as facilities to allow for embarking and disembarking of passengers along with associated services such as baggage handling and transport to and from the facility. International marine transportation vessels also require customs facilities. Currently, cruise boats arrive at a location with inadequate facilities to accommodate their arrival.

Recent trends also indicate that the size of most types of boats, including pleasure boats, commercial charter boats, cruise vessels and cargo ships is getting larger and there are increasing demands for larger boat slips.

Problems with the condition of existing infrastructure also limit the ability to meet the demands for access to and use of the water for marine activities. For example, marine users have

indicated concerns with the condition of the dockwall (e.g. crumbling structure) that create limitations on use as well as safety risks.

Strategies for the provision and management of marine facilities are needed to ensure marine uses are accommodated with the types of infrastructure and services that are required and that the use of existing infrastructure and facilities is optimized by resolving deficiencies in current conditions. Emerging technologies, such as floating breakwalls, may create opportunities for providing required facilities and infrastructure at lower costs.

Protecting the Marine Environment

Improving and preserving the health of the natural and aquatic environment are priorities of Toronto's marine community. A high quality natural environment is essential to maintaining and enhancing the enjoyability and sustainability of the waterfront for marine uses. It is essential to the physical and social well-being of marine users, particularly for the many recreational boaters and leisure participants who rely on the water(front) to provide a natural retreat from urban life. The health and welfare of the people who use the water(front) are directly related to and dependent on the natural and aquatic environment.

As identified earlier in the discussion of issues related to a lack of marine infrastructure and facilities, there are a number of environmental risks created when adequate facilities to support marine activities are not provided. In addition, marine users have identified that the water surface requires better maintenance and clean-up of floating debris which can damage expensive boats and result in costly repairs as well as contaminating the water and impacting visual amenity. Many of these issues can be avoided by providing adequate services and facilities such as sanitary sewer connections/pump-outs, garbage disposal and pick-up areas, fuelling and other essential services. Ongoing maintenance of the water/shoreline, and educational/promotional initiatives to improve public understanding and awareness of environmental impacts, processes, habitats and other aspects of the marine environment are also possible strategies to supplement the provision of facilities to address these issues.

Natural shoreline and fluvial processes such as long-shore drift, siltation, erosion, wave action, flooding, etc. also impact marine uses by affecting water depth, altering shoreline characteristics, eroding infrastructure and potentially damaging boats, marine facilities and properties. These natural shoreline characteristics and processes present constraints to marine uses in various locations along the waterfront, and costly infrastructure such as dockwalls, breakwalls, shoreline stabilization, etc. and activities such as dredging are needed to allow many marine uses to occur. Where this infrastructure is in place, it is important that its use for marine activities is maximized and concentrated so that the cost of providing and maintaining this infrastructure can be offset by the many economic benefits and contributions that marine uses bring to Toronto. This approach will also limit the need for construction of new infrastructure in new locations to accommodate marine uses in the future, which will also avoid further impacts on natural shoreline processes associated with this infrastructure. In developing and implementing strategies for marine uses through this Study, the limitations created by natural shoreline characteristics and processes need to be understood to ensure that marine uses are directed to appropriate locations based on a balancing of locational needs with environmental constraints.

As noted earlier in this report, a number of studies have been completed for improving and restoring natural terrestrial and aquatic environments and preventing further negative impacts

on the natural systems along Toronto's waterfront, such as the Toronto and Region Conservation Authority's Aquatic Habitat Strategy.

Safety and Security

Another priority of the marine community is water safety. While some marine users feel that Toronto harbour is not particularly congested in comparison to other areas, boating activities and events are increasing and as a result water safety and liability is becoming more of a concern. Representatives of commercial and industrial shipping and tour boat operations have indicated that strategies are needed to ensure that large vessels can be safely accommodated and to direct small recreational boating uses to appropriate locations to ensure water safety. Strategies for managing the scheduling of events and avoiding timing conflicts are also required.

Other safety concerns are related to the lack of both water- and land-based safety facilities. For example, there are buoys in the water that are not clearly marked and a lack of understanding among boaters regarding the purpose of these buoys. Dilapidated shoreline safety facilities (e.g. safety rails, ladders, etc.) were also identified as an issue and there are concerns regarding accidental immersion into the water and the lack of locations and facilities for people to get out of the water.

Security is an issue associated primarily with the land-side and dockage/mooring facilities of marine uses. Some marine users have experienced problems with vandalism and others have been victims of theft of marine supplies, out-board engines and other property as well as break-ins (e.g. moored boats, clubhouses, etc.). As a result, security structures (ie. fences, gates, etc.) are needed, creating a barrier to water access and visibility of the water's edge. Marine users have indicated that more lighting is required along the waterfront for both safety and security reasons.

Boat Club Lease Agreements

As noted earlier, many waterfront properties are publicly owned and the use of these lands is governed by lease agreements between the City of Toronto and various boat clubs. Prior to amalgamation, these boat clubs operated under lease arrangements with each municipality. All of the boat clubs were on a common lease modeled on the lease administered by Metro Toronto, with the common rental fee being the "Metro Formula", and the only difference being the length of term. After amalgamation, most of the boat clubs operated under a 5-year lease agreement with the City or a 1-year extension of a previous 5-year agreement. Under these agreements, the City has the ability to adjust the lease rates every 5 years. Most of these lease agreement terminated at the end of July, 2005.

A number of issues were identified by the parties of the 5-year lease agreements, such as a lack of sufficient tenure to obtain proper investment in capital improvement, and the impact on the boat clubs' ability to forecast operating costs given the level of uncertainty associated with the lease rates. In 2003, Toronto City Council authorized the renewal of lease agreements with the various boat clubs across the City's waterfront. To resolve the issues associated with the past 5-year agreements, the new agreement has a 20-year term, providing greater tenure to the boat clubs, and also introduces a stable pricing environment by linking future lease rate increases to the Consumer Price Index. The new agreement became effective August 1, 2005.

The new lease agreements address a number of legal issues such as:

- ownership of boat club facilities and buildings while the agreement is in effect and upon termination of the agreement;
- lease rates, property taxes and terms of payment;
- required permissions from the City for construction of buildings, structures and facilities on the leased lands;
- required operation of the clubs as not-for-profit organizations;
- liability and insurance requirements;
- property maintenance responsibilities; and,
- prohibited uses (e.g. floathomes).

Under the lease agreements a standard lease rate is applied to the land area used for each boat club. Since the area occupied by the clubs located in the south port lands is not serviced, only 75% of the rental rate is applied to these clubs, with provisions for phasing in annual 5% lease rate increases during the initial five-year period following establishment of full development infrastructure (e.g. sewers, etc.) until the rate reaches the rate applied to the other serviced boat clubs.

Consultation with the boat clubs during the marine strategy process showed some concerns with a proposed "six month clause" which would have allowed termination of the lease provided 6 months' notice is given. The primary concerns of the boat clubs again relate to the corresponding uncertainty that this would create for planned capital improvements to club facilities and infrastructure and the resulting inability to obtain financing and capital grants for these projects. The boat clubs have indicated that they need tenure to ensure their investments in new or improved waterfront structures and facilities is a worthwhile investment for their organization (cost/benefit). Since 2003, the boat clubs have reported plans to spend approximately $8.5 million on capital improvements to 2008[9]. The clubs spend $1.4 million annually on capital maintenance[8].

The timing of the above consultation with the boat clubs was in early 2005 when the new agreements were still being worked out and the specific boat clubs that would be subject to the "six month clause" had yet to be determined. Since then, the six month clause has been reduced to only two groups of clubs affecting a handful of organizations in the Cherry Beach area and the clubs in Coatsworth Cut. The intent of the clause is to allow flexibility while the Lake Ontario Park Plan is undertaken so that the outcome and recommendations of this study are fully understood before long-term land arrangements are made along the waterfront.

A key advantage of the City's lease arrangements with the boat clubs is that they offer the opportunity for a variety of water-based recreation, and enhance the infrastructure for recreational boating, at no cost to the taxpayer.

TPA/TEDCO Lease Arrangements

The Toronto Port Authority (TPA) currently leases approximately 26.8 acres of lands owned by the Toronto Economic Development Corporation (TEDCO) at the east end of the Ship Channel and adjacent to the current TPA marine terminals, including lands used for the TPA Works Yard[10]. The TPA and TEDCO are also party to a lease and renewal lease in respect of the dockwall[9]. In 2003, the two organizations reached a settlement on issues related to lands

[9] SOURCE: City of Toronto. Economic Development and Parks Committee, Report No. 7. 2003.
[10] SOURCE: Hoy, Dill and Pennachetti. Staff Report to Policy and Finance Committee. City of Toronto. 2003. and Court File Nos. 01-CV-215214CM and 01-CV-215214CM A2. Minutes of Settlement. Ontario Supperior Court of Justice. 2003.

leased to the TPA which are currently used for port-related functions and may be required for revitalization in the future. The City and TEDCO have maintained their land holdings and a 10-year lease was agreed upon for 25.6 acres of land not required for Waterfront Revitalization in the near future[9]. However, the possibility of re-locating the TPA Works Yard may be considered to allow for the renaturalization of the Mouth of the Don River[9].

A significant issue for the TPA is that sufficient land is needed to house its port users, accommodate modest growth, and generate rental and port user income[9]. The settlement provides the necessary infrastructure and financial stability for the TPA to retain existing port users, attract new users and explore other appropriate business opportunities to ensure long-term financial viability and independence[9]. Research undertaken during the preparation of the Central Waterfront Secondary Plan indicates that, while overall cargo volumes in Toronto's port have declined, core cargoes such as salt, cement and sugar, have remained resilient and a modest annual growth rate of 1 or 2% is feasible[9]. This could result in an additional 2.1 million tonnes of port traffic by 2010[9]. In addition, this research concluded that there may also be opportunities to attract container feeder traffic to the Port of Toronto[9].

Regulatory Issues

Float Homes and Liveaboards

The regulation of float homes (non-navigable) and liveaboards (navigable) is another marine issue affecting the Toronto waterfront. A "liveaboard" is a vessel intended primarily for use in navigation and used incidentally as a residence, whereas "Float homes" are house-like structures incorporating a floatation system, intended for use or being used or occupied for residential purposes and not primarily intended for, or usable in, navigation[11]. A survey completed by the City in 2000 revealed that 18 vessels were used for year-round residence at the boat clubs, and another 60 vessels were used for this purpose at marinas[10]. There are a number of issues related to these uses, including concerns regarding health and safety, servicing, noise, traffic, garbage handling, water pollution, unsightliness, taxation, regulatory authority (federal vs. municipal) and the unmanaged residential use of properties acquired and intended for parks and recreation purposes[10]. These uses also limit the availability of boat slips intended for seasonal recreational boaters.

In 2002, the City considered several options for addressing liveaboards and floathomes moored at City marina facilities and lands leased to boat clubs, including prohibition, license fee requirements, and limited permission. The City adopted a policy prohibiting floathomes (with some existing floathomes allowed to continue), and approved the concept of a license fee for liveaboards and asked staff to report back on the regulatory and statute changes that would be required. All of the boat clubs operating under lease agreements with the City of Toronto must comply with any City policies relating to float homes and liveaboards. Furthermore, the proposed standard form lease agreement with the boat clubs prohibits float homes. Additional regulatory measures may be needed to control float homes and liveaboards if these continue to be an issue, however this issue would appear to be under federal jurisdiction if this cannot be accomplished through the City's Zoning By-law.

[11] SOURCE: Planning and Transportation Committee and Toronto City Council Economic Development and Parks Committee. Joint Report No. 1, Clause No. 1. 2002.

Water Taxis

There is currently no formal regulation of water taxis serving Toronto's waterfront. Issues associated with this use include insurance/liability, a lack of clarity of regulatory authority (federal vs. municipal), and a lack of formally designated areas suitable for passenger embarking and disembarking and absence of consideration of this use in waterfront development plans. There is potential for this use to increase as a popular mode of transportation as the waterfront revitalization brings new residents, visitors and attractions and increases the intensity of use along the water's edge. Strategies for formalizing locations and destinations where water taxis may be accommodated should be considered along with possible regulatory approaches. A review of regulatory models used in other waterfront cities may provide insight into possible solutions.

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 1-3

Stakeholder Consultation Summary

PART 1-3: STAKEHOLDER CONSULTATION SUMMARIES

The Marine Use Strategy provided an opportunity to engage marine stakeholders and waterfront users in consultation through a series of focus groups sessions, public meetings and interviews. Over 40 marine user groups and organizations were represented during consultation, including representatives of a wide range of recreational, commercial and industrial users. The process also included ongoing consultation with the City of Toronto, the Toronto Port Authority (TPA), and the Toronto Economic Development Corporation (TEDCO). On May 18, 2005, a presentation was made to the public and marine stakeholders providing an overview of the Marine Use Strategy and summarizing initial findings of the study, along with maps illustrating existing marine uses and other visual aids. During the meeting, input was obtained on marine use issues and the Study Team also received feedback on the draft guiding principals proposed. This section provides a summary of the comments received from the marine community.

Boat Clubs

Organization	Description	Issues/Comments
Toronto Brigantine Inc (TBI)	- not-for-profit sail training organization established in 1962 - offers sail training to youth (14-18 year olds) - located at the foot of Bathurst - 1,100 sq. ft. facility - have two 72-foot sail boats - use 150 feet of dockwall	- need a home base for boat maintenance and winter program (currently operate out of an underground parking garage as a temporary solution) - amount of water space disappearing - can't afford to purchase property - need winter storage space for masts, etc. when boats are taken apart - accessible and affordable waterfront property must be preserved for recreational water uses

Royal Canadian Yacht Club	- organization established 150 years ago and existing at present island location since the 1920s
	- operate out of Island Clubhouse
	- 5,000 members
	- members maintain 322 larger sailing boats and 122 smaller sailboats
	- scheduled programs daily from June 1st to September 1st including racing, learn-to-sail, cruise racing and regattas
	- junior sailing program in July and August (Monday to Friday) – 482 youth participated in program last year
	- high performance sailing – competitive and Olympic sailing programmes – practice daily from May to late October
	- Club has hosted many international yachting events
	- host annual Easter Seals fundraising regatta
	- when member boat slips are vacant they are made available to visiting boats
	- ferry crossing every 15 minutes – take 200,000 passengers across the harbour each year
	- 140 summer staff and 90 full time staff
	- run 2 work boats and a barge daily to carry provisions to the island facilities
	- Queens Quay – use dock wall facilities all day
		- inadequate parking
		- shore needs (east end of Quay):
		  - vehicle parking
		  - boat trailer space for visitors (regattas)
		- space for travelling boats does not have water and sewer services
		- City station at Parliament Street slip not compatible with East Bayfront precinct plan

Organization	Description	Issues/Comments
	every day for picking up crew and provisions, loading and unloading, etc. - High Performance training program uses the club's Queens Quay facility - Dock side cranes to launch and retrieve smaller visiting boats	
Outer Harbour Sailing Federation	- 9 clubs established in 1970 - community based and self-operated - provide access to the waterfront for 2,000 members - use entire Outer Harbour - offer sailing school programs - located south of Unwin Avenue	
Council of Commodores	- represent 40 boat clubs (24 within City of Toronto) and 15,000 people - 5,200 moorings in Toronto, 2,800 used by yacht clubs - largest recreational boating area in Great Lakes - $55 million in economic benefit - Mariport Report (2002) – study of economic benefit	- HTO Park – stepped over dockwall – cement beach/parkette displaced Toronto Brigantine Disabled Sailing and HMCS Toronto - no dockwall available - boat clubs getting no respect - 6-month clause in lease agreements – millions of dollars in capital spending and no tenure - harbourfront piers – need to improve vistas - need to accommodate charter boat industry
Bayside Rowing	- location on Ship Channel - established in 1993 - offer a variety of rowing programs for youth, adults, competitive and recreational rowing and adaptive rowing - serve the needs of underprivileged young people and youth at risk	- need access to calm water - safety concerns associated with mix of waterfront users (e.g. rowing vs. kayaking and canoeing) - cannot re-locate – service area includes inner-City kids - hope to expand service area - need parking and services - opportunities for ancillary recreation uses would be nice - need facilities at either end of the rowing course
Aquatic Park Sailing Club	- 100 mooring non-profit sailing club - located at Leslie Street Spit (Tommy Thompson Park) - removable clubhouse and docks - arrangement with TRCA – protect bird populations - active with OHSF - member of Tommy Thompson Parks Plan Committee	- water is well governed by Federal Regulation - access is important – who gets access – need to make sure it is on public lands - need a place to put boats in the water - dredging needed for keel boats - refer to Outer Harbour Sailing Federation Water Use Report (2003) - implement Tommy Thompson Park Master Plan - develop and use a community strategy to establish the Spit as unique urban wilderness - establish Outer Harbour as water park
Ashbridges Bay Yacht Club	- established in Ashbridges Bay in 1932 - community-based sailing program - 550 members	- 20-year lease – concern with 6-month clause – if this clause stays in the agreement then capital improvement is no longer worth it and

Organization	Description	Issues/Comments
	- facilities include clubhouse and boat slips for members - $100,000 Trillium Grant for sailing school program - offer scholarships - significant capital investment in last 5 years with additional investment under review for improvements to clubhouse, meeting space and sailing school (need funding) - clubhouse is used extensively for public use (no cost)	cannot be justified for financing - no additional land needed but may need more water space for new boat slips
Harbourfront Canoe and Kayak Centre	- rental outfit for paddling offering canoe and kayak instruction, a rental centre and youth camps - not operated as a club but have "regulars" - over 200 active members and 20 staff - dedicated to outdoor education for kids - events – social night where 30 boats are paddled to island - operation has grown every year – turning people away - adventure racers - operate primarily from late May to late September - over 1,000 children and adults go through learning programs - teach water safety and rules - all profits go to charities and ecological initiatives (e.g. Community Air Group)	- feel undervalued and unappreciated given the contribution made to the community and that this organization is the primary option for canoeing and kayaking in the City - access to water – expropriated last fall to a temporary portable - share slip with Queens Quay Yachting – sometimes there are conflicts but the club can co-exist with other boating groups - need calm water and a sheltered area - likely to require more space - would like to see the creation of a secluded inlet for learning and launching and a nautical centre incorporating various uses and providing facilities (clubhouses, showers, lockers, etc.)
North Shore Aquatic Sailing Club / OHSF	- offer learn-to-sail programs, events, rowing - not-for-profit - 2,000 members - make water accessible to public - UCC and U of T rowing - Water rats, board sailing - Many arrangements with different organizations	- like north shore location and would like to stay there
Mooredale Sailing Club/OHSF	- small sailing club: 175-200 members - accessible, low cost, volunteer-based (no staff) - teach 75-100 people (learn-to-sail) - offer a variety of activities - 25-30 boats including 2-3 power boats - dry-sail boats are rolled in and out of the water daily on ramps - racing in Outer Harbour - facilities include a parking lot for member access and 2 docks for launching	- would like to keep costs low - need flat water protected area - dry-sail boats need direct access to water - marine traffic affects racing programs - amount of traffic/personal watercraft a concern - uncertainty regarding future outlook – need stability to allow capital planning for future - security – low occurrence of vandalism but concern regarding exposure and traffic through the space (potential for theft) - issues with high-speed power boats – need to manage speed limits - need better trails and parkland in the Port Lands - Outer Harbour needs dredging

Organization	Description	Issues/Comments
Boulevard Club	- 100th year of operation - started out as Parkdale Canoe Club - 2,000 members - multi-sport – dragon boating, tennis, etc. - $10-$11 million renewal including a fitness centre and pool (ideal amenities) - 35 members joining per month - work with neighbours (e.g. Toronto Sailing and Canoe Club)	- breakwall is in poor condition (falling in/collapsing)
Island Yacht Club	- located on Mugg's Island – East of Hanlan's Point - over 200 members - traditional yacht club - slips for more than 100 boats - private boat launch (City side) - currently re-building clubhouse (substantial investment)	- concerned about maintaining access for people and supplies - concerned about level of commercial activity and congestion on the water - need to preserve strong interest in competitive sailing - need city-side access and parking
Toronto Sailing and Canoe Club	- small club - dragon boat teams and canoeists - helps to generate sports tourism - all classes of membership are growing - fleet of keel boats for disabled persons	- breakwall is collapsing - canoeing is growing - need more access for small powerboaters - water becoming more and more crowded
Alexandra Yacht Club	- 100 members and 50 associate members - 100th anniversary - self-help club (no staff) – everything is done by members	- limited land space for boat storage - waiting list for membership - security – theft is an issue - would like to invest more in the site (dockage, landscaping, retaining walls) but leery about long-term outlook
Ontario Place	- 280 slips (180 seasonal) - no real shore-based facilities other than washrooms - facility users: 60% power boats, 40% sail boats	- lack of space for larger boats (40 ft +) - no room to grow facility - lack of sufficient electricity - parking located too far from marina
Toronto Windsurfing Club	- volunteer club - have existed for a long time - educate youth and adults on windsurfing	- concerned about 6 month lease termination clause – need a longer lease time frame to invest more
Humber Boat Club / Rowing Canada	- Rowing Canada – national sports federation – promote rowing	- in order to improve harbour area the shore term lease termination needs to be addressed (Ontario Trillium Foundation requires a five-year lease) - outer harbour is unique - access to water is an issue - uninterrupted access to Martin Goodman Trail is a concern because boats have to go in and come out daily (safety concern) - rowing courses must be a planned piece of the waterfront – Ontario Place is not a rowing course since it is only 600 metres long and not the required 2000 metres - a proper rowing facility would help to attract bids for competitions

Organization	Description	Issues/Comments
Water Rats Sailing Club	- 200 member sailing club - located in Outer Harbour at the foot of Regatta Road, east of Cherry Beach - dry sailed boats (no moorings or dock space) - sailboats, catamarans, canoes, kayaks and windsurfers - have 2 Zodiacs for rescue (qualified operators) - good area for competitive sailing – programs include Ontario Gold Cup - daily use of the water 4 to 5 months each year - races on Sundays and Tuesday and Thursday evenings when light permits - season runs from April to November - facilities include a beach for launching small sailboats, catamarans, canoes and kayaks, a launch ramp for larger boats and rescue boats, a small finger dock, a clubhouse (unserviced – no change rooms, electricity or water), boathouse/garage, grounds for events (picnics, etc.), parking and garbage disposal - use waters almost every day	- ear that they may be supplanted in order to accommodate land-based recreational activities - inherent insecurity of short term leases has curbed capital investment in facilities – a long-term lease without re-location clauses would allow improvement of facilities and programs - want to stay at present location – moving to the other side of the bay is not an option (winds too strong for novice sailors) - access is needed – need to be on the water and therefore need a way to get to the water – any development that does take place must not diminish accessibility to the water - need protocol to ensure viable access by all existing recreational waterfront users and enforcement of speed limits on the water - need better maintenance of the usable water area in the Outer Harbour
Club Management Services	- consultant to private yacht clubs and teacher of marine courses	- lack of availability of water area in the Inner Harbour for evening races and youth programs - would like to see establishment of a marine museum - need adequate parking for waterfront users - need to provide space for visiting vessels
Hanlan Boat Club	- has been offering rowing programs to Toronto for 30 years - facility located off Regatta Road in the Outer Harbour - home of University of Toronto Rowing Club and high school programs	- uncertainty of lease occupancy has always been a barrier to an investment in more permanent and better facilities - proposal for construction of Hanlan Rowing Centre – requesting long-term lease of land in an appropriate location having adequate sheltered water, sufficient storage space, security, access to city services, road access and adequate parking
Disabled Sailing Association of Ontario	- support and provide sailing opportunities for people living with a disability in Ontario - promote the integration of disabled sailors with able-bodied sailing - 100 members - 12 member Board of Directors - 4 full time staff (in summer season) - over 150 volunteers (over 50 on a regular twice-weekly-plus basis) - hundreds of participants in community programmes - facilities at 283 Queens Quay West include: - wet berths for six Martin 16 sailboats, two 22' keelboats, one 2.4 metre sailboat and various	- recently moved from west side of slip to east side with substantially reduced space, only two toilets and extremely limited vehicular access (even for drop-off by wheeltrans and vehicles with disabled permits) and lack of parking - new office/clubhouse has insufficient space for wheelchairs inside - no space available for expansion - will require relocation within a few years - redevelopment of Maple Leaf Quay ignored the recreational boating users and turns it into greenspace/parkland that could easily have accommodated recreational boating

Organization	Description	Issues/Comments
	tenders and crash boats - wheelchair accessible docks - hoya lifts, launching ramp - wheelchair accessible office/clubhouse with deck and adjoining space for teaching and social activities (e.g. BBQ) - accessible washrooms - limited potential for disabled parking spots and WheelTrans drop-off area - good access to public transit	users - close, safe vehicular access is essential for disabled sailors - there is a need for a Nautical Centre that brings many recreational boating user groups together in one central location where the various needs for wet berths, dry sailing launching/storage, clubhouses, tenders, parking, access to public transit, etc. can be addressed - a nautical centre should be viewed as a focal point of the waterfront and a draw for public involvement (e.g. spectators) - Harbourfront has discussed a nautical centre for its users, but the concept needs to be broadened to include the needs of ALL recreational boaters using Toronto Harbour

Commercial/Tour Boat Operators

Organization	Description	Issues/Comments
Yankee Lady	- operating for 22 years (longest running operator) - located at Pier 28 at foot of Jarvis Street - run 4 tour boats (trying to sell smallest one) - use 400 – 500 feet of dockwall - boats are in water all winter - also build boats and captain boat charters	- need more docks and dockwall space
Obsession 3 Yacht Charters	- moored – pier 35 to Bathurst - cater to tourism – sight-seeing, weddings, conventions, socials - mostly seasonal (May – Oct) - offices open all year - 80,000 passenger capacity - provide over 1,000 jobs and spin-off benefits to other businesses and attractions	- residential condos object to noise (music) - need a location for charter boats to be together - all need land side services – garbage disposal, pump out, delivery, passenger access - losing parking lots - need docking space – currently pay to different companies
Passenger Vessel Association/Great Lakes Schooner Company	- 2 tall ships at Harbourfront Piers and Trillium at Ferry docks - 3 employees in winter, 60 in summer - Harbourfront is location for sight-seeing tours (5 groups offer sight-seeing)	- each tour company has different needs but most require visibility – need to be located where tourists go - future considerations: need room to grow (e.g. 1,500 passenger vessel) - could there be a terminal at Yonge Street?

Industrial / Storage Uses

Organization	Description	Issues/Comments
Tate & Lyle Canada Ltd. (Redpath Sugars)	- sugar refinery - operating at present location since 1959 - located at 95 Queen's Quay East - receive 600-700,000 tonnes of sugar annually (20-25 ocean bulk vessels, 18,000 to 22,000 tonnes per vessel) - 250 employees - in winter 4 to 7 lakers are used as floating storage along dockwall - have land for storage of approximately 100,000 tonnes	- need more ground space for storage - need save navigable waters for commercial shipping - land available for expansion is not in immediate vicinity - need better separation between commercial and recreational demands
Essroc Canada Inc.	- bulk cement terminal - terminal and slip located at Cherry Street (Keating Channel) - cement carrier – 700,000 tons of cement in bulk and over 400,000 tonnes pass through Toronto terminal - 50 harbour visits - current facility: 40-50 year lifespan remaining	- concerned that there is an intent to significantly reduce or eliminate industrial/commercial uses of the harbour
Doug Faye (Boat Ontario)	- provided over 400,000 tons of cement for the CN Tower	- concerned about residential development in the area - cement has a life span so it is important that these uses are located close to the demand
Lafarge Canada Inc.	- U.S. and Canada's larges supplier of construction materials such as cement and cement-related products - Located at 54 Polson Street in Toronto and also have locations in 75 countries and over 75,000 employees	- industrial-based business – need to stay in an industrial neighbourhood - require water access, rail and truck routes

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 2

Marine Use Inventory & Analysis

2-1 : Recreational Boating on the Toronto Waterfront

2-2 : Charter and Tour Boat Business on the Toronto Waterfront

2-3 : Cruise Ship Activity on the Toronto Waterfront

2-4 : Industrial Shipping Activity on the Toronto Waterfront

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 2-1

Recreational Boating on the Toronto Waterfront

PART 2-1: RECREATIONAL BOATING ON THE TORONTO WATERFRONT

Boating Clubs, Marinas and Boating Activity

There are 29 yacht clubs and boating clubs, 5 marinas and 7 boating/teaching organizations on the waterfront between Humber Bay in the west and Ashbridge's Bay in the east. See Table 1 following and Map 1 provided at the end of this report. The members and users of these 41 facilities are active on the Toronto waterfront from 5:00 to 5:30 am in the morning until 8:30 to 9:00 pm or last light at night, seven days a week. The rowers normally use the water from 5:00 am to 7:00 am in morning and to a lesser extent from 5:30 pm to 8:30 pm in the evening. Sailors, power boaters and dragon boaters normally use the water from 6:00 pm until 9:00 pm on the weekdays. The weekends from 9:00 am to 4:00 pm are peak times for sailors and power boaters. Weekends (10:00 am to 12:00 noon and 2:00 pm to 4:00 pm) and mid week (6:00 pm to 8:00 pm) are the normal times for regattas. More than forty regattas occur each year attracting in excess of 6,000 local and visiting boaters. There are also three large rowing, canoeing and dragon boat regattas/festivals held annually. The Canada Day rowing and canoeing regatta and the Toronto International Dragon Boat Festival both held at Long Pond on Centre Island attract in excess of 2,000 and 4,800 competitors respectively. The Great White North Challenge Dragon Boat Festival held at Ontario Place attracts a further 3,600 competitors annually. Sailing races occur 4 or 5 days a week during the peak boating season in the Inner Harbour, Humber Bay, Ashbridges Bay and south of the Toronto Islands. The 29 yacht clubs and boating clubs offer more than 500 programs during the boating season for children, teens and adults to learn to sail, canoe, kayak, row, windsurf, and operate a power boat. June, July and August are the peak months for these programs that normally occupy the water between 9:00 am and 6:00 pm Monday through Friday and 9:00 am to 4:00 pm on the weekends.

The greatest concentration of boaters occurs in the area from Humber Bay to the Western Gap. This area hosts 8 yachting and sailing clubs, 11 boat clubs one rowing club (Argonaut Rowing Club), one dragon boat club (Toronto Dragon Boat Club), one private club (Boulevard Club) and one marina (Ontario Place). See Table 2 following. 1,431 sail and power boats occupy 1,562 slips and moorings, a further 116 sail and power boats are on land under repair or waiting for a preferred slip or mooring space. In addition there are 372 dry sailed sail and power boats in the area including 76 canoes and kayaks, 50 rowing shells and 20 dragon boats.

The Inner Harbour stretching from the western gap to the eastern gap has the second largest concentration of boaters with four yachting and sailing clubs, three marinas, three canoe club/facilities, two special boating organizations (Blind Sailing Association of Canada, Queens Quay Disabled Sailing Program), one rowing club (Bayside Rowing Club) and Queens Quay Sailing & Power Boating. There are 847 sail and power boats occupying 950 slips, a further 10 sail and power boats currently on land as well as an additional 647 dry sailed sail and power boats including 121 rowing shells, 42 canoes and kayaks, 11 viking boats and 6 war canoes.

The Outer Harbour which occupies the area south of the Toronto Islands from the eastern gap to the Leslie Street Slip is home to seven sailing clubs, one wind surfing club (Toronto Windsurfing Club), one rowing club (Hanlan Boat Club) and one dragon boat club (Great White North Dragon Boat Club) and one marina (Outer Harbour Marina). 703 sail and power boats occupy 783 slips and mooring spaces, a further 73 sail and power boats are on land for repairs or waiting for a slip or mooring as well as another 435 dry sailed sail and power boats including 30 canoes and kayaks, and 16 dragon boats.

The Ashbridges Bay area to the east of the Leslie Street slip is home to two yachting and sailing clubs and one canoe club (Balmy Beach Canoe Club). 318 sail and power boats occupy the 340 slips available in this area, an additional 18 sail and power boats are currently on land along with 130 dry sailed sail and power boats including 78 canoes, 2 dragon boats and one war canoe.

Within the area from Humber Bay to Ashbridges Bay there are a total of 3,539 sail and power boats, the other 1,304 small sail and power boats are dry sailed. More than 90 percent (i.e. 90.8%) of the 3,635 available slips and moorings are occupied (i.e. 3,299).

Facilities Available at Marinas and Yacht Clubs

Of the 18 marinas and yacht clubs, only five offer fuel (i.e. Toronto Humber Yacht Club, Ontario Place, Toronto Island Marina, Royal Canadian Yacht Club, Outer Harbour Marina). None of these facilities have launch ramps. In fact there are only five double launch ramps available within the area from Humber Bay to Ashbridges Bay: two of these are located at Humber Bay West Park and three at Ashbridges Bay Park. There are 337 parking spaces available at Humber Bay West Park and 229 (including 18 spaces specifically for boat trailers) at Ashbridges Bay Park. Five facilities provide haul out cranes with lift capacities ranging from 5 to 35 tons (i.e. Alexandra Yacht Club, 5 tons; Toronto Island Marina, 15 tons; Royal Canadian Yacht Club, 15 tons; Queens Quay Yacht club, 20 tons; Outer Harbour Marina, 35 tons). The Toronto Island Marina and the Royal Canadian Yacht Club are the only two facilities offering repairs. Marina Quay West, Outer Harbour Marina and Toronto Hydroplane Sailing Club are the only facilities offering no form of food service. All facilities provide showers and washrooms and 13 of them provide laundry facilities as well. Twelve of the facilities have at least 30 amp shore power and four (i.e. Ontario Place, Marina Quay West, Island Yacht Club, Outer Harbour Marina) have 50 amp power as well. Thirteen of the marinas and yacht clubs have a pump out. Eleven of the facilities offer on-site winter storage. See Table 3 following.

The trend now is to provide water (i.e. capacity for 95 litres per day), 50 amp power hook ups and individual hook ups to the pump out using a vacuum system at each of the slips. Internet connections are going wireless with the base station serviced. Main docks are now at least eight feet wide (i.e. 2.4 metres) and longer finger docks are being provided to accommodate 40+ foot boats. Of the 3,302 slips available between Humber Bay and Ashbridges Bay only 73 are 40+ feet long. It should be noted that Toronto Island Marina will be undergoing a reconfiguration and expansion of their slips that will result in 60 slips at 40+ feet.

Transient Boaters

More than 6,000 transient boaters visit Toronto's waterfront on an annual basis between Humber Bay and Ashbridges Bay. A maximum of 637 transient boats can be accommodated through dedicated slips at the five marinas, Hanlans Point, Harbour Front, and the slips and mooring available through reciprocal docking privileges at the yacht clubs. Ontario boaters represent approximately 70 percent of the transient boater market visiting Toronto marinas and boating clubs, followed by New York state boaters at 20 percent and 8 percent from Quebec and Pennsylvania. There are over 73,800 boats in Ontario, over 35,000 in New York, over 48,300 in Quebec and 26,000 in Pennsylvania greater than 6 metres in length (i.e. 20 feet) normally considered the minimum length for any distant travelling on the Great Lakes. Based on our interviews with the yacht clubs, marinas and information provided by the Council of Commodores it is estimated that approximately 1,800 of these boaters are from the United States. According to Canada Customs (See Table 4 following) 3,021 American boats reported at marinas and yacht clubs between Port Credit and Bowmanville. While information is not available on the length of stay, the following numbers indicate an impressive expenditure pattern by American boaters while in Canadian ports: an average per person expenditures of $16.19 for less than 12 hour stay; $28.23 for less than 24 hours and not overnight; and $127.19 overnight (average stay 3 nights)[1].

Growth in Boats

The trend is toward larger boats, as shown in Table 6 following, between 1998 and 2004 the number of boats 12 metres or more in length (i.e. 40 feet+) grew at 4.8 percent per annum in Ontario and 3.6 percent in New York. Boats 9 metres to less than 12 metres (i.e. 30 to 39 feet) grew at an equally impressive 3.8 percent annually in Ontario and 2.9 percent annually in New York. Boats less than 9 metres (i.e. less than 30 feet) grew at only 1.9 percent per annum in Ontario and 2.0 percent per year in New York. While boats 12 metres or more in length still represent a relatively small percentage of the overall boating market, they are projected to increase their market share from 4.6 percent in 2005 to 5.6

[1] Great Lakes Recreation Boating Economic Impact Study, 2004, National Recreational Marine Research Centre at Michigan State University.

percent by 2015 and reach 7.2 percent by 2025. It will be important for marina and boating club managers to keep this in mind when undertaking any expansion or slip reconfiguration plans.

Based on the projected growth in boats between 2005 and 2025 as shown in Table 7, it is possible to provide demand projections for seasonal slips and moorings on the Toronto waterfront. The number of power and sail boats is expected to increase from 4,555 in 2005, to 5,365 in 2010, to 6,290 in 2015, to 7,313 by 2020 and reach 8,463 by 2025. There are currently 5,258 slips and mooring available citywide (i.e. Colonel Sam Smith Park in the west to Bluffers Park in the east). There is also the potential within the Humber Bay to Ashbridges Bay area to expand the number of slips and moorings by 907. The Outer Harbour Marina has the ability to meet more than half this need (i.e. 564 slips). Including the 907 potential slips and moorings, the demand for slips and mooring can be met until 2015 when there will be a shortfall of 125. Excluding the potential 907 slips and mooring the demand from new boaters can be met until 2010 when there will be a shortfall of 107. By 2020 there will be a shortfall of 1,148 and 2,055 slips and mooring which will reach between 2,298 and 3,205 by 2025. Given that recreational boating generated $3.019 billion in gross output and $996 million in total labour force income in Ontario in 2001[1] it will be important to find locations on the Toronto waterfront to meet this demand for slips by 2015.

Growth in Related Boating Activities

Approximately 18.1 percent of Ontario's population 15 years of age and over participates in fishing either from the shore or a boat. Between 1994 and 2003 participation in fishing has grown at a modest rate of 1.7 percent per annum. See Table 9 following. There are no statistics available regarding participation rates of Toronto residents. These numbers are provided as an indication of order of magnitude only. There are a number of popular locations on the waterfront for fishing such as the Leslie Street Spit, the lagoons surrounding the Toronto Islands, the mouth of the Humber River and Humber Bay, and Ontario Place where the warship Haida was moored. Because fishing appeals to all ages and across all ethnic groups, the Urban Fishing Program sponsored by the Ministry of Natural Resources and the City of Toronto should be given more recognition.

Based on the number of programs offered by the boating clubs and other organizations on the Toronto waterfront, it is not surprising that although only 7.9 percent of the population participates in canoeing and kayaking it has had a 4.0 percent annual growth rate since 1994. Humber Bay, the lagoons surrounding the Toronto Islands, Tommy Thomson Park and the Outer Harbour are all popular locations for canoeing and kayaking. Six clubs and organizations offer memberships, instruction for children teens and adults and the opportunity to pursue these activities in a recreational or competitive maaner. The Harbourfront Canoe and Kayak School rent canoes and kayaks by the hour and day, seven days of the week.

Issue:

A permanent home needs to be found for Toronto Brigantine and a new home for the Bayside Rowing Club.

Recommendation:

The Toronto Brigantine requires office and activity space primarily for the winter months as the Pathfinder and Playfair are away from the waterfront from June 30th until November 1st sailing in the 1000 Islands. If space cannot be offered at Habourfront consideration could be given to including the Toronto Brigantine in the Queen Elizabeth Docks area.

Bayside Rowing occupies a site on the Ship Channel that will be required for industrial use. Therefore, this marine use must be relocated.

[1] Economic Impact Analysis of Recreational Boating in Canada: 2001, Discover Boating, Goss Gilroy Inc., August 2003.

Although only 2.0 percent of the population 15 years of age and over participate in rowing on an annual basis, it has exhibited a high 11.7 percent average annual growth rate since 1994. There are three rowing and two dragon boat clubs located within the area from Humber Bay to Ashbridges Bay. The most poplar locations for rowing are the protected areas on the waterfront such as along the western beaches watercourse, Long Pond and Outer Harbour. The rowing clubs also provide an opportunity for recreation and competition, and offer summer day camps for kids, as well as instruction programs for children, teens and adults.

Issue:

Only Humber Bay Park West and Ashbridges Bay Park provide public launch ramps. If trailered boating and urban fishing are to become a more important part of the waterfront activity, additional launch ramps and fishing piers must be provided in the central waterfront area.

Recommendation:

Consideration should be given to adding a launch ramp at the eastern end of Ontario Place off of Rememberance Drive, at Marina Quay West, and the Outer Harbour Marina. Consideration should also be given to providing a fishing pier within Humber Bay Park and possibly at one or more of the parks planned within the central portion of the Toronto waterfront.

Issue:

The trend is toward bigger and longer power and sailboats in the order of 12+ metres (i.e. 40+ feet).

Recommendation:

Marinas and yacht clubs should be encouraged to add slips to accommodate these longer boats whenever reconfigurations or expansions are being considered.

The Toronto Island Marina is setting an example. The new configuration for the marina will add 160 slips, including 80 for boats 12 metres and larger. Once built out the marina will have a total of 350 slips, including 110 for boats 12 metres and longer.

TABLE 1

RECREATIONAL BOATING CLUBS, MARINAS AND ORGANIZATIONS ON TORONTO'S WATERFRONT

(Humber Bay to Ashbridges Bay)

Yacht & Boating Clubs		Marinas		Boating/Teaching Organizations	
Mimico Yacht Club	200 Humber Bay Park Road West	Ontario Place Marina	955 Lakeshore Boulevard West	Humber College Sailing & Power Boating Centre	100 Humber Bay Park Road West
Etobicoke Yacht Club	300 Humber Bay Park Road West	Marina Quay West	539 Queens Quay West	Navy League of Canada	659 Lakeshore Boulevard West
Toronto Humber Yacht Club	101 Humber Valley Road	Marina 4	235 Queens Quay West	Blind Sailing Association of Canada	539 Queens Quay West
Greater Toronto Dragon Boat Club	Lakeshore Boulevard West (east of Sunnyside Pool)	Toronto Island Marina	Centre Island	Queen's Quay Sailing & Power Boating	275 Queens Quay West
Boulevard Club	1491 Lakeshore Boulevard West	Outer Harbour Marina	475 Unwin Street	Queens Quay Disabled Sailing Program	275 Queens Quay West
Toronto Sailing & Canoe Club	1391 Lakeshore Boulevard West			Harbourfront Canoe and Kayaking School	283A Queens Quay West
Argonaut Rowing Club	1225 Lakeshore Boulevard West			Toronto Brigantine	249 Queens Quay West
Alexandra Yacht Club	2 Stadium Road				
National Yacht Club	1 Stadium Road				
Island Yacht Club	400 Queens Quay West				
Toronto Island Sailing Club	Centre Island				
Royal Canadian Yacht Club	South Island				
Toronto Island Canoe Club	Wards Island				
Sunfish Cut Boat Club	Algonquin Island				
Queen City Yacht Club	Algonquin Island				
Bayside Rowing Club	600 Unwin Street				
Toronto Windsurfing Club	Regatta Road				
Water Rats Sailing Club	Regatta Road				
Hanlan Boat Club	Regatta Road				
Mooredale Sailing Club	Regatta Road				
St. Jamestown Sailing Club	Regatta Road				
Westwood Sailing Club	Regatta Road				
Outer Harbour Centreboard Club	Regatta Road				
Toronto Multihull Sailing Club	Regatta Road				
Great White North Dragon Boat Club	Unwin Avenue				
Aquatic Park Sailing Club	Tommy Thompson Park				
Ashbridge's Bay Yacht Club	30 Ashbridge's Bay Park Road				
Toronto Hydroplane Sailing Club	20 Ashbridge's Bay Park Road				
Balmy Beach Canoe Club	10 Ashbridge's Bay Park Road				

TABLE 2

RECREATIONAL BOATING SLIP CAPACITY ON TORONTO WATERFRONT

Area on Toronto Waterfront	Number of Slips Available	Number of Boats in Slips	Number of Boats		Number of Boats Dry Sailed		Number of Moorings Available	Number of Boats Moored	Number of Slips Reserved for Transients	Maximum Transient Boats Accommodated	Ability to Expand			Slips Available 40+ feet
			Sail	Power	Sail	Power					Slips	Moorings	Dry Sail	
Humber Bay to Western Gap[1]	1,364	1,280	1,049	347	354[5]	18[6]	198	151	94	375	180[7]	107	283	4
Inner Harbour[2]	950	847	624	233	414[8]	4[6]	0	0	46	175	46	0	64	36
Outer Harbour[3]	648	588	430	232	423[9]	12[6]	135	115	14	27	564	0	43	28
Lesley Street Spit to Ashbridge's Bay Area[4]	340	318	255	103	113[10]	17	0	0	25	60	10	0	30	5
Total	3,302	3,033	2,358	915	1,304	51	333	266	179[11]	637	800	107	420	73

[1]Humber Sailing & Power Boating Centre; Mimico CC, Etobicoke YC, Toronto Humber YC, Greater Toronto Dragon Boat Club, Boulevard Club, Toronto Sailing & CC, Argonaut Rowing Club, National YC, Alexandra YC, Navy League of Canada, Ontario Place Marina
[2]Island YC, Royal Canadian YC, Queen City YC, Marina Quay West, Marina 4, Queens Quay Disabled Sailing Program, Blind Sailing Association of Canada, Queen's Quay Sailing & Power Boating, Harbourfront Canoe and Kayaking School, Toronto Island Marina, Toronto Island Sailing Club, Sunfish Cut Boat Club, Toronto Island Canoe Club, Bayside Rowing Club
[3]Aquatic Park SC, Mooredale SC, Outer Harbour Centreboard Club, St. Jamestown SC, Water Rats SC, Westwood SC, Hanlan Boat Club, Toronto Multihull Sailing Club, Great White North Dragon Boat Club, Outer Harbour Marina
[4]Toronto Hydroplane & SC, Ashbridges Bay YC, Balmy Beach Canoe Club
[5]Includes 76 canoes/kayaks, 50 rowing shells, 20 dragon boats
[6]Support boats for rowing shells and dinghies
[7]Individual properties indicated: dock space for 80 but no winter storage; space for 60 but docks not affordable due to breakwall condition; planned 20 but need more waterlot
[8]Includes 42 canoes/kayaks, 6 war canoes, 121 rowing shells, 11 viking boats
[9]Includes 30 kayaks/canoes, 16 dragon boats
[10]Includes 78 canoes, 2 dragon boats, 1 war canoe
[11]179 slips reserved for transients, however 292 can be accommodated, 249 through reciprocal docking

Source: Council of Commodores, Brian Knoll; boating clubs, Ontario Place Marina; Harbourfront Centre; Toronto Island Marina; Toronto Port Authority

TABLE 3

FACILITIES AVAILABLE AT MARINAS AND YACHT CLUBS ON TORONTO WATERFRONT

Name	Location	Total Slips/ Moorings	Max. Length ft.	Draft ft.	Fuel	Launch Ramp	Haul out	Repairs	Food	Facilities	Shore Power amps	Pump out	Hookups	Winter Storage
Humber College Sailing & Power Boating Centre	100 Humber Bay Park Road West 416-252-7291	20	26	6					Ice/Water Snack bar	Showers Washrooms				
Mimico Cruising Club	200 Humber Bay Park Road West 416-252-7737	302	50	5					Ice/Water Dining Room	Showers Washrooms Laundry	20 30		Power Water	Outside
Etobicoke Yacht Club	300 Humber Bay Park Road West 416-259-1159	347	47	5					Ice/Water Dining Room	Showers Washrooms Laundry	30		Power Water	Outside
Toronto Humber Yacht Club	101 Humber Valley Road 416-231-4650	118	32	2	Gas				Ice/Water Dining Room	Showers Washrooms	15	Yes	Power Water	Outside
Boulevard Club	1491 Lakeshore Blvd West 416-533-5907	50	50	8					Ice/Water Dining Room Snack Bar	Showers Washrooms	15 30	Yes	Power Water	
Ontario Place Marina	955 Lakeshore Blvd West 416-231-1346	300	40	7	Gas Diesel				Ice/Water Restaur-ant Snack Bar	Showers Washrooms Laundry	15 30 50	Yes	Power Water	Outside
National Yacht Club	1 Stadium Road 416-260-8686	240	45	9					Ice/Water Dining Room	Showers Washrooms Laundry	15		Power Water	
Alexandra Yacht Club	2 Stadium Road 416-260-8690	100	70	9			5 tons		Ice/Water Dining Room	Showers Washrooms	15 30	Yes	Power Water	Outside
Marina Quay West	539 Queens Quay West 416-203-1212	200	100	8					Ice/Water	Showers Washrooms Laundry	30 50	Yes	Power Water	

TABLE 3

FACILITIES AVAILABLE AT MARINAS AND YACHT CLUBS ON TORONTO WATERFRONT

Name	Location	Total Slips/ Moorings	Max. Length ft.	Draft ft.	Fuel	Launch Ramp	Haul out	Repairs	Food	Facilities	Shore Power amps	Pump out	Hookups	Winter Storage
Marina 4	235 Queens Quay West 416-203-2620	100	42	18					Ice/Water Restaur-ant adjacent	Showers Washrooms Laundry	20 30	Yes	Power Water	
Hanlan's Point Public Docks	Hanlan's Point 416-203-1055	150	200	7					Snack Bar	Showers Washrooms	15 30		Power Water	
Toronto Island Marina	Centre Island 416-203-1055	350	70	10	Gas Diesel		15 tons	Hulls Engines Electrical Sails	Ice/Water Snack Bar Groceries	Showers Washrooms Laundry	15 30	Yes	Power Water	Outside
Island Yacht Club	400 Queens Quay West 416-262-6588	100	50	15					Ice/Water Dining Room	Showers Washrooms Laundry	30 50	Yes	Power Water	
Royal Canadian Yacht Club	South Island 416-967-7245	430	50	5	Gas Diesel		15 tons	Hulls Engines Electrical Sails	Ice/Water Dining Room	Showers Washrooms Laundry	30	Yes	Power Water	Outside
Queen City Yacht Club	Algonquin Island 416-203-0929	110	43	6			20 tons		Ice/Water Dining Room	Showers Washrooms Laundry	15	Yes	Power Water	Outside
Outer Harbour Marina	475 Unwin Street 416-778-6245	636	100	20	Gas Diesel		35 tons		Ice/Water	Showers Washrooms Laundry	30 50	Yes	Power Water	Outside
Toronto Hydroplane Sailing Club	20 Ashbridge's Bay Park Road 416-694-6918	20	36	14					Ice/Water	Showers Washrooms Laundry	15	Yes	Power Water	Outside
Ashbridge's Bay Yacht Club	30 Ashbridge's Bay Park Road 416-698-4498	6	38	5					Ice/Water Restaur-ant	Showers Washrooms Laundry	15	Yes	Power Water	Outside

Source: Boating Ontario 2005 Marinas & Destination Guide, Ontario Marine Operators Association; Lake Ontario Ports O' Call, Lakeland Boating; Lake Ontario & The Thousand Islands, Ports Cruising Guide; Interviews with Yacht clubs, sailing clubs and marinas.

TABLE 4

NUMBER OF U.S. RECREATIONAL BOATS REPORTING TO CANADA CUSTOMS ON LAKE BETWEEN PORT CREDIT AND BOWMANVILLE

Year	Number of U.S. Recreational Boats[1]	Number of Persons Onboard
1995	3,310	12,776
1996	3,125	11,906
1997	3,060	11,842
1998	2,973	11,654
1999	3,225	12,570
2000	2,984	11,727
2001	2,689	10,628
2002	2,615	10,167
2003	2,896	11,207
2004	3,021	11,706

Source: Canada Customs, Mount Hope Office.

[1]Boats are required to report to Canada Customs at first port of entry into Canada, subsequent stops are not recorded. Information regarding length of time in Canada is not available.

TABLE 5

GROWTH IN NUMBER OF BOATS IN TORONTO'S MAJOR MARKET AREAS[1]

Year	Number of Boats	
	Ontario[2]	New York[3]
2004	1,068,280	546,540
2003	1,049,603	536,672
2002	1,031,244	526,975
2001	1,012,722	526,190
2000	995,463	525,436
1999	977,756	524,326
1998	960,520	514,749
1997	945,777	512,430
1996	933,641	458,092
1995	914,087	455,189
1994	898,875	443,899
1993	886,318	435,465
1992	868,973	431,437
1991	852,250	428,679
1990	833,834	425,334

[1]Based in information from the marinas and yacht clubs on Toronto's waterfront, and Canada Customs almost 90 percent of boats using the waterfront are from Ontario and New York. Quebec and Pennsylvania which generate approximately 8 percent of the boats visiting had 700,426 and 366,920 boats in 2004 respectively.

Source: [1] Department of Fisheries and Oceans, Canadian Coast Guard Office of Boating, and Canada Customs, 2004, includes all boats powered by motor of 10hp or more
[2] U.S Coast Guard, National Marine Manufacturers Association, Annual Sailing Business Review

TABLE 6

LENGTH OF BOATS REGISTERED WITHIN TORONTO'S MAJOR MARKET AREAS

Length	1998	1999	2000	2001	2002	2003	2004
Ontario[1]							
5 m. to less than 6 metres	362,491	369,237	375,596	381,481	387,032	393,640	404,092
6 m. to less than 8 metres	42,606	43,823	45,226	47,055	48,639	50,662	52,808
8 m. to less than 9 metres	5,877	6,138	6,255	6,312	6,580	6,629	7,060
9 m. to less than 12 metres	8,670	9,112	9,502	9,642	9,940	10,021	10,653
12 metres+	2,597	2,654	2,800	2,927	2,999	3,126	3,347
Total	422,241	430,964	439,379	447,417	455,190	464,078	477,960
New York[2]							
5 m. to less than 6 metres	182,058	185,316	186,336	194,440	198,671	202,127	207,607
6 m. to less than 8 metres	22,373	22,365	22,694	23,450	23,783	24,132	25,303
8 m. to less than 9 metres	3,128	3,297	3,310	3,111	3,189	3,234	3,422
9 m. to less than 12 metres	4,451	4,692	4,823	4,775	4,842	4,895	5,214
12 metres+	887	963	972	953	971	1,032	1,078
Total	212,897	216,633	218,135	226,729	231,456	235,420	242,624
Total							
5 m. to less than 6 metres	544,549	554,553	561,932	575,921	585,703	595,767	611,699
6 m. to less than 8 metres	64,979	66,188	67,920	70,505	72,422	74,794	78,111
8 m. to less than 9 metres	9,005	9,435	9,565	9,423	9,769	9,863	10,442
9 m. to less than 12 metres	13,121	13,804	14,325	14,417	14,782	14,916	15,687
12 metres+	3,484	3,617	3,772	3,880	3,970	4,158	4,425
Total	635,138	647,597	657,514	674,146	686,646	699,498	720,584

[1] No provincial data is available therefore breakdown is based on discussions with boat builders/manufacturers, Ontario Marine Operators Association, Canadian Coast Guard Office of Boating, and Canadian Marine Manufacturers Association

[2] Data from U.S. Coast Guard compiled by National Marine Manufacturers Association in their Annual Statistical Reports 1998 to 2004 and discussions with U.S boat builders/manufacturers

TABLE 7

PROJECTED GROWTH OF BOATS REGISTERED WITHIN TORONTO'S MAJOR MARKET AREAS

Ontario											
Length	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
6 m. to less than 8 metres	54,180	55,580	57,020	58,500	60,020	61,580	62,810	64,060	65,340	66,640	67,970
8 m. to less than 9 metres	7,300	7,540	7,790	8,050	8,320	8,600	8,850	9,100	9,360	9,630	9,900
9 m. to less than 12 metres	11,060	11,480	11,920	12,370	12,840	13,330	13,810	14,310	14,830	15,370	15,930
12 metres+	3,510	3,680	3,860	4,050	4,240	4,440	4,650	4,870	5,100	5,340	5,590
Total	76,050	78,280	80,590	82,970	85,420	87,950	90,120	92,340	94,630	96,980	99,390
Length	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
6 m. to less than 8 metres	68,980	70,010	71,050	72,110	73,190	73,920	74,660	75,410	76,160	76,920	
8 m. to less than 9 metres	10,150	10,410	10,680	10,950	11,230	11,510	11,790	12,080	12,380	12,680	
9 m. to less than 12 metres	16,490	17,070	17,670	18,290	18,930	19,580	20,250	20,940	21,650	22,390	
12 metres+	5,850	6,120	6,400	6,700	7,010	7,330	7,660	8,010	8,370	8,750	
Total	101,470	103,610	105,800	108,050	110,360	112,340	114,360	116,440	118,560	120,740	

TABLE 7

PROJECTED GROWTH OF BOATS REGISTERED WITHIN TORONTO'S MAJOR MARKET AREAS
(Continued)

New York											
Length	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
6 m. to less than 8 metres	25,860	26,420	27,000	27,590	28,190	28,810	29,290	29,780	30,280	30,790	31,310
8 m. to less than 9 metres	3,500	3,550	3,610	3,670	3,730	3,790	3,850	3,910	3,970	4,030	4,090
9 m. to less than 12 metres	5,330	5,480	5,640	5,800	5,970	6,140	6,310	6,480	6,660	6,840	7,030
12 metres+	1,100	1,140	1,180	1,220	1,260	1,310	1,360	1,410	1,460	1,510	1,560
Total	35,790	36,590	37,430	38,280	39,150	40,050	40,810	41,580	42,370	43,170	43,990
Length	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
6 m. to less than 8 metres	31,740	32,180	32,630	33,080	33,540	33,970	34,410	34,850	35,300	35,750	
8 m. to less than 9 metres	4,150	4,210	4,270	4,330	4,390	4,450	4,510	4,570	4,630	4,690	
9 m. to less than 12 metres	7,220	7,410	7,610	7,810	8,020	8,230	8,450	8,670	8,900	9,140	
12 metres+	1,610	1,670	1,730	1,790	1,850	1,910	1,980	2,050	2,120	2,190	
Total	44,720	45,470	46,240	47,010	47,800	48,560	49,800	51,070	52,370	53,710	

TABLE 7

PROJECTED GROWTH OF BOATS REGISTERED WITHIN TORONTO'S MAJOR MARKET AREAS
(Continued)

Total											
Length	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
6 m. to less than 8 metres	80,040	82,000	84,020	86,090	88,210	90,390	92,100	93,840	95,620	97,430	99,280
8 m. to less than 9 metres	10,800	11,090	11,400	11,720	12,050	12,390	12,700	13,010	13,330	13,660	13,990
9 m. to less than 12 metres	16,390	16,960	17,560	18,170	18,810	19,470	20,120	20,790	21,490	22,210	22,960
12 metres+	4,610	4,820	5,040	5,270	5,500	5,750	6,010	6,280	6,560	6,850	7,150
Total	111,840	114,870	118,020	121,250	124,570	128,000	130,930	133,920	137,000	140,150	143,380
Length	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
6 m. to less than 8 metres	100,720	102,190	103,680	105,190	106,730	107,890	109,070	110,260	111,460	112,670	
8 m. to less than 9 metres	14,300	14,620	14,950	15,280	15,620	15,960	16,300	16,650	17,010	17,370	
9 m. to less than 12 metres	23,710	24,480	25,280	26,100	26,950	27,810	28,700	29,610	30,550	31,530	
12 metres+	7,460	7,790	8,130	8,490	8,860	9,240	9,640	10,060	10,490	10,940	
Total	146,190	149,080	152,040	155,060	158,160	160,900	163,710	166,580	169,510	172,510	

TABLE 8

DEMAND FOR SEASONAL SLIPS AND MOORINGS 2005 TO 2025

Year	Number of Boats Requiring a Seasonal Slip or Mooring[1]	Number of Slips Available City Wide[2]	Number of Potential Slips or Moorings[3]	Surplus/ (Shortfall) Excluding Potential Slips or Moorings[4]	Surplus/ (Shortfall) Including Potential Slips or Moorings[5]
2005	4,555	5,258	907	703	1,610
2006	4,694	5,258	907	564	1,471
2007	4,847	5,258	907	411	1,318
2008	5,010	5,258	907	248	1,155
2009	5,184	5,258	907	74	981
2010	5,365	5,258	907	-107	800
2011	5,539	5,258	907	-281	626
2012	5,717	5,258	907	-459	448
2013	5,902	5,258	907	-644	263
2014	6,094	5,258	907	-836	71
2015	6,290	5,258	907	-1,032	-125
2016	6,482	5,258	907	-1,224	-317
2017	6,681	5,258	907	-1,423	-516
2018	6,885	5,258	907	-1,627	-720
2019	7,096	5,258	907	-1,838	-931
2020	7,313	5,258	907	-2,055	-1,148
2021	7,532	5,258	907	-2,274	-1,367
2022	7,755	5,258	907	-2,497	-1,590
2023	7,985	5,258	907	-2,727	-1,820
2024	8,220	5,258	907	-2,962	-2,055
2025	8,463	5,258	907	-3,205	-2,298

[1] Based on growth in Toronto area boats greater than 6 metres (20 ft.) as taken from Table 6 and 7
[2] Council of Commodores
[3] Table 2
[4] Column 2 minus Column 1
[5] Column 2 + Column 3 minus Column 1
[6] The projected number of boats requiring a seasonal slip or mooring is based on the number of boats of 20+ ft. currently owned by residents of the Greater Toronto area as provided by Statistics Canada and the Canadian Marine Manufacturers Association. This number was then divided by population of the Greater Toronto Area. This provides the number of persons per boat. By dividing the population by the base number of residents per boat we arrive at the number of seasonal boaters. This approach is used by the U.S. National Parks Service, U.S. Bureau of Land Management, and the Tennessee Valley Authority (TVA) in all their watershed area studies in the United States to arrive at the demand for seasonal slips. The number of persons per boat has then been adjusted between 2006 and 2025 to reflect the population projections for the GTA, and the projected growth rate for the number of new boats as provided by the Canadian Marine Manufacturers Association. The projections also assume that the economy of the GTA will continue to grow at the rates provided by the Conference Board of Canada and that the price of marine fuel will not exceed $2.00 per litre. Any significant changes to these assumptions could impact on the projections.

TABLE 9

PARTICIPATION RATES IN SELECTED OUTDOOR ACTIVITIES 1994 TO 2003

(percentage of population 15 years and over participating in past year)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average Annual Participation Rate	Average Annual Growth Rate
Walking for fitness/pleasure		34	28	31	36	31	46	38	36	35	35.0	2.3
Picnicking	33	29	24	26	30	32	36	36	37	38	32.1	1.9
Swimming	25	21	18	21	23	30	29	30	30	31	25.8	2.6
Recreational cycling	21	20	16	19	19	22	27	27	22	22	21.5	1.6
Fishing	19	17	15	13	15	21	19	21	20	21	18.1	1.7
Running/jogging	19	16	13	12	16	16	18	21	20	19	17.0	2.1
Wildlife viewing	18	15	10	14	16	15	16	20	18	16	15.8	2.9
Outdoor photography	15	15	10	13	15	12	17	17	17	17	14.8	2.8
Bird watching	14	11	8	11	10	11	16	18	17	16	13.2	4.9
Motor boating	10	9	5	8	9	11	9	12	11	10	9.4	4.8
Canoeing/kayaking	8	7	6	7	7	9	7	9	9	10	7.9	4.0
Personnel watercraft (e.g. jet skis)				3	5	5	5	6	5	5	4.9	10.0
Waterskiiing	6	6	3	4	4	6	4	6	5	3	4.8	3.8
In-line skating		4	4	5	6	5	5	6	5	3	4.8	6.5
Snorkeling/scuba diving	4	3	3	3	3	4	3	4	3	3	3.3	-0.8
Sailing	4	3	3	3	2	3	2	4	3	3	3.0	3.3
Rowing	3	2	1	2	1	1	2	2	3	3	2.0	11.7

Source: Ontario Ministry of Tourism and Recreation; Ontario Ministry of Natural Resources; Environment Canada; Statistics Canada, General Social Survey.

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 2-2

Charter and Tour Boat Business on the Toronto Waterfront

PART 2-2: CHARTER AND TOUR BOAT BUSINESS ON THE TORONTO WATERFRONT

A significant amount of the boater traffic on the Toronto waterfront is due to the substantial charter and tour boat business that currently operates from locations primarily between the Portland Street Slip in the west and the Jarvis Street Slip in the east. The Enterprise 2000 operates from Pier 35 at the foot of Cherry Street. Thirty one boats with a capacity to handle 6,921 passengers are operating in 2005. See Table 1 following and Map 3 found at the end of this report. Four boats that operated in 2004 (i.e. Maple Leaf I, Jaguar II, Galactica, Shark I) are not in operation in 2005 and one, the Yankee Lady IV, is currently under construction and may commence operation near the end of the 2005 boating season. The Canada Shipping Act stipulates that Small Passenger Vessels may operate year round in the Inner Harbour but are restricted to operating between May 1st and September 30th when boating beyond the Eastern and Western Gaps but within one nautical mile of the Harbour limits. It is interesting to note that the one nautical mile limit restricts the tour and charter boats from sailing to the east beyond the Leslie Street Spit and Tommy Thompson Park. In accordance with the Canada Shipping Act all charter/tour boats must pass an annual inspection before they are legal to operate. According to our interviews with the charter/tour boat operators, depending on weather conditions, in most years the charter and tour business operates seven days a week between mid May and the end of September. The charter boat business by its very nature is unscheduled and may occur anytime from approximately 9:00 am until 11:00 pm. Typically a charter boat will make a maximum of one or two trips in a day, whereas tour boats which operate on a schedule may make as many as three to five trips in a day. Based on our interviews with charter and tour boat operators, we estimate that the 31 boats will make approximately 8,000 trips carrying 450,000 passengers in 2005. As a point of comparison, the Toronto Island Ferries carried in excess of 1.3 million passengers in 2004 and Toronto City Centre Airport Ferries approximately 250,000 passengers in 2005. Typical charter/tour boat routes cover the Toronto Inner Harbour; Toronto Inner Harbour, Toronto Island Lagoons and Long Pond, Eastern Gap, Western Gap and Lake Ontario; and Toronto Inner Harbour, Toronto Island Lagoons, and Western Gap to Ontario Place.

Nine charter/tour boats are moored at York Quay (with its new East and West Piers), and five in the York Street Slip. The Jarvis Street Slip moors six boats, while there are three each in the Yonge Street Slip, Portland Street Slip, and the Avro Quay. During July and August the York Street Slip sees multiple tour boat departures and arrivals each hour. There are over 50 charter/tour boat departures and arrivals per day on the Toronto Waterfront.

Based on an average per passenger trip expenditure of $40.00, at a minimum, the Toronto Waterfront charter/tour business generates in excess of $18,000,000 million annually, excluding pre- and post-trip expenditures. The charter/tour boat business is capital-intensive and operates on thin profit margins. It is also highly dependent on good weather.

The future for the charter/tour business appears positive as evidenced by comments from virtually all of the operators contacted indicating that their numbers in 2005 will exceed those of 2003 and 2004. In addition, three boats have found new owners (i.e. Empress of Canada, Jubilee Queen, Ste. Marie I) and an interest has been expressed in purchasing two others. Our interviews with Charter/Tour boat operators in Montreal, Chicago and Vancouver indicate that the increasing interest in conservation and conserving marine life has led to the development of new marine education packages. Families travelling with children who seek activities that can be done together have led this market. There has also been an increase in the use of charter/tour boats as a new and alternative venue for corporate meetings. Both market segments would appear to have potential for development on the Toronto Waterfront and would positively impact the future growth of the charter/tour boat business. As there are no overall historical trip or passenger statistics available, we have used the 8,000 trips and 450,000 passengers in 2005 as a base to derive low, medium and high forecasts of trips and passengers for the period between 2005 and 2025. The medium forecast uses the combined projected population growth rate for the City of Toronto (as provided by the Ontario Ministry of Finance based on the 2001 Census) and the projected tourism visitation number to the City of Toronto (as provided by the Ontario Ministry of Tourism and Recreation, April 2005). See Table 2, following. Based on interviews with the charter/tour boat operators we have assumed that City of Toronto residents generate 85 percent of the business and 15 percent is generated by tourist visitors. The medium forecast is felt to be the most realistic and assumes that new boats or

ones that have been out of service in the previous year will replace any boats that do not operate in a particular year. The low projection assumes an annual growth rate 20 percent below the medium forecast and the high forecast 10 percent above the medium forecast. The high forecast is the most optimistic and assumes new boats will be added and new markets will be penetrated such as the ones described above. It also assumes that the existing operators will make greater use of websites as we understand that an increasingly larger portion of the charter/tour boat market is being captured this way. The medium forecast projects that the number of trips will be 8,340 in 2010; 8,670 in 2015; 9,020 in 2020 and reach 9,390 by 2025. As the number of trips increases so too will the number of charter/tour boat passengers. See FIGURE 1 following. The medium projection also reflects a slight average annual increase in passenger load per boat. The number of passengers are projected to grow from 450,000 in 2005 to 472,900 in 2010, to 496,900 by 2015, 522,000 by 2020 and reach 548,400 by 2025. See Table 3, and FIGURE 2 following.

Issue:

2006 could see 34 charter and tour boats operating on the Toronto Waterfront (i.e. with addition of Maple Leaf I, Yankee Lady IV, and the new American tour boat), and potentially there could be further additions in subsequent years to meet the projected demand. Added to this is the uncertainty of when and what type of development might take place on the lands comprising Avro Quay where five charter/tour boats are currently moored (i.e. Obsession III, Jaguar II, Stella Borealis, Empress of Canada, and River Gambler) and whether or not that development would precipitate the removal of the mooring space. New locations must be identified to handle even a small growth in the number of charter/tour boats. One additional boat could be located on York Quay West Pier and one more on the Marina Quay West breakwall where the Wayward Princess is currently moored. Neither of these locations can accommodate more than one additional boat.

Recommendation:

Incorporate a plan for marine uses as the East Bayfront precinct plan is implemented and as the Yonge Street precinct plan is developed. The use of finger piers to accommodate tour/charter vessels should be encouraged.

FIGURE 1 - PROJECTED NUMBER OF CHARTER/TOUR BOAT TRIPS 2005 TO 2025

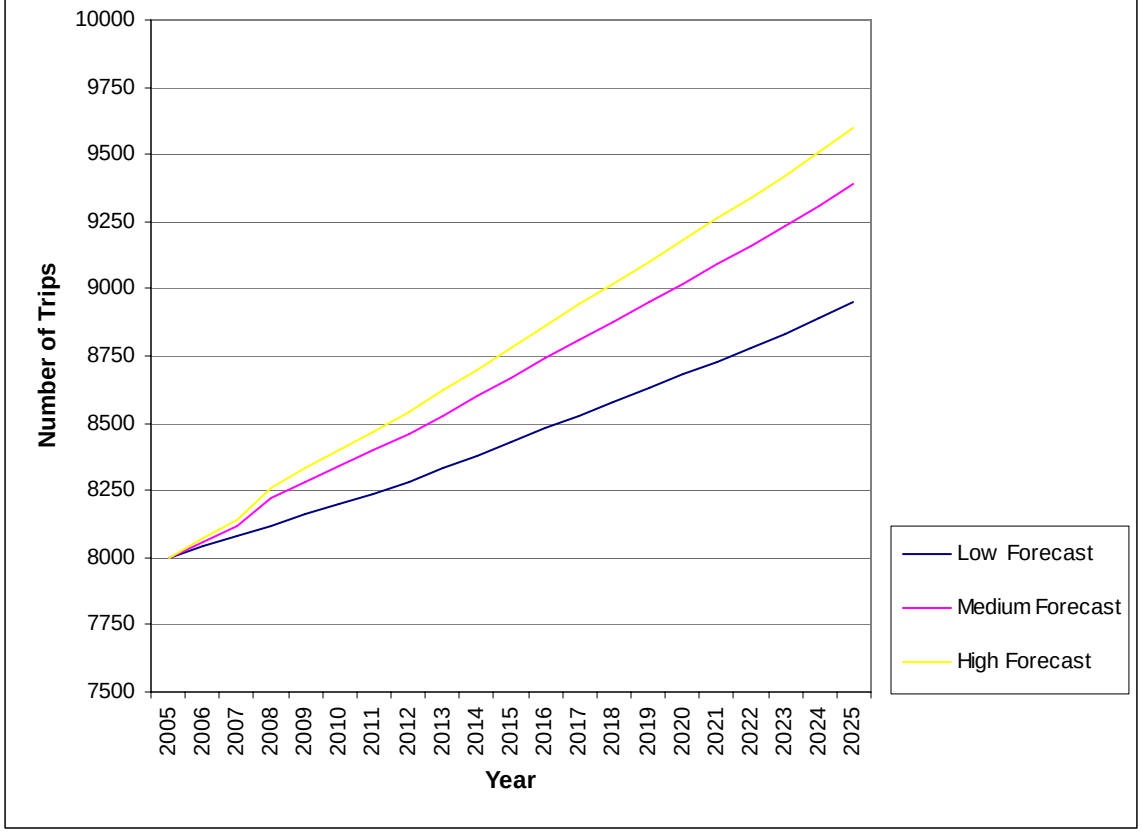

FIGURE 2 - PROJECTED NUMBER OF CHARTER/TOUR BOAT PASSENGERS 2005 TO 2025

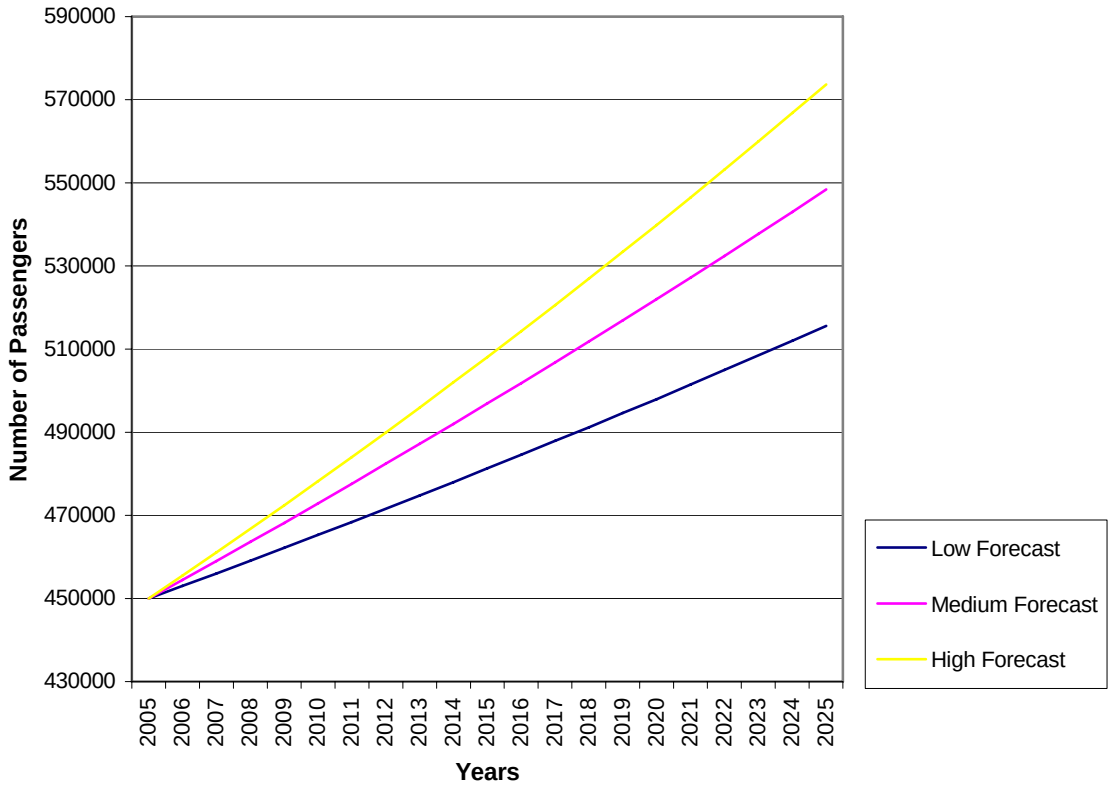

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT

#	Vessel Name	Operator/ Owner	Maximum Capacity – Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
1	Obsession III	Obsession Yacht Charters (Mystique Shipping Ltd)	190	Yonge Street Slip	Charters			20.12	66.0	7.62	25.0	1.86	6.1
					Sun to Sat	1:00 to 4:00 pm 7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place						
2	Kajama	Great Lakes Schooner Company	225	York Quay	Charters			39.25	128.8	7.00	23.0	3.62	11.9
					Sun to Sat	7:00 to 10:00 pm	Toronto Inner Harbour, Eastern Gap, Western Gap, Lake Ontario						
3	Challenge	Great Lakes Schooner Company	72	York Quay West Pier				21.21	69.6	4.88	16.0	2.26	7.4
4	Trillium	Great Lakes Schooner Company (Metro Toronto)	500	Ferry Docks	Day Tours			42.21	138.5	14.02	46.0	2.21	7.3
					Sun to Sat	3 times per day	Toronto Inner Harbour, Eastern Gap, Western Gap, Lake Ontario						
					Education Programs								
					Mon to Fri	10:00 am to 12:00 pm or 1:00 to 3:00 pm	Toronto Inner Harbour, Eastern Gap, Western Gap, Lake Ontario						
5	Pioneer Princess	Toronto Paddle Wheel Cruises	150	Jarvis Street Slip	Charters			22.83	74.9	5.18	17.0	1.16	3.8
					Sun to Sat	1:00 to 4:00 pm 7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond						
6	Pioneer Queen	Toronto Paddle Wheel Cruises	175	Jarvis Street Slip				19.78	64.9	7.13	23.4	2.23	7.3

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT
(Continued)

#	Vessel Name	Operator/ Owner	Maximum Capacity - Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
7	Showboat Royal Grace	Mariposa Cruise Line	90	York Quay East Pier	Charters			16.89	55.4	6.40	21.0	1.71	5.6
8	Mariposa Belle	Mariposa Cruise Line	250	York Street Slip	Sun to Sat	1:00 to 4:00pm 7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place	21.82	71.6	7.01	23.0	1.71	5.6
9	Captain Mathew Flinders	Mariposa Cruise Lines	600	York Street Slip	Event Tours			42.28	138.7	10.67	35.0	4.66	15.3
10	Oriole	Mariposa Cruise Lines (Spirit Cruise Line)	185	York Quay East Pier	Sun to Sat	11:00 am to 2:00 pm 7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place	20.94	68.7	7.01	23.0	2.74	9.0
11	Northern Spirit	Mariposa Cruise Lines (Spirit Cruise Line)	580	York Quay	Harbour Tours			38.71	127.0	9.45	31.0	2.77	9.1
12	Torontonian	Mariposa Cruise Lines	135	York Quay East Pier	Sun to Sat	11:00 am to 12:00 pm 12:15 am to 1:15 pm 1:30 to 2:30 pm 2:45 to 3:45 pm 4:00 to 5:00 pm	Toronto Inner Harbour	16.31	53.5	5.30	17.4	1.86	6.1
13	Rosemary	Mariposa Cruise Lines	70	York Quay East Pier				19.02	62.4	4.82	15.8	1.95	6.4
14	Ste. Marie I	City View Cruise Lines	100	York Quay West Pier				11.77	38.6	4.63	15.2	1.59	5.2

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT
(Continued)

#	Vessel Name	Operator/ Owner	Maximum Capacity - Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
15	Empire Sandy	Nautical Adventures (Empire Sandy Inc.)	275	Spadina Slip	Charters			41.86	137.3	9.15	30.0	4.88	16.0
16	Wayward Princess	Nautical Adventures (Norman Frederick Rogers)	325	Outside Breakwall Marina Quay West	Sun to Sat	9:00 am to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap, Lake Ontario	26.64	87.4	7.92	26.0	2.59	8.5
17	Island Princess	Charter A Yacht Company (Robert Muran)	60	Portland Slip	Charters			14.20	45.6	4.56	15.0	2.53	8.3
					Sun to Sat	Primarily 7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place						
18	Maple Leaf I	Leisure Cruise Lines	100	Portland Slip	Charters - Not currently operating			13.72	45.0	5.49	18.0	1.19	3.9
					Sun to Sat	9:00 am to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place						
19	Yankee Lady I	Yankee Lady Yacht Cruises	50	Jarvis Street Slip	Charters			18.29	60.0	4.72	15.5	1.92	6.3
20	Yankee Lady II	Yankee Lady Yacht Cruises	100	Jarvis Street Slip	Sun to Sat	1:00 to 5:00 pm 7:00 to 11:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place	16.18	53.1	4.82	15.8	1.79	5.9
21	Yankee Lady III	Yankee Lady Yacht Cruises	300	Jarvis Street Slip				30.36	99.6	8.23	27.0	3.60	11.8
22	Yankee Lady IV	Yankee Lady Yacht Cruises	300	Jarvis Street Slip	Being built, will not be in operation until near the end of the season								

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT
(Continued)

#	Vessel Name	Operator/ Owner	Maximum Capacity - Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
23	Empress Of Canada	Canadian Flagship Lines	550	Avro Quay	Charters			33.68	110.5	8.53	28.0	2.19	7.2
24	Jubilee Queen	Canadian Flagship Lines	243	Portland Street Slip	Sun to Sat	9:00 am to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place	27.19	89.2	7.32	24.0	1.74	5.7
25	Miss Toronto	Charter Miss Toronto (1069040 Ontario Limited)	100	Portland Slip	Charters			19.79	64.9	5.64	18.5	1.07	3.5
					Sun to Sat	7:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place						
26	River Gambler	Harlequin Cruises (1346470 Ontario Inc)	500	Avro Quay	Charters			30.66	100.6	12.16	39.9	1.43	4.7
					Sun to Sat	9:00 am to 11:00pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond						
					Event Cruises								
					Sun to Sat	11:00 am to 3:00 pm 7:00 to 11:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond						
27	M. V. Klancy II	Klancy's Yacht Charter	100	Jarvis Street Slip	Charters			18.35	60.2	6.10	20.0	2.50	8.2
					Sun to Sat	11:00 am to 3:00 pm 6:00 to 11:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond						

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT
(Continued)

#	Vessel Name	Operator/ Owner	Maximum Capacity - Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
28	Stella Borealis	Canamac Cruises	284	Avro Quay	Charters			35.88	117.7	7.92	26.0	3.87	12.7
29	Jaguar II	Canamac Cruises	100	Yonge Street Slip	Sun to Sat	9:00 am to 11:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap, Lake Ontario	29.05	95.3	5.88	19.3	2.16	7.1
30	Enterprise 2000	Toronto Cruises (Olympia Cruise Line)	500	Pier 35 (Foot of Cherry Street)	Charters			36.92	121.1	10.92	35.8	2.13	7.0
					Sun to Sat	11:00 am to 2:00 pm 6:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond						
31	Galactica I	Toronto Cruises (Olympia Cruise Line)	100	Pier 35	Not currently operating			15.33	50.3	6.04	19.8	1.92	6.3
32	Harbour Star	Harbour Star Cruises (The Bus & Boat Company Inc)	60	York Quay West Pier	Charters			19.42	63.7	4.60	15.1	1.25	4.1
					Sun to Sat	11:00 am to 3:00 pm 6:00 to 10:00 pm	Toronto Inner Harbour, Toronto Island Lagoons & Long Pond, Eastern Gap, Western Gap to Ontario Place						
33	Shark I	Harbour Star Cruises (The Bus & Boat Company Inc)	48		Will not operate in 2005			16.06	52.7	4.36	14.3	1.55	5.1

TABLE 1

CHARTER AND TOUR BOATS OPERATING ON TORONTO WATERFRONT
(Continued)

#	Vessel Name	Operator/ Owner	Maximum Capacity - Passengers	Mooring	Normal Operating Schedule[1]			Length		Beam		Draft	
					Days	Times	Normal Operating Area	metres	feet	metres	feet	metres	feet
34	Shipsand	Toronto Tours Limited	51	York Street Slip	Harbour Tours Sun to Sat	11:00 am 2:00 pm	Toronto Inner Harbour, Toronto Islands, Eastern Gap, Western Gap to Lake Ontario	11.73	38.5	3.66	12.0	1.49	4.9
35	Miss Kim Simpson	Toronto Tours Limited	78	York Street Slip	Charters Sun to Sat	9:00 am to 10:00 pm	Toronto Inner Harbour, Toronto Islands, Eastern Gap, Western Gap to Lake Ontario	17.40	57.1	4.11	13.5	1.22	4.0
36	New Beginnings	Toronto Tours Limited	23	York Street Slip				12.80	42.0	4.02	13.2	1.46	4.8

[1] Schedule for Charters, Day Tours, Education Programs, Event Tours, Harbour Tours, Event Cruises applies to overall operation of all boats owned or leased by Operator/Owner

Source: Charter/Tour Boat Operators; Harbourfront Centre; Transport Canada Marine Services, Vessel Registration System.

TABLE 2

POPULATION AND TOURISM VISITATION PROJECTIONS FOR CITY OF TORONTO 2004 TO 2025

Year	Population[1]	Tourism Visitation[2]
1998		25,994,893[3]
1999		27,973,172
2000		28,683,411
2001		29,665,995
2002		29,286,865
2003		26,637,210
2004	2,603,180	26,810,330
2005	2,613,900	26,984,580
2006	2,629,030	27,159,960
2007	2,647,450	27,336,480
2008	2,669,000	27,514,150
2009	2,693,440	27,692,970
2010	2,717,700	27,872,950
2011	2,741,730	28,054,100
2012	2,765,320	28,236,430
2013	2,788,480	28,419,950
2014	2,811,190	28,604,660
2015	2,833,410	28,790,570
2016	2,855,140	28,977,690
2017	2,876,350	29,166,020
2018	2,897,050	29,355,580
2019	2,917,190	29,546,370
2020	2,936,750	29,738,400
2021	2,955,670	29,931,680
2022	2,973,870	30,126,210
2023	2,991,300	30,322,010
2024	3,007,930	30,519,080
2025	3,023,710	30,717,430

Source: [1]Statistics Canada estimates, 2004, and projections of Ontario Ministry of Finance.
[2]Ontario Ministry of Tourism and Recreation, April 2005.

[3]1998 to 2003 are actual numbers, 2004 to 2025 are projected numbers

TABLE 3

PROJECTED NUMBER OF CHARTER AND TOUR BOAT PASSENGERS AND TRIPS 2005 TO 2025

Year	Number of Passengers			Number of trips		
	Low	Medium[1]	High	Low	Medium[1]	High
2005	450,000	450,000	450,000	8,000	8,000	8,000
2006	453,000	454,500	455,500	8,040	8,060	8,070
2007	456,000	459,000	461,100	8,080	8,120	8,140
2008	459,100	463,600	466,700	8,120	8,220	8,260
2009	462,200	468,200	472,400	8,160	8,280	8,330
2010	465,300	472,900	478,200	8,200	8,340	8,400
2011	468,400	477,600	484,000	8,240	8,400	8,470
2012	471,600	482,400	489,900	8,280	8,460	8,540
2013	474,800	487,200	495,900	8,330	8,530	8,620
2014	478,000	492,000	502,000	8,380	8,600	8,700
2015	481,300	496,900	508,100	8,430	8,670	8,780
2016	484,600	501,800	514,300	8,480	8,740	8,860
2017	487,900	506,800	520,600	8,530	8,810	8,940
2018	491,200	511,800	527,000	8,580	8,880	9,020
2019	494,600	516,900	533,400	8,630	8,950	9,100
2020	498,000	522,000	539,900	8,680	9,020	9,180
2021	501,500	527,200	546,500	8,730	9,090	9,260
2022	505,000	532,400	553,200	8,780	9,160	9,340
2023	508,500	537,700	560,000	8,830	9,230	9,420
2024	512,000	543,000	566,800	8,890	9,310	9,510
2025	515,600	548,400	573,700	8,950	9,390	9,600

[1]estimated number of passengers and charter/tour boat trips in 2005 based on interviews with owner/ operators of 31 boats; 2005 to 2025 projection is based on population projections for City of Toronto (as provided by Ontario Ministry of Finance), 2004 to 2015 - 0.77% per annum, 2015 to 2025 - 0.65% per annum; tourism visitation projections to City of Toronto (as provided by Ontario Ministry of Tourism and Recreation, April 2005), 2004 to 2025 - 0.65%; and economic growth rate for City of Toronto; assumes 85% of overall charter/tour business generated by City of Toronto residents, 15% generated by tourist visitors.

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 2-3

Cruise Ship Activity on the Toronto Waterfront

PART 2-3: CRUISE SHIP ACTIVITY ON THE TORONTO WATERFRONT

Cruise ship business on the Great Lakes had been in decline since the early 1950's when passenger steamers became too expensive to operate on a seasonal basis. However, the cruise ship business began to revive in the late 1990's as cruise lines began building more smaller ships which were better suited to the number of passengers who wished to cruise the eastern seaboard of the United States, the Atlantic Provinces, the St. Lawrence River and the Great Lakes. In 1995 there were 48 cruise ships capable of carrying between 100 and 500 passengers, by 2000 that number had increased to 63 and by 2005 reached 71[1]. Between 1995 and 1999 there were an average of five cruise ship calls to Toronto each year carrying an average of approximately 1,130 passengers each year. Between 2000 and 2004 the average number of cruise ship calls increased to 11 each year and the average number of passengers carried increased to approximately 1,970. See Table 1 following. In addition the international fast ferry between Rochester and Toronto, The Breeze, now renamed The Cat, made 165 visits in 2004 with 133,868 passengers.

The market for cruise travel on the St. Lawrence River and the Great Lakes comes from North America and Europe. These two markets dominate the demand for cruises throughout the world (i.e. more than 93 percent of all passengers carried between 1994 and 2004). See Table 3 following. It is projected that the North American cruise market will increase from 5,670,000 in 2005 to 6,890,000 by 2011 and the European market from 1,680,000 to 2,370,000 during this same time period. As shown in Table 2, all of the cruise ships currently visiting Toronto are from the United States, Germany and France.

Based on the numbers shown in Table 4 and our interviews with the operators of Clipper Cruise Line, Hapag-Lloyd Cruises and Iles du Ponant, the number of cruise ship and passenger arrivals is expected to continue to increase in the foreseeable future. In arriving at the projections shown in Table 5, we have provided a low, medium and high projection for both cruise ships and cruise ship passengers. The low projection is based on the average number of ships arriving in port between 1995 and 2004 (i.e. 8). The medium forecast is based on the average number of ships that arrived in port between 1999 and 2004 (i.e. 11) and the high forecast assumes as a base the number of ships that arrived in 2004 (i.e. 14). The growth rates for the three scenarios reflect those provided by G.P. Wild (International) Limited[2] and Cruise Lines International Association (CLIA)[3]. The low forecast is the most pessimistic and should be easily achieved. The high forecast is the most optimistic and would require a strong and directed annual marketing effort by the Toronto Port Authority and Tourism Toronto to be achieved. The medium forecast is felt to be the most realistic. The medium forecast projects that the number of cruise ship arrivals will be 13 by 2010, 16 by 2015, and reach 20 and 24 by 2020 and 2025 respectively. As the number of cruise ship arrivals increases so too will the total number of passengers. Typically when an itinerary is continued over a number of years the passenger load per cruise ship also increases. The medium forecast for the number of passengers projects the number of passengers will grow from 1,950 in 2010, to 2,380 by 2015, to 2,890 by 2020 and reach 3,520 by 2025. See FIGURES 1 and 2 following.

The Port Authority's new International Marine Passenger Terminal is capable of handling the annual number of cruise ship passengers projected in the medium and high forecasts. A dedicated short-term parking area for tour buses and taxis to serve in-transit passengers should be located as close as possible to the terminal's entrance/exit to ensure the timely and efficient handling of passengers wishing to take an organized or self-guided tour of the city. A water taxi service between the Terminal and York Quay would provide an alternative means of transportation as well as an attraction for in-transit passengers.

[1] Lloyd's Register and Cruise Line International Association (CLIA).
[2] G.P. Wild (International) Limited, London, England provide annual reports and projections for the Passenger Shipping Association (PSA) whose member cruise lines represent 95 percent of the cruise capacity marketed in Great Britain and Europe.
[3] Cruise Line International Association (CLIA) whose 19 member cruise lines represent 98 percent of the cruise capacity marketed in North America.

Of even more importance is the demonstrated increase in the number of passengers home porting from Toronto as compared to those in transit. It is worth noting that the economic impact on a port with an in-transit call (i.e. passengers disembark for shore tours or local visits, then re-embark after a period of 4 to 6 hours) is less than that of a cruise that is home porting (i.e. normally involves complete passenger turnaround, crew changes and vessel reprovisioning). The Canadian Tourism Commission recently completed a study that indicates the average expenditure per passenger in a port city is $64.06 for in-transit passengers and $248.00 for home port passengers for an average per passenger of $72.55. Crew expenditures were estimated at $28.00. If the cruise line spending (fuel, disposal, cleaning and restocking) were included the impact per passenger jumps to $155.70 for the local economy.

FIGURE 1 - PROJECTED NUMBER OF CRUISE SHIPS VISITING PORT OF TORONTO 2005 TO 2025

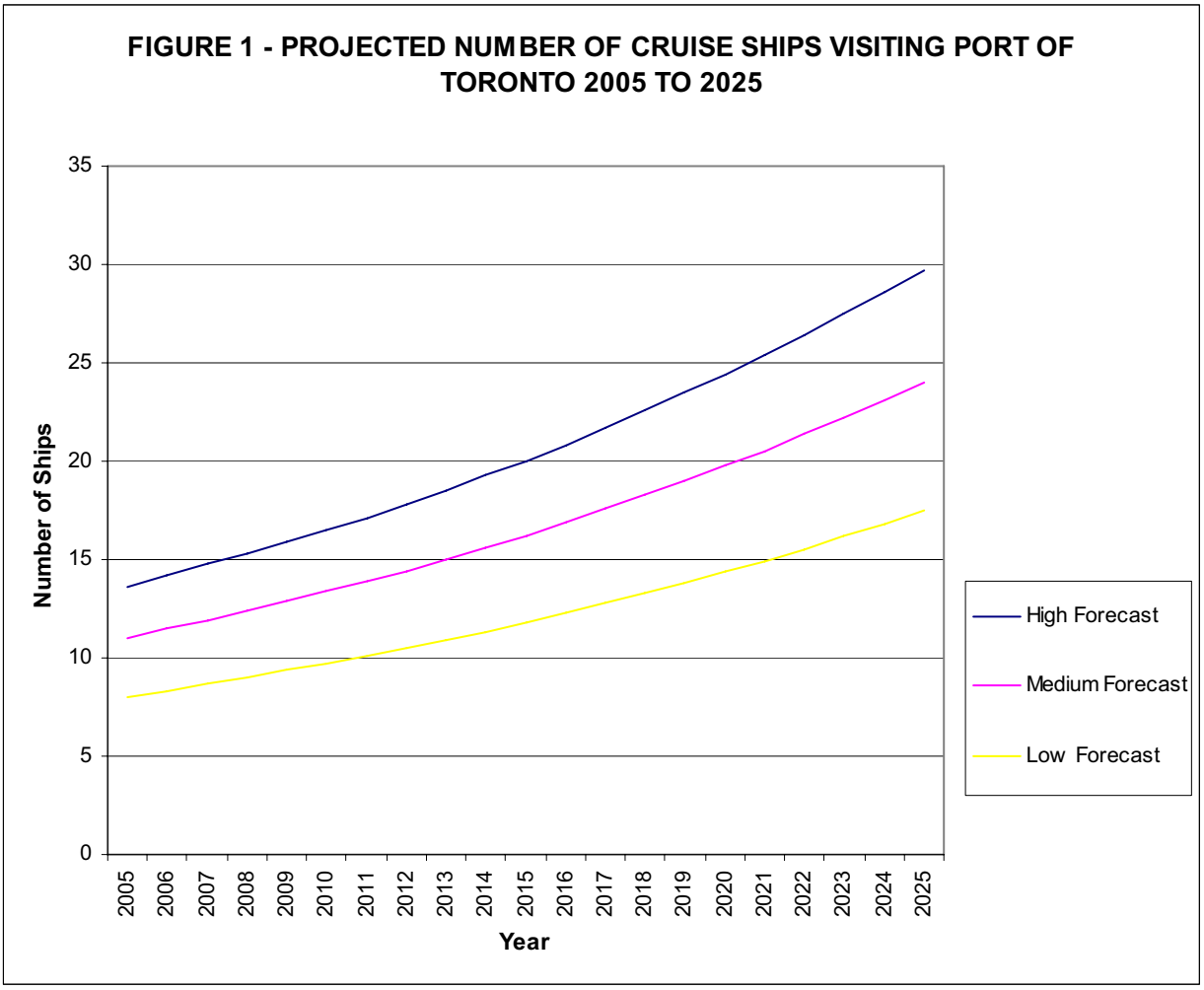

FIGURE 2 - PROJECTED NUMBER OF CRUISE SHIP PASSENGERS VISITING PORT OF TORONTO 2005 TO 2025

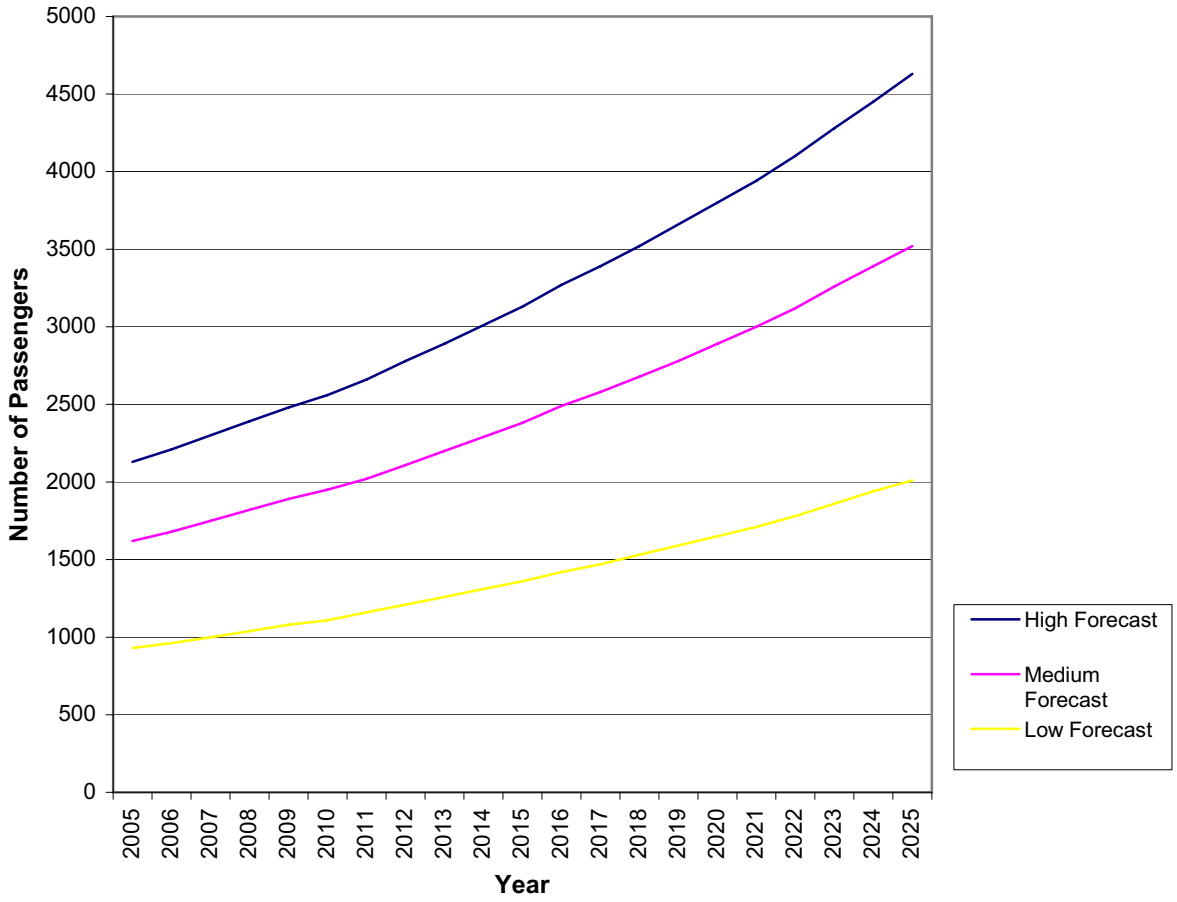

TABLE 1

CRUISE SHIP ACTIVITY IN PORT OF TORONTO 1995 TO 2004

Cruise Line	Ship	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Clipper Cruise Line	Nantucket Clipper	2T	2T	4T	2T	-	-	-	-	-	3T
Hapag-Lloyd Cruises GmbH	C. Columbus	-	-	2T	2T	2H	2H	2H	2T	-	2H
Companie des Iles du Ponant	Le Levant	-	-	-	-	5H	6H	6H	4T 5H	1T 6H	5T 3H
Seabourne Cruises	Seabourne Pride	-	-	-	-	1H	1H	1H	-	-	-
Navitrans Maritime Inc.	Arcadia	-	-	-	-	-	-	1H	-	-	-
Delta Queen Steamboat Company	Cape May Light	-	-	-	-	-	-	6T 1H	-	-	-
	Mayan Prince	1T	-	-	-	-	-	-	-	-	-
American Canadian Caribbean Line Inc.	Niagara Prince	-	-	-	-	-	1T	-	-	-	-
Ship Visits											
Total Number of Ship Visits		3	2	6	4	8	10	16	11	7	13
Passengers											
Transit		300[1]	250	1,300	1,050	-	-	1,113	1,041	150	816
Homeport		-	-	-	-	2,759	2,020	2,421	702	414	1,169
Total Passengers		300[1]	250	1,300	1,050	2,759	2,020	3,534	1,734	564	1,985

Transit Call (T), passengers disembark for shore tours or local visits, then re-embark after 4 to 6 hours on shore.
Home Port Call (H), complete passenger turnaround, crew change, and vessel reprovisioning
[1]Estimated, prior to 1999 cruise ships berthed at Harbour Front, normally berth 232, passenger information was not recorded

Note: According of officials of Clipper Cruise Line the Nantucket Clipper did not call on the Port of Toronto between 1999 and 2003 due scheduling changes to move the ships itinerary deeper into the Great Lakes. According to officials with the Nantucket Clipper, Columbus and Le Levant all three ships are scheduled to call on Toronto in 2005 and 2006.

TABLE 1

CRUISE SHIP ACTIVITY IN PORT OF TORONTO 1995 TO 2004
(Continued)

International Fast Ferry	**Ship**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Rochester Fast Ferry Company	"The Breeze"[2]										165H
Ship Visits											
Total Number of Ship Visits											165
Passengers											
Transit											
Homeport											
Total Passengers											133,868
Vehicles											21,799

[2]Only operated for part of 2004, but is scheduled to operate again in 2005

Source: Toronto Port Authority

TABLE 2

CHARACTERISTICS OF CRUISE SHIPS VISITING PORT OF TORONTO 1995 TO 2004

Ship	Cruise Line	Home Port Country	Length		Beam		Draught		Number of Cabins	Number of Berths
			m.	ft.	m.	ft.	m.	ft.		
Nantucket Clipper	Clipper Cruise Line	United States	63.09	207.00	11.40	37.40	2.43	7.98	51	102
C. Columbus	Hapag-Lloyd Cruises GmbH	Germany	145.00	475.72	21.50	70.54	5.10	16.73	205	423
Le Levant	Companie des Iles du Ponant	France	100.26	328.94	13.90	45.60	3.00	9.84	45	90
Seabourne Pride	Seabourne Cruise Line	United States	133.80	438.98	19.00	62.34	5.00	16.40	106	212
Arcadia[1]	Navitrans Maritime Inc.	Greece	106.91	350.75	16.31	53.51	4.98	16.34	139	364
Cape May Light	The Delta Queen Steamboat Company	United States	91.44	300.00	15.24	50.00	3.81	12.70	114	226
Mayan Prince[2]			53.34	175.00	11.89	39.01	11.70	38.39	47	99
Niagara Prince	American Canadian Caribbean Line Inc.	United States	53.03	173.98	12.20	40.03	2.06	6.76	42	84

[1]Renamed Caribic Star in 2002, now operated by Cruise Ship Condos, Bellevue, Washington, staterooms being sold for $70,000 to $100,000 $US.
[2]Renamed Wilderness Discoverer in 1998, now operated by Glacier Bay Marine Service Inc., Juneau, Alaska, now cruises Seattle to Glacier Bay.

Source: *Lloyd's Register of Ships 2004-2005*, Lloyd's Register, London, England.

TABLE 3

HISTORICAL INTERNATIONAL PASSENGER DEMAND FOR CRUISE SHIPPING 1994 TO 2004

Passenger by Area	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
North America ('000s)	3,290.0	3,640.0	4,000.0	4,100.0	4,480.0	4,660.0	4,730.0	4,380.0	4,420.0	4,620.0	5,470.0
Europe ('000s)	330.0	620.0	700.0	770.0	880.0	970.0	1,000.0	1,150.0	1,350.0	1,530.0	1,560.0
Sub-total ('000s)	3,620.0	4,260.0	4,700.0	4,870.0	5,360.0	5,630.0	5,730.0	5,530.0	5,770.0	6,150.0	7,030.0
Rest of World ('000s)	200.0	210.0	220.0	230.0	250.0	290.0	340.0	390.0	420.0	430.0	490.0
Total ('000s)	**3,820.0**	**4,470.0**	**4,920.0**	**5,100.0**	**5,610.0**	**5,920.0**	**6,070.0**	**5,920.0**	**6,190.0**	**6,580.0**	**7,520.0**

Source: G. P. Wild (International) Limited from Cruise Lines International Association (CLIA), Passenger Shipping Association (PSA) data.

TABLE 4

PROJECTED INTERNATIONAL PASSENGER DEMAND 2005 TO 2011

Passenger by Area	2005	2006	2007	2008	2009	2010	2011
North America ('000s)	5,670.0	5,870.0	6,070.0	6,280.0	6,480.0	6,680.0	6,890.0
Europe ('000s)	1,680.0	1,790.0	1,910.0	2,020.0	2,140.0	2,250.0	2,370.0
Sub-total ('000s)	7,350.0	7,660.0	7,980.0	8,300.0	8,620.0	8,930.0	9,260.0
Rest of World ('000s)	470.0	500.0	530.0	550.0	580.0	610.0	640.0
	7,820.0	8,160.0	8,510.0	8,850.0	9,200.0	9,540.0	9,900.0

Source: G. P. Wild (International) Limited, *Cruise Industry Statistical Review*, September 2004.

TABLE 5

PROJECTED NUMBER OF INTERNATIONAL CRUISE SHIPS AND PASSENGERS VISITING PORT OF TORONTO 2005 TO 2025

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Ships											
High	14[1]	14	15	15	16	17	17	18	19	19	20
Medium	11[2]	11	12	12	13	13	14	14	15	16	16
Low	8[3]	8	9	9	9	10	10	10	11	11	12
Passengers											
High	2,130	2,210	2,300	2,390	2,480	2,560	2,660	2,780	2,890	3,010	3,130
Medium	1,620	1,680	1,750	1,820	1,890	1,950	2,020	2,110	2,200	2,290	2,380
Low	930	960	1,000	1,040	1,080	1,110	1,160	1,210	1,260	1,310	1,360
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	
Ships											
High	21	22	23	23	24	25	26	27	29	30	
Medium	17	18	18	19	20	21	21	22	23	24	
Low	12	13	13	14	14	15	16	16	17	17	
Passengers											
High	3,270	3,390	3,520	3,660	3,800	3,940	4,100	4,280	4,450	4,630	
Medium	2,490	2,580	2,680	2,780	2,890	3,000	3,120	3,260	3,390	3,520	
Low	1,420	1,470	1,530	1,590	1,650	1,710	1,780	1,860	1,940	2,010	

[1]based on number of ships visiting Port of Toronto is 2004; [2]based on average number of ships visiting Port of Toronto 1999 to 2004; [3]based on average number of ships visiting Port of Toronto 1995 to 2004 and using growth rate as provided by G. P. Wild (International) Limited, Cruise Lines International Association (CLIA), and discussions with officials of Clipper Cruise Line, Hapag-Lloyd Cruises and Iles du Ponant.

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 2-4

Industrial Shipping Activity on the Toronto Waterfront

PART 2-4: INDUSTRIAL SHIPPING ON THE TORONTO WATERFRONT

Preamble

Over the years, there have been a number of initiatives and agreements affecting the industrial area of Toronto's waterfront. These, combined with a number of non-industrial development initiatives, precinct planning (e.g. East Bayfront), and the Port Lands Implementation Plan will define the future industrial landscape along Toronto's waterfront. In this light, the Industrial assessment for the Marine Use Strategy has looked at the history of industrial shipping, the current situation and associated trends. The scope of the assessment does not include an evaluation of the future needs of industrial shipping based on direction from the Toronto Waterfront Revitalization Corporation.

Introduction

In the past, the intangible barriers presented by security fences around the ports' entire waterfront, their security guards and restrictive signs made them not only unwelcoming but also unfriendly and aloof. This created an atmosphere of seclusion and discouraged mingling and interaction of the various communities closer to the water. Now, the countenance of the ports is changing and its functions are multiplying. The present concept of a Modern Port is an entity that encourages multiple uses of its vibrant waterfront helping improve the overall quality of life and economic development of the City surrounding it.

This section of the report reviews and analyses facts and figures of that sector of the waterfront that is predominantly related to industrial shipping on the Toronto waterfront.

Port History and Trends

History and Evolution of the Port

The following is a time line of the various events focusing on how the Port evolved, grew and was managed in the past:

- ***1700s:*** The present site of Toronto Harbour was originally a morass of swamps fed by the Don River. The French administration of Canada set up a trading post there in the 1740s to offer the Indians an alternative market for their goods to the British trading post across the lake at Oswego. When the British government took over, it bought the site of Toronto from the Mississauga Indians in 1787, and upon the creation of the province of Upper Canada in 1791, its first governor, Colonel Simcoe, picked Toronto as the place to build the Capital for the new province. This location was selected especially because of the protection provided by the harbour.

- ***1800s:*** The real importance of Toronto Harbour grew with the beginning of the first great engineering works on the Great Lakes-St Lawrence to improve navigation: the opening of Lachine Canal in 1824, followed over the next quarter of a century by the Welland, Cornwall, Beauharnois, and Williamsburg canals, making commercial navigation possible from Montreal into the Great Lakes. In 1850, the first Toronto Harbour Commission was set up by the City Council to manage the development of the port. With the new Age of Steam at its peak, and several railways coming into Toronto to be served by the Port, a new phase of construction and reconstruction began by the Harbour's reorganized administration. A Tripartite Agreement was made in 1892 among the City of Toronto, the Grand Trunk Railway and the Canadian Pacific Railway, dividing up the land along the waterfront. This agreement weakened the existing Harbour Commission and in fact made it powerless, as each of the land-holders went about developing its own part of the Harbour independently.

- ***1900s (to 1990):*** A stronger Toronto Harbour Commission was formed on May 19, 1911 by a Federal Act of Parliament. The Commission prepared a bold and innovative Waterfront Plan of 1912. Work on the Port and Harbour began in 1912.

    - The Harbour was deepened to 24 feet (7.3m)
    - The following marine terminal facilities were established:

  - Terminal 27
  - Terminal 28
  - Terminal 35
  - Terminal 51
  - Warehouse 52
- An area was created for an industrial park that resulted in the establishment of several important industries such as Redpath Sugar in 1959.
- Access to the waterfront was improved by building roads and bridges such as Lakeshore Boulevard.
- Other developments such as Palais Royale, Sunnyside Bathing Pavilion etc. were established.
- The City Airport was constructed and opened in 1939.

- ***1990s to Present:*** Since 1990, the traffic through the Port has been slowly but steadily growing. In 1992, all land except 23.9ha was transferred from the Toronto Harbour Commission to the Toronto Economic Development Corporation (TEDCO). The Toronto Port Authority (TPA) was created on June 8, 1999 as part of a national marine strategy set out in the Canada Marine Act. The management and control of its waters are the responsibility of the TPA under the Act.

  Following release of the Toronto Waterfront Revitalization Task Force's report in March 2000, the Government of Canada, the Province of Ontario, and the City of Toronto jointly announced their support for the creation of the Toronto Waterfront Revitalization Corporation (TWRC) for the express purpose of stimulating new development along the waterfront. TWRC was then formally established in the fall of 2001 and started full functioning in February 2002.

Trends in Port Usage

The Port of Toronto has been seeing changes overtime in the mix and quantity of cargoes passing through the Port, reflecting the changing needs of the surrounding city, changes in the dynamics of transportation and changes due to external forces. The main reasons for these changes are:

- Diminishing Role of Energy Related Cargo

  In the past, large quantities of coal moved through the port both for domestic heating and power plants. Together with coal, oil was also handled. However, with the oil crisis of 1970s and convenience of gas, both coal and oil were overshadowed by gas. In 1969, the port handled 2.31million tonnes of coal. This completely disappeared by 1990. Petroleum products amounted to 1.156 million tonnes in 1969. This reduced to 0.118 million tonnes in 1990 and to only 43,000 tonnes in 1998.

- Shifting of Flour Milling Facilities

  Significant quantities of wheat also passed through the Port. By the 1990s, this cargo completely disappeared due to shifting of flour-milling elsewhere.

- Emergence of Containerization

  With the emergence of containerization in 1956, general cargo transportation has changed enormously. After the early evolutionary period, the fully purpose-built containership arrived on the scene in 1968. The first three generations of fully cellular ships were constructed in quick succession from 1968 to 1970. Within a short period, the size grew from 500 TEU to 3,000 TEU. The fourth generation of 4,400 TEU evolved in 1984-85. The biggest ship in operation now is 8,600 TEU with the 10,000 TEU ship on order. There are now even bigger ships on the drawing board - the biggest being the Dutch Malaccamax design of 18,000 TEU. This has changed the dynamics of transportation of break bulk cargo. Seventy five percent of the break bulk is now containerized. This has given rise to the concept of the hub and spoke system. The bigger containerships now select only deep drafted ports as hubs from where cargo is transported by feeder ships to smaller ports or transported by an inland transportation system to the hinterland. This meant that smaller ports such as those on the Seaway lost the break bulk business. It is

therefore not surprising that the Port of Toronto's Terminals 51 and 52 often quoted in the port planning text books as state-of-the-art facilities lost this business.

- External Forces

  These included (a) ups and downs in economic cycle, especially the recession of the early 1990s, and (b) changing plans for the Toronto Port Lands. The Official Plan Amendment No. 257 as enacted by the Council of the City of Toronto on April 16, 2003, designates most of the "Port Lands" as a Regeneration Area as shown in Figure 1. The Central Waterfront Secondary Plan indicates that Regeneration Areas are blocks of land that may be subdivided into smaller areas for a variety of mixed-use development ranging from industries to housing to community services and parks. Regeneration Areas in the Secondary Plan will generally be subject to a more detailed Precinct Implementation Strategy. The TWRC's Port Lands Implementation Strategy articulates the latest thinking on how the Port Lands should evolve in the future.

The Port Traffic

The total cargo passing through the Port since 1990 is given in Table 1.

Table 1: Port of Toronto Cargo Throughput[1], 1990-2004 (Tonnes)

Year	Total	Sugar	Road Salt	Cement	Aggregates	Asphalt *	General	Intermodal **	Warehousing
1990	1,763,000	266,000	432,000	532,000	277,000	111,000	145,000	0	
1991	1,331,000	301,000	374,000	364,000	133,000	66,000	93,000	0	
1992	1,337,000	281,000	330,000	395,000	177,000	76,000	78,000	0	
1993	1,464,000	328,000	371,000	335,000	137,000	89,000	53,000	151,000	
1994	1,467,000	286,000	425,000	370,000	96,000	70,000	89,000	131,000	
1995	1,319,000	261,000	384,000	291,000	46,000	90,000	56,000	191,000	
1996	1,585,000	469,000	367,000	350,000	47,000	97,000	45,000	210,000	
1997	1,778,000	501,000	415,000	417,000	45,000	68,000	117,000	215,000	
1998	2,051,000	472,000	510,000	428,000	0	43,000	357,000	241,000	
1999		368,204							
2000	1,963,000	386,486							
2001		398,611							
2002		436,351							
2003	2,091,090	627,928	516,813	422,826	74,841	54,058	27,451	330,271	36,902
2004	2,536,078	669,571	531,065	418,256	194,929	10,726	100,615	586,248	24,668

Notes:
[1]The term "cargo throughput" means total commodities passing through the Port by all three modes of transport, namely, marine, road and rail.
Figures in black from Mariport Report; in blue from TPA and in red from Annual TPA Report 2000. Missing data was not made available to the Study Team.
* Includes petroleum products
** Includes warehousing for Mariport data

The present situation regarding the cargo traffic of various commodities, divided into three main categories, is briefly reviewed and analyzed as follows:

- The Extinct/Obsolete Cargo
- The Growth and/or Steady Cargo
- The Potential and/or Untapped Cargo

<u>The Extinct/Obsolete Cargo</u>

This category includes:

- Coal
- Petroleum Products, and
- Wheat

In the past, large quantities of coal moved through the port both for domestic heating and power plants. Together with coal, oil was also handled. However, with the oil crisis of 1970s and the convenience of gas, both coal and oil were overshadowed by gas. In 1969, the port handled 2.31million tonnes of coal and by 1990 it handled none. Likewise, petroleum products which amounted to 1.156 million tonnes in 1969, decreased to 0.111 million tonnes in 1990 and reached only 43,000 tonnes in 1998. Except for asphalt, all other petroleum products have now moved to other ports, particularly to the Port of Hamilton.

Significant quantities of wheat also passed through the Port. In 1969, 0.761 million tonnes of grain were handled. This total decreased to 80,000 tonnes in 1990 and to none in 1998 due in large part to the shifting of flour-milling to other locations.

The Growth and/or Steady Cargo

This includes the following categories of cargo:

- Overseas Bulk (sugar)
- Domestic Bulk (road salt, cement, aggregates, asphalt)
- General cargo (break-bulk, container)
- Logistec (intermodal, warehousing)

Sugar

Located on a 6.1ha site on the Central Waterfront at 95 Queens Quay East, Redpath's recently expanded state-of-the-art refinery is an integrated sugar production plant. Here the company unloads cargoes of raw sugar, stores it until it is needed, processes the sugar through various processes and products, and ships supplies all over Canada. Redpath has approximately 65% of the market share of sweeteners in Ontario and 45% of the share nationally.

Redpath formally started operating on June 29, 1959 to coincide with the opening of the St. Lawrence Seaway. Since then the production has continued to grow to keep pace with the increasing demand for sugar in Canada. The import of raw sugar has simultaneously been increasing - from 160,000 tonnes in 1969 to 266,000 tonnes in 1990 and now to 670,000 in 2004 representing the following growth rates for the various periods as summarized below:

Table 2: Growth of Raw Sugar Imports through the Port of Toronto

Year	Import (Tonnes)	Period	Years	Growth (%)
1969	160,000	1969-2004	35	4.2
1990	266,000	1990-2004	14	6.8
1995	213,000	1995- 2004	9	13.6
2000	386,486	2000-2004	4	14.7
2003	627,928	2003-2004	1	6.6
2004	669,571			

This growth has been maintained by Redpath by continually increasing the capacity of the plant. The present output capacity of the plant is approximately 700,000 tonnes per year. This capacity can be increased as the demand of sugar increases.

Redpath imports sugar using ships with 16,000 to 24,000 tonnes capacity. The cargo of sugar is unloaded by two mobile cranes mounted on rails that run the length of the 167m dock. These cranes are

equipped with large mechanical grabs that lift over three tonnes of sugar per scoop and deposit the raw sugar onto moving conveyor belts that transfer the cargo to the weigh tower at the end of the raw sugar shed. It takes 36 to 48 hours to unload each ship depending upon the size of the load. The average depth at the wharf is 9 metes, capable of accommodating ships of 25,000dwt. In 1998, 24 ship loads arrived representing an average load of about 20,000 tonnes per ship.

Redpath maintains a raw sugar shed and warehousing and storage facilities for both granular and liquid forms of sugar. In recent years Redpath is using Lakers for carrying about 25,000 tonnes of raw sugar from the Ports of Quebec for storage aboard the vessels during their winter lay-up in Toronto.

Road Salt

There are three operators in the Port:

- Canadian Salt at 240 Unwin Avenue
- Cargill Salt at 220 Unwin Avenue
- Sifto Salt at 210 Unwin Avenue

Canadian Salt is operated by the Canadian Salt Company Limited with a regional office in Mississauga. They bring salt from Windsor and Fairport using self-unloading Lakers. The company does not own any vessels of its own. Transportation is done on contract with shipping companies having self-unloading vessels. The average load is about 25,000 to 26,000 tonnes. Canadian Salt has about 3.4 ha of land (measured from the chart) divided into two lots: one of about 2.2 ha on a long term lease and the other 1.2 ha on a short term lease from TEDCO. The total dockwall used is about 395 m. The plinth (easement) on the dockwall is about 23 metres (75 ft). If they are given a long term lease and adequate assurance that they will not be displaced in the future, their optimum land requirement is approximately 6 ha with about 600 m of waterfront-dockwall.

The salient operating features are summarized below:

- Area: 3.4 ha (5.2ac + 3.3ac)
- Throughput 2004 400,000 tonnes
- Number of ship loads About 20
- Average handling rate Varies up to 10,000 tonnes per day
- Dockwall in use 395 m (1,300ft)
- Dockwall depth Dredged to 9m (to provide for seaway draft)

Cargill Salt ships salt from Cleveland, Ohio. Cargill gets its supplies from Cleveland solely by marine mode, though not at full seaway draft because of draft restrictions at the Whiskey Island salt loader in that Port. It has 1.6ha of land (measured from the chart) leased from TEDCO.

Sifto Salt is operated by Sifto Canada Inc. from its Head Office in Mississauga. It gets its salt from the Goderich salt mines through marine mode. The operation of Sifto Salt is controlled by the Goderich Office. It has 1.5ha of land (measured from the chart) leased from TEDCO.

The process of shipping salt through the Port and stockpiling it for later distribution is done because the Port is central to the GTA and neighbouring market areas. All three suppliers located in the Port depend on the marine mode because of the cheaper transportation costs. While Canadian Salt and Sifto could survive without access to marine supplied salt it would have an adverse impact on transportation costs and create much greater truck traffic and congestion on the highways.

Salt consumption in the GTA is believed to be in the order of 400,000 tonnes per annum, though the total throughput of all three suppliers in the Port was 531,000 tonnes in 2004. The additional 131,000 tonnes is distributed outside the GTA. Salt consumption varies considerably from year to year depending on the weather and road condition forecasts. The slow but steady growth of salt cargo through the Port is illustrated in Table 3:

Table 3: Growth of Road Salt through the Port of Toronto

Year	Throughput (Tonnes)	Period	Years	Growth (%)
1969	204,000	1969-2004	35	2.78
1990	432,000	1990-2004	14	1.49
1995	384,000	1995- 2004	9	3.6
2000	N/A	2000-2004	4	N/A
2003	516,813	2003-2004	1	2.76
2004	531,065			

Cement

Two of the following four major producers of Portland cement for the GTA have storage and distribution centers in the Port Lands. They are Lafarge Cement and Essroc Cement.

Company	Cement Plant Location	Distance from Toronto
• Blue Circle (ex. St. Marys Cement)	Bowmanville	65 km.
• Blue Circle (ex. St. Marys Cement)	St Mary's	150 km
• St Lawrence Cement (Holderbank)	Mississauga	35 km
• Lafarge Cement	Bath	220 km
• Lafarge Cement	Woodstock	130 km
• Essroc Cement	Picton	210 km

Lafarge operates out of its distribution terminal at 54 Polson Street. The cement storage centre is spread over an area of 3.5 ha. It uses 385 metres of dockwall with a plinth (easement) of 16.8 metres. Cement is brought from the Cement Plant at Bath, Ontario, using its own self-unloading bulk carrier *English River* with a capacity of 7,000 tonnes, a length of 106 metres and a draught of 7.92 metres. The storage capacity of the silos is 20,000 tonnes. Relevant operational details are as follows:

• Total throughput (2004)	150,000 Tonnes (approx). (Nothing brought by rail in 2004 though 25,000 tonnes brought in 2002. Their throughput has been as high as 400,000 tonnes in the past)
• Number of trips by English River (2004)	22 (There have been as many as 46 in the past)
• Average handling rate	1,000 tonnes per hour
• Dockwall in use	385 m
• Dockwall depth	Dredged to 9m

Lafarge uses the dockwall for winter berthing also. The site is designated as heritage property.

Essroc, a member of Italcementi Group of Companies, has been operating out of Toronto Harbour since 1956. Essroc leases approximately 1.5 hectares of land at 312 Cherry Street from TEDCO. The present lease expires in 2009. The cement is supplied to this terminal from their Picton Plant which also supplies cement to Rochester, Oswego, Cleveland and Windsor. There are 7 silos on the site with a storage capacity of 25,000 tonnes. Essroc uses a barge with a capacity of 5,000 tonnes capacity for emergency storage to meet sudden surges in demand. The cement is transported by its bulk carrier *Steven B. Roman* with 7,500 tonnes capacity. This ship is also used for storage of cement during the winter months. Some of the operational details are as follows:

• Total throughput (2004)	278,000 Tonnes (approx)
• Number of trips by Steven B. Roman (2004)	42
• Dockwall in use	542.5 m
• Dockwall depth	> 7 m.

Both of the above operators, Lafarge and Essroc, supply cement mainly to the Innocon ready-mix concrete plants located at Newmarket, Newkirk, Wilson, Notion Road, Albion and Mavis in the GTA. Lafarge also supplies cement to the Innocon plant located at 535 Commissioners Street in the Port Lands. All these facilities are jointly operated by Lafarge Construction Materials (LCM) and Essroc Canada. Ready-mix concrete has to be delivered within forty five minutes of initial load, unless extenders are used. The Innocon operation at Commissioners Street is thus at a very strategic location. Most of the City of Toronto can be covered from here without the use of extenders. Innocon is equipped for an annual output of approximately 1.2 million cubic meters.

The total consumption of cement in the GTA is in the order of 1.3 million tonnes based on the 1998 estimates of the Portland Cement Association. If this estimate is still valid, the 418,000 tonnes passing through the Port represent only 32% of the GTA consumption. This share could increase considerably because of the locational advantage of the Port in relation to the various ready-mix plants.

The cement throughput has increased at an average annual growth rate of 4% since 1995. Recently it has stabilized at about 400,000 tonnes annually excluding cement brought by rail and road transport. Furthermore, there appears to be a trend towards development of more ready-mix cement capacity in the Port Lands. One effort in this direction is to develop and consolidate the ready-mix plants by rezoning the properties located at 595 Commissioners Street and 600 Unwin Avenue (Figure 2). The throughput under these circumstances could reach some 18 times the combined storage capacity of their silos i.e. about 800,000 tonnes without increasing the existing storage capacity of Lafarge and Essroc. Of course, market quantities are very dependent on building cycles and the throughput varies from year to year.

Aggregates

The three main users of aggregates in the Port Lands are:

- Strada Aggregates at 320 Unwin occupying about 4.9 ha of land leased from TEDCO
- Innocon at 535 Commissioners occupying about 4.9 ha of land leased from TEDCO
- Dufferin Custom Concrete at 650 Commissioners. It occupies about 1.6 ha of privately owned land.

According to Clayton Research, the total consumption of aggregates (demand) in the GTA area and the demand filled by GTA quarries and by imports are as follows:

Table 4: Demand and Supply of Aggregates in the GTA (Million Tonnes)

Demand & Supply	1991-2002		2003-2004	
	Total	Average	Total	Average
Total demand in GTA	560	47	738	62
Filled by GTA production	314	26	416	35
Filled by imports	246	21	322	27

Source: Dr. Peter White, APAO.

Most of the demand filled by GTA production is from quarries located within a distance of some 100 kilometres. The various quarries in order of their production in 2001, as compiled by Aggregates and Road Building Magazine, are:

- Milton Quarry - Dufferin Aggregates located at 9410 Dublin Line in Halton (Production 5.92 million tonnes)
- Dundas Quarry - Lafarge Canada in Dundas Ontario near Hamilton on Highway #5, 6 km west of the junction between Highway #5 and Highway #6 (Production 4.8 million tonnes)
- Acton Quarry - Blue Circle Aggregates, 60 km west of Toronto (production 3.47million tonnes).
- Burlington Quarry - Nelson Aggregates (production 1.89 million tonnes)
- Ingersoll Quarry - Global Stone Ingersoll (production 1.86 million tonnes)
- Brechin Quarry - Lafarge Canada (production 1.53 million tonnes)
- Amherstburg Quarry - Amherst Quarries (production 1.36 million tonnes)
- Mcgregor Quarry - Amherst Quarries (production 1.24 million tonnes)

In spite of having this many large quarries within an easy reach and truckable distances, it is estimated that the GTA already has a deficit of some 21 million tonnes annually which may rise to 27 million tonnes per year in the future. The short fall is being filled by importing aggregates from more distant sources.

As shown in the following table, there appears to be a trend toward greater use of the Port of Toronto for the supply of aggregates. In fact between 2003 and 2004 there was an increase of 160 percent in aggregate throughput. This is all the more remarkable because in 1998 there was no unloading of aggregates at the Port of Toronto.

Table 5: Growth of Aggregates through the Port of Toronto

Year	Throughput (Tonnes)	Period	Years	Growth (%)
1995	46,000	1995- 2004	9	17.4
2000	N/A	2000-2004	4	N/A
2003	74,841	2003-2004	1	160.45
2004	194,929			

It is anticipated that the movement of aggregates through the Port could increase if encouragement is given to the Ready-made Concrete plants in the Port Lands. The recent efforts for rezoning of 595 Commisioners Street and 600 Unwin Avenue to allow for consolidation of concrete works in these properties is a step in the right direction (Figure 2).

Asphalt

McAsphalt located at 41 Basin Street started operation in the early 1970s at the present site that was taken over from Imperial Oil. This is one of the 21 facilities that McAsphalt has in Canada coast to coast. The other facilities in Toronto and its neighboring area are located at West Hill, Leaside, and Oshawa. McAsphalt's market share is quite extensive especially with the shutting down of the Oakville Refinery operation in October 2004. Miller paving uses sixty percent of McAsphalt's products. Miller Paving was previously located on the other side of the ship channel but it closed a number of years ago.

McAsphalt has an area of about 1.2ha presently on lease from TEDCO. The tank farm comprises 7 tanks with a total capacity of about 12,000 tonnes used for various types of products. Asphalt is brought both by water (using its own barges from Detroit) as well as by road (using truck tankers from Nanticoke). Out of 62,000 tonnes of asphalt and other black oils brought to this facility in 2004, 10,000 tonnes were brought in by water in three barge loads and the rest by road. Transportation by water is cheaper than by road but road transport was preferred from Canadian sources such as from Nanticoke apparently due to the unfavorable exchange rate. Transportation by water is now expected to increase due to the closing of the Nanticoke Refinery and a better exchange rate. Total barge trips could be in the order of 33 annually. As more of McAsphalt's competitors cease operation, the throughput by water could increase. The Company currently has two barges and one tug to transport asphalt by water: *McAsphalt 401* with 7,000 tonnes capacity, *Norman McLeod* with 10,000 tonnes capacity and the Tug *Everlast* with 6,000 BHP.

Given favorable conditions, the throughput could easily be about 120,000 tonnes annually without increasing the capacity of the tank farm. The throughput of this facility reached 110,000 tonnes in 1999. Any further increase of capacity is severely limited by lack of sufficient land on the waterfront.

Some of the other features of the operation are:

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- Water frontage — Depth: 8.2 m (27 feet). TPA provides use of 149.1m of dockwall for barge operation.
- Asphalt discharge rate — 420 tonnes per hour.
- Operation schedule — May to December: 24 hours - 5days a week. (Weekend working if required) January to February: Closed March to April: 16 hours - 5 days a week.

General Cargo

This cargo mainly comprises steel, project-related heavy lifts and miscellaneous cargoes; both in break-bulk and containerized form. The historical throughput of the cargo is tabulated in Table 6.

Table 6: Throughput of General Cargo by Year (1990-2004) (in tonnes by weight)

Year	Steel	Project Cargo	Other	Total (TPA)
1990	7,742	3,102	43,132	53,976
1991	5,002	0	40,671	45,673
1992	5,566	734	56,173	62,473
1993	3,055	0	15,956	19,011
1994	59,141	1,416	30,099	90,656
1995	13,108	7,125	34,591	54,824
1996	13,712	4,235	14,339	32,286
1997	74,333	2,559	10,475	87,367
1998	157,534	453	20,977	178,964
1999	45,421	0	65,142	110,563
2000	227,188	2,259	75,263	304,710
2001	23,380	1,045	63,771	88,196
2002	232,437	2,904	9,379	244,720
2003	27,451	429*	0	27,451
2004	100,615	2,073*	0	100,615
Average	**66,379**	**1,889**	**31,998**	**100,266**

Notes: * The Project Cargo figures for 2003 and 2004 appear to be included somewhere else, possibly with the Intermodal, as this cargo is not reflected in the Totals.

General Cargo, except Project Cargo, is handled at the TPA's Terminals 51 and 52. This facility, which is spread over an area of some 20.34 ha, is well equipped to handle every type of general cargo including break-bulk, containerized and roll-on-roll-off (ro-ro). Project Cargo is handled at the Cousins Quay by TPA's heavy lift Atlas Crane with 270 tonnes capacity. Terminals 51 and 52 have 20,571 sq. m. of indoor storage area and 103,406 sq. m. of outdoor storage area with electrical plugs for reefers. The 8.2 metres deep, 813 metre long berthing space provides for the maximum St. Lawrence shipping draught of 8.0 metres.

An average of approximately 100,000 tonnes of General Cargo has been handled at the TPA's terminals from 1990 through 2004. This cargo includes steel, heavy lift and miscellaneous products as follows:

Steel: Steel is the main general cargo handled at the Port. On average the Port has handled about 66,000 tonnes annually over the 15 years since 1990. This cargo, however, exhibits extreme shifts. Over the last 15 years it has varied from a minimum of approximately 3,000 tonnes in 1993 to a maximum of approximately 232,000 tonnes in 2002. The steel cargo was particularly depressed during the 1990s due to competition from other ports, particularly the Port of Hamilton. There appears to be some revival of this cargo through the Port including small amounts of containerized steel. However, a comparatively larger amount of steel in containers is handled in the Intermodal yard as described below. The rebound of steel cargo through the Port appears to be due to the recovering economy, the lifting of the US steel tariff and the China factor.

Project Cargo: This cargo, mostly outbound, comprises heavy equipment and machinery such as railway locomotives, transformers and industrial boilers. It is being handled at the Cousins Quay where the TPA has the heavy lift Atlas Crane. The dock is served by on-dock rail. Project Cargo faces an uncertain future. The Port of Toronto faces competition with the East Coast and the St. Lawrence ports for this type of cargo. These other ports have frequent liner services that do not involve additional trans-shipment and they have a voyage time advantage. Depending on

the decision regarding the future alternative development of Cousins Quay, it would not be surprising if this cargo shifted to the other competing ports.

Miscellaneous: This cargo comprises such diverse commodities as chipboard, rum, chemicals, tallow, vegetable oil, beans, buses, chassis, alfalfa, twine and newsprint. Most cement producers have more cement clinker grinding capacity than actual clinker production, as a result some clinker has been imported through Terminals 51 and 52 to supplement cement plant production capacity. The quantities and type of commodity under the miscellaneous category varies considerably from year to year. It has been as high as 75,000 tonnes in 2000 and as low as almost nothing in 2003 and 2004.

In the summer of 2003, the Port entered into an agreement with a subsidiary of Logistec Corporation to manage its marine terminals and related cargo-handling operations. They are managing all cargo handling from dock to warehouse to truck and are also providing services along with Empire Stevedoring.

Intermodal & Warehousing

Taking advantage of its unique central location with no inter-port competition from any of its neighboring ports, the Port of Toronto has built an effective business based on land side operations. This service is basically related to stuffing/destuffing, and consolidation/deconsolidation of container cargo combined with warehousing services for lines serving the Toronto market through East Coast and St. Lawrence ports.

This cargo is handled at Terminals 51 and 52 that have extensive covered and open storage areas, container handling equipment, and electric plugs for reefers. The container distribution center has heated storage, an inside rail loading dock, inside truck docks, and a number of container bays. The entire yard is paved, fenced, custom bonded and has 24 hour security. It also has a large workshop for maintaining/repairing the equipment.

Although this operation was only started in 1993, it has made dramatic progress. From a throughput of 151,000 tonnes in 1993, it reached 611,000 tonnes in 2004, a compound growth rate of 13.55% per annum.

Potential Cargo

In addition to the above cargo that is growing steadily, there appears to be a potential for capturing some additional cargo, including the following:

- Short Sea containerized cargo
- Ro-Ro service
- Foreign export of waste products for recycling
- Clinker
- Miscellaneous (non-cargo generating facilities)

Short-Sea Containerized Cargo

With increasingly congested highways, the pressure for marine transportation, especially for bulk, non-time-sensitive cargoes, is expected to continue to grow. From the perspective of the environment and cost comparison, the advantages of moving products by ship rather than by truck are well known. It is anticipated that more and more waterborne cargo will be attracted to the Port of Toronto in the future. One such example is the European initiative to relieve road congestion on major highways, nicknamed “Motorways of the Sea”. This initiative has recognized the importance of short-sea shipping. The initiative was first introduced following the Mont Blanc accident in 1999 that accentuated the problem of road congestion. It was further highlighted in the 2001 White Paper on European Transport Policy for 2001: “Time to decide developing Motorways of the Sea”.

If the concept of short sea services is introduced on the St. Lawrence Seaway, the Port of Toronto will likely be the first Port on Lake Ontario to be benefited because of its locational advantage in relation to the GTA region.

Roll-On-Roll-Off (Ro-Ro) Service

There is also the possibility of introducing Ro-Ro service to Oswego for onward feeder service to New York City, thus saving 400 kilometres of land transported cargo. New York City could then be a spring-board for transporting the Port of Toronto's cargo directly to and from the Caribbean and South America.

Waste Products

Fuelled by soaring oil prices, growing markets and government policies the demand for waste products is growing day by day all over the world. Huge quantities are shipped from North America and Europe to be processed in China, India, Vietnam and Thailand. Prices are reaching record highs.

China with its economy growing by leaps and bounds has a ravenous appetite for all kinds of resources. Every day, ships loaded with bales of plastic leave North American and European ports. The transportation cost is inexpensive. China exports huge quantities of manufactured goods and the vessels have plenty of space for cargo on the return voyage. Brokers are pleading for shipments. One-third of the US supply of waste products goes to China.

This is good news for Toronto in general and the Port of Toronto in particular. The City, desperate to find alternatives to trucking its garbage to Michigan, and committed to diverting 60 percent of wastes from landfill by 2010, is pushing to expand all forms of recycling. Toronto collects nearly 200,000 tonnes of blue and grey box waste i.e. paper, cardboard, aluminum, steel cans, glass and plastic. The City delivers this waste to the factories, half of which goes to Metro Waste Paper Inc, and pays $60 to $70 for each crushed and baled tonne is then destined for recycling rather than land fill.

"Chinese demand is continuing to grow. We get calls every day" says Dave Smith, at Canadian Plastic Recycling Inc. in Sarnia. His company buys plastics from Ontario municipalities, including Toronto, and converts them into flakes for sale to manufacturers, mainly in the U.S. (Source: Peter Gorrie: Feature Writer, Toronto Star Tuesday May 21, 2005).

It is worth investigating the possibility of exporting crushed and baled waste products through the Port of Toronto, especially to China.

Clinker

Most cement producers have more cement clinker grinding capacity than actual clinker production. As stated earlier, some clinker has been imported through Terminals 51/52 to supplement cement plant production capacity. It is worth further investigation to see if the margin between grinding capacity and clinker capacity could be met through the Port of Toronto.

Miscellaneous

In addition to the above cargo prospects, there is also the possibility of providing facilities that may not generate cargo but will be directly or indirectly a marine-related industrial use. These include but are not limited to winter lay-up and repair/ship yard facilities. As stated earlier, Redpath, Essroc and Lafarge have already taken initiative in using Lakers as floating storage for meeting some of their winter requirements.

Ship Traffic

On average, 214 commercial ship arrivals with an average load of 9,516 tonnes per ship have occurred annually over the period from 1990 to 2004. While the total number of commercial ship arrivals is more or less steady, the average load carried by them is increasing steadily over the years. In addition there has

been an average of 48 non-revenue producing ship arrivals annually such as the Canadian Coast Guard vessels, oilers, temporary winter berths etc. The year by year shipping statistics are provided in Tables 7 and 8.

Table 7: Port of Toronto Commercial Ship Traffic

Year	Ship arrivals	Total Throughput (Marine)	Average ship load
1990	293	1,767,342	6,032
1991	300	1,285,098	4,284
1992	131	1,320,988	15,916
1993	171	1,289,927	13,870
1994	187	1,360,112	8,948
1995	222	1,333,505	7,556
1996	201	1,348,527	9,702
1997	250	1,519,826	8,836
1998	238	1,568,331	8,211
1999	220	1,512,327	9,222
2000	242	1,462,046	7,497
2001	159	1,713,037	11,979
2002	182	1,397,523	9,772
2003	193	1,800,497	10,529
2004	219	1,922039	10,389
Average	**213.87**	**1,506,741.67**	**9,516.2**

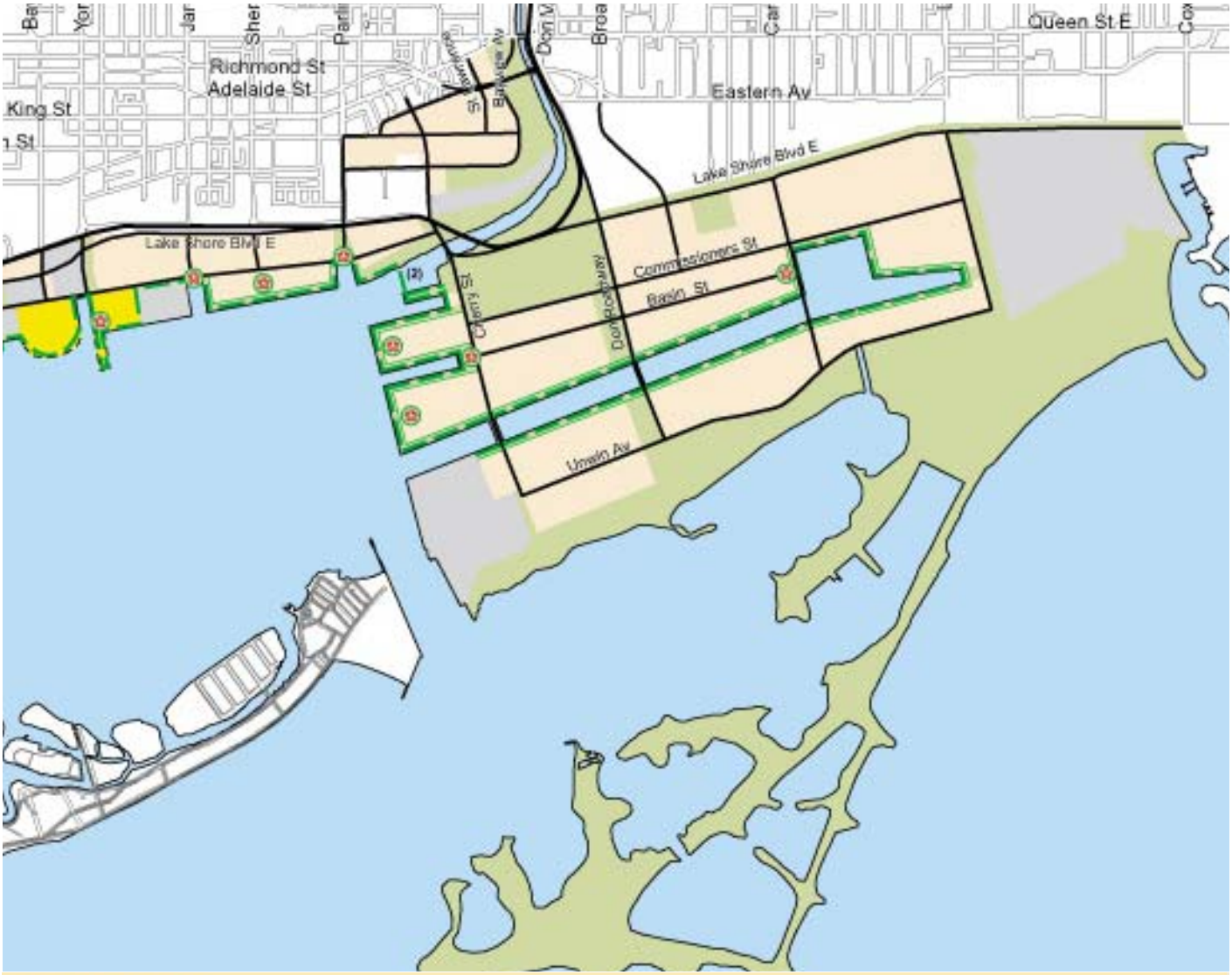
The totals in Table 7 do not include non-revenue ships, those arrivals are presented in Table 8 below. There has been an average of 48 vessels per year over the last 15 years.

Table 8: Port of Toronto Non-Commercial Ship Traffic

Year	Non-revenue ships
1990	47
1991	40
1992	48
1993	78
1994	35
1995	72
1996	62
1997	78
1998	47
1999	56
2000	47
2001	16
2002	39
2003	22
2004	39
Average	**48.4**

Figure 1

CENTRAL WATERFRONT SECONDARY PLAN - LAND USE PLAN



MAP INDEX

- PARKS AND OPEN SPACE AREAS (1) (3)
- REGENERATION AREAS (3)
- EXISTING USE AREAS (3)
- FOOT OF YONGE SPECIAL STUDY AREA
- PUBLIC PROMENADE (DOCKWALL / WATER'S EDGE)
- INNER HARBOUR SPECIAL PLACES

Source: City of Toronto

Figure 2

CONCRETE CAMPUS
CONSOLIDATION OF READY-MIX CONCRETE PLANTS

595 Commissioners Street & 600 Unwin Avenue

Source: Toronto Zoning Urban Development Services, File # 03 199921

TORONTO WATERFRONT
REVITALIZATION CORPORATION

PART 3

Dockwall Condition Assessment

PART 3: DOCKWALL CONDITION ASSESSMENT

The types and conditions of existing shoreline and shore structures were reviewed. The review was based primarily on information obtained from past studies of conditions of structures within the Toronto Harbour. Some of the inner harbour dock walls and shores were reviewed directly and a "float by" review of the entire inner harbour shore was undertaken on May 25, 2005. A photographic record of the conditions was obtained and covers much of the inner harbour walls. The shoreline outside of the inner harbour is described using our knowledge of conditions obtained during past work along the Toronto waterfront.

Toronto Inner Harbour

East Part of Harbour

The main sources of information for the Inner Harbour area are the reports Dockwall Condition Survey, Toronto Harbour (SHAL Consulting Engineers Inc., 1996), Toronto East Harbour Dockwall Conditions Inspection (SHAL Consulting Engineers Limited, 2004) and Harbour Dockwall Survey, Western Gap to York St. Slip (W.D/ Wilkins & Assoc., 1993). These reports include several volumes and appendices.

The majority of dockwall structures within the east inner harbour were constructed in the early 1900s. Some structures were completed in the mid 1900s and these are generally located along the north shore of the harbour east of Redpath. There are three types of structures found in the area. These include timber cribs, Wakefield timber sheet piling and steel sheet piling. Details of the various types of structures are provided in the reference reports and the location of each type of dock structure is provided on Map 4 found at the end of this report. Map 4 is a reproduction of Drawing no. 2 from the Dockwall Condition Report (SHAL 1996). A brief summary of each type of structure is provided below.

The timber crib structures consist of a timber crib filled with stone ballast up to about the low water level. Above the timber crib is a concrete cap consisting of a precast segment and a cast in place segment. The details of the concrete caps vary. It may be a relatively narrow cap at the water's edge or it may extend further back over the crib and cover most or all of the crib structure.

The timber pile walls are similar to the timber cribs in that the timber portion of the structure extends to about the low water level. The structures consist of interlocked timber sheet piles tied off to an anchor system. The piling is backed with closely spaced round timber piles that extend several meters back. These form the support for a concrete cap that is in appearance similar to that used in the cribs. The above water appearances of the timber pile structure and timber crib are the same.

The steel sheet pile walls are similar to the timber piles walls in that they consist of sheet piles tied off to an anchor with the upper deck of the shore structure supported on closely placed round piles. The steel sheet piles were extended above water at the time of construction and a concrete cap was cast directly over the steel sheet pile and supporting round piles.

The 1996 Dockwall Condition Report covers the east part of the harbour, starting at about Church Street and proceeding east into the Keating Channel, around the EssRoc dock, Cousins and Polson Quays and into the Ship Channel. Work undertaken during that project included the review of previous underwater inspections completed by CanDive in 1990/91, a new underwater inspections, a detailed above water survey and detailed documentation. The report notes that the dock walls are generally in good conditions with some exceptions. These exceptions include three areas: one in the Keating channel, one along the north side of Polson Quay and one at the southwest corner of the Turning Basin and Ship Channel. These areas show signs of vertical misalignment, generally due to the failure of one or more anchor rods. Four areas were identified for further investigation, including the same Keating Channel location, the north-west corner of Polson Quay, dock 412 on the north side of the Ship Channel and dock 435 in the Turning Basin. The follow up report by SHAL indicates that a number of these repairs have been completed. However, there is no indication of any work on the north side of the Keating Channel. The letter of transmittal of the 1996 report indicates that this dockwall is outside of TEDCO's jurisdiction.

Although the dock walls are described as generally in good condition, this description refers to the structural integrity as a whole and is in reference to their present use. There are numerous references in the report to damaged copings, spalling of concrete and damaged fenders. This damage does not adversely affect the present use of the dock walls and does not present a safety concern.

The 2004 SHAL report included visual observations of the top and front face of the docks walls. No underwater review or position surveys were completed. The emphases were on identifying obvious deterioration since the 1996 review, safety hazards on the front face and top of the wall, subsidence in the backshore and the status of safety stations. The same areas were reviewed as in 1996.

The report indicates that a number of repairs were undertaken between 1996 and 2004 as a result of recommendations made. The repairs included a new SSP wall along part of the south side of Keating channel, repairs to the coping wall on Essroc dock, repairs of anchor rods and anchors on the north side of Polson Quay and repairs to anchor rods and blocks at the southeast corner at the Ship Channel and Turning Basin. With one exception, this makes all dock walls structurally sound. The exception is the north part of the cascade property on the west side of the Turning Basin. The report notes that an agreement has been reached with the user not to apply horizontal forces or vertical surcharge to the dock wall in its present condition. The report also describes that the coping wall is in need of repairs throughout the harbour. Some areas are more deteriorated than other, with some severely deteriorated. However, the existing conditions generally accommodate the present uses. For the most part repairs can be delayed until justified by a change in use or by further deterioration. The same statement can be made with respect to the existing bollards.

West Part of Harbour

The conditions in the west part of the Inner Harbour were reviewed in 1993 and are described in a report titled Harbourfront Dockwall Survey, Western Gap to York St. Slip (W.D. Wilkins & Assoc., 1993). The work described in the report included an underwater and above water review of the dock wall and documentation of the original construction. As in the eastern part of the harbour, the original dock walls were constructed in the early 1900s. The only new construction in this area includes the Spadina Quay Marina completed in the 1980s.

The original dock wall construction consists of timber cribs with a concrete coping. Various types of concrete coping and crib widths were used and the locations of each type are documented in the report. The newly constructed Spadina Quay Marina Basin consists of steel and concrete cribs with rip rap placed along the exterior toe of the structure. We understand that the rip rap was placed after the initial construction to prevent the possibility of the accidental impact of a large vessel directly against the new wall which might cause flooding of the underground parking lot developed as part of the marina project.

The report indicates that the timber cribs are structurally sound and are capable of providing service. A regular inspection program should be implemented, considering their age. Only one area of undermined foundation was found. This was at the south east corner of the Peter Street slips and was caused by past dredging practices. However, the condition appears to be stable.

The concrete coping is deteriorating and considered to be in poor condition in some parts of the west harbour. However, the report indicates that repair work can be delayed until specific plans for the waterfront promenade are prepared. The improvement can be made as part of and to support this future development.

Central Part of Harbour

The reviewed reports do not include the area extending from the east side of the York Street slips to the dock wall at the southerly projection of Church Street (west of Redpath). A portion of this dock wall is presently being upgraded to expand the width of the promenade. It is assumed that improvement to this part of the dock will include any required restoration. Given the consistency of the findings of the two reports reviewed and the above water conditions observed during our field reviews, there is no reason to

believe that the overall structural integrity of the remaining dock wall in this area is any different than those described for the remainder of the harbour.

Shores Outside the Inner Harbour

The shorelines outside of the Toronto Inner Harbour vary considerably. A brief description is provided first proceeding from the Inner harbour west to Humber Bay Park and then east to Bluffers Park. The same level of detailed information regarding the conditions of the structures was not available for most of these shores. The descriptions are, for the most part, based on casual above water observations.

The shoreline west of the Inner Harbour has been historically dominated by a detached timber breakwater. More recent major modification of the shore includes Ontario Place. Another major modification is underway with the construction of the Western Beaches Watercourse Facility which includes the construction of an approximately 600 metres long armour stone breakwater with the removal of about the same length of the existing timber crib breakwater.

The existing timber crib breakwaters extend from just west of the western gap to the Humber River. Within Ontario Place, these structures were incorporated into the shore structures of the development, buried or removed. The exact construction dates of the entire breakwater were not researched, but information available on drawings of the structures suggest that these were built in the early 1900s. They consist of timber cribbing that extends to just below low water, topped with a concrete cap. The concrete cap extends to just above the high water level. Some sections of the breakwater have been repaired over the years. Other sections are in need of repair while some sections are in relatively good conditions underwater. The condition of the concrete cap has deteriorated over the years. The breakwater provides partial protection for the shoreline and also provides partly sheltered water for various boating activities. The level of protection and sheltering offered depends on the water level. Only minimal to moderate sheltering is provided during periods of high water levels.

The shoreline structures within Ontario Place vary considerably. No detailed review or inventory was undertaken. The structures included vertical walls, mostly sheet pile walls, armour stone or rip rap revetments and old ship hulls used as an entrance breakwater for the Ontario Place Marina.

Directly west of the Humber river and leading up to the west side of the Humber Bay Park the shoreline includes a series of armour stone headlands and cobble beaches with rip rap and armour stone revetments. Revetments are sloping stones structures designed to withstand wave actions. The shore treatments are not designed with boating activities as a priority use.

The shoreline east of the Inner Harbour and including the exterior shore of the Toronto Islands, the Outer Harbour and Tommy Thompson Park, includes numerous types of shorelines and coastal conditions.

The exterior shores of the Toronto Islands consist mostly of sand beaches. With relatively recent changes in the sediment supply caused by the construction of the Leslie Street Spit, the exterior shoreline of the islands is undergoing changes. These changes include notable erosion in some areas, namely in the area of Gibraltar point. Seawalls have been constructed in the vicinity of the Eastern channel.

The outer harbour shores include the Cherry Beach area, the Outer Harbour Marina and the inner shores of Tommy Thompson Park. These shores include sandy beaches, various natural and man-made gently sloping shores, seawalls and revetments associated with the marina. The outer shore of Tommy Thompson Park is made up of a series of rubble headlands and rubble beaches. This is a completely man-made shore, recently constructed and undergoing profile adjustments.

The shoreline fronting the main treatment plant and the Coatsworth Cut is a protected shore. Rubble, armour stone and rip rap revetments and sheet pile walls dominate this part of the shore. Ashbridges Bay is a man-made park with shoreline consisting of a series of armour stone protected headlands with gravel beaches between the headlands. The Eastern Beaches extend from Ashbridges Park to the R.C. Harris Filtration Plant. These beaches are retained by the large Ashbridges Park headland or by a series

of recently completed smaller shore parallel and detached headlands. The shoreline east of the water treatment plant to Bluffers park consists of a high bluff with various types of shore stabilization treatments. Some sections of the shoreline are unprotected. The shore treatments include groynes and armour stone revetments.

Discussion of Repairs and Budget Costs

The information reviewed strongly indicates that the structural integrity of the existing dock walls is, in most areas, acceptable. The only area with identified potential structural problems is within the Turning Basin near the north east end of the Ship Channel. An arrangement has been made with the present user to minimize line loads on the dock wall, thus ensuring its stability for the time being. The reports also indicate that of the three types of dock walls constructed in the past (crib, timber steel piles with concrete coping and steel sheet pile with concrete coping), the timber sheet pile walls tend to show an overall greater degree of deterioration than the other types.

The concrete cap or coping wall is in various stages of deterioration in all areas of the harbour, except those where recent repairs have been undertaken. The extent of these recent repairs is relatively small. Relocation of various marine uses within the harbour may require that improvements be implemented along the water front to accommodate a new use. As part of these site improvements, refurbishing the dockwall may need to be considered. The need and the type of refurbishing will depend on the present condition of the dock wall in that specific area and the proposed new uses. In most cases, refurbishing will include some improvements to the existing coping wall (concrete cap). The main purpose of the repair would be to restore the integrity of the cap and provide a safe shore access for the public and the new user(s). The actual details of the restoration will depend on the designated use and may include, in addition to the concrete refurbishing, some minor adjustment in the height of the dock wall.

There are two basic types of coping walls along the harbour. There are those that have a concrete cap that spans the entire width of the crib and has a relatively narrow supporting wall and those that have a large massive concrete block along the front edge. The repairs for these different types are likely to require different approaches. We expect that the cap in areas where the narrow supporting wall exists, such as on the north side of the Western Gap, will require complete removal and replacement. The wall is likely too “thin” to allow sufficient deteriorated concrete to be removed without disturbing the integrity of the entire cap. The massive block wall can, on the other hand, be repaired by removing deteriorated concrete on the exterior while retaining much of the existing block in place.

The two different types of repairs have different construction costs associated with them. Although the actual cost will differ from location to locations based on the degree of deterioration, we suggest construction budgets of $5,500/m for complete replacement of the concrete cap on a timber crib and a construction budget of $2,600/m for re-facing a massive concrete block coping. These budget figures include a 10% construction contingency only. No design fees are included, as these will depend greatly on the extent of the repair area under considerations. The unit cost of design will be reduced with an increasing length of repair and is likely to vary between 10% and 25% of the construction cost.

Some of the existing timber sheet pile walls could also benefit from being upgraded to steel walls prior to the repairs of the coping walls. The need for steel sheet piling will depend on the proposed use of the wall and the condition of the timber sheets. However, a structure subject to any heavy to moderately heavy marine use is likely to benefit from total refurbishing. This would reduce maintenance costs in the backshore, such as losses of backfill materials and sink holes. These occurrences are likely not tolerable in a public use area. The restoration work should include provision of new steel sheet piles on the face of the dock wall, restoration of the concrete cap and upgrading of the anchor system. A typical cost of this type of repair and improvement is estimated to be $15,000/metre to $20,000, depending on local conditions.