

# PORT SUSTAINABILITY PROGRESS REPORT

August 2008

*Prepared for:*

**Massachusetts Port Authority  
Maritime Department**

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## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1.	BRIEF OVERVIEW OF MASSPORT .....	1
1.2.	PURPOSE OF REPORT .....	1
1.3.	FACILITIES/PROPERTIES INCLUDED IN REPORT .....	1
<b>2.0</b>	<b>SUSTAINABILITY OVERVIEW .....</b>	<b>2</b>
2.1.	WHAT IS SUSTAINABILITY?.....	2
2.2.	ROLE OF SUSTAINABILITY IN MASSPORT .....	2
<b>3.0</b>	<b>SUSTAINABILITY AT PORT OPERATIONS.....</b>	<b>3</b>
3.1.	CONLEY EMS.....	3
3.2.	EQUIPMENT REPLACEMENT PROGRAM.....	4
3.3.	ULTRA LOW-SULFUR DIESEL USAGE .....	4
3.4.	TRUCK IDLING REDUCTION .....	5
3.5.	VISUAL IMPACT REDUCTION .....	5
3.6.	VOLUNTARY DIESEL RETROFIT PROGRAM.....	6
3.7.	PARK OPERATIONS.....	6
3.8.	FISH PROCESSING WASTE .....	6
3.9.	FISH PIER ELECTRIFICATION .....	6
<b>4.0</b>	<b>SUSTAINABLE PLANNING, DEVELOPMENT AND CONSTRUCTION .....</b>	<b>7</b>
4.1.	PLANNING PRINCIPLES .....	7
4.2.	DESIGN GUIDELINES IN NEW GROUND LEASE AGREEMENTS .....	7
4.3.	LEED GOALS FOR DEVELOPMENT AND REDEVELOPMENT.....	8
4.4.	MASS TRANSIT SUPPORT.....	9
4.5.	OPEN SPACE AND PARK DEVELOPMENT.....	10
<b>5.0</b>	<b>OTHER SUSTAINABILITY INITIATIVES .....</b>	<b>12</b>
5.1.	NORTH ATLANTIC RIGHT WHALE .....	12
5.2.	TBHA MARINE DEBRIS REMOVAL PROGRAM .....	12
5.3.	HARBOR DEEPENING PROGRAM .....	13
5.3.1.	ENVIRONMENTAL AWARD FOR HARBOR DEEPENING.....	14
5.4.	STATE SUSTAINABILITY PLAN.....	14
<b>6.0</b>	<b>CONCLUSION.....</b>	<b>15</b>
6.1.	SUMMARY OF SUSTAINABILITY ACTIVITIES .....	15
6.2.	WHO TO CONTACT FOR MORE INFORMATION .....	15



## **1.0 INTRODUCTION**

### **1.1. Brief Overview of Massport**

The Massachusetts Port Authority (Massport) is an independent public authority which develops, promotes and manages airports, key facilities and properties in the Port of Boston, the Tobin Bridge and other transportation infrastructure to enable Massachusetts and New England to compete successfully in the global marketplace. Massport is also one of the largest landowners in the South Boston Waterfront District, controlling nearly 300 acres of marine terminals, development parcels and other properties. Massport is a self-financing authority and as such must undertake projects and make investments that are both fiscally and environmentally sound. Massport's facilities employ more than 20,000 people, including approximately 1,100 Massport employees, and generate more than \$8 billion for the region's economy every year. By safely and securely moving passengers and goods, the airports, seaport and other world-class transportation facilities lay the foundation for economic prosperity in New England.

### **1.2. Purpose of Report**

This report highlights the sustainability-related activities that Massport's Maritime Department has undertaken to date through the operations and development of its maritime terminals and other properties in Charlestown, East Boston and South Boston. This report provides an overview of the programs that Massport has put in place to improve the sustainability performance of the Maritime Department's operations.

### **1.3. Facilities/Properties included in Report**

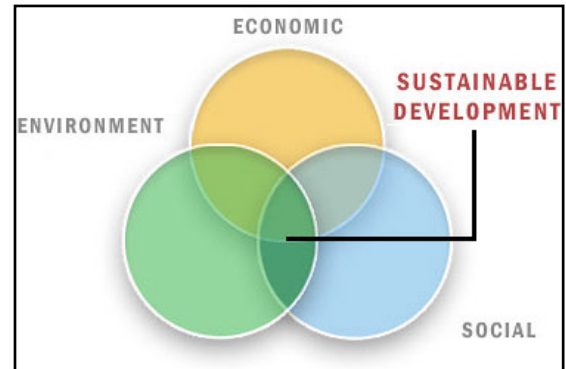
This report focuses on:

- Port Facilities Operated by Massport
  - Conley Container Terminal
  - Black Falcon Cruise Terminal
  - Fish Pier
  
- Parks on Maritime Property
  - Piers Park
  - Bremen Street Park
  - South Boston Maritime Park
  
- Development Parcels
  - Commonwealth Flats Development Properties
  - Manulife Building
  - Massport Marine Terminal

## 2.0 SUSTAINABILITY OVERVIEW

### 2.1. What is Sustainability?

Sustainability is a broad concept with many and varied definitions. However, the most widely accepted definition is that from the World Commission on Environment and Development (also known as the Brundtland Commission), which defined sustainable development as “development that meet the needs of the present without compromising the ability of future generations to meet their own needs.” Another common concept used in the definition of sustainability is the idea of balancing economic, environmental and social needs. This concept is often expressed as the triple bottom-line or three legged stool.



### 2.2. Role of Sustainability in Massport

Sustainability has played a significant role in Massport’s planning and decision-making for a number of years. In 1999, Massport integrated key sustainability objectives into the Environmental Status and Planning Report (ESPR) for Logan Airport. In 2000, Massport adopted an Environmental Management Policy designed to support its sustainability goals. This Policy includes a commitment to:

- Operate all facilities in an environmentally sound and responsible manner.
- Minimize the impact of its operations on the environment to the extent feasible and practicable.
- Define and apply sustainable design principles in the planning, design, operation and decommissioning of its facilities.
- Ensure environmental considerations are included in the business, financial, operational and programmatic decisions.

The Policy also commits Massport to develop and implement Environmental Management Systems at its Maritime and other facilities. To date, Environmental Management Systems have been developed at Hanscom Field, the Tobin Bridge, Conley Terminal and Logan’s Facilities II. All of these Systems have been certified to the international standard for Environmental Management Systems, known as ISO 14001.

In October 2004, Massport developed its first Sustainability Plan which builds on the Environmental Management Policy. The plan established an internal sustainability team, and established long- and short-term goals related to emission reduction and alternative fuels among others. The plan also formalized the environmental management system (EMS) priorities and tracking mechanisms. Through these programs, Massport is focused on reducing impacts on air and water quality as well as becoming more energy efficient in its operations, which has the complementary benefit of reducing operating costs. In this way, Massport is being attentive to the concerns of the local and regional communities.



Massport is committed to the efficient use of renewable resources to reduce the impact of built projects while also creating a practical, comfortable and healthy working environment at its facilities. Massport is in the process of developing a formal sustainable design and construction program for use on all Massport and major tenant projects. The program will establish specific requirements and criteria for a variety of sustainability components including criteria for designer selection and design review, as well use of “green technologies” which foster the efficient use of renewable resources such as energy, water and air.

Massport has voluntarily agreed to comply with the “LEED Plus” green building requirements incorporated into Executive Order 484, Leading by Example – Clean Energy and Efficient Buildings. The LEED Plus standard was developed by the Commonwealth of Massachusetts Sustainable Design Roundtable and incorporates principles of the Leadership in Energy and Environmental Design (LEED®) standard, as well as additional requirements associated Smart Growth, Water Conservation, Energy Efficiency and Indoor Air Quality. LEED is a green building standard developed by the United States Green Building Council and is the most widely utilized green building standard in the U.S. The LEED standard assigns points based upon a wide range of environmental and energy criteria and a building must achieve a certain minimum number of points to be able to be certified to the standard. The LEED Plus standard established by the Commonwealth requires that, in addition to achieving basic LEED certification that a building incorporates a number of other specific features, including:

- Energy conservation that reduces consumption to at least 20 percent below the Massachusetts Energy Code requirements.
- At least one of four Smart Growth criteria, including development on a previously used site in a densely populated neighborhood, use of a brownfields site, reuse of at least 75 percent of an existing structure, or development within one-half mile of public transportation.
- Water conservation measures, including reduction of potable water use for irrigation by 50 percent and reduction of total building water use by 20 percent.

Massport is also in the process of updating its Environmental Management Policy to include additional sustainability and energy conservation programs and targets.

### **3.0 SUSTAINABILITY AT PORT OPERATIONS**

#### **3.1. Conley EMS**

In December 2003 the Conley Container Terminal was certified to the ISO 14001 Standard, making Conley the second Massport facility (Hanscom Field was the first) to have a certified Environmental Management System (EMS). Conley is also one of the first container terminals in the United States to have such a system in place. The basis for the EMS is Massport’s Environmental Management Policy which provides the framework for Massport’s EMS and other environmental goals.



The EMS at Conley (as well as at other Massport facilities) is a key mechanism for ensuring that Massport addresses its sustainability goals. One of the key steps in developing the EMS at Conley was to go through an aspects and impacts analysis. This analysis examines all activities undertaken at Conley and analyzes them in terms of their potential environmental impact, regardless of whether or not they are regulated. Impacts are then objectively evaluated for their potential to impact the environment, the level of concern by interested parties (e.g. neighbors, employees, tenants, regulators, etc.), and a number of other factors to determine whether or not they are worthy of further consideration. Those impacts that are deemed worthy of further consideration undergo additional analysis to determine if there are feasible options for impact reduction. These options then become the basis for explicit objectives and targets for improving environmental performance. These objectives and targets establish specific, measurable action items and target due dates so that environmental improvements can be tracked over time.

The aspects and impacts are revisited annually to determine if any changes to operations, regulations or available technologies warrant updating the analysis, which then is reflected in an update of objectives and targets. This ensures that the consideration of environmental impacts remains current and that there are continuous improvements to environmental performance.

At Conley Terminal there are a number of operational controls that have been established to foster the principles of sustainability through improved environmental performance. These include:

- Recycling of waste oil
- Recycling of fluorescent bulbs
- Recycling of specialized waste, such as batteries, tires and anti-freeze
- Integration of environmental considerations into purchasing decisions regarding new equipment
- Installation of diesel oxidation catalysts on mobile equipment to reduce air emission impacts

### **3.2. Equipment Replacement Program**

As equipment is replaced at Conley Terminal, environmental considerations are factored into the decision-making. The environmental impact of greatest concern with most of these equipment replacements is the air emissions from use of diesel. Increasingly stringent regulatory requirements for diesel engines used in non-road applications are being phased in over time. As a result, consideration is given to whether it is possible to purchase equipment which exceeds the current regulatory requirements at the time of purchase, so as to reduce environmental impacts beyond what is required.

### **3.3. Ultra Low-Sulfur Diesel Usage**

Massport is using ultra low-sulfur diesel (ULSD) fuel in all diesel equipment at Conley Terminal. ULSD significantly reduces one of the key pollutants of concern from diesel engines:



sulfur dioxide. As with the engine requirements, the requirements for use of ULSD are being phased-in. Off-road vehicles and equipment (such as that used at Conley) are not required by regulation to use ULSD until 2010. In an effort to reduce its environmental impacts in advance of the regulations, Massport started using ULSD at the Conley Terminal in early 2004.

### **3.4. Truck Idling Reduction**

Conley Terminal has embraced the challenge of increasing capacity and improving operational efficiency within the facility's constrained footprint. Since November 1, 2006, Massport has decreased the dwell time for containers from 5 days to 2 days to encourage turnover and free up space. To reduce the possibility of trucks idling on city streets before container pick up or drop off, Massport has instituted an efficient gate processing system and extended the gate operating hours. Pre-gates are available to process several trucks at any one time, again with the goal of reducing idling time. With computers and remote cameras, the Conley Terminal dispatchers can process a trucker's request for pick-up or drop-off within a couple of minutes and then direct the truckers to the appropriate location for the container. The system works efficiently, resulting in few occasions of queuing at the gate. In general, efficiency will continue to improve and air impacts will be reduced with the implementation of more sophisticated computer systems to manage container operations among dispatchers, brokers, shippers, U.S. Customs, carriers, and Massport. Massport is currently evaluating next generation computer terminal operating systems (MTOS) for use at Conley which, when implemented, will further increase terminal efficiency.

The Conley EMS identified truck idling as an issue for further study, and Massport has evaluated options for reducing impacts from truck idling. Since the container trucks visiting Conley are not directly operated by Massport and the majority of the truck idling occurs outside Massport property, the options for Massport to directly reduce truck idling are limited. Massport has identified two specific activities as the best options for reducing truck idling. First, Massport initiated a discussion with the State Police to remind them of the importance of enforcing the state law which limits idling to five minutes (unless there are specific conditions, such as preservation of refrigerated cargo, that require idling). Second, Massport developed a handout describing the requirements of the idling law which was provided to truckers entering the Conley Terminal. It should also be noted that Conley Terminal provides 360 electrical power outlets to maintain cold temperatures within refrigerated units (reefers) to reduce the need for idling.

### **3.5. Visual Impact Reduction**

Conley Terminal has visual impacts on the nearby South Boston neighborhood, which result from the size and nature of the equipment at the Terminal, as well as the need for nighttime lighting. To minimize visual impacts, Massport has solicited input from the local community regarding particular issues of concern and taken specific actions in response. Massport sought community preferences for the color of the cranes at Conley Terminal to best reduce their visual impact, given their size and location.

Another area of concern expressed by local residents was the impact of nighttime lighting at Conley Terminal. Although a certain level of lighting is necessary to maintain security at the



Terminal, Massport determined that certain lighting could be reduced or eliminated without affecting security and these changes were made to reduce impacts on the local neighborhood.

### **3.6. Voluntary Diesel Retrofit Program**

As part of Massport's commitment to decreasing emissions from portside equipment, it has implemented a program of engine retrofitting and upgrades that are now an integral part of Conley Terminal's equipment maintenance and management system. Massport already has made many retrofits at the Terminal. All cargo cranes have been electrified, reducing air emissions; however, much of the remaining mobile equipment at Conley is diesel-powered. With help from an EPA grant, Massport retrofitted four rubber tire gantry cranes, 14 tractors, and two reach stackers at its Conley container terminal with emission controls. Tractors have been equipped with diesel oxidation catalysts and some have Tier III engines. Many of the forklifts are powered with propane and two additional forklifts are electrified. Snowmelters at all Massport facilities are equipped with diesel particulate filters (DPFs). Massport has experienced no loss of fuel efficiency with these retrofits, or any additional maintenance requirements.

### **3.7. Park Operations**

Massport operates a number of parks for the benefit of the public. These include Piers Park, South Boston Maritime (Waterfront) Park and Bremen Street Park. In the management of these parks, Massport incorporates several sustainable landscape practices into its beautification and maintenance programs. These include:

- Aggregating open space to create larger parks, more vegetation and shade, and decreased heat island effect;
- Integrating stormwater management practices designed to capture, use, detain, and treat runoff;
- Decreasing the urban heat island effect by creating shade;
- Specifying the use of native woody plants (shrubs and trees) and reserve perennial and herbaceous plants as focal points to reduce maintenance and improve aesthetics;
- Reducing long-term pesticide, herbicide, and fertilizer use;
- Enriching of soil with composting and leaf shredding to increase organic matter and allow plantings to resist insects and disease invasion and tolerate periods of drought.

### **3.8. Fish Processing Waste**

As part of the waste stream management from seafood processing operations, a local company collects the seafood gurry (the portion of the seafood product left over after cleaning, cutting, portioning and other processing) and recycles this byproduct into cat food and fertilizer.

### **3.9. Fish Pier Electrification**

Massport currently maintains two power stations extending shore-to-ship power for up to four vessels at the Boston Fish Pier ("the Fish Pier") in South Boston, the home of Boston's commercial fishing fleet. Currently 13 fishing vessels regularly dock at the Fish Pier and

additional berthing space is available to accommodate visiting vessels and future growth of the fishing vessel fleet. The fishing vessels operate on-board diesel generators approximately 10 to 14 hours per day when docked to supply electricity for all on-board service needs. The available electrical power stations at the Fish Pier enable vessels to connect to shore power when docked, reducing unnecessary idling by 95% and yielding significant reductions in the emissions of EPA criteria pollutants and greenhouse gases. Benefits include idle reduction, regional air quality improvement, public health improvements, and immediate economic benefits for fishing and visiting vessels. The project directly reduces NO<sub>x</sub> and VOCs, two main contributors of ozone formation, as well as PMs. Massport is pursuing grant opportunities to install shore power stations at the remaining nine berths at the Fish Pier.



*Shore Power Stations*

## **4.0 SUSTAINABLE PLANNING, DEVELOPMENT AND CONSTRUCTION**

### **4.1. Planning Principles**

Redevelopment of Massport's underutilized urban waterfront properties supports a regional environmental policy of "Smart Growth" where denser urban redevelopment is preferred near existing transportation, utility, open space and municipal service infrastructure. Reuse of Massport's urban waterfront property creates jobs, adds housing units and attracts tourists, all of which expand economic prosperity in the greater Boston area. Development on Massport's waterfront property follows the Commonwealth of Massachusetts Sustainable Design Principles. In applying these principles, and others, to waterfront development on its property, Massport seeks to increase public open space, achieve appropriate development massing and density, enhance public transportation, expand use of alternatively fueled vehicles, integrate sustainable design and construction in new developments and remediate environmentally impaired properties, among other objectives. The application of sustainable planning, development and construction measures are described in the remainder of this section.

### **4.2. Design Guidelines in New Ground Lease Agreements**

When Massport leases land for development or redevelopment, sustainable design and construction requirements are incorporated to the extent possible into the lease agreements. Massport requires tenants to include a design and development team with experience in achieving Leadership in Energy & Environmental Design (LEED) Certification and that the project achieve LEED Plus certification as established by the State under Executive Order 484 (see Section 2.2 for description of LEED and LEED Plus). It is the intent of these guidelines to establish performance standards and objectives that can be satisfied using a number of approaches or solutions that protect and enhance the important site features, water resources, energy resources, indoor air quality and neighborhood characteristics.

Site design objectives typically include the minimization of impacts from all site improvements such as roadways, parking areas, pedestrian walkways, and drainage facilities, on the existing environment; minimization of new impervious surfaces; limitations on the clearing of existing vegetation; and, grading requirements to prevent soil erosion. Massport works with developers to design and site buildings to minimize impacts on the existing natural environment, and minimize grading requirements and alteration of existing drainage patterns. Building clustering is to be considered in order to maximize opportunities for sharing facilities, and to enhance “view sheds” and view corridors.

Planting and landscaping objectives include use of construction materials and plant materials that have minimum maintenance needs, including watering and fertilizing; and minimizing tree removal to include only those absolutely necessary for construction to take place.

### **4.3. LEED Goals for Development and Redevelopment**

To ensure that green building concepts are integrated into all projects, Massport has incorporated LEED goals in all new development and redevelopment projects for the past several years. Since not all development teams may have access to LEED expertise, Massport has retained the services of a LEED-certified consultant who provides guidance and assistance during the planning stages and development of new construction projects. This type of approach has proven successful, as demonstrated by the Hancock Manulife building, which was built on Massport Maritime Department property.

The John Hancock/Manulife Building Office building at 601 Congress Street was built on Massport's South Boston land holdings and was LEED Certified in 2006, one of the first buildings in Boston to achieve full LEED certification. The building exhibits a glass curtain wall with three layers of glass. With this design, the building is expected to use less energy overall compared to a typical code-compliant high-rise building with a conventional curtain wall. The outer layer of glass is a double-paned, sealed panel and inner glass layer provides a cavity for airflow along the wall to a plenum, reducing heating and cooling demand and cost, as well as initial mechanical equipment costs. The base building, with its plant-filled atrium, qualifies for LEED certification.

*Manulife Office Building*

The 14-story building is stepped at the 12th floor, leaving an open roof area with direct access from adjacent offices. This “green roof” creates a terrace and garden that is an amenity for Hancock/Manulife employees as well as another sustainable design component of the building. Specified native seagrasses that are adaptable to dry conditions were placed on the rooftop. The green roof area provides additional insulation, minimizes stormwater runoff and reduces the heat island effect of the building.

The interior was designed to support sustainability and comfort. Exterior private offices have full glazed fronts to provide daylight to the interior spaces and make views accessible from the



workstations. Collection and storage spaces for recyclables are conveniently located throughout the office spaces. Interior finishes include eucalyptus, a rapidly-renewable wood, as well as non-PVC materials such as rubber base and linoleum. Urea formaldehyde-free millwork substrate, low-VOC paints and sealants, and low-flow fixtures were also specified.



*Black Falcon Cruise Ship Terminal*

Another application of LEED principles is in the planned renovation of the Black Falcon Cruise Terminal. Massport currently owns and operates the Black Falcon Cruise Terminal in South Boston. The existing terminal is an adaptive reuse of a former warehouse building. Many cruise passengers arrive by bus or taxi, reducing the potential automobile traffic associated with the facility. Cruise lines have an extensive recycling program for almost all the materials used on-board.

The existing cruise terminal no longer efficiently meets the needs of modern cruise vessels, and when two cruise vessels embark/disembark on the same day the second vessel must operate out of an unfinished warehouse space. In October 2006, Massport issued a Request for Expressions of Interest (RFEI) to private entities interested in partnering with Massport to renovate the existing terminal and unfinished warehouse to modern standards and to operate and maintain the new facility. The RFEI encouraged proposers to incorporate sustainable design principles and/or a commitment to LEED certifications into their submittals, and one of the criteria upon which the submittals were evaluated was the proposers' commitment to sustainable development. Massport is currently in the early stages of negotiating a development/operating agreement, as well the design review process for Black Falcon Terminal, but a significant component of both processes will address energy efficiency and sustainability elements that can be incorporated into the design and operation of the renovated facility.

#### **4.4. Mass Transit Support**

Transportation is a key issue in the planning for redevelopment of the South Boston Waterfront, which includes mixed-use development on Massport property in Commonwealth Flats. Massport has worked for many years with other area stakeholders on the planning, design and construction of major infrastructure projects such as the CA/T and Silver Line projects. In addition, improvements to truck and rail access have helped to revitalize the port by providing more direct connections to the regional interstate highway system and Logan International Airport. A spine of designated and dedicated truck routes – including the Massport Haul Road and South Boston Bypass Road – serving the South Boston Waterfront help to increase the efficiency of freight movement and reduce truck traffic on local streets.

Massport has and will continue to commit significant resources to providing public transit into the South Boston Waterfront. Massport, working with the MBTA, has developed a conceptual plan for Silver Line bus operations serving the South Boston waterfront. These efforts have included the design and construction by Massport of Silver Line Way, a dedicated transit-way and station located on Massport property to the east of D Street. Massport also has been



instrumental in the extension of Silver Line Service through the South Boston waterfront to Logan Airport. This support has included extensive and on-going inter-agency coordination, as well as the contribution of \$20 million towards the purchase of Silver Line vehicles and an on-going annual contribution of \$2 million towards operating costs. Overall, Massport has been involved in inter-agency planning for public transit that accounts for potential routings of the proposed urban ring, local buses, and express and commuter buses serving the South Boston Waterfront. In conjunction with the Silver Line service, currently the MBTA operates two local bus routes linking the downtown area to the South Boston Waterfront. Finally, Massport has planned for future expansion of passenger water transportation serving the district as well. Currently in design is a new terminal facility in the vicinity of the World Trade Center which is planned to be a district hub for future passenger water taxi, commuter ferry and Inner Harbor water shuttle services.

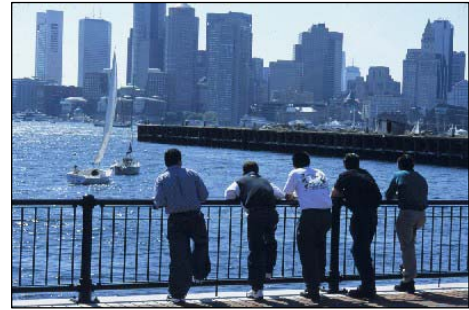
Massport recognizes the importance of transportation demand management (TDM) to encourage alternative modes of district access and reduce single occupancy trips to the South Boston Waterfront. Tenants on Massport development parcels are expected to actively embrace TDM measures for their employees such as ridesharing, van pools, public transit subsidiaries, flex-time work schedules etc. Massport included specific TDM requirements in its development permitting commitments for the overall build out of Commonwealth Flats. These commitments require Massport and private developers of Massport parcels to implement an extensive set of TDM measures intended to discourage single-occupancy vehicle trips and encourage the use of transportation alternatives.

Important among these TDM measures is the role of the Transportation Management Association (TMA), an organization intended to promote and facilitate employee use of alternative transportation modes. The TMA active in the South Boston Waterfront is the Seaport TMA. Massport is a member and longstanding supporter of the TMA. In addition to its basic membership obligations, Massport routinely coordinates with TMA management on transportation-focused projects in the district, provides traffic, transit and pedestrian infrastructure and operations updates to TMA membership at monthly meetings, and requires major tenants on its property to become TMA members.

#### **4.5. Open Space and Park Development**

Massport parks are designed and constructed to include a variety of high-quality open spaces to benefit the public. The public open spaces operated by Massport's Maritime Department range from parks large enough to host concerts and other public gatherings to a network of pedestrian-friendly sidewalks connecting to the waterfront. These urban public amenities offer excellent views and access to Boston Harbor in East and South Boston. In South Boston, Massport property within Commonwealth Flats includes nearly 20 acres of public open space overall. Massport's primary park resources include Piers Park and Bremen Street Park in East Boston, and South Boston Maritime Park.

Opened in 1995, Piers Park is a beautifully landscaped, \$17 million park developed in consultation with the East Boston community. Owned, constructed and maintained by Massport, Piers Park provides direct access to the waterfront along with spectacular views of downtown Boston across the Inner Harbor. A 600-foot pedestrian promenade leads to two pavilions, as well as four smaller shade pavilions. One pavilion honors the memory of



*Park visitors enjoying the view of Boston Harbor*

Donald McKay, the noted builder of clipper ships whose facility was in East Boston. Piers Park Sailing Center, located in the park, provides an affordable and popular community-boating program. The park also features an amphitheater, an outdoor fitness system, and a large playground.

Bremen Street Park is a new neighborhood park opened on June 1st, 2007 that runs for four blocks along Bremen Street between Porter Street and Prescott Street. The 18-acre park is



*Bremen Street Park Spray Fountain*

designed to accommodate a mix of uses and age groups. It incorporates pedestrian and bicycle paths, a performance area, two playgrounds/tot-lots, bocce courts, a spray fountain, a rest room building, a community garden, as well as extensive lawn and landscaped areas. It also includes a bronze bust of Donald McKay which responds to the community's desire to display East Boston's history in public art. Bremen Street Park is primarily a passive park which serves as an excellent complement to the adjacent more active Memorial Stadium Park.

The new East Boston YMCA facility is contiguous with Bremen Street Park, occupying the historic building formerly used as a railroad engine house. The Park also serves as the community's primary access to the new Airport T station. Bremen Street Park is an integral section of the East Boston Greenway, a major parkway system that will link several East Boston parks.



*South Boston Maritime Park*

The South Boston Maritime Park, located at the intersection of D Street and Seaport Boulevard/Northern Avenue, opened in June 2004. The park features a large lawn area, shaded sitting areas including moveable tables and chairs and fixed benches, extensive landscaping, a mist fountain, public art, public restrooms, and a seasonal cafe. South Boston Maritime Park highlights Boston's role both in history and in contemporary times as one of the oldest seaports in the Western Hemisphere and once the busiest trading port in North America. Maritime related elements and interpretive

art adorn the park reminding visitors of Boston's proud maritime past as well as modern day activities within the Port of Boston. The park provides an inviting place to catch a glimpse of the city's working waterfront activities including those at the historic Boston Fish Pier and other waterfront facilities.

Massport identified the following objectives in designing South Boston Maritime Park:

- Create a park that is a landmark and an important public place in the city, region and the South Boston Waterfront;
- Create a park that is a major public destination at the harbor's edge;
- Create a park that responds to its adjacency to Boston Harbor in establishing the character of the park and providing views to the harbor;
- Program and design the park so that it addresses the needs of residents and employees in the immediate area, residents of the larger community and visitors; and
- Program and design the park so that it is enjoyable, active and useable throughout the year, day and night, and on weekdays and weekends.

South Boston Maritime Park was planned to complement other open space in the area with an active program that features interpretive/educational elements, protected/indoor space, food service, public toilets and other elements that define it as an inviting and important public destination. South Boston Maritime Park is well suited to host events on its own or in combination with nearby facilities, including Eastport Park, Harborwalk and the head of the Fish Pier.

## **5.0 OTHER SUSTAINABILITY INITIATIVES**

### **5.1. North Atlantic Right Whale**

For more than a decade, Massport has worked actively with the National Marine Fisheries Service (NMFS) and other stakeholders to reduce mortalities to North Atlantic Right Whales resulting from ship strikes. Massport has been an active member of the Northeast Implementation Team and the related ship strike subcommittee since their inception. Massport strongly supports NMFS's goal of protecting the North Atlantic Right Whale, a highly endangered species, and supports many of their proposed recommendations to achieve this goal.



*Female Right Whale and Calf*

### **5.2. TBHA Marine Debris Removal Program**

The TBHA Marine Debris Removal Program began in July 2000 and is now beginning its eighth year. The project is managed by The Boston Harbor Association (TBHA), who contracts with a private company to provide on-water removal of floating debris from the harbor throughout the summer (July through Labor Day). Funding for the project is provided by city, state, federal and private entities. Massport has contributed to the project every year since its inception. Other

fundere have included Massachusetts Coastal Zone Management, the Massachusetts Water Resources Authority (MWRA), City of Boston, Eastern Salt and the U.S. Environmental Protection Agency.

This program addresses a major aesthetic, public safety and environmental problem in Boston Harbor that was otherwise unaddressed – no public entity was taking responsibility for removal of marine debris on a regular basis. In addition to physical removal of marine debris, TBHA is also working toward a long-term solution by identifying sources of marine debris and working to eliminate or reduce those sources.

Debris commonly removed from the harbor under this program includes the following types of materials:

- Wooden pieces of broken docks, piers and pilings;
- Plastic or Styrofoam cups, bottles and wrappers;
- Large pieces of Styrofoam floats and other construction debris; and
- Cigarette butts and wrappers.

### **5.3. Harbor Deepening Program**

In late 2001, the U.S. Army Corps of Engineers (Army Corps), in partnership with Massport, completed dredging of approximately 2 million cubic yards of silt and clay for the Boston Harbor Navigation Improvement and Berth Dredging Project (BHNIP). Massport was an active co-sponsor for this project, which resulted in the deepening of key tributaries and portions of the main shipping channel to 40 feet (except for Chelsea Creek, which was only deepened to 38 feet) and

related Massport and private berths to depths ranging from 35 to 45 feet. This project resulted in a number of key benefits to the Port, including increased navigational efficiency by reducing the need to “wait out the tides” or decrease loads prior to entering the harbor, ability to ship more tons of containerized cargo with fewer ships, and improved navigational safety for vital petroleum product vessels. These operational benefits will also have direct effects on improving air quality as the ships will be able to move more quickly and efficiently through the harbor upon arrival and departure. Without the BHNIP, significantly more of the cargo destined for Massachusetts would have been forced to enter the U.S. through other East Coast ports and be trucked to the area, which would have resulted in significantly more air emissions per ton of cargo.



*Container ship loading operations at the Conley Terminal*

Massport and the Army Corps committed to a number of specific measures designed to minimize the environmental impact of the project and to ensure compliance with the project permits, including the following key impact minimization commitments:

- Use of a sealed environmental bucket to minimize turbidity;

- Disposal of silt material only at slack tide when tidal currents are minimal;
- Installation of a 3-foot cap of clean sand on the disposal cells to minimize transport and bioavailability of disposed silty sediments and related contaminants;
- Incorporation of various fish protection measures;
- Implementation of an extensive monitoring program; and
- Funding of an independent observer to oversee all aspects of the construction and monitoring program.

The lessons learned on the BHNIP have been incorporated into the planning for subsequent maintenance dredging projects as well as the Boston Harbor Deep Draft Navigation Improvement Project, which will provide 48-foot channels serving Conley Terminal.

### **5.3.1. Environmental Award for Harbor Deepening**

In 1998, Massport received the American Association of Port Authority's (AAPA) Environmental Award for Community/Public Involvement, as a result of their efforts in relation to the BHNIP. Throughout the planning, permitting, design and construction stages of the BHNIP, Massport and the Army Corps proactively interacted with the environmental regulatory agencies and the public, actively seeking their participation and input into the process. As a result of early public involvement in the project planning process, potential project adversaries became stakeholders who developed a better understanding and appreciation of each others needs and concerns related to the project and a ultimately a commitment to the same goals. Once construction was underway, open lines of communication were maintained with the various stakeholders through various formal and informal mechanisms. The early and continuous public involvement process was one of the key reasons for the project's high level of success.

### **5.4. State Sustainability Plan**

The Commonwealth of Massachusetts Executive Order 484 (EO 484) – Leading by Example states that the state government has an obligation to demonstrate to others that large entities can make significant progress in reducing society's impact on the environment. Massport has embraced the sustainability challenges and commitments set forth in EO 484 and is striving to be a model corporate citizen. In addition to reducing its environmental impact, Massport believes that the regional economic development resulting from the fostering of new, sustainable technologies is directly related to the Authority's mission. Massport is participating in the Commonwealth's Leading by Example Council to help share knowledge and coordinate initiatives between all of the state agencies and Authorities. EO 484 lays out the following targets:

- Reduce greenhouse gas emissions from state government operations by 25% by 2012, 40% by 2020, and 80% by 2050.
- Reduce overall energy consumption in state buildings by 20% by 2012 and 35% by 2020.
- Utilize 3% bio-based materials for heating applications that use #2 fuel oil by 2008 and 10% by 2012.
- Reduce potable water use by 10% by 2012 and 15% by 2020.



- Obtain 15% of electricity from renewable sources by 2012 and 30% by 2020.
- Construct all new buildings over 20,000 square feet to Massachusetts LEED Plus standards.

## **6.0 CONCLUSION**

### **6.1. Summary of Sustainability Activities**

This Sustainability Progress Report demonstrates that Massport is committed to operating all of its facilities overseen by the Maritime Department, including maritime industrial terminals and commercial development projects, in an environmentally sound and sustainable manner. For both financial and environmental reasons, Massport has a strong interest in developing and maintaining efficient, high-performance facilities. As a self-financed authority, Massport strives to make smart initial capital investments and optimize its facility operations to reduce on-going costs. Overall, Massport manages its assets with the environmental, economic and community needs and impacts in mind.

Massport will continue to strive to minimize the impact of its operations on the environment through the continuous improvement of its environmental performance and the implementation of pollution prevention measures. The following are key examples of Massport's commitment to sustainability as an organization and specifically within the Maritime Department:

- An Environmental Management Policy, with a specific commitment to sustainable development, sustainable operations and continuous improvement;
- Development and implementation of Environmental Management Systems at its facilities, including the ISO 14001 certified EMS at Conley Terminal;
- Use of the LEED Plus green building design and construction standard for development on the properties it owns;
- Commitment to maintaining first-class open space on the Boston waterfront; and
- Voluntary implementation of programs to reduce environmental impacts, such as air emissions, in a manner above and beyond that required by regulations.

### **6.2. Who to Contact for More Information**

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