

An aerial, high-contrast black and white photograph of the Port of Yarmouth. The image shows a large body of water in the foreground, a long pier extending into it with a large ship docked, and a dense urban area on the right side of the frame. The background shows a wide river or bay leading to the ocean. The overall image has a grainy, high-contrast appearance.

**PORT OF YARMOUTH**

**YARMOUTH PORT MASTER PLAN**

**DRAFT**

**September 11, 2008**

**MACDONNELL**

## Executive Summary

The Port of Yarmouth is a significant asset in the transportation infrastructure of South West Nova Scotia and an international gateway for Canada and the Province of Nova Scotia. The port infrastructure, together with the airport and the ground transportation system, are integral to the economic sustainability of the region. Several events over the past 10 years have influenced the current and likely future transportation requirements for the region and have reshaped the area as a service center and an emerging, potentially significant transportation hub for southwest Nova Scotia.

The downtown area of Yarmouth, and the waterfront and ferry landing areas in particular, increasingly demonstrate the potential for the area to become a more significant tourism destination and center of commerce. The ferry link to the United States provides the *only* international marine border crossing for road traffic that Nova Scotia shares with another country. The geographic positioning of the port also makes Yarmouth a critical and unique gateway for tourism and cargo into the United States.

The Port of Yarmouth has undertaken this comprehensive master planning exercise to ensure that the port assets are prepared to maximize the port's role in the future development of a regional transportation system. The master plan is also intended to strike a balance between maintaining the working waterfront and creating new development potential for mixed use facilities.

The development and implementation of the port master plan will allow the Port of Yarmouth to prepare for a potentially expanded role as a critical connection for international trade and tourism. The master plan looks at the current use of the port's facilities and provides development alternatives for future investment and recommendations for considerations within the port business plan that support that potential.

The master plan also lays the foundation for the reorientation of the waterfront to optimize port assets and take advantage of natural synergies among waterfront businesses, both maritime and non-maritime related.

Finally, the master plan highlights some critical near and long term infrastructure improvements that are recommended to enhance the overall effectiveness of the port area and set the stage for further economic growth. These elements build a strategy to adapt the port to future needs within the pending Atlantic Gateway Strategy. Yarmouth is a critical component of Canada's port infrastructure and transportation system, and is vital to both the nation and the province.

The existing conditions, opportunities, and strategic issues have been consolidated into a physical, management, and economic plan that is operationalized by implementing a series of specific actions. The plan is based on adopting a gateway concept of Yarmouth as an international border crossing town, a central node in an inter-modal transportation corridor, and a recognized maritime tourism destination location with outstanding waterfront living opportunities.

The physical plan is consists of a reorientation of waterfront uses and preparation of the waterfront infrastructure for development based on the strategic directions. Included in

this are rehabilitation of the existing berths and creation of a new Global Logistics and Free Trade Zone on the waterfront and a Bulk Materials Handling Facility at Bunker Island. It also includes creation of an iconic waterfront tourism destination consisting of entertainment, research and education features. The physical plan also anticipates significant residential and public uses, particularly in the north end of the waterfront

The management plan includes consolidation of as much of the port planning and facility management with the Yarmouth Port Authority as possible. This may involve expansion of the organization and collapsing other organizations into it. To the extent possible, all transportation modes should be planned jointly. It also includes the port taking an active role in governance matters in the Gulf of Maine in partnership with the province and taking an active role in trans-border organizations.

The marketing plan includes developing solid data on cargo shipments between the heartland of Nova Scotia, including the Newfoundland Ferry traffic, and the heartland of New England and targeting specific commodity producers and transporters as partners. It also includes presenting a concise and credible picture of Yarmouth from a marine transportation and related services perspective. It is heavily weighted upon partnering with select enterprises and institutions that the Port of Yarmouth can add value to. This includes industry, academia and governments.

The financial plan calls for capital investments of \$20-25 million which will result in the port operating at a comfortable surplus in several years time. The specific action plans are as follows.

#### **Year One Action Items**

1. Adopt the Yarmouth Port master Plan
2. Apply for federal funding through the Gateway enhancement and critical infrastructure programs for infrastructure improvements
3. Reorient the waterfront's marine terminals
4. Prepare the Global Logistics and Free Trade Zone Detailed Concept Plan
5. Conduct a supply chain transportation research study
6. Prepare Transport Partners Package
7. Institute the comprehensive marketing plan
8. Develop a University Marine Research Strategy
9. Institute a new port tariff and terminal rules/regulations
10. Enhance marine terminal security
11. Commence an improvement plan for the ferry terminal
12. Commence process for assuming governance of the ferry terminal
13. Commence process of purchasing Bunker's Island
14. Conduct an environmental assessment and develop master plan for Bunker's Island
15. Commence construction design, engineering and permitting as funded

#### **Year One to Five Action Items**

1. Complete streetscape and public waterfront improvements as funded
2. Construct Global Logistics and Free Trade Zone
3. Target for initial stage of US Customs Pre-Clearance Facility

4. Complete design engineering and construction of a bulk storage and export facility on Bunker's Island
5. Create signature waterfront attraction

**5-10 Year Action Items**

1. Complete all construction as funded
2. Begin process for selected harbour area dredging

**5.4 10 + Year Action Items**

1. Expand the Global Logistics and Free Trade Zone footprint
2. Dredge harbour in selected areas

# Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>II</b>
<b>TABLE OF CONTENTS.....</b>	<b>V</b>
<b>LIST OF FIGURES.....</b>	<b>VII</b>
<b>1.0 OVERVIEW AND INTRODUCTION .....</b>	<b>1</b>
<b>1.1 BACKGROUND .....</b>	<b>1</b>
<b>1.2 HISTORY .....</b>	<b>2</b>
<b>1.3 KEY TASKS AND PROCESS .....</b>	<b>3</b>
<b>1.4 APPROACH AND WORK PLAN.....</b>	<b>3</b>
<b>1.5 GOALS OF THE PLANNING PROCESS.....</b>	<b>4</b>
<b>1.6 STEPS IN THE PLANNING PROCESS .....</b>	<b>4</b>
<b>1.7 REVIEW OF EXISTING RELATED STUDIES .....</b>	<b>4</b>
<b>1.8 INTERVIEWS AND MEETINGS .....</b>	<b>5</b>
<b>2.0 ASSETS .....</b>	<b>6</b>
<b>2.1 THE PORT OF YARMOUTH .....</b>	<b>6</b>
<b>2.2 THE PORT OF YARMOUTH MARINE FACILITIES .....</b>	<b>8</b>
<i>2.2.1 Yarmouth Marginal Wharf.....</i>	<i>9</i>
<b>2.2.2 YARMOUTH PUBLIC WHARF .....</b>	<b>10</b>
<i>2.2.3 Lobster Rock Marine Terminal.....</i>	<i>10</i>
<i>2.2.4 New Mega Yacht Berth and Marina.....</i>	<i>11</i>
<i>2.2.5 Waterfront Properties .....</i>	<i>11</i>
<i>2.2.6 Bunker's Island.....</i>	<i>12</i>
<i>2.2.7 Waterfront Zoning.....</i>	<i>12</i>
<i>2.2.8 Transportation Corridor .....</i>	<i>12</i>
<b>3.0 EXISTING CONDITIONS .....</b>	<b>14</b>
<b>3.1 GENERAL.....</b>	<b>14</b>
<b>3.2 CONDITION SURVEY OF FACILITIES, SHORE AND WATER DEPTH .....</b>	<b>14</b>
<b>3.3 MARINE INSPECTION AND MAINTENANCE PROGRAM.....</b>	<b>14</b>
<b>3.4 PORT UTILIZATION IN SELECTED MARKETS .....</b>	<b>14</b>
<i>3.4.1 Marine Passenger and Tourism Trade.....</i>	<i>15</i>
<i>3.4.2 Cargo .....</i>	<i>18</i>
<i>3.4.3 Fishing and Fish Processing.....</i>	<i>21</i>
<i>3.4.4. Offshore Oil and Gas .....</i>	<i>24</i>
<i>3.4.5. Engineering and Repair .....</i>	<i>24</i>
<i>3.4.6. Cold Storage and Warehousing .....</i>	<i>25</i>
<i>3.4.7. Bulk Commodity Exporting .....</i>	<i>25</i>
<b>3.5 ENVIRONMENTAL CONDITIONS.....</b>	<b>25</b>
<b>3.6 COMMUNITY ISSUES .....</b>	<b>26</b>
<b>3.7 FINANCIAL.....</b>	<b>27</b>
<b>4.0 STRATEGIC ISSUES .....</b>	<b>28</b>
<b>4.1 COMMUNITY DESIRES AND GOALS .....</b>	<b>30</b>
<b>4.2 BUILDING THE BORDER CROSSING .....</b>	<b>32</b>
<b>4.3 SHORT SEA SHIPPING .....</b>	<b>33</b>
<b>4.4 CARGO.....</b>	<b>34</b>
<b>4.5 MARINE BASED TOURISM .....</b>	<b>34</b>

4.5.1 <i>Signature Waterfront Research/Education/Entertainment Attraction</i> .....	35
<b>4.6 PUBLIC VENUES</b> .....	37
<b>4.7 HOUSING</b> .....	37
<b>4.8 SUGGESTED INFRASTRUCTURE IMPROVEMENTS</b> .....	38
4.8.1 <i>Yarmouth Marine Terminal</i> .....	39
4.8.2 <i>Lobster Rock Marine Terminal</i> .....	40
4.8.3 <i>Global Marine Logistics Park and Free Trade Zone</i> .....	41
4.8.4 <i>International Ferry Facility</i> .....	43
4.8.5 <i>Bulk Export Terminal</i> .....	44
4.8.6 <i>Harbour Dredging</i> .....	45
<b>4.9 PORT MARKETING</b> .....	45
4.9.1 <i>Marine Based Tourism</i> .....	46
4.9.2 <i>Cargo</i> .....	47
4.9.3 <i>Marine Industrial Activities</i> .....	47
4.9.4 <i>Fishery</i> .....	48
<b>4.10 GOVERNANCE</b> .....	48
<b>5.0 PORT DEVELOPMENT PLAN</b> .....	49
<b>5.1 YEAR ONE ACTION ITEMS</b> .....	49
<b>5.2 YEAR ONE TO FIVE ACTION ITEMS</b> .....	50
<b>5.3 5-10 YEAR ACTION ITEMS</b> .....	50
<b>5.4 10 + YEAR ACTION ITEMS</b> .....	50
<b>6.0 COST ESTIMATES</b> .....	51

## LIST OF FIGURES

Figure 1: Regional Position.....	1
Figure 2: Master Plan Area.....	2
Figure 3: Regional Transportation System.....	6
Figure 4: Harbour Channel & Navigation.....	7
Figure 5: Port Elements.....	8
Figure 6: Yarmouth Marginal Wharf Layout.....	9
Figure 7: Yarmouth Marine Terminal Layout.....	10
Figure 8: Lobster Rock Terminal Layout.....	10
Figure 9: Mega Yacht Berth.....	11
Figure 10: Regional Transportation Corridors.....	12
Figure 11: Port of Yarmouth Land Use.....	27
Figure 12: Border Corridor Strategy.....	33
Figure 13: Gulf of Maine Research Project.....	36
Figure 14: Infrastructure Improvements.....	38
Figure 15: Proposed Port Land Use.....	39
Figure 16: Bunker Island Terminal Concept.....	45

# 1.0 Overview and Introduction

## 1.1 Background

The Port of Yarmouth is a significant asset in the transportation infrastructure of South West Nova Scotia and an international gateway for Canada and the Province of Nova Scotia. The port infrastructure, together with the airport and the ground transportation system, are integral to the economic sustainability of the region. Several events over the past 10 years have influenced the current and likely future transportation requirements for the region and have reshaped the area as a service center and an emerging, potentially significant transportation hub for southwest Nova Scotia.

The downtown area of Yarmouth, and the waterfront and ferry landing areas in particular, increasingly demonstrate the potential for the area to become a more significant tourism destination and center of commerce. The ferry link to the United States provides the only international marine border crossing for road traffic that Nova Scotia shares with another country. The geographic positioning of the port also makes Yarmouth a critical and unique gateway for tourism and cargo into the United States. Figure 1 shows the position of Yarmouth in the north Atlantic region.

The Port of Yarmouth has undertaken this comprehensive master planning exercise to ensure that the port assets are prepared to maximize the port's role in the future development of a regional transportation system. The master plan is also intended to strike a balance between maintaining the working waterfront and creating new development potential for mixed use facilities. The planning area is shown on Figure 2 and covers areas owned by the Port of Yarmouth and other related sites.

The development and implementation of the port master plan will facilitate the Port of Yarmouth in preparing for a potentially expanded role as a critical connection for international trade and tourism. The master plan looks at the current use of the port's facilities and provides

development alternatives for future investment and recommendations for considerations within the port business plan that support that potential.

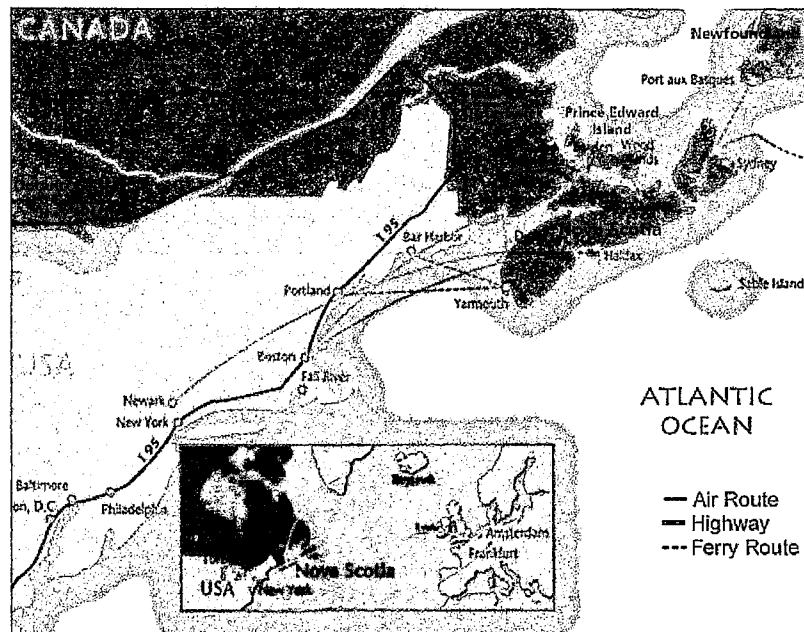


Figure 1: Regional Position

The master plan also lays the foundation for the reorientation of the waterfront to optimize port assets and take advantage of natural synergies among waterfront businesses, both maritime and non-maritime related.

Finally, the master plan highlights some critical near and long term infrastructure improvements that are recommended to enhance the overall effectiveness of the port area and set the stage for further economic growth. These elements build a strategy to adapt the port to future needs within the pending Atlantic Gateway Strategy. Yarmouth is a critical component of Canada's port infrastructure and transportation system, and is vital to both the nation and the province.

## 1.2 History

The Port of Yarmouth dates back to the earliest inhabitants of the area who settled around the harbour in the 1760s. An early dependence on fishing demonstrated the importance of the port to local residents. Over the next 100 years, the number of residents increased to over 1,000.

Industries included foundries, mills, lumbering, shipping and trade. In the late 1800s a building boom of public and private buildings, as well as, piers, wharves, and warehouses occurred. The shipping industry remained healthy through the early part of the last century. Steamship service connected the area to New England and its expanding rail services. The military occupied the area for a period but by the end of the Second World War, the port and surrounding area had declined.

In 1954, a new ferry service was instituted into Maine, which caused some of the infrastructure to be improved; this was joined by a second service in 1970. Additional infrastructure was added in the 1960s by the federal government. New piers replaced several older wharves, which had deteriorated significantly.

Through the 1995 National Marine Policy, the Government of Canada implemented the transfer of selected regional and local ports to local interests with the intent to modernize Canada's marine transportation system. In accordance with the

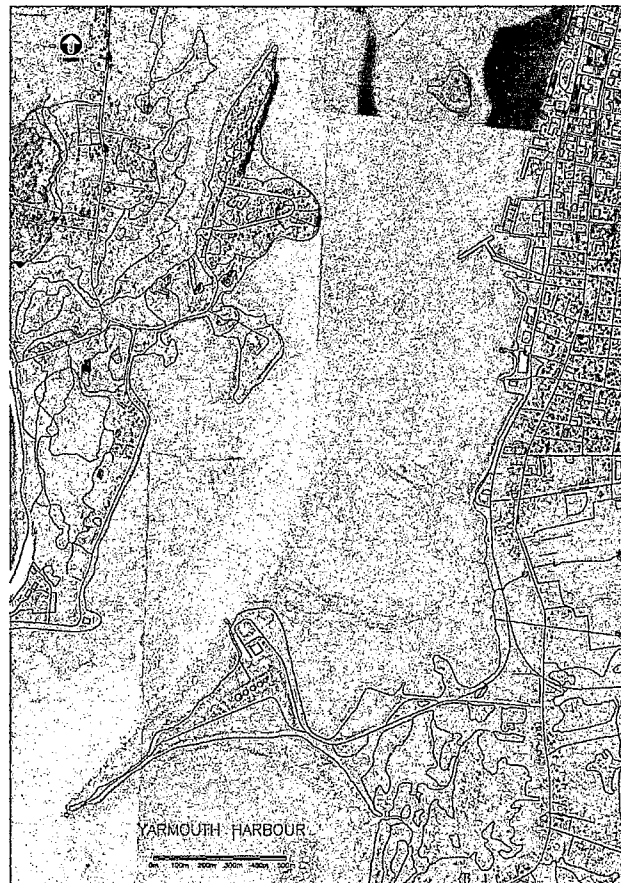


Figure 2: Master Plan Area

divestiture program, this involved the transfer of three specific marine assets within Yarmouth Harbour. These included the Yarmouth Government Pier, Marginal Wharf and Lobster Rock facilities, which had previously been under the administration of Transport Canada.

In 2001, the Yarmouth Area Industrial Commission, doing business as the Port of Yarmouth, became the new entity to administer these assets. The intent of the public port system is to support the safe and efficient movement of vessels and cargo and is integral to regional economic prosperity. Transferring regional and local ports to local interests' places decision-making responsibilities in the hands of those best able to gauge local requirements. This allows for a more effective and efficient port system with local accountability.

In accordance with this transfer, the new owners the Port of Yarmouth are to be compliant with a 10-year operational agreement, which includes periodic compliance audits conducted under the scrutiny of Transport Canada. By 2011, the operational agreement ends and the Port of Yarmouth will assume full responsibility for the assets.

### **1.3 Key Tasks and Process**

The completion of a number of key tasks was essential in the development of the port master plan. These identified tasks prepare a foundation upon which strategic changes can be brought about. The tasks involved:

- Review of current waterfront zoning and usage of selected waterfront properties around Yarmouth Harbour;
- Analyzing the advantages and limitations of Yarmouth Harbour reuse of port facilities as a:
  - Transportation corridor;
  - Feeder vessel service support;
  - Cruise ship destination; and
  - Short sea shipping route;
- Review of physical and operational data;
- Review of development strategies for the owner's existing three marine facilities;
- Proposing development strategies of other waterfront properties for long-term development potential;
- Reviewing the revenue and expenses over the past several years of operations for each of the marine facility assets administered by the Port of Yarmouth; and
- Revision of forecasts for the next five year period.

### **1.4 Approach and Work Plan**

The method of approach was to develop a work plan comprised of five major activities that define the progression of operations intended for completion of deliverables. All aspects of activities were reviewed as a means for process validation and for providing the basis for measuring project completion. The activities within the work plan included:

- TASK 1 – Project Orientation and Data Collection
- TASK 2 – Data Analysis and Research
- TASK 3 – Workshops to Assess Port Function and Options

- TASK 4 – Develop Future Growth Scenarios and Master Plan
- TASK 5 – Revise Business Plan and Submit Final Report

### **1.5 Goals of the Planning Process**

The essential goal of the planning process was to build an understanding of existing conditions and make recommendations related to the potential for expansion into new business areas based on infrastructure improvements and updated business processes. It also includes a focus on development to increase the municipal tax base. The team worked with political leaders, stakeholders and the public to shape a vision for future use and development of the facilities based on community aspirations. Also critical to the process was the identification of market conditions as well as realistic opportunities, taking into account the port's limitations. This inclusive process was designed to lead to the development of a master plan with strategic and timed steps for improving the port's facilities. The plan also takes into account adjacent properties and how the waterfront worked together as a unit. Collectively, the plan provides a comprehensive look at the industrial components of the port and how they can be improved and optimized to enhance Yarmouth's position as a national gateway.

### **1.6 Steps in the Planning Process**

The team began by looking at current businesses in the port area and reviewed their historic trends. Visionary meetings were held with the community and physical surveys were conducted of the port's facilities. These surveys were used to update information previously obtained in earlier studies done on facilities in the port. A review of related studies was also undertaken to determine what information was relative to Yarmouth and its potential for growth. Data was collected to predict future trends and identify potential new business opportunities, as well as look at what was needed to sustain existing businesses.

A number of individual interviews were held with business owners and community stakeholders to discuss issues that had emerged in the process. Alternatives were looked at to identify advantages and disadvantages of various concepts. It was determined early on that there was general consensus on what issues needed to be addressed and what improvements might benefit the port. Although the process was focused on port properties, the waterfront was not viewed in isolation, but holistically, to understand its capabilities.

### **1.7 Review of Existing Related Studies**

The team looked at numerous reports that outlined visions for Yarmouth and Nova Scotia, as well as other studies that that would have a direct or potential impact on the Port of Yarmouth. Among these reports were:

1. Yarmouth Waterfront Development Plan, Sperry Partners, 1995
2. Gloucester International Ferry Demand Study, Berger Associates, 1999
3. Nova Scotia Cruise/Ferry Viability Study, Peat Marwick Stevenson, 1990
4. Update Study-NS Cruise/Ferry Viability Study 1990, MRA, 1995
5. Analysis of the Potential for a Halifax-Boston Cruise Ferry, Massport, 1996

6. Capacity Analysis for Competing Conventional and High Speed Ferry Services, City of Portland, 2004
7. Ocean Gateway Master Planning Project, Woodard and Curran, 2001
8. Cargo and Passenger Study for the Port of Portland, State of Maine, 1998
9. Port of Boston Economic Development Plan, City of Boston & Massport, 1996
10. Cruise Industry Trends Report, Arrowstreet & Prime Interests, 1998
11. Ocean Cruise Industry Study, Mercer, 1995
12. Report on the Governor's Commission on Commonwealth Port Development, Commonwealth of Massachusetts, 1994
13. Port of Sydney Master Plan, TEC Inc., 2007
14. Port of Sydney Cruise Market Study, BEA, 2007
15. New England Cargo Report, Martin Associates, 2002
16. Condition Assessment of Marine Facilities, Vaughn Engineering, 2002
17. Digby-St. John Ferry Service Analysis, Opus International , 2007
18. Yarmouth Area Transportation Study, Atlantic Road and Management, 2008
19. Inspection and Maintenance Program - Port of Yarmouth - MacDonnell Group

## **1.8 Interviews and Meetings**

The team held a preliminary meeting with port personnel on April 7 and 8, 2008 and again on May 7 and 8, 2008 in Halifax. This was followed up by a series of public meetings with political leaders, staff, business and tourism professionals, the general public and targeted community members. Those meetings were scheduled as follows at the Rodd Grand Hotel (except where indicated):

- Meeting with Officials, Monday, June 9, 2008 1:00 pm to 4:00 pm
- Businesses (Chamber of Commerce & Tourism), Tuesday, June 10, 2008 9:00 am to 2:00 pm
- Public Meeting, Tuesday, June 10, 2008 7:00 pm to 9:00 pm
- Professional Staff (CAO's & Planners) Wednesday, June 11, 2008 9:00 am to 12:00 pm
- Hotel Operators & Inn Keepers, Wednesday, June 11, 2008 12:00 pm to 1:30 pm.

The team also met with the port staff, the Harbor Master, numerous marine waterfront businesses, several retail waterfront businesses, selected related port businesses and conducted a series of phone interviews during June, July and early August.

## 2.0 Assets

### 2.1 The Port of Yarmouth

The active history of the port and the community of Yarmouth can be traced back to 1761 when the first settlers arrived and began homesteading in the area. The community relied on the port for fishing activities and not until the 1800's was there substantive growth. Near the later part of the 19<sup>th</sup> century, larger vessels were making regular calls on the port and the fledging maritime industry began to grow. A large number of buildings including warehouses and factories were erected, along with piers and wharves. Waterfront industries began a decline in the 20<sup>th</sup> century, particularly in fishing. The economy shifted from mostly industry based to mostly tourism based beginning in the 1970s although waterborne passenger and cargo service had existed since the late 1800s. The port at that time was serviced by two passenger and vehicle services: one out of Bar Harbor, Maine and the other out of Portland, Maine.

In 1998, the conventional ferry operated by Marine Atlantic was replaced by a high speed ferry operated by Bay Ferries. At the end of the 2004 season, the longstanding ferry service from Portland, Maine to Yarmouth ended. That service had averaged 180 turnarounds per season on a conventional vessel. Passenger and vehicle volume had decreased since 2000, from 165,000 passengers in 2000 to less than 125,000 passengers in 2004. In 2006, the service was replaced by a high speed ferry service operated by Bay Ferries. The ferry completed approximately 70 turnarounds in 2007, carrying some 55,000 passengers. The same vessel is used to connect to Bar Harbor and Portland and splits the week during the season calling on both ports.

While the high speed ferry handles most vehicles, including motor coaches, it does not handle tractor trailers. Most over water connections to New England are made through Digby.

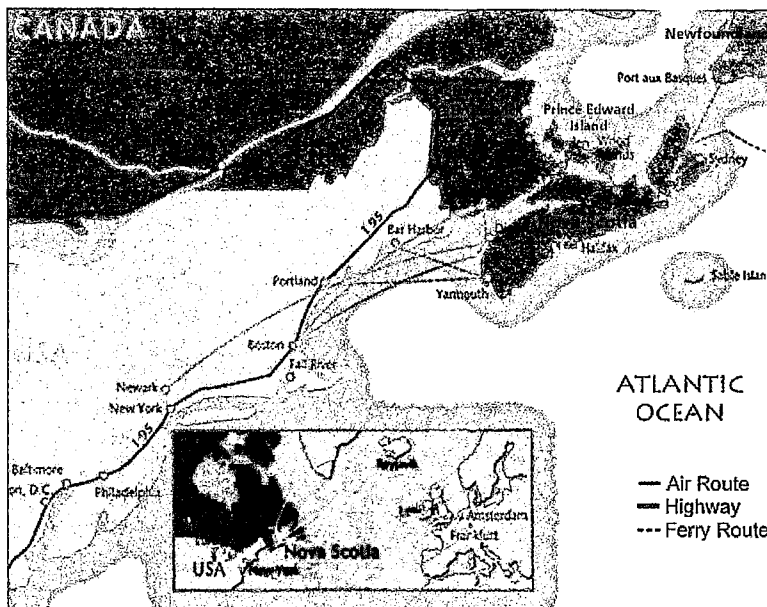


Figure 3: Regional Transportation System

The Port of Yarmouth is 185 Nautical Miles (NM) from Portland, Maine; 90 NM from Bar Harbor, Maine; 237 NM from Boston, Massachusetts; and 467 NM from New York, New York. It is the prominent port in South West Nova Scotia, based on throughput volume of all commodities including tourists. Over land through two major highway connections, it is 300 kilometers (190 miles) from Nova Scotia's largest city, Halifax, as shown on Figure 3.

The port is considered to be small geographically and in most cases, shallow. The harbour was last dredged in 1996. The semi-diurnal (two highs and two lows daily) tidal range averages between 4 and 4.5 meters. There are a number of tidal flats which are exposed during low tide throughout the port. The port has some icing but is generally open to navigation all year.



*2.7 nm to Old Public Wharf*

The distance from the harbour entrance is approximately ~~1.3~~ Nautical Miles. The main ship channel, shown on Figure 4, is approximately 2500 meters long, with a width of 180 meters at the harbor entrance narrowing to 100 meters past Bug Light off the principle wharves. There is a turning basin that measures 335 X 250 meters in the inner harbor. The size of the vessel that can call on the port is limited to about 8000-11,000 tonnes in weight and 150 meters in length.



Figure 4: Harbour Channel & Navigation

The port has a number of valuable infrastructure assets, shown on Figure 5, with an estimated replacement value of nearly \$25 million. These include:

- 3 port owned deep water facilities - this does not include ferry terminal
- 5 acres of supportive and integrated upland
- 1,300 linear feet of berthing (pier) space

- 7 acre federal facility with 10,000 square foot terminal and vehicle ramp
- Deep water access to protected piers
- Diverse mix of facility uses
- Potential infill areas
- Short access to deep water
- Abundance of shallow water berths

The width of the channel, water depth and berth dimensions limit the size of vessels that can call on the port in effect limiting the scope of deepwater marine activities. The port's essential advantages and disadvantages are outlined as follows:

#### Advantages

- Well protected harbour
- Short access to and from deep water
- Abundance of shallow draft berths
- Geographic proximity to fishing grounds
- Geographic proximity to offshore oil and gas fields

#### Disadvantages

- Narrow channel
- Channel depth and turning basin limits size of ships
- Segregated infrastructure (properties not inter-related)
- Poor intermodal connections
- Waterfront is auto dependant and has limited public access
- Very tidal & shallow to shoreline
- Aging infrastructure

## 2.2 The Port of Yarmouth Marine Facilities

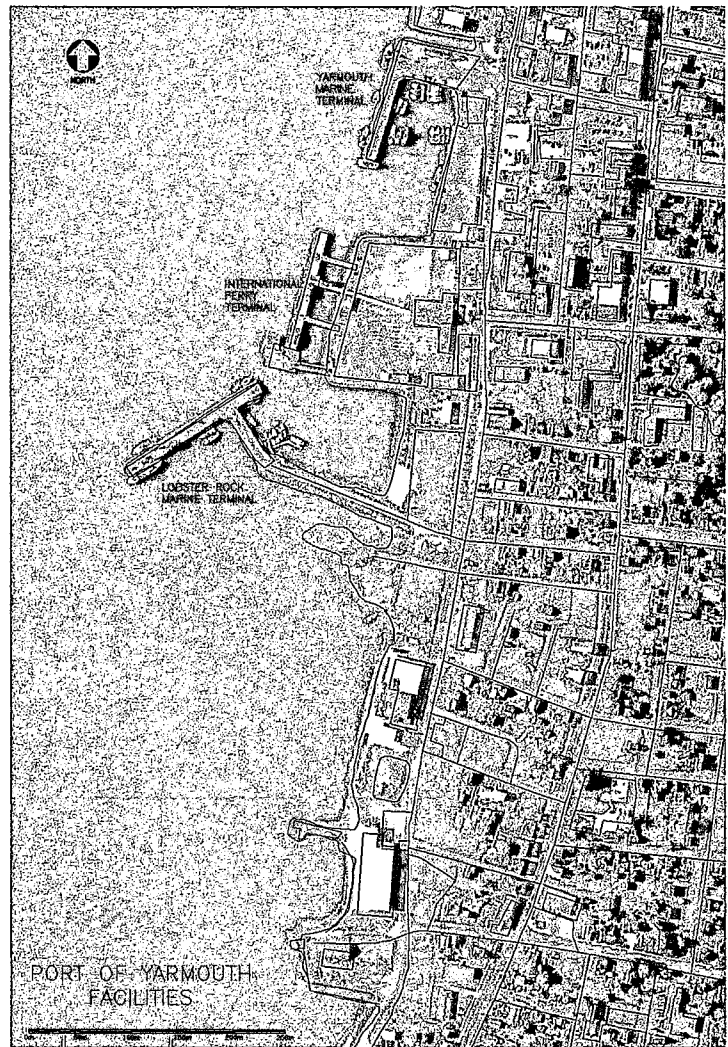


Figure 5: Port Elements

Three marine facilities transferred to the Port of Yarmouth from Transport Canada, Harbours and Ports Branch in 2001 under the divestiture program include the following:

- Yarmouth Marine Terminal (Old Public Wharf) (built in 1960)
- Yarmouth Marginal Wharf (built in 1966)
- Yarmouth Lobster Rock Marine Terminal (built in 1974)

A new mega-yacht berth was recently constructed for the Waterfront Development Commission by the Yarmouth Development Corporation. While not operated by the port, it is an important addition to the marine infrastructure. In addition to the above, the port of Yarmouth has entered into an agreement to manage two nearby facilities owned by the Yarmouth Waterfront Development Authority that provide general berthing and marina services to small craft. } ?

### 2.2.1 Yarmouth Marginal Wharf

Built in 1966, the Marginal Wharf is a classic quay with ~~steel bulkhead~~ *treated timber cribwork* shore retention, with approximately 2 acres of paved surface. It has direct access to Water Street. Water depth alongside is estimated to be between 1.2 meters and 1.9 meters below Mean Low Water, limiting its use to shallow draft vessels. The Yarmouth Public Wharf forms a protected basin for the wharf. *Not so* It is adjacent to but not connected with the federally owned ferry terminal. The facility has shore power available at 120 VAC, 60 Hz. The wharf is generally used for berthing smaller fishing vessels. Figure 6 shows a general arrangement.

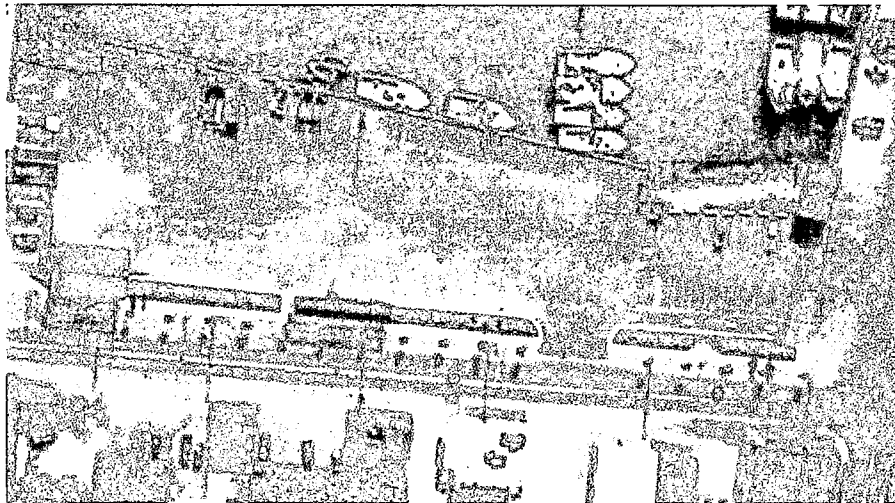


Figure 6: Yarmouth Marginal Wharf Layout

## 2.2.2 Yarmouth Public Wharf

Built in 1960, the Yarmouth Public Wharf or (Old Government Wharf) has an “L” shaped configuration and adjoins the Marginal Wharf facility creating a single controlled area with an enclosed shallow water basin. Figure 7 shows a general arrangement.

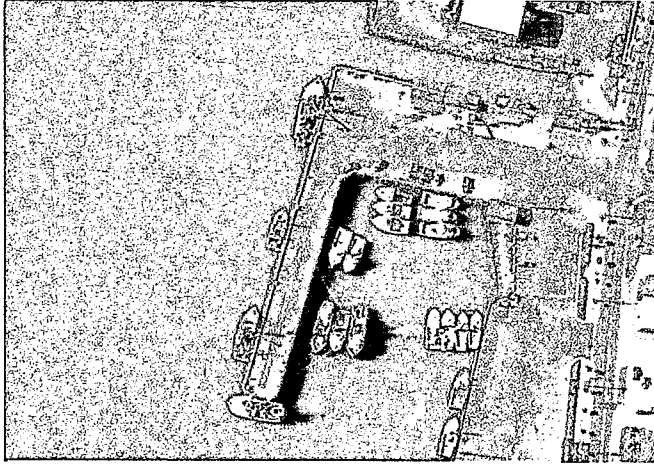


Figure 7: Yarmouth Marine Terminal Layout

The available outside berth measures 121.0 meters with an overall berth depth ranging from 5.1 meters to 5.8 meters at Mean Low Water. The pier has an apron width of approximately 8 meters. The berth is equipped with power (110 VAC, 220 VAC, 60 htz/1ph, 30 Amp and 208 VAC/3ph, 50 Amp) and water.

## 2.2.3 Lobster Rock Marine Terminal

Built in 1974, the Lobster Rock Facility has a pier that extends to the main ship channel with a pier length of 152.4 meters. It also has inner berths of 109 meters length and 31 meters length. At present, minimum berth depths alongside range from 5.8 to 6.4 at Mean Low Water. Figure 8 shows a general arrangement.

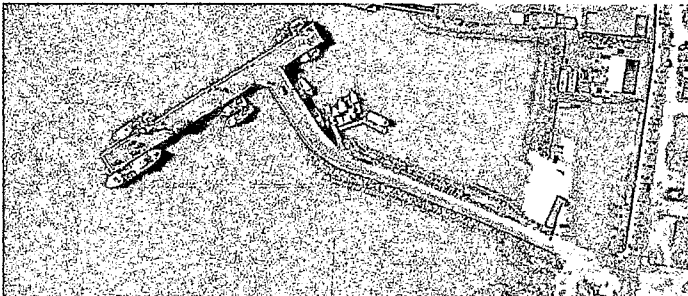


Figure 8: Lobster Rock Terminal Layout



The berths are equipped with power (110VAC, 220 VAC, 60htz/1ph, 30 Amp and 208 VAC/3ph, 50Amp) and water. There is no berthing available on the south side of the pier due to rip-rap style construction. The facility is primarily used for fishing vessels. ?

## 2.2.4 New Mega Yacht Berth and Marina

The facility was added in 2008 to an existing small vessel marina known as Killam's Wharf. The floating berth is comprised of a 61 meter long protected floating berth; with two inside 30 meter berths. Water depth is approximately 3 meters at Mean Low Water. There is potable water; and shore power (100 amp 3 phase, 30-50 amp single phase) available within a secured area with a gated entrance. Figure 9 shows a recent newspaper article on the facility.

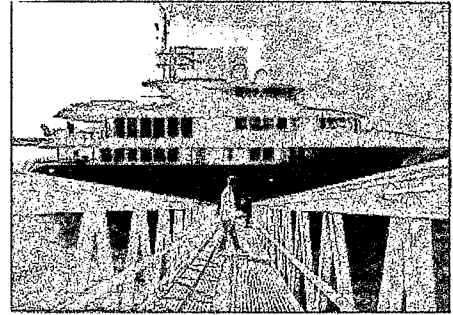
Shoreside facilities include washrooms and showers; coin operated laundry; fuel truck access; pumpout truck access; delivery truck access; walking distance to downtown and local attractions. The facility is projected to service pocket cruise ships and mega-yachts.

First mega yacht sails into harbour since new docking facility built

By Tina Corneau  
17th March 2012  
Newfoundland.com

In a case of 'if you build it, they will come', the port of Yarmouth welcomed its first mega yacht into the harbour last Wednesday since installing a new mega yacht dock to handle these large vessels. Kevin Costner, though, wasn't onboard.

"The rumour is its George Clooney," said port of Yarmouth manager Dave Whiting. "The only problem we started that summer."



The 131-foot Regatta mega yacht pulled up to a new 127-foot dock at Yarmouth waterfront, built specifically to accommodate this type of vessel. The yacht can be chartered for \$192,000 a week. The Coonara photo by Tina Corneau.

Figure 9: Mega Yacht Berth

The facility is also equipped with an ice plant and has approximately 1 acre of support space. The facility is commonly used for berthing larger fishing vessels, visiting small cruise ships, larger yachts and government vessels.

## 2.2.5 Waterfront Properties

The port has ten facilities that are publicly and privately owned and make up the primary core of the industrial waterfront with water depth that permits vessel access. With the exception of Bunker Island, all of the facilities are located within an approximate distance of 300 meters on Water Street. Table 1 gives a summary of the facilities.

Table 1: Waterfront Properties

Facility Name	Owner
Bunker Island Oil Tanker Terminal	Irving Oil Company
Lobster Rock Marine Terminal	Port of Yarmouth
International Ferry Terminal	Transport Canada
Yarmouth Town Wharf	Town of Yarmouth
Marginal Wharf	Port of Yarmouth
Killam's Wharf/Marina	Town of Yarmouth
Parker Eakin's Wharf	Parker Eakin's Ltd.
Waterview Marine Wharf	Waterview Marine
Yarmouth Sea Products Wharf	Yarmouth Sea Products
Scotia Garden Wharf	Scotia Garden's Seafood

?



?



Yarmouth  
Public Wharf

### 2.2.6 Bunker's Island

Bunker's Island is located at the entrance of Yarmouth Harbour and was formerly used for an artillery battery and medical facility and is currently used for recreation and the handling of petroleum products for Irving Oil. The site consists of about 12-15 usable acres of land with several remaining oil tanks that are serviced by truck and used for distribution to the general area. A number of former buildings that support petroleum operations, as well as several storage tanks have been demolished. There is deep water access with a former deep water berth of approximately 8 meters at low tide. A pier structure is on site but it is reported to be unused and in need of significant repair.

The facility was, for many years, the primary petroleum terminal for the area. Vessel traffic ceased a number of years ago. The terminal site shares space with a recreation area that is a National Historic Site and includes a small cemetery. The north side of the island, which is connected to main roads south of the Town of Yarmouth, remains in the ownership and operation of Irving Oil. There have been several proposals made over the years to create a large recreation area or reuse the site for cargo shipments.

### 2.2.7 Waterfront Zoning

The Town of Yarmouth maintains zoning regulations consistent with deep water uses and public access. The zoning ordinances in place are consistent with the current and anticipated uses for the properties under the responsibility of the Yarmouth Area Industrial Commission and the port.

The Town Council recently enacted a change in the zoning ordinances which now contain a restriction on the open air storage of bulk materials on the waterfront. This applies to the waterfront properties that are the focus of this study. Overall, the zoning supports the desire of the community to maintain a working waterfront.

### 2.2.8 Transportation Corridor

Yarmouth is a major transportation corridor for southwestern Nova Scotia. It has direct access to two major highways as well as a host of secondary roads that connect to the waterfront. The routes are indirect in some locations and recently new designated truck routes have been proposed for the area.

There are some roadway constraints in Yarmouth proper between the highway terminus and the port, which have been recently looked at in a separate transportation study. Yarmouth enjoys a unique

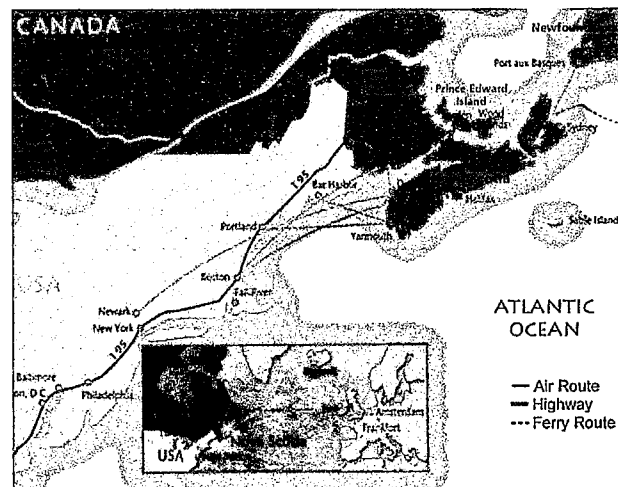


Figure 10: Regional Transportation Corridors

geographic position in relation to the Northeastern United States. An all water connection currently exists through a seasonal ferry service which serves as a direct extension of the province's highway network into the U.S. Figure 10 shows the unique intermodal transportation corridors between the economic heartland of Nova Scotia and New England.

Transportation is a critical component to the region's growth and economic sustainability. While the port serves primarily as a tourist connection, it could expand into a substantial center of commerce, serving export and import interests in waterborne cargo.

In addition to the seaport, Yarmouth has an airport which supports charter and general aviation traffic. The airport once had regularly scheduled air service provided by Air Nova and Southwest Air. Both services were suspended. The airport is currently focused on restoring regularly scheduled air service as well as air cargo service.

this market is that the ports in the Canada-New England region are close to each other, so few route miles are needed and ships can operate at slower speeds. The newest approach is fuel efficient itineraries.

The industry is also continually pushing for a wider range of shore tours which they consider critical to profits. Many ports have been offering the same type of shore excursions for years and including new ports have opened up different offerings to passengers including soft adventure tours, golf programs and museum highlights.

Traditional Canada and New England ports are considered to be costly because of high berthing and passenger fees. This has opened up some opportunities for lower cost ports in the region, which do not have the high cost of infrastructure or high labor costs.

While larger ships dominate the market, there are an increasing numbers of smaller vessels entering the cruise market focused on small niche ports. Many smaller ports are now looking to accommodate these vessels because they tend to command high per diem rates and cater to a market that is more upscale than the current average cruise customer market.

Companies that are looking to this market are introducing small, high scale, luxury vessels which could be easily classified as super yachts. These vessels are classified as "pocket cruise ships" and represent an increasing market potential. Companies such as American Cruise Line (ACL), American Canadian Caribbean Cruise Line (ACCL) and the new Pearl Seas Cruise Line are looking to open up a new style of cruising for passengers who prefer smaller, more intimate vessels and who are looking to visit niche ports not normally in cruise line itineraries.

The deployment trend for Canada and New England is predicted to be good according to the International Council of Cruise Lines. European and Alaskan markets are filling up and lines are seeking new alternatives. Canada, in particular, is expected to attract more ships. The target is to shift the trend for visits from the high concentration in the fall to throughout the summer where there is greater potential for port connections. The industry predicts cruising will remain healthy due to the large number of "baby boomers" in the market with significant and available disposable income.

Canada and New England should remain strong and steady while worldwide, China will be the fastest growing market in the next several years. Boston is the predominant turnaround port in the region with New York being the largest turnaround port that serves New England and Canada. Boston in particular has strong turnaround growth potential with 13 million people within 2 hours of Boston and 58 million within 5 hours. Logan Airport, which is within the port area, has connections to 77 US cities and 32 international cities. Boston will handle 280,000 passengers in 2008. They have 116 ships scheduled, with 44 turnarounds (homeport) and 72 port-of-calls. Most will occur in the fall with 15 lines calling just in September and October.

In Maine, 150,000 passengers will call on Portland, Bangor and Bar Harbor which will host 107 ships. There are 850,000 visitors expected to call on Portland alone. In Massachusetts, New Hampshire and Southern Maine there are 1.25 million households which support Boston and potentially Portland as homeports. Portland distributed information on events and information through e-post cards they also distributed 225,000 guidebooks in New York, New Jersey, Maryland and Ohio. Maine supports several

homeport operations for pocket cruise ships including American Cruise Line (ACL) and American Canadian Cruise Line (ACCL).

In the Maritimes, Halifax is aspiring to handle homeport operations. They will handle over 100 ships this year. Charlottetown will handle some 70,000 passengers and Sydney's cruise activities are also growing. Corner Brook, which is offering specialized expedition cruising, looking at turnaround activities, is developing access to the UK through their airport and has installed a new floating dock system. St. John will handle 187,000 passengers on 81 calls. They estimate the economic impact to New Brunswick to exceed \$20 million and they are building a new cruise ship facility to accommodate expected growth.

In the St. Lawrence area, there are nine ports participating in the marketing effort led by Cruise St. Lawrence. The area has invested some \$103 million in new facilities and marketing. This includes \$46 million from the ports and industry and \$57 million from the province. Their main marketing effort has centered on web sites and a widely distributed DVD brochure.

There are five companies operating cruises in the New England and Atlantic Canadian market. These companies have six ships presently running cruises in the region, with each ship averaging around 200 passengers. Four more companies have the potential to operate small cruises in the same region and should be considered as cruising partners for the port. Each of the companies operate ships between 70 and 180 meters in length; thus making them ideal vessels for the berths available in Yarmouth.

In recent industry meetings, the message to ports overall was very specific. The industry generally has a two to four year window in regard to adding new ports and itineraries. Lines choose ports based on physical infrastructure, facility quality, services for vessels, ease of navigation, cost, who else is calling on the port, demographics, competition, shore excursion opportunities, and customer demand.



The distinguishing factors for successful port selection revolve around the port's geographic location, scope of services offered, type and condition of terminals, available vessels and desirable destinations.

Some of the best practices that attract lines are based on cooperative efforts to sell a region, as opposed to any one port. Regional activities, efforts and marketing have

proven to be very successful, particularly in the St. Lawrence River area where cruise line calls have expanded due to regional efforts.

Successful marketing efforts need to be focused on a target audience. Activities in particular should be directed at cruise lines, travel agents and consumers. Effective tactics that successful ports and regions have used include branding, dynamic websites, useful brochures, provisioning directories, advertising campaigns, press trips and frequent press releases, events, familiarization trips for lines and travel writers, brand imaging (such as a recognizable logo), give away items and virtual trade shows. Successful ports note that marketing in most cases does not need to be expensive, just innovative. A number of ports in the market area have seen growth as a result of marketing efforts, including Halifax, Boston, Bar Harbour and the ports of the St. Lawrence.

### **3.4.2 Cargo**

The Port of Yarmouth has not actively handled cargo since the Prince of Fundy Cruises suspended operations in 2005. Those activities were generally restricted to ferry operations and the movement of tractor trailers, mostly moving fish products. Nova Scotia however has a fairly significant amount of trade that moves between the province and the United States. The port is geographically well situated to provide good connectivity for cargo movements into the US.

Cargo types include bulk, which is a single type of cargo moved in large quantity, unpackaged, which includes dry bulk cargoes such as ores, aggregate, coal, wood pellets and similar material, or liquid bulk such as crude oil or refined products. Refined products include gasoline, diesel fuel and home heating oil. Cargo can be also categorized as neo-bulk, which is a large quantity of similar cargo not in loose form. This includes automobiles, lumber or equipment.

Containerization is the most common method now employed for the movement of general cargo, and material of all types. The material, mostly manufactured goods, spirits or agricultural products, is stowed in shipping containers. These containers average twenty feet long by eight feet square and are commonly known as twenty-foot equivalent units (TEU). Containers can also be forty feet long (FEU) or various other sizes. Most containers in the industry are either twenty or forty feet long, the majority being forty feet long. Container measurements are generally given in feet as opposed to meters.

A variation of that is ro-ro cargo, also called roll on-roll off, or wheeled cargo. This cargo can include any type of commodity that is moved by tractor trailer. Ro-Ro cargo is driven onto specialized ships or ferries, or dropped off at a facility, loaded on board a vessel and picked up by another trucker at another port.

Cargo can also be classified as project cargo, which includes large segments of a particular type of machinery or components of a facility. These include turbines, wind generators and a wide range of specialized units.

According to Export Development Canada (EDC), almost 75% of Nova Scotia's exports go to the U.S. These include a wide range of exports including forestry products, motor

vehicles and parts including tires, agricultural products, fisheries products, and aerospace commodities. Most exports moving into the United States are moved over the road (OTR) by tractor trailer.

The weak US economy, however, is having an impact on the export levels. Statistics show that exports from Nova Scotia through Maine (closest US State) alone have declined significantly in the last several years. Based on information from Statistics Canada, trade has decreased almost 20% from \$179 million to \$143 million. Imports were significantly less, at \$1.45 million last year. Those impacts will affect forestry, motor vehicles and parts, and natural gas sectors most significantly. However, fisheries and aerospace commodities are expected to remain steady according to Export Development Canada.

The agricultural food sector accounts for 23.5 per cent of the province's total exports, and is expected to grow by 4.7 and 4.2 per cent in 2008 and 2009, respectively. Fisheries in Nova Scotia will have to overcome several challenges to remain competitive, such as the strong Canadian dollar, rising operating costs, and new legislation affecting the industry. Domestic production and international demand for lobster, sea scallops and snow crab are expected to remain strong. Other species such as cold water shrimp, cod, pollock, haddock and redfish will continue to suffer from great price volatility. Overall, fisheries exports are expected to grow 6 per cent in 2008 and 5 per cent in 2009, according to EDC.

A number of companies that were interviewed expressed a need and a desire to move products into the U.S. using a service that would be shorter than road travel. One company moves thousands of pounds of lobsters into the U.S. on a regular basis. The loss rate for truck transport is estimated at between 2%-3%, representing a substantial financial loss to the shipper. Another company moves 2-3 large truckloads per day handling groundfish and similar products. In the province, an auto parts manufacturer moves approximately 150 high cube containers of material into the U.S., weekly. Other shippers transport forestry products, canned fish and agricultural products regularly. The fish products are primarily destined for markets in Massachusetts, Maine, New Hampshire and New York. Manufactured goods move further South into destinations from Maryland to Texas. Many of these truck movements include backhaul cargo ranging from fish to manufactured and packaged goods.

Overall, Canadian exports are forecast to decline by 2 per cent in 2008 before posting a projected 2 per cent growth in 2009. Nationally, economic growth is forecast to decline to 1 per cent in 2008 with a slight upturn by 2.3 per cent in 2009. For Canadian exports, internationally, EDC is forecasting a 3.8 per cent growth rate in 2008 and 2009.

Of significance to Yarmouth is the fact that most all water cargo movement between the province and the United States via waterborne container feeder services has ceased. The long standing Halifax-Portland, Maine-Boston, Massachusetts service was suspended in early 2008 and has not been replaced. Most of the cargo moved via the feeder as well as the remainder of the exports except for energy is now moved over the road through New Brunswick, including Digby to St. John, NB.

A review of the recent Digby-Saint John Ferry service shows that about 11% of the vehicles carried annually are commercial, including tractor trailers, drop trailers and

straight body trucks. The distribution for truck moves in either direction is about equal. This accounted for about 15,000 vehicles per year since 2002.

An all water service from Yarmouth into either Portland, Maine; Portsmouth, New Hampshire; Boston, Massachusetts; or Gloucester, Massachusetts would appear to be a very cost effective means of moving cargo from the province into the Northeast United States because of the direct access afforded by connections further south into New England. In addition, a U.S. East Coast short sea (coastal container feeder service) would also provide more direct connections to United States and Atlantic Canada ports out of the province. The Port of Yarmouth has a unique geographic position and is 185 miles from Portland, Maine; 190 Miles from Portsmouth, NH; and 237 miles from Boston, Massachusetts. Exporters in Nova Scotia are located throughout the Province and have good highway access to Yarmouth. A service from Yarmouth would be an extension of the highway system and would be the most direct into the U.S.

Portland has existing Ro-Ro capacity at its new Ocean Gateway facility. It also has a 15 acre container terminal, the International Marine Terminal, with crane and yard equipment. The pier is 750 feet long with 35 feet alongside. The facility has near dock rail, provided by two different railroads, and excellent highway connections. A container feeder service operated from Halifax for 18 years but ended in early 2008. The port also hosted a feeder service from New York and Boston for about a year but that service has also been suspended. The container facility, operated by the City of Portland, is currently unused.

Portsmouth has an 11.5 acre terminal known as the Market Street Marine Terminal. There is a 600 foot pier with 35 feet alongside. The facility also has a 310 foot barge pier with 22 feet alongside and two warehouses totaling 50,270 square feet. The facility is served by one railroad and has excellent highway connections. The port does, however, have tide and current issues which can hamper regularly scheduled water based services. The terminal is operated by the Pease Development Authority, and is currently used for the handling of bulk material.

Boston has several facilities operated by the Massachusetts Port Authority, including the Paul W. Conley Container Terminal in South Boston. The terminal is the prime facility for Boston's cargo handling network. The 101 acre facility has four post-Panamax container gantry cranes and 2,000 feet of pier space with 45 feet alongside. Conley Terminal can handle the largest container ships in service on the Atlantic. Also, the port is in the Boston Auto port. The facility opened in Charlestown in 1998 at the 65 acre former Moran Container Terminal and Mystic Pier One. The Boston Auto Port offers automobile import, processing and distribution for approximately 50,000 cars per year, as well as covered storage for high-end automobiles.

Gloucester is approximately 30 miles North of Boston and has a small cruise ship facility known as the Gloucester Marine Terminal. The terminal is accessed via the North Channel of Gloucester Inner Harbor and can accommodate vessels up to 500 feet (152.4m) in length and drawing up to 18 feet (5.5m). The facility is owned by the City of Gloucester.

Only Portland currently has a ramp in place to handle roll on-roll off cargo as well as an active ferry service. The vessel currently used in the service, the CAT, does not generally accommodate large tractor trailers because of potential impacts on the

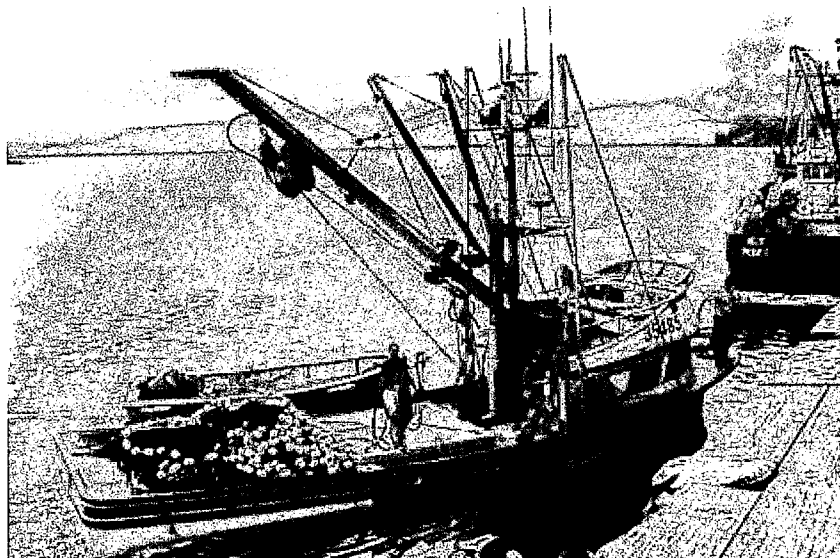
vessel's speed due to vehicle weights and limited space aboard the vessel. Bay Ferries has looked at various models for a year round service and has expressed its willingness to consider expanding its service offerings. The main consideration for shippers would have to be the cost of the service in relation to the cost of moving cargo over the road. This would have to take into account the amount of time the equipment is in use, the driver requirements, cost of fuel, and efficiency of one method against the other.

Yarmouth is a Canadian Customs clearance port. Passengers and any cargo moving into the United States are cleared upon arrival in the U.S. There is significant interest in creating an export advantage for the province through the securing of a U.S. Customs pre-clearance facility. All traffic and cargo could be staged and cleared prior to loading, which would speed transport upon arrival in the United States and also meet U.S. Homeland Security objectives of clearance of cargo outside of the United States.

Another tool used by ports to generate cargo volume is the creation of a duty free zone, known in the U.S. as Free Trade Zones. These areas are exempt from import tariffs and fees and allow for the manufacturing or assembly of products that are then exported for use outside of Canada. These facilities generate good employment and a great deal of import/export activity. Auto processing is a good example of this type of activity. Vehicles manufactured in Mexico and bound for the United States could be processed and brought up to U.S. pollution standards in Canada, and then exported to U.S. markets.

### **3.4.3 Fishing and Fish Processing**

Fishing in Nova Scotia, and in particular southwest Nova Scotia, is generally centered on groundfish, lobsters, scallops and herring. In Yarmouth, lobsters and herring are the predominant fishing industry and processing. About 100 transient fishing boats call on the port on a regular basis. There are about 20 boats homeported at port owned facilities in Yarmouth.



The groundfish fishing industry in Atlantic Canada and New England has come under intense regulatory pressure over the last several decades. Restrictions on groundfish catches, fishing areas, days at sea, institution of quotas, restrictions on licenses and other regulatory methods have had an adverse impact on the number of vessels and fishers in the industry. The groundfish sector remains under significant economic pressure due to fuel costs and the decreased value of the U.S. dollar but market prices are rebounding.

Nova Scotia is divided into various fishing regions which according to Fisheries Canada are generally based on "coastline, oceanography and biological ecosystem characteristics. The four main regions are the Gulf of St. Lawrence, and Newfoundland, Scotian Shelf, Bay of Fundy (Scotia - Fundy) and Georges Bank. These regions are subdivided into fishing zones, or management divisions, based on the Northwest Atlantic Fisheries Organization (NAFO) system. Fish species are characterized as stocks, subdivided within these defined zones."

Fisheries Canada reports that the commercial groundfish industry in Nova Scotia remains very diverse and geographically widespread. The government reports that there are about 3300 boats and 5500 fishermen remaining in the industry. There were substantial stock declines in the early 1990s, resulting in significantly reduced landings and industry activity. The value of the catch, however, has increased with the higher wholesale price of landed stock. The following table from Fisheries Canada highlights recent trends in the Nova Scotia fishing industry, including landed amounts and value.

TABLE # 1: Canadian Commercial Fishing

<b>SUMMARY OF CANADIAN COMMERCIAL CATCHES AND VALUES</b>								
<b>Quantity (Q) in tonnes, live weight, Value (V) in thousand dollars</b>								
	2004		2005		2006		2007	
	Q	V	Q	V	Q	V	Q	V
Atlantic - Total	919,718	1,902,451	848,124	1,746,650	865,578	1,531,844		
Nova Scotia	332,255	742,752	268,211	731,681	284,271	656,694		
New Brunswick	117,994	193,475	119,261	204,951	110,620	152,861		
PEI	48,147	139,952	45,873	140,076	37,873	136,502		
Quebec	63,865	198,787	57,306	152,316	58,748	117,056		
Newfoundland	357,456	627,485	357,472	517,626	374,067	468,730		
Pacific - Total	255,608	354,148	248,520	330,121	211,816	324,327		
Seafisheries - Total	1,175,326	2,256,599	1,096,645	2,076,771	1,077,393	1,856,171		
Freshwater fish - Total	36,207	63,793	32,286	66,117	32,234	67,885		
New Brunswick	1,210	406	1,209	406	1,209	406		
Quebec	1,083	2,977	884	2,217	797	2,030		
Ontario	14,899	29,513	13,384	35,133	13,737	36,430		
Manitoba	13,206	24,656	11,446	22,683	11,632	23,818		
Saskatchewan	2,915	2,985	2,777	2,830	2,788	2,843		
Alberta	1,857	2,249	1,679	2,032	1,457	1,748		
NWT	1,039	1,009	906	817	614	610		
Canada - Total	1,211,533	2,320,392	1,128,931	2,142,888	32,234	67,885		

Source: Fisheries and Oceans Canada

The biggest challenge to the groundfish industry currently is stock availability and regulation. The decrease in fish stocks as reported by ocean researchers caused both the Canadian and US Governments to institute fishing restrictions on the industry before fish stocks were totally depleted. The government accomplished this by establishing species allocations and quotas for the approximately 20 different species landed in provincial waters. The main commercial species targeted were haddock, cod, halibut, redfish, pollock, silver hake, American plaice, yellowtail flounder, winter flounder and grey sole. Lesser amounts of white hake, turbot, cusk, catfish and monkfish are landed frequently as “by catch”, which is incidental catch when fishing for another species.

Stocks are defined and allocated within each region under a total allowable catch (TAC) quota system. Generally, levels are set annually by the federal Minister of Fisheries, after a scientific and management assessment is performed by the Department of Fisheries and Oceans with an industry consultation process management through industry advisory committees. There are also numerous management measures, protocols and restrictions governing types of vessels, gear, seasons, area closures, fish size etc. through regulations or condition of license. Environmental legislation such as the Species at Risk Act (SARA) and the precautionary approach method are also being integrated into fish management in Canada. (Source Fisheries and Oceans Canada)

The lobster segment of the fishing industry is the most significant in value. Fisheries Canada reports that over \$300 million worth of lobsters are landed annually in Nova Scotia. The industry has about 3,400 license holders registered with the government and lobsters from the province are exported worldwide with the most significant market being the United States. Lobsters are also transported to the US for processing and export and a large number are moved out of Nova Scotia over the road by truck. Overall the industry remains healthy and is considered significant in the Port of Yarmouth.

The scallop industry is facing some serious challenges. The rising cost of fuel, lack of workers, increased cost of trucking, value of the Canadian dollar and the wholesale price of scallops, which is estimated to be several dollars less per pound than most draggers need to make a profit, are all major challenges for the industry at this time.

Scallop farming is being tried as an alternative to the more expensive dragging method of securing product. Recently some boats are electing not to drag for scallops until the price increases. In the meantime, transportation cost and time in transit remain significant challenges in getting the product to market from Nova Scotia.

Herring is a species that enjoys a larger consumer market in Canada and Europe than in the United States. Yarmouth does however process a number of herring products for export to the U.S. Herring is a managed fishery both in the US and Canada. The South West Nova Scotia herring fishery is the largest single herring fishery in the province. The continued recovery of the George’s Bank stock and the development of the Outer Banks herring fishery on the Scotian Shelf indicate continued growth in the fishery. There are concerns, however, about depleting the stock due to over fishing in some areas.

Both Canada and the United States fish for herring on George’s Bank, which is the prominent catch area. To prevent over fishing, a Canada and U.S. Herring Working Group meets regularly to make recommendations to adjust the catch level, based on data gathered during the fishing season. Changes are planned prior to the next season.

The herring season in most areas runs for about a year under the regulatory framework but commences and ends at different times depending on the location. On George's Bank it begins in January. The Outer Banks fishing season is most active in the spring.

According to the Department of Fisheries and Oceans Canada, the demand on coastal Nova Scotia stocks is significant because local fishermen also use herring for bait. This has led the Department and the fishing industry to start working together to plan and maintain a sustainable fishery. Herring is processed and canned on the Yarmouth waterfront for export to the United States and for domestic markets in Canada. A portion of the landed herring is also used for bait fish.

For a number of years, fish products moved from the province to New England markets over water on the conventional ferries formerly used between Yarmouth and Maine. Some of that traffic uses the Digby–St. John ferry, since large truck traffic is not accommodated on high speed ferry service into Maine. These products continue to move over the road, although in lesser amounts. The biggest challenge remains travel time, particularly with live product. New England remains the primary destination.

#### **3.4.4. Offshore Oil and Gas**

More than 21 per cent of the province's exports are generated by the energy sector, which is expected to grow by 1 per cent in 2008 and 3 per cent in 2009. On the natural gas front, the Sable Offshore Energy Project is expected to boost output by 25 per cent between 2009 and 2015. There are also several other projects underway, but none of them will come on line over the next 2 years. The government expects exports of Nova Scotia natural gas to decrease by 2 per cent in 2008 and increase by 5 per cent in 2009.

There is a need for marine support of the province's energy production. Vessels need to be serviced and have regular berthing which entails engineering services, repair, fueling, supplies and crewing. South West Nova Scotia is geographically situated to provide this type of operational support. These operations are already being supported in several ports within the province.

Average support vessels range from 15 meters to 100 meters in length, and have drafts of 4 to 6 meters. The vessels are used for anchor handling, repair work and re-supply of offshore units.

In the case of Yarmouth, the pending review of the drilling on George's Banks may provide a short term opportunity to establish an interpretative centre on the subject and a long term opportunity in traditional service areas.

#### **3.4.5. Engineering and Repair**

Vessel calls often include pier side repairs and servicing. Machine shops, welding, pipefitting, fabrication, and HVAC support are critical services for the marine industry. These services are also important to shoreside industries and provide a diverse market to sustain these businesses. There is a definitive need for these services in the port and in the region. In Yarmouth, there is currently only one major machine shop and repair activity on the waterfront. These services are critical to attracting vessel support

activities and every consideration needs to be given to preserving and expanding these types of vessel services.

#### **3.4.6. Cold Storage and Warehousing**

Fish processing and agricultural needs create demand for cold storage as well as some warehousing. This is a localized issue based on the volume and type of product handled. These services do not create demand in themselves but sustain demand as service needs evolve. A herring processor in the port currently uses the cold storage facility at the south end of Water Street for commodity warehousing. The amount of product processing can be limited with insufficient storage capability. This would be of critical importance if export demand were to increase.

#### **3.4.7. Bulk Commodity Exporting**

The potential opportunity exists for the manufacture and shipping of wood pellets from southwestern Nova Scotia to Europe and the United States. Key to this is the ability to store and ship the product by water out of the region. The port proper does not have sufficient space to build a storage and transit facility on Water Street for this product however there is real potential for a new facility to be established at Bunker Island. The area best suited is currently owned by Irving Oil. There is another potential deepwater area located on Hilton Road at Kelly's Cove where there is a fish plant complex. The narrow waterway and southwest exposure makes this a less suitable location.

A new and enclosed storage facility would have to be built along with handling equipment in the port. At Bunker's Island, a new pier and mooring platform would have to be built as well and berth dredging would be required. The current berth has around 8 meters of water at low tide which is inadequate for most modern bulk vessels. That depth should be increased to at least 12 meters.

### **3.5 Environmental Conditions**

The single biggest challenge for ports today is dredging. Dredging in the Port of Yarmouth was last completed in 1996. Since then, significant changes have occurred in the standards for disposal of dredge spoils.

Yarmouth's berths and port proper will require dredging in the future. The port has the advantage of a readily available disposal option that is cost effective and will benefit port expansions. This involves using dredge spoils in tidal flats adjacent to deep water to create new land for port uses.

In Yarmouth two areas may be used for spoils disposal which will create new area for marine uses. The port will need to undertake a review of spoils content to evaluate disposal options and determine if the concept of using these spoils for the creation of new port land is an acceptable option. At present, the make up of spoils content is unknown and a comprehensive study of material content will need to be undertaken.

### 3.6 Community Issues

The primary issue relative to community association with the waterfront area is connectivity for both the regional and local users. Regional issues include passenger and transport vehicle access from provincial highways, through both the 101/103 corridors and downtown business districts, to the port district. Local issues include a weakened association between the downtown district and port areas as well as a lack of public activity on the waterfront. Many of the community discussions focused on these concerns.

The port, which is a regional asset, holds great potential given the positioning of the Yarmouth waterfront as a provincial and state gateway for both passenger and freight traffic. Yarmouth's position on the southern tip of the province assures this traffic maintains the gateway with proper vessel connectivity. The primary issue then becomes access to port lands upon entering Yarmouth.

Presently, passenger traffic is pushed to the port through Main Street and eventually onto Water Street. At this location, commercial density begins to signify "Downtown Yarmouth". Thus, regional passenger traffic is encouraged to avoid the business district to get in queue at the ferry terminal. Residents are concerned about both the loss of retail business because of this diversion as well as the possible impact of the flow-through traffic if passenger vehicles are encouraged to continue on Main Street.

Regional truck traffic shares access and impact issues with passenger vehicles. Vehicles accessing waterfront and port businesses must travel through difficult routing situations. The province and the town are looking at a future truck route that moves transport traffic away from both the Parade Street and downtown business districts. The issue with this move is the impact on corridor neighborhoods as well as reasonable access to destinations along Water Street.

The recent Yarmouth Area Transportation Study looked at new connections to the port from Hardscratch Road and Route 103 to Haley Road including connections to Water Street over Argyle and Huestan Streets. Some of these streets have residential housing, are narrow and will require significant improvements to handle the high truck volume, which is critical to port growth.

The Sperry Waterfront Report considered the waterfront as a linear element relative to the parallel nature of the harbour and Water Street. After much discussion with residents and viewing implementation results, this concept should be updated relative to local concerns.

*I'm interested*

Historically, the Yarmouth waterfront existed as a series of fingers extending from Main Street to port piers. This evolved to a linear-parallel waterfront with changes in waterfront activity, larger vessel and transportation requirements. With this evolution, the strong linkages between Main Street and waterfront areas were dissolved. Although increased business and public activity will inherently increase connectivity, physical elements must re-establish the dissolved perpendicular linkages. The primary issue relative to this concern is contemporary relevance that ensures successful and meaningful implementation.

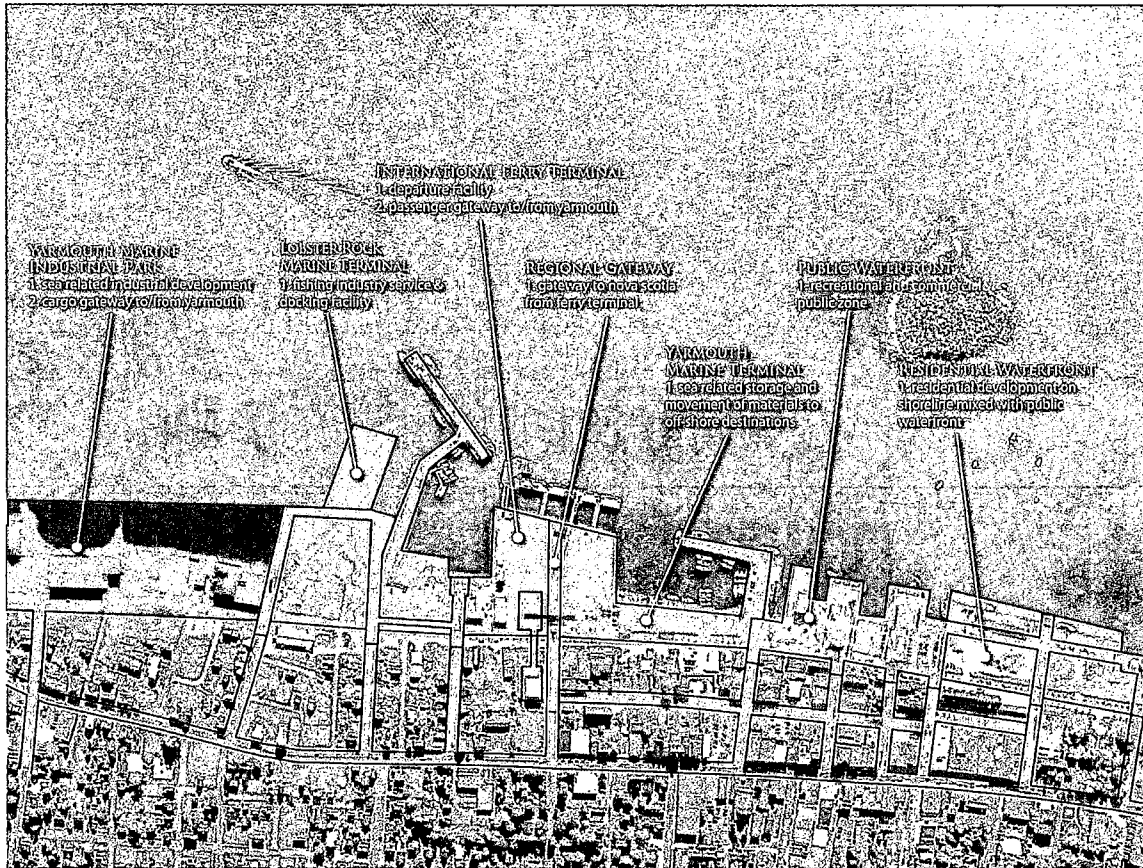


Figure 11: Port of Yarmouth Land Use

### 3.7 Financial

A review of the financial status of the port was conducted as part of this study. In looking at the profit and loss data, as well as the potential for reducing expenses and increasing fees, it was determined that this was not a feasible solution to improving the port's financial picture. Extensive reductions in expenses were not viewed as practical and fees would have to be increased to well above market level to meet revenue requirements. The only practical solution is to develop new business in the port that would expand and diversify the revenue base, while not dramatically increasing expenses. Critical to reaching those goals would be the optimization of the facilities for a wide range of marine uses.

## 4.0 Strategic Issues

Port growth is tied to several key factors, including the availability and flexibility of assets, overcoming of challenges, and focusing on potential opportunities. While infrastructure is critical, ports are often constrained in their ability to grow due to an inability to overcome disadvantages or take advantage of opportunities that are appropriate for their available assets.

Through a series of meetings with key political and business leaders and the public, as well as an assessment conducted as part of this study, there was a universal recognition of the key challenges facing port growth. These included:

- Small geographic harbour with dredging and depth issues;
- Limitation on ship size due to turning basin capacity;
- Indirect road connections to the industrial waterfront;
- Diversified port governance;
- Need for significant capital improvement funds;
- Consistent positive cash flow to meet port management and improvement needs;
- Adequate upland support for piers;
- Aging infrastructure;
- Lack of intermodal transportation connections;
- New and more restrictive fishing regulations;
- Seasonal ferry service with decreased daily connections to multiple ports;
- Limited tourism development plan;
- Lack of a tourism image or landmark;
- Non-pedestrian friendly, auto dependant waterfront; ← *Harbin Trail?*

While some of the limitations can not be addressed in an economically viable fashion, such as the size of the harbour area or its topographical configuration, a number of issues were easy to address. One example is the tourism promotion and branding. For example, the Port of Sydney NS created a new visual image using a fiddle, related to its musical heritage. The need for an easily recognizable brand and symbol that brought the region to the mind of the tourist was evident in numerous meetings. Given the port's dependence on the tourism industry, this is a significant consideration.

Cash flow is also a significant issue. The port office estimates that while it generates some \$300,000 annual in revenue, it expends some \$400,000 on meeting operational requirements. While many ports have found themselves operating in continuous deficits, the trends in recent years have placed a number of these ports into positive cash flow positions through changes in the way they conduct business. Ports have recognized their regional impacts and have expanded their impact areas. In addition they have abandoned subsidizing of operations, embraced market pricing and shifted thinking from a social perspective. They have also carefully introduced non-maritime related development in key port areas which provides financial support for expensive marine infrastructure.

The way business is conducted in the port is a critical component of making the port successful. In meetings with various port stakeholders, a "needs" comparison was developed in the course of this study. These are outlined Table 2.

## Table 2 Port Needs Comparison

### HAVE

- Fishing Industry
- International Ferry
- Service Industry
- Tourism
- Deep water (limited)
- Diversity of waterfront
- 5 Acres of hard land
- 13 Acres of water
- 16,000 ft<sup>2</sup> of Building
- 1,300 ft. of Pier Length
- 300 Parking Space
- Disposal Areas
- Partnerships:
  - a. YAIC/Domtex - \$7M real estate
  - b. Town – 5 Acres (1 hard, 4 water)
  - c. Federal – 7 Acres (5 land, 2 water)
- 10,000 ft<sup>2</sup> (terminal) + out blds.
- Tidal Flats / Potential for Infill

### DON'T HAVE

- Rail
- Big Harbour
- Direct Road Connections
- Symbol or Brand
- Marketing Program
- Flexibility at Terminals
- Marine Cargo Equipment
- Parking & Revenues
- Abundance of Pleasure Boats
- Pier & Upland Space
- Deep Water
- Natural Flush in Port
- Money to Dredge
- One Regional Partnership
- One Governance Structure
- Pre-clearance to U.S.
- Public fishing area
- Year round ferry connections

### NEED

- Positive Cash Flow
- Eliminate Deficit
- Create Reserves
- Money for Dredging
- Infrastructure Funding
- Expanded Facilities
- Comprehensive Governance
- Expanded Marine Businesses
- Protection of Marine Industries
- New Ferry Terminals
- Terminal Repairs
- Site Flexibility
- Direct Traffic Routes
- New Marine Businesses
- Better Public Access
- Pedestrian Friendly Waterfront
- Fishing Piers
- Expanded Ferry Service

It was also evident that the port may have a number of opportunities that would enhance port activities and cash flow. Some of these opportunities already exist and can be expanded, while others are taking place in other ports and would be successful in Yarmouth. Input from meetings identified the following:

- Short sea shipping connections;
- Roll on-roll off (Ro-Ro) trucking operations;
- Increased frequency of the ferry service
- Servicing the offshore oil and gas industry;
- Fishing;
- Fish processing;
- Increased tourism;
- Pocket cruising;
- Historic ship visits and associated events;

- Increased waterfront festivals;
- Mega yachts;
- Recreational boating; and
- Customs point of entry and clearance;

#### **4.1 Community Desires and Goals**

The team held numerous meetings with political leaders, the public, tourism professionals, waterfront businesses, marine businesses, municipal staff and other key stakeholders. There was a broad consensus on both key requirements and possible ideas. Of note was the strong message conveyed by the political leaders in the community who expressed a definitive feeling about the primary considerations of any port development. These included:

- Protecting the working waterfront
- Expanding the maritime industrial mix and number of businesses
- Protecting the fishing and fish processing industries
- Prohibiting non-maritime uses that impact deep water piers
- Clustering compatible industries and businesses
- Protecting and expand public access
- Allowing mixed use retail and residential development where appropriate
- Ensuring a cohesive city core inclusive of downtown and the waterfront

The meetings with the public and local business leaders focused on a number of goals that were consistent with the key requirements expressed by the political leaders and related to the study. These can be generally summarized in the following manner:

- Expanding marine business opportunities
- Creating demand for recreational and small cruise ships
- Expanding the ferry service;
- Providing for cargo and offshore marine operations
- Optimizing and expanding multi-use infrastructure
- Expanding and clustering marine and related businesses
- Optimizing waterfront infrastructure and assets
- Optimizing public access, including redevelopment of streetscape on both sides; and
- Developing new waterfront housing and retail near the shallow North end of the harbour.

There were a number of excellent ideas expressed by the attendees at all of the meetings. These ideas were also consistent with the key requirements expressed by the regions political leaders. The most common ideas expressed, not in any particular order of priority were:

- Retail fish market;
- Expanded tourism connections by land, sea and air;
- Different type of international ferry;
- New ferry and pocket cruise ship facility;
- Connect ferry to other ports in the United States;

- Scallop processing and export facility;
- Cargo pre-clearance facility into the United States;
- Economic trade or duty free zone for handling manufacturing tied to export/imports and value added services;
- Wood pellet processing and export facility;
- Access for family and public events;
- Larger amalgamated marine facilities;
- Clustering of fishing businesses including lobster and ground fish industries
- Expanded residential capacity near the waterfront;
- Recreational center at Bunker Island tied to the downtown waterfront;
- Fish auction and wholesale exchange;
- Preservation and possible expansion of public access;
- Develop a public market facility with vendor stalls;
- Diversify and expand the port economic mix;
- Improve Water Street image;
- Improve traffic flow;
- Expand parking;
- Maximize year round berthing;
- Use the port as a catalyst to expand local industry;
- Place the airport and seaport under a single authority;
- Protect the rail right of way into Halifax for a possible future pipeline;
- Take advantage of Yarmouth's natural closeness to major fishing areas;
- Develop new energy and power distribution in the area;
- Create a regional transportation authority;
- Develop a post secondary education satellite campus with a major university;
- Develop a Canadian maritime research center;
- Develop direct and shorter water connections into the US highway system;
- Create a deep water industrial and commercial complex to service South West Nova Scotia;
- Create a Global Logistics and Free Trade Zone with direct highway, air and sea connections in the region with adequate room for growth and expansion; and
- Expand Yarmouth's potential as the key business center for South West Nova Scotia.

After careful consideration of the desires of the community, examination of current business trends, analysis of existing conditions including infrastructure and facilities, and looking at Yarmouth's strategic importance in the nation's gateway considerations, a series of key recommendations are offered. These recommendations focus on:

- 1) Infrastructure improvements
- 2) Marine based tourism
- 3) Cargo
- 4) Short sea shipping
- 5) Regional training
- 6) Public venues
- 7) Housing
- 8) Bulk export facility
- 9) Port marketing

10) Governance

11) Harbour dredging

This will give the Port of Yarmouth the greatest level of flexibility to address changing market conditions. These changes are critical to the full optimization of the facilities, which would enhance Yarmouth's gateway position. The key to effective use is the ability to be flexible to adjust to the needs of changing market conditions.

## 4.2 Building the Border Crossing

Yarmouth is presently Nova Scotia's only international border for vehicle traffic. Since the creation of the North American Free Trade Agreement (NAFTA), cities located along the northern and southern borders of the United States have developed substantially. There are myriad economic development advantages available to towns and cities that function as border crossings. Companies opt to establish operations on foreign soil for many reasons, from cutting labor and operational costs to accessing foreign suppliers to reaching new markets. No specific action has been taken to develop a border strategy for Yarmouth, although the recruitment of Register.com is an example to hold out to other companies. For a variety of reasons, the development of a border strategy and associated transportation corridors could help Nova Scotia gain additional value from our exports and imports. The Canadian and U.S. border has provided many communities in Canada with unique development opportunities.

The North American Free Trade Agreement, an agreement which created a powerful free-trade zone among the U.S., Canada, and Mexico, has led to the establishment of hundreds of "sister cities" located along the borders in the short number of years since it was created. Almost 10 years have passed since NAFTA created a powerful free-trade zone unlike any on the planet. At the center of this mighty economic force, many border towns do an especially good job accelerating trade between the trio of countries. Some believe these locales will be vital to the continent's economic prosperity for decades to come.

The United States and Canada enjoy the largest trading partnership in the world, which supports more than two million jobs in each country. Trade between them impacts 25 percent of the American economy and 60 percent of the Canadian economy. The United States sells almost three times as many goods to its northern neighbor (market of 30 million people) as to Japan (market of over 125 million). Moreover, Canada is a larger market for U.S. goods than all European Union member nations combined.

In December 2001, the United States and Canada signed the Smart Border Declaration. Its goal is to create a seamless system that allows factory-produced goods to move quickly and securely across the border. A significant outcome of the Smart Border Declaration is the joint Free and Secure Trade program (FAST), presently available at the highest-volume border crossings. It allows low-risk companies (pre-registered importers, carriers, and drivers) to expedite movement of low-risk shipments in either direction across the border. Amazingly, \$1 million of services and goods cross the border every minute, or \$1.5 billion a day, which translates into more than \$500 billion a year.

There are 128 border crossings between the United States and Canada. About 20 of the crossings account for 90 percent of transborder activity, and the busiest crossings traverse water boundaries. Approximately 27 percent of American-Canadian trade is

conducted at the Detroit, Michigan and Windsor, Ontario border crossing, where daily shipments average at least \$400 million. It's no surprise that Canada is also Michigan's largest trading partner. It bought about 60 percent of the state's exports in 2000.

About 35 percent of U.S./Canadian trade - representing \$81 billion annually - moves across six international border crossings spanning the Niagara River. The four major metro areas along the river are Buffalo, N.Y. and its sister city Fort Erie, Ontario; and Niagara Falls, N.Y., and Niagara Falls, Ontario. Another key crossing in this locale teams up Lewiston, N.Y. with Queenston, Ontario.

Estimates show that this regional trade volume grows 20 percent annually, with 70 percent of goods moved by truck.

Binational coalitions of public/private groups in Canada and the United States have formed to encourage trade at in border towns and corridor development. An example is the International Mobility & Trade Corridor Project (IMTC). The goal of IMTC is to improve mobility through the western Cascade Gateway by identifying joint projects and then cooperatively securing money for a number of transportation and security projects. There are myriad economic development advantages to being the border locations including the potential for free-trade zones. Many border towns and cities have established industrial land pre-approved for free-trade zone use.



Figure 12: Border Corridor Strategy

In Atlantic Canada, the province of New Brunswick is adjacent to New England and bordering the state of Maine to the southwest. New Brunswick's strategic location on the East Coast assures ease of exporting. In fact, over the past 10 years, New Brunswick exports have more than doubled. More than C\$8 billion worth of goods are produced for world markets every year, representing 41.2 percent of GDP.

New Brunswick companies export trucks at the St. Stephen border crossing. Yarmouth needs to develop a border town strategy and pursue the concept of a New England-Nova Scotia intermodal corridor, including all the national designations and senior government program participation that is available.

### 4.3 Short Sea Shipping

Short Sea Shipping is the term used to describe the movement of goods between ports along coastal routes, usually in international shipping containers. While perceived as a new concept, it was, for many years in the early part of the last century, the primary means by which cargo and passengers arrived in Yarmouth. In modern terms, it refers to the shipping of trucks or containers by water to other regional ports. This would involve for Yarmouth shipping to other Canadian ports or ports in the Northeastern United States.

While Yarmouth has a substantial potential for moving cargo by ferry, it has limited space for the storage and transshipment of containers. To meet minimum demands, a 10 acre facility with deep water berth and cargo handling equipment would be required at a minimum. A facility of this nature would cost at least \$15 million if the space was available.

Current demand for container moves into the United States remains in question since the service out of Halifax terminated. Yarmouth's best opportunity lies with the handling of truck traffic on a year round ferry service with an eventual transition to an expanded roll-on/roll-off capability with a drop off and pick up facility on the waterfront.

#### **4.4 Cargo**

The development of the new and expanded Yarmouth Marine Terminal would place the port in an optimal position to provide an outlet for Nova Scotia exports and imports that currently move over the road by truck. Yarmouth is connected to the province by two major highways and could develop direct connections into various parts of New England for the purposes of moving cargo as close as possible to US highway nodes over the water. The key to the optimal utilization of the infrastructure will be a frequent connecting service into the United States.

To accomplish the development of the port as a regional cargo service area, the following steps are recommended:

- Develop a Halifax-Yarmouth-New England corridor strategy
- Develop a plan to modify, as required, the boundaries of the port's marine infrastructure;
- Work with service providers that can provide a year round service from the port.
- Specify the provision of a conventional vessel with capacity to handle the maximum allowed and highway specific lengths, weights and tandem capabilities;
- Working with shippers, partner with the port(s) in the United States that provides the best overall origin and destination connections including Portland, Maine; Portsmouth, New Hampshire; Gloucester, Massachusetts and Boston, Massachusetts; and
- Work with U.S. officials to develop a U.S. Customs Pre-Clearance Facility for trucks, ferry passengers and vehicles. This should be done in conjunction with the airport with the focus on meeting U.S. objectives to push the US border out.

#### **4.5 Marine Based Tourism**

Yarmouth is in a unique position in regard to both cruise ship and ferry operations. Generally, it is excluded from most cruise line consideration because it cannot accommodate large cruise ships due to harbour and pier limitations. While a vessel could anchor off the harbor opening, the distance into the port as well as the vessel's exposure to environmental conditions would make Yarmouth an undesirable selection for large vessel port-of-calls.

Yarmouth is, however, in an ideal position to take advantage of the emerging pocket cruise ship market. The new mega-yacht berth is an ideal facility to host vessels of this

size and the port is a Canadian Customs clearance port. It also has a wide variety of services which would make it attractive to vessel operators.

As the pocket cruise ship market grows, the sizes of the vessels are also expected to increase. Industry experts predict that pocket cruise ships will not exceed 400-450 feet, and 10,000 gross tons, placing Yarmouth in an ideal situation to accommodate this market. Lines that should be targeted include the American Canadian Caribbean Cruise Line, American Cruise Line, Lindblad Expeditions, Seabourn Cruise Line, Pearl Seas Cruises, CruiseWest, Hebridean International Cruises, Hurtigruten, and Majestic America Lines.

Unique to Yarmouth is its activity's as a ferry port, which is not dissimilar to homeport operations. Yarmouth could potentially serve homeport activities if air service development into the Yarmouth Airport is successful. This air service would need to connect to a major U.S. hub such as Boston to serve this market. If homeport activities could be developed air service connections, and can drive through tourism travel packages with the CAT should also be created.

Cruise activities throughout Nova Scotia can compete with the drive through tourism. Low cost berths on large cruise ships compete with the market for passengers and vehicles using the CAT. The market in the U.S. Northeast is strong however, and trends so far this year seem to indicate that vacationers are staying closer to home in regard to planned travel. Frequent service to Yarmouth by ferry pulls South West Nova Scotia into this market.

As noted earlier, there are 13 million people within 2 hours of Boston and 58 million within 5 hours. Logan Airport, which is close to the port, has connections to 77 U.S. cities and 32 international cities. Portland serves a Southern Maine market of 350,000 people and the Portland International Jetport serves 15 domestic U.S. hubs and handles 1.6 million passengers annually. This market is substantive because in most cases, cruise lines with larger ships focus on Halifax, and most of southwest Nova Scotia does not see the benefits of the cruise line trade in the Canada-New England market.

Yarmouth has experienced some significant limitations in regard to becoming a cruise destination but it already enjoys regular ferry service. Infrastructure could possibly accommodate a part of the market if service connectors develop. Yarmouth can possibly become a regional homeport like Portland for small cruise ships.

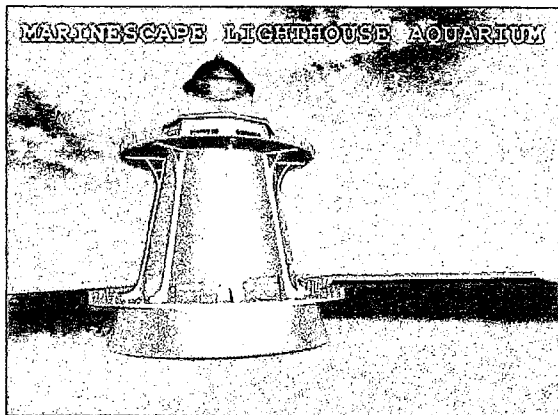
The port should focus on three major short term areas of expansion:

- Ferry passengers and vehicles;
- Pocket cruise ships; and
- Luxury yachts including mega-yachts.

#### **4.5.1 Signature Waterfront Research/Education/Entertainment Attraction**

A signature waterfront attraction that involves waterfront research, education, and entertainment should be explored. For example, some research has been done on a Yarmouth Aquarium/Marine Centre of Excellence. The initial concept for the facility was to design an iconic lighthouse type structure that could house an aquarium, a café, a

seafood restaurant, a museum, a research component, and classrooms so that local schools could come and visit.



The aquarium would feature touch pools and small tanks, with a large panoramic acrylic window curving around the main tank in the basement of the lighthouse. Visitors would be able to see divers feed the marine life at certain times of the day (these times could be tied in with ferry arrival or departure times). Visitors could take the journey through the underwater tunnel – the tunnel will wind its way through an underwater landscape. This facility would be intended to become a must see landmark for Yarmouth and Nova Scotia.

An example of a research component that could be included is the Gulf of Maine Mapping Initiative (GOMMI), is a collaboration of governmental and non-governmental partners in the U.S. and Canada. The goal of GOMMI is to map the entire seafloor of the Gulf of Maine to produce maps of seafloor topography, geology, and habitat, which are essential for resource management and many commercial activities. Stations for research could easily be assigned to Yarmouth and GOMMI should be approached on this.

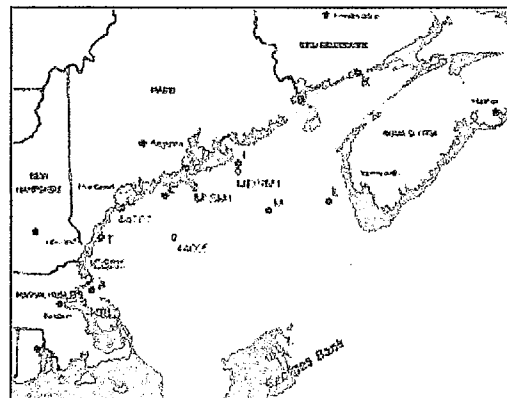


Figure 13: Gulf of Maine Research Project

#### **4.5 Regional Training Centre**

There is a skilled personnel shortage in the maritime and cruise ship industry. Operating companies are competing for well trained personnel. In the cruise industry, main stream vessels are growing in size and numbers and crew demand is higher. The Middle East is also drawing skilled ship service staff due to good wages ashore. Industry experts predict that there will be a significant need for new training programs and facilities to meet rising demand. New security regulations will also require introductory and advanced training for port and marine personnel.

The region should host a training facility in conjunction with an appropriate education institution. One of the benefits, besides local employment and economic impact would be the increased publicity the region would have in the maritime industry. The ability of the area to contribute to research in the field of marine aquatics is high.

#### **4.6 Public Venues**

There is a large amount of interest in having access to the waterfront for public activities and special events. Often these desires are incompatible with marine industrial activities. To provide for public enjoyment of the waterfront, designated public facilities that do not require deep water access should be enhanced north of the deepwater marine facilities. These venues should also be integrated with better pedestrian access, redevelopment of mid-areas between Water and Main Streets and enhancements of walking areas along Water Street. In addition to walking activities, there is a fair demand on the part of the public for public fishing. Fishing is a popular pastime and facilities have been incorporated into various waterfront developments throughout Canada and the Northeast United States to allow the public to fish. In conjunction with further waterfront development, several locations should be set aside and small parallel or finger style fishing piers should be constructed to meet public demand. The areas most appropriate for this include:

- South end, off Water Street between the treatment plant and the South end of the proposed Marine Global Logistics and Free Trade Zone;
- Location on public property near Killam's Wharf; and
- North end, off Water Street, between the public park near the former train station site and Scotia Garden Seafood.

Three locations are noted because of the tidal nature of the harbour and the path of travel of schools of fish during tidal changes. At least two of these locations would have water access during all states of the tide.

#### **4.7 Housing**

It is recommended that housing be incorporated into those areas of the water's edge that are impacted by tidal conditions such that vessels cannot generally access those areas during all states of the tide. The potential area could run north from Scotia Garden Seafood to the Domtex building. In addition, residential development on the east side of Water Street from the Waterview Marine Wharf to the former Domtex Building would be appropriate.

The integration of housing into this section of the waterfront does not interfere with the desire on the part of the community to maintain a healthy working waterfront and is consistent with the utilization of a portion of the harbour that is generally inaccessible to watercraft. The addition of housing also meets the community's need to add a higher level of vitality to portions of the waterfront. It also expands the availability of public resources to meet ongoing infrastructure requirements.

#### 4.8 Suggested Infrastructure Improvements

To accommodate many of the expressed desires, there was a general consensus that there needs to be a basic reorientation of the Yarmouth waterfront to optimize the current assets and provide operational flexibility. This would provide the port managers with the opportunity to adapt to changing market conditions that would also provide protection for marine businesses while addressing the desire to have a vibrant waterfront with plenty of public activities.

Effective utilization and development of waterfront assets should also involve a singular governance approach with the placement of all marine activities within the port management structure.

The following infrastructure changes are recommended for the noted facilities to address the needs of the port, and are consistent with the desires and goals of the community:

- a. Yarmouth Marine Terminal-Reorientation and reuse;
- b. Lobster Rock Marine Terminal-Reorientation, expansion and reuse; and
- c. Yarmouth Marine Global Logistics and Free Trade Zone-Creation and expansion.

Improvement of these facilities and a single managing entity provides the port with the best potential for improving marine business to meet community goals. These changes are the foundation for reaching the port's potential as a provincial and national gateway asset. Figure 14 shows the overview of the infrastructure improvements described in the following

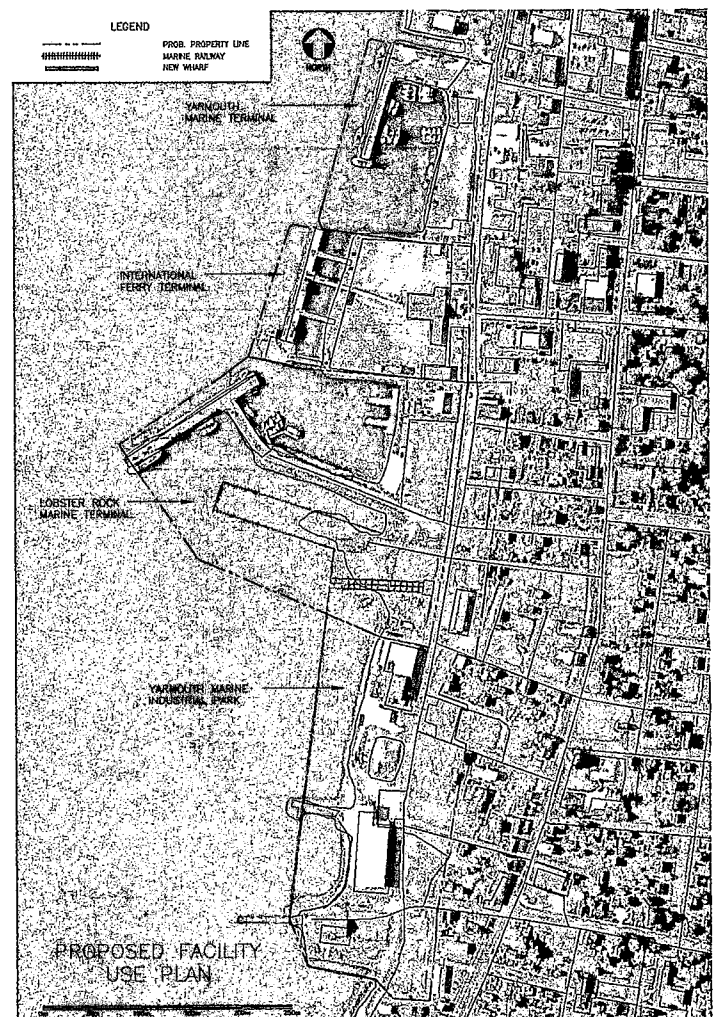


Figure 14: Infrastructure Improvements

sections. Figure 15 shows the proposed port land use.

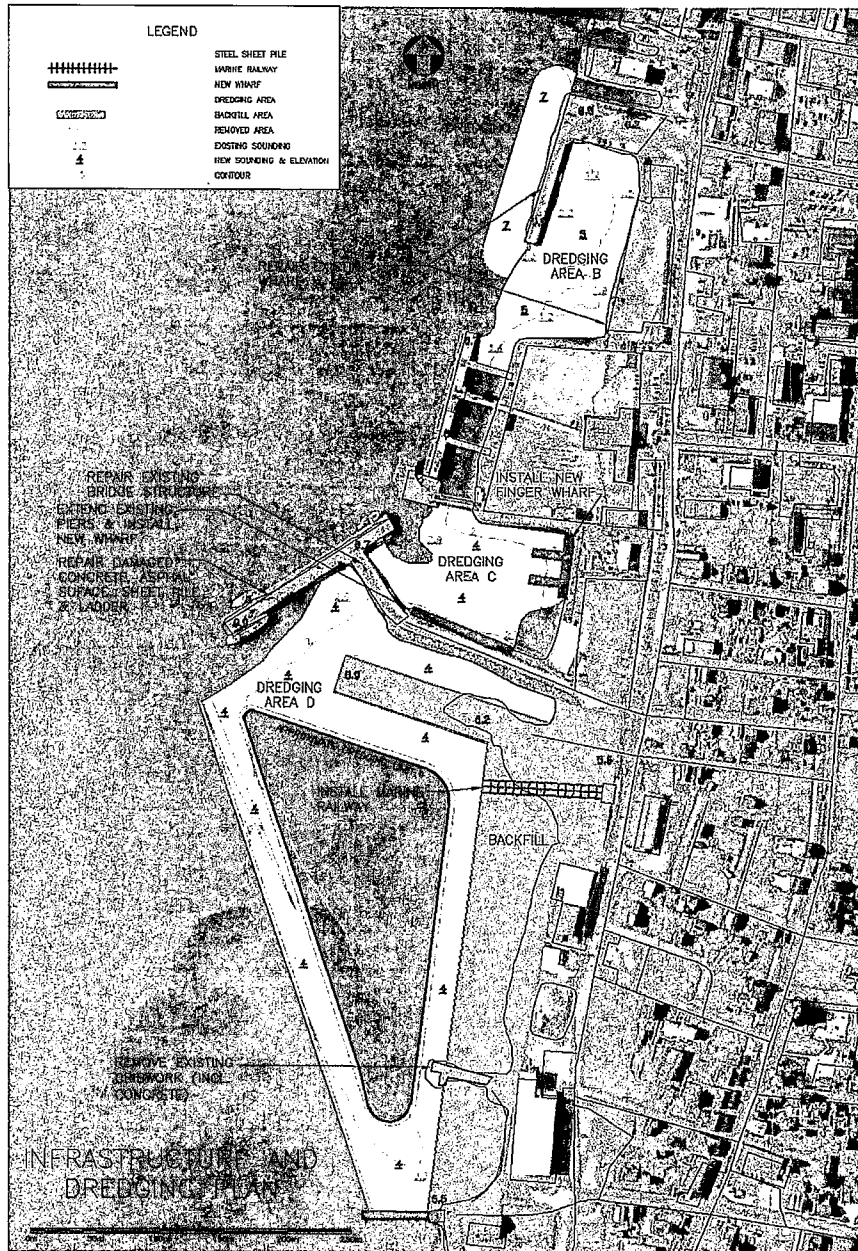


Figure 15: Proposed Port Land Use

#### 4.8.1 Yarmouth Marine Terminal

The objective of infrastructure improvement for this keystone facility would be to create an expanded Yarmouth Marine Terminal for multiple uses including marine based tourism, cargo operations, and possible support for marine industries such as the offshore oil and gas service sector. The critical nature of the suggested improvements is to provide a larger and more flexible facility that can be adapted to multiple marine uses.

## **Utilization**

It is recommended that the fishing industry be relocated to the Lobster Rock Pier Facility and the facility be reutilized for small cruise ships, offshore service industry, and other vessel calls appropriate for the terminal. The fishing fleet can continue to use the facility for icing, repair and layover if additional space is needed beyond the capacity of Lobster Rock. Figure 15 shows the concept plan.

## **Reorientation**

The Yarmouth Marine Terminal should be reoriented to encompass both the old Government Wharf and Marginal Wharf to provide a single comprehensive and flexible facility for multiple marine industry uses. When practical, parking should be moved to accommodate marine activities.

## **Infrastructure**

Repairs to the Marginal Wharf seawall at the south end should be undertaken to stabilize the structure. The fendering system on the Marginal Wharf should be improved with the addition of 12" fender piles. New fendering in the form of fender piles or shock absorbing fenders should be installed on the concrete pier. The landing weight capacity of the Marginal Wharf paved area should be tested and enhanced if necessary.

## **Dredging**

The basin and outer berth should be dredged to provide at least a seven meter berth depth at Mean Low Water on the outside berth and an overall five meter depth MLW within the basin.

## **Utility**

The ice plant should be retained for the remainder of its useful life but should be replaced at the Lobster Rock Facility. Shore power is adequate but outlets and some lighting should be expanded. Water lines should be retained with additional connecting stanchions added. A sewer line for pump out should be added as well as a supplemental fire main. A fueling station should be added to the facility for vessel servicing.

## **Security**

The entire facility should have access control fencing installed according Canadian government security regulations. A surveillance system should also be installed.

### **4.8.2 Lobster Rock Marine Terminal**

The objective for improving this other keystone facility is to provide a centralized area where full servicing of the fishing fleets can occur without encroachment or interference from other activities on the waterfront. The placement of all fishing fleet activities in a

single location has proven to be successful in numerous ports such as Portland, Maine; Gloucester, New Bedford; and Boston, Massachusetts.

### **Utilization**

The Lobster Rock Pier area should become a designated and clustered fishing fleet industrial area providing expanded services for vessels and fishing activities. This would provide a protected area where the fishing fleet can access services, care for vessels and conduct business without pressure from gentrification or public access. Figure 16 shows the concept plan.

↖ 15?

### **Reorientation**

The five acre parcel adjacent to the pier facility owned by the Town of Yarmouth should be incorporated into the facility footprint.

### **Infrastructure**

The area surrounding the former marine railway site should be enclosed with a sheet pile bulkhead structure creating an additional acre of hard ground for facility activities. The outfall slip should be opened for berthing in addition to the west side of the new structure. Fill would be provided from the dredged areas at the facility as well as dredge material from the Yarmouth Public Wharf. The material should be mixed with aggregate or other appropriate material to form an underlying stable surface. The fill area should be paved and constructed to handle landing weights of 250 pounds per square foot.

### **Dredging**

Berthing areas, the inner basin, outer basin and near shore outflow slip should be dredged to provide a minimum depth of four meters MLW.

### **Utility**

All portions of the facility used for berthing should be equipped with shore power with separate in line meters, fresh water and sewer line connections spaced an average of sixty meters apart.

### **Security**

Canadian government security regulations do not ,at this point, apply to fishing facilities; however, surveillance to deter crime and provide basic security should be installed.

## **4.8.3 Global Marine Logistics Park and Free Trade Zone**

The creation of a designated marine logistics park near the proposed expanded fishing facility would create a synergistic relationship between the processing industry and fleet serving sector. The close proximity of the park to the Lobster Rock facility would enhance cooperative commerce between the fleets and the processing sector.

## **Utilization**

The marine logistics park concept creates a clustered industrial park where marine activities and related industries can operate apart from, but integrated into the port's working waterfront. The creation of a park is actually formed as an administrative district where both public and private properties exist. The structure of the district encourages the development and relocation of marine and associated businesses into the footprint of the area. The area most appropriate for this is the southern end of the waterfront on Water Street where IMO Foods and several other businesses are located. There is adequate land available. Through municipal processes, the Town of Yarmouth would designate the recommended area as the Yarmouth Marine Global Logistics and Free Trade Zone and, in cooperation with the port office, develop incentive guidelines, criteria and management processes for the area. These incentives might include a tax incentive, tax increment financing district, and US Customs clearance export zone under CT-PAT.

## **Reorientation**

Access points should be established on the perimeter of the proposed Global Logistics and Free Trade Zone without encumbering public or roadway access on Water Street.

## **Infrastructure**

Walkways, roadway markings and signage should be installed to indicate the marine logistics park area. A structured sheet pile bulkhead could be installed around the tidal area to create approximately five acres of potential new land. This can be done in segments based on demand and available fill and dredge spoils. The dredge material should be mixed with aggregate or other appropriate material to form an underlying stable surface. The fill area should be paved and constructed to handle landing weights of 500 pounds per square foot. It is anticipated that new buildings on the fill area would be built on foundational pile structures. To the extent possible, berthing space should be added as an extension of the Lobster Rock Facility to accommodate fishing vessel unloading and servicing.

## **Dredging**

The South Channel and any newly created berthing should be dredged to a minimum depth of four meters MLW. Care needs to be taken to not disrupt or compromise the quality of the water supply for the lobster operation.

## **Utility**

A utility sub-station to meet all power demands of heavy industrial use should be considered based on the potential capacity of the marine logistics park's utilization. All utilities should be relocated below ground where practical. Any new berths should be equipped with shore power, fresh water and sewage similar to the Lobster Rock Facility.

## **Security**

No overall extraordinary security measures are required unless individual businesses elect to undertake them. Individual businesses that export into the US can undertake a

pre-approval process for export under US Customs known as the Customs Trade Partnership Against Terrorism (CTPAT). This process requires expanded security at participating facilities.

In addition, a marine railway for the servicing of fishing boats and small craft should be added to facilitate repair and maintenance capabilities. This should be integrated into the fill area proposed for the site.

#### **4.8.4 International Ferry Facility**

The International Ferry Terminal is owned by Transport Canada and is on long term lease to Bay Ferries. The facility is located between the Yarmouth Public Wharf and Lobster Rock Facility. The facility comprises seven acres, with five acres of land and two acres of water sheet. The facility has a ten thousand square foot terminal, constructed in the 1950s which is in need of updating. The facility currently hosts the high speed ferry, The CAT, which operates on a seasonal basis and connects to Portland and Bar Harbor Maine. The placement of the facility limits the flexibility of adjacent port properties to adapt to expanded year round marine use. There are also some current traffic and space issues.

##### **Utilization**

The facility should not remain as a stand alone facility in the middle of the port district under separate management and control. This facility, along with the Lobster Rock upland area, and Yarmouth Public Wharf, needs to be looked at holistically to develop enhanced and optimal utilization of all three properties.

##### **Reorientation**

A site plan needs to be developed which would incorporate this facility with the port owned properties in support of expanded marine activities. A new site plan should look at realigning the on site and off site traffic flows and allow for interconnection of properties.

##### **Dredging**

The ferry facility should be included in any proposed dredging project for the port or port berths.

##### **Infrastructure**

The existing terminal needs to be upgraded or replaced. A master planning and engineering study is recommended for the near future.

##### **Utility**

Utilities on site should remain separate and may need to be relocated based on any new site plans and reconfigurations.

## **Security**

Security for the site is currently in place according to Canadian Federal Regulations. Any surveillance system set up for port properties should be interconnected with this facility.

## **Governance**

It is recommended that the ownership of the ferry terminal be transferred from Transport Canada to the Port of Yarmouth. Any existing lease agreements would carry over and Bay Ferries would continue to have operational control of the site.

### **4.8.5 Bulk Export Terminal**

While outside of the scope of this study, there was an apparent opportunity and general consensus that Bunker's Island can play a key role in the future of Yarmouth as a port gateway. Of note is the port's current discussion with a European company interested in developing a wood pellet manufacturing plant and export facility.

It is recommended that the port ask the province to explore the purchase of the Bunker Island complex currently owned by Irving Oil to develop the potential for bulk exports from southwestern Nova Scotia. The property should be placed under management of the Port of Yarmouth, who should undertake pier repairs and arrange for the addition of mooring dolphins to expand the capacity of the berth. The pier needs to be restored for cargo handling and a separate engineering study is recommended to plan improvements and assess environmental conditions.

In addition to the purchase of the property, public funding should be sought which would allow the port to develop a storage facility for bulk cargo storage and handling, including the equipment necessary to load ships at the wharf. A concept of the Bunker Island Terminal is shown in Figure 16.

A preliminary estimate in regard to the addition of a 100,000 square foot storage facility for wood pellets has been carried out. The cost of construction of the building, utilities, equipment for loading, and pier repairs are estimated at 5 – 7 million dollars. This facility could be constructed on the existing site where the former Irving building was located. The approximate size of the foot print of the building, which would have a steel support structure with fabric covering, is approximately 50 m by 100 m. In addition, a new berth should be planned with a length of approximately 300 meters, with an alongside depth of 14 meters. The berth should include a new pier for cargo handling equipment, mooring dolphins and a pile based fendering system. A more detailed construction estimate should be completed if this project moves forward at the earliest possible opportunity.



**Figure 16: Bunker Island Terminal Concept**

#### **4.8.6 Harbour Dredging**

Within a five year period, the port will need to address some general harbour dredging in selected areas. This requirement needs to be planned because of the long permitting process for dredging projects and the ongoing silting of parts of the harbour.

Key to this is the means to finance the project through the collection of harbour fees and the responsibility for undertaking the project. The port, working with the federal government needs to address this specific issue and determine which entity will be responsible for the general harbour dredging, outside of facility dredging requirements. The federal government and the port needs to develop a funding mechanism to address those needs.

#### **4.9 Port Marketing**

The port needs to develop a comprehensive marketing effort and provide the resources to undertake meeting the goals and objectives of the new plan. The marketing program should have a full time manager and staff support, should outline objectives and goals,

include benchmarks to measure success, and seek to develop a sound base of information for decision making and resource commitment.

This should be accomplished through a regional marketing effort, in cooperation with Tourism Nova Scotia, the international ferry operator, the airport, local businesses and the various municipal and regional economic development agencies.

The plan itself should focus on some very specific areas and should target each of the following:

- Marine based tourism;
- Cargo;
- Marine industrial activities; and
- Fishing.

#### **4.9.1 Marine Based Tourism**

Tourism is the core of the regions current economic base. The recent loss of the conventional ferry operation in 2005 demonstrated a need to diversify the marine based tourism market. To accomplish this, the port should target the Tourism and Businesses in Section 9, 1 as follows:

- Ferry passengers and vehicles: The port would undertake a focused marketing effort targeting the New England and upstate New York drive in market, including cooperative efforts with AMTRAK, regional bus lines and Two-Nation Vacation Travel Agents.
- Pocket cruise ships: The port need direct contact all pocket cruise operators for port of call activities and possible future homeport activities based upon ferry and air service connections.
- Luxury yachts including mega-yachts: The port should seek to develop a cooperative marketing plan that can be developed with U.S. facilities that handle mega-yachts to attract vessel owners.

The port, however, cannot be successful without the cooperation and assistance of the numerous stakeholders that base their efforts in the tourism trade. To accomplish this, several expanded marketing activities need to be undertaken. First and foremost however, the port, in cooperation with regional entities, needs to establish a full time and focused marketing program with an appropriate budget. Some of the objectives would include:

#### **Create a Regional Image**

- Create a signature tourism destination project on the waterfront
- Local attractions, service providers and tourism officials should work together to create a new and more prominent concept of tourism offerings featuring the local region as opposed to just the port area.
- The region should develop a new and easily recognizable image or brand.

### **Focus on Target Marketing**

- Population centers with direct vehicle access to New England
- Population areas in the US Southeast and Southwest with good air service connections to New England
- Luxury yacht owners, manufacturers and service providers
- Pocket cruise line managers and executives

### **Develop a Port Gateway Marketing Package**

- Port information kit with tourism information and service directory
- Regulatory requirements including Customs and Immigration
- Safety and security information
- Port costs
- Facility information and service provisions

### **Increase Utilization of the Internet for Marketing**

- Develop a tourism e-mail database
- Develop an information E-Card for distribution
- Develop comprehensive tourism and service based web sites

### **Enhance the Current Marketing Effort**

- Work with the province and Bay Ferries in a cooperative targeting effort
- Make frequent sales calls to pocket cruise line headquarters in New England
- Make sales calls to New England mega-yacht facility operators and develop an exchange marketing program with those facilities
- Develop a cooperative marketing effort between the seaport and airport
- Develop unique gifts that promotes the area's image
- Develop a regional resource plan for marketing funds

#### **4.9.2 Cargo**

Working with the Province of Nova Scotia, the port should begin to develop and maintain a database of Nova Scotia exporters who currently move product over the road and work with those exporters to develop a cost effective marine alternative to their current logistical flow. This would involve a comprehensive survey of the province's exporters with frequent updates. The most effective manner is regular contact with shippers to address transportation needs.

#### **4.9.3 Marine Industrial Activities**

The port, working with private industry, should seek to enhance Yarmouth's image as a marine service center by promoting service based activities such as marine engineering and repair, fueling, and similar businesses. The port should also market the port for its vessel support capabilities.

#### **4.9.4 Fishery**

Similar to marine industrial activities, the port should enhance its offering to the fishing fleets and promote those services. The fishing industry needs a protected area that provides shelter for berthing and servicing of vessels, as well as infrastructure for maintenance and repair. In addition, close proximity to processors and suppliers allows the industry to function unencumbered.

The best approach is the clustering of marine and shoreside facilities in a specific area of the port as recommended. This technique has been used successfully in numerous ports in the U.S. and Canada, and has proven to be successful for both the fishing fleets and processing industry.

#### **4.10 Governance**

Effective utilization and development of waterfront assets should also involve a singular governance approach with the placement of all marine activities within the existing port management structure. The port's management will function best when consolidated into a single entity. The port should also adopt the proposed master plan in cooperation with the associated political entities in the community and the port staff should be expanded as appropriate to accommodate the management of facilities and marketing program.

## 5.0 Port Development Plan

The existing conditions, opportunities, and strategic issues have been consolidated into a physical, management, and economic plan that is operationalized by implementing a series of specific actions. The plan is based on adopting a gateway concept of Yarmouth as an international border crossing town, a central node in an inter-modal transportation corridor, and a recognized maritime tourism destination location with outstanding waterfront living opportunities.

The physical plan is shown on exhibits attached throughout the report. It consists of reorientation of waterfront uses and preparing the waterfront infrastructure for development based on the strategic directions. Included in this are rehabilitation of the existing berths and creation of a new Global Logistics and Free Trade Zone on the waterfront and a Bulk Materials Handling Facility at Bunker Island. It also includes creation of an iconic waterfront tourism destination consisting of entertainment, research and education features. The physical plan also anticipates significant residential and public uses, particularly in the north end of the waterfront

The management plan includes consolidation of as much of the port planning and facility management with the Yarmouth Port Authority as possible. This may involve expansion of the organization and collapsing other organizations into it. To the extent possible, all transportation modes should be planned jointly. It also includes the port taking an active role in governance matters in the Gulf of Maine in partnership with the province and taking an active role in trans-border organizations.

The marketing plan includes developing solid data on cargo shipments between the heartland of Nova Scotia, including the Nfld Ferry traffic, and the heartland of New England and targeting specific commodity producers and transporters as partners. It also includes presenting a concise and credible picture of Yarmouth from a marine transportation and related services perspective. It is heavily weighted upon partnering with select enterprises and institutions that the Port of Yarmouth can add value to. This includes industry, academia and governments.

The financial plan calls for capital investments that will bring long term operating revenues. The port needs to align resources to attract \$20- 25 million in capital investments which will result in the port operating at a comfortable surplus in several years time,

The specific action plans are as follows.

Each of the following tasks are recommended to be undertaken and completed as practical within the time frame as indicated.

### 5.1 Year One Action Items

16. Adopt the Yarmouth Port master Plan
17. Apply for federal funding through the Gateway enhancement and critical infrastructure programs for infrastructure improvements
18. Reorient the waterfront's marine terminals
19. Prepare the Global Logistics and Free Trade Zone Detailed Concept Plan

## Infrastructure

- too exposed
  - $> 2$  nm fetch
  - reflection off SSP
- dredged channels  $\neq$  berth areas are too narrow
  - large potential for Class A dredging
- the proposed finger pier immediately south of Lobster Rock Approach is too close to the Approach
- the marine railway bisects the area

20. Conduct a supply chain transportation research
21. Prepare Transport Partners Package
22. Institute the comprehensive marketing plan
23. Develop a University Marine Research Strategy
24. Institute a new port tariff and terminal rules/regulations
25. Enhance marine terminal security
26. Commence an improvement plan for the ferry terminal
27. Create designated truck and high traffic routes
28. Commence process for assuming governance of the ferry terminal
29. Conduct an environmental assessment and develop master plan for Bunker's Island
30. Commence process of purchasing Bunker's Island
31. Commence construction design, engineering and permitting as funded

## **5.2 Year One to Five Action Items**

6. Complete streetscape and public waterfront improvements as funded
7. Construct Global Logistics and Free Trade Zone
8. Target for initial stage of US Customs Pre-Clearance Facility
9. Complete design engineering and construction of a bulk storage and export facility on Bunker's Island
10. Create signature waterfront attraction

## **5.3 5-10 Year Action Items**

3. Complete all construction as funded
4. Begin process for selected harbour area dredging

## **5.4 10 + Year Action Items**

3. Expand the Global Logistics and Free Trade Zone footprint
4. Dredge harbour in selected areas