

## **Bridgeport CT Green Port Strategy** **Draft dated 02/02/09**

### **Introduction and Background**

Bridgeport is a deep-water port on Long Island Sound made up of two separate channels, Bridgeport Harbor and Black Rock Harbor. Located in Fairfield County, Bridgeport is 52 nautical miles from New York City and 25 nautical miles from New Haven; Interstate 95 travels across 3+ miles of Bridgeport, in close proximity to its shoreline. The Bridgeport waterfront is both publicly and privately owned and about half of all waterfront uses are water-dependent or served by water transportation.

The Bridgeport Port Authority (BPA) was formed in 1993 to promote trade and commerce in Bridgeport's harbors, and to promote the use and development of Bridgeport's waterfront for maritime and port users. BPA is a quasi-public agency, governed by a board of commissioners and gets its powers from Connecticut Statutes. The BPA generates revenue through collection of lease payments, management fees, and tariffs; it finances its projects principally through grants received from various state and federal agencies which are project specific.

The Bridgeport Port Authority is considered an involved and active port authority in the Northeast region; not including ferry traffic or work at a shipyard facility, the Army Corps of Engineers ranks the Port of Bridgeport 75th out of 150 ports in the country. The Port of Bridgeport is one of three deepwater ports in Connecticut and plays an essential role in bringing about new economic growth in the region and the State. The Bridgeport Port Authority is an active member of organizations such as the Connecticut Maritime Commission (created by State Legislature, the BPA Executive Director is Vice Chairman of the Maritime Commission), the Connecticut Maritime Coalition (CMC - a Connecticut DECD initiative), the Long Island Sound Ferry Coalition (LIS Ferry - an association of Connecticut and New York government and private entities, BPA Executive Director is the Connecticut chairman of this coalition), American Association of Port Authorities (AAPA - Industry trade association, representing ports and port authorities in the United States and its territories), New York Metropolitan Transit Corporation (NYMTC - organized by the New York Department of Transportation, the BPA is a member of this group, as well as other agencies such as the Connecticut Department of Transportation)

Bridgeport is a typical urban port in that it is adjacent to numerous residential and public facilities. Some of the industrial and commercial operations in Bridgeport harbors, a major grid power-generating plant and the heavy traffic and congestion on I-95, contribute to county and state exceedences of EPA's ozone and particulate matter (PM) standards. Some of the residents in the surrounding community have advocated for reducing the public health impacts of facilities operating in the City, and for conversion of industrial operations to residential, retail, and other commercial uses. However, Bridgeport harbors also hold economic promise as a center of commerce, and offer transit modes that can help reduce air pollution and other environmental impacts from existing venues such as Interstate 95.

Bridgeport as a whole has been designated by EPA as an Environmental Justice Area of Concern, and is the subject of a "Level 1" Community Action for a Renewed Environment (CARE) grant, through which many partners work toward assessing environmental issues of concern, including diesel emissions and water pollution. BPA is committed to leveraging upgrades to surrounding operations that fall within the Port District, and when it creates its own new operations, to meet an environmentally sustainable standard. To that end, BPA joined the Northeast Diesel Collaborative (NEDC) Ports Work Group early in 2007, and met with the CARE implementation team early in 2008.

The NEDC combines the expertise of public and private partners in a coordinated regional initiative to significantly reduce diesel emissions and improve public health in the eight northeastern states. Its Port Workgroup ("Workgroup") focuses on making the business case for reducing diesel emissions from ports in the Northeast. Workgroup participants include representatives from five of the eight state air agencies in the Northeast, port authorities, and industry. In collaboration with Workgroup partners, BPA is assessing opportunities and strategies to increase the efficiency of its port activities while reducing emissions. This Green Port Strategy is an outline of this process and initial goals; it is intended to be an organic document evolving over time as experience is gained and new opportunities and goals develop. The **Activities, Timeline and Outcomes** section identifies specific activities that BPA will implement in phases: short-, medium-, and long-term. Many planned activities are based on options presented in EPA New England's "**Green Strategies for Sustainable Ports**" document. The major focus of the current Bridgeport Green Port Strategy is on reducing and avoiding air emissions and energy use, but over time the BPA's efforts will expand to encompass a multi-media approach.

## Scope

The BPA owns two parcels along the waterfront, the majority of the land/shoreline leased to maritime tenants. On both of these properties, BPA can influence operations through relationships with tenants, redevelopment planning, and contracting for construction and operations. On other port-area properties, BPA can exert influence indirectly by setting an example and through education.

Currently, the land and shoreline in the port area is underutilized. Changing patterns in commerce and transportation, along with harbor siltation, have impacted the growth of maritime and port uses and users. Bridgeport Harbor has not been dredged since the 60's, and commerce into the harbors is hindered by the need for dredging. Over 1.5 million cubic yards of material needs to be removed, and half of it is not suitable for open water disposal. The Army Corps of Engineers has developed a Dredged Material Management Plan for disposal options. None of the redevelopment plans outlined below is contingent on deepening (as opposed to maintenance) dredging, but vessel and facility design options will be significantly improved by harbor dredging.

As BPA develops and executes near-term and long-term redevelopment plans, it will seek opportunities and funding sources to build energy efficiency, diesel emissions reduction, and other environmentally preferable features into these new facilities and operations.

**BPA-owned properties:**

1. The Water Street Dock & Terminal (WSDT) is the CT port for the Bridgeport-Port Jefferson Steamboat Company (passenger/car/truck ferry) (“Ferry Co.”). The Ferry Co. owns and operates 3 ferry boats (2 purchased after 1999), operates 365 days a year and is currently reducing vehicle trips on Interstate 95 by approximately 450,000 per year for that segment of their journey. Based out of New York, the Ferry Co. has been approached by EPA Region 2 to install/upgrade some diesel emission reduction equipment, but that has not yet taken place.

WSDT is one of the proposed sites for a planned High-Speed Ferry Operation serving New York, Stamford CT, and Bridgeport. The high-speed ferry would transport people, not vehicles and is intended to remove more cars off the highways. Start up operations of the service require a schedule offering not less than 2 peak hour trips in the morning and 2 peak hour trips in the evening between the designated ports; vessel capacity planned could be up to 350 people per trip. The potential route feasibility and site selections studies were favorable, and currently an operator qualification process is underway. The ferry/ies deployed could be new, although it is likely the service would start with existing vessels in an operator’s fleet; also, a parking lot/garage would be necessary at any site.

2. The Bridgeport Regional Maritime Complex (BRMC) housed steel mill operations for more than a century; when the last steel mill left town in the 1980’s, most of the buildings on the property were “removed” and the land sat idle for 18 years. The site is zone industrial use and is heavily contaminated from historic uses, but some remediation activities have taken place using State and Federal funding. A Remediation Action Plan (“RAP”) was developed by the Bridgeport Port Authority and approved by the Connecticut Department of Environmental Protection. RAP and redevelopment activities revealed that the site is impacted by several adverse factors, including extensive demolition debris, abandoned building remnants and large slag blocks buried on the site; an extensive oil spill; and widespread soils contamination by petroleum hydrocarbons and metals including arsenic, lead, nickel, and non-hexavalent chromium. A portion of the BRMC site has been partially developed both along the waterfront and landside, and has been occupied since 1999 by Derektor Shipyards. Derektor Shipyards is a premier ship building facility, constructing new vessels such as high speed ferries, water taxis, and racing yachts, and performs upgrades and maintenance on all types of vessels – private, commercial and military. Derektor currently employs approximately 250+ people in primarily skilled labor jobs, and is planning a \$20 million, multi-year infrastructure expansion at its Connecticut yard.

BRMC is also the future home to a new Container Barge Feeder service. Originally built to handle between 60 – 90,000 vehicles a day, the daily vehicle count average of Interstate 95 in Connecticut’s southern section (Fairfield County) averages between 130,000-200,000 (as of 2006). This section is considered to be one of the most congested roadways in the country and its volume alone is one of the greatest contributors to air pollution and other

environmental impacts in the area. The I-95 volume, and its resulting bottlenecks, accidents and road closures have created an “economic cul de sac” for Connecticut and the Northeast region. Problems caused by “asphalt highways” in general are widely recognized on Federal and State levels, as well as by anyone who uses them.

Working with the State of Connecticut, the Port Authority of New York/New Jersey, and the Federal Department of Transportation, Maritime Administration (“MARAD”), the BPA is developing its Container Barge Feeder Service, as part of the Federal Marine Highway System Initiative. Start up projections are for a weekday service, with each barge carrying 80 containers of domestic goods between ports in New York/New Jersey and Bridgeport, for further distribution through-out the Northeast. Bridgeport’s container barge service will also be a part of the Planned Inland Distribution (PIDN), which includes other Northeast ports such as Albany (NY), Camden (NJ), Providence (RI) and Boston (MA). The BRMC site is well suited for the water and landside operations of this service; there are no navigational barriers (i.e. bridges) to access the site, the site is level and clear sits next to I-95 at the 29 interchange. Seaview Avenue, running directly in front of the BRMC, as well as I-95 and its 29 interchange were recently re-designed and re-constructed specifically for commercial/truck traffic. Any truck traffic would be minimal on nearby streets and residences in the vicinity, if any at all. It is likely that the tug-barge vessels and cranes involved will be privately owned. The Connecticut Transportation Strategy Board selected the Port of Bridgeport to commence this service and the State of Connecticut has provided funding for required planning & operation start up activities; the project also has the support of MARAD.

#### **Additional BPA operation(s):**

BPA operates a pump-out boat serving recreational boats in Bridgeport and Black Rock Harbor and their marinas, with some state/fed government cost-sharing.

#### **Other properties & operations in the Port area, not located on land owned by BPA:**

O&G Industries, a CT-based commercial construction firm with numerous facilities throughout the state and four within Bridgeport, has a material crushing/recycling facility located on Seaview Avenue, next to I-95 at the 29 interchange (on the north side of I-95 from BRMC). Trucks bring construction & demolition debris to the facility for processing, and trucks take the processed material away. Heavy equipment such as loaders, excavators and bulldozers manage material onsite.

Cilco Terminal, presently an employee owned facility (owned by Coastline Terminals of Connecticut, the longshoremen’s union), has been inactive since April 2008 (when the tenant, Turbana, moved out), and is up for sale. The site is zoned light industrial and offers 20 acres of outside storage/staging area; 85,000 sf of refrigerated warehousing, 130,000 sf of dry storage and 2 berths of over 1,100 feet in total length.

A major grid power generating plant presently owned and operated by PSE&G is located and operates in Bridgeport Harbor. A coal-fired facility, its primary fuel is shipped to the facility by

water. The lack of dredging in Bridgeport Harbor has caused the channel depth to silt up at the PSE&G facility; instead of a direct shipment of fuel to the facility, the coal must first be lightered (transferred) off a vessel out in the Sound, then brought to the PSE&G facility via barge. Deposition of soot from coal-burning (and possibly also from coal transfer) are an environmental condition at the port.

Motiva and CPW Terminals own and operate (oil) tank farms in Bridgeport Harbor; Hoffman Fuel barges in (heating) oil to its facilities up the Pequonnock River (accessed by Bridgeport Harbor).

A municipal sewage treatment plant is also present in Bridgeport Harbor.

Black Rock Harbor is host to several recreational vessel marinas, several (oil) tank facilities, an earth products facility, a trash-to-energy facility (Wheelabrator), Sikorsky Aircraft (helicopter manufacturer), the City dump, among other waterfront users.

## **Objectives**

The Bridgeport Port Authority is focused on maximizing opportunities to build energy efficient, emissions reduction, and other environmentally sustainable yet business-savvy practices into its existing and new operations. BPA is focused on harnessing the potential of the port to generate jobs, develop alternate (and greener) transportation modes and a quality living environment for port neighbors, Bridgeport, and the greater area. Through building partnerships with fellow NEDC Ports Workgroup members, community groups, local/state/federal agencies, business and nonprofits, BPA hopes to leverage information, financing, and buy-in to these objectives.

**Activities, Timeline & Outcomes**

<u>Activity</u>	<u>Target Completion Date</u>	<u>Expected Outcomes</u>
<b>Short Term (1 year)</b>		
CARE: participate as invited by the coalition implementing the EPA CARE grant to explore issues of interest in the port area, such as where residential housing should be located near the port, community access to the water, fish contamination, & renewing access to Pleasure Beach.	April 2008	Ongoing productive relationship with other CARE partners; identification & implementation of projects of mutual interest.
Pump-out boat serving Black Rock Harbor marinas: New engines installed	July 2008	More fuel and diesel efficient engines; part of BPA efforts to ensure a cleaner harbor.
Implement container recycling and food composting at ferry terminal cafeteria and ferry waiting areas; use green cleaning products.	April 2009	50% capture of recyclables from trash. 20% capture of food scraps from trash.
O&G Industries: Encourage O&G to begin to retrofit, rebuild, repower and perhaps replace offroad material handling equipment and truck fleet serving the site, with the help of seed funding.	Spring/Sum 2009	Demonstrate reduction in diesel emissions and fuel savings.
Develop & pilot-test an EMS for BPA operations, to gain experience for assisting tenants in developing EMSs.	Aug 2009	EMS covering BPA-owned and -operated facilities.
Existing ferry service: install no-idling signage for drivers in queue, and direct waiting drivers to shelter in terminal. Also, via signage, video, audio, or flyers, educate drivers on the CT 3 minute idle limit and EPA’s SmartWay program for passenger vehicles and trucks.	Sept 2009	Idling in queue is already low, but reduce it further to a negligible level. General reduction in idling and fuel use due to increased driver awareness.
Existing ferry service: test ULSD or biodiesel in ferry. Region 2 company. Seek cold iron viability for overnight and interim docking.	Sept 2009	90%+ reduction in emissions over standard marine diesel.
Adopt model emissions standards in standard process for establishing new operations: CDOT’s Notice to Contractors Vehicle Emissions Controls, and EPA’s suggested language for Marine Emissions Contract Requirements.	Dec 2009	1) CDOT’s bid specs henceforth incorporated into expected construction contracts, 2) EPA’s suggested language henceforth used in acquiring or contracting for new vessels.
Pilot two new EPA NE tools for ports in partnership with private operations at the port: 1) a landlord-tenant MOU for establishing, implementing and tracking mutual emission reduction goals, and 2) a multi-media compliance checklist, including federal and state regulations, to allow a port facility to monitor its own	Dec 2009	1) New site tenants and BPA sign and use the landlord-tenant MOU 2) New site tenants and BPA pilot the multi-media compliance checklist.

environmental compliance.		
<b>Medium Term (Year 2)</b>		
High-speed ferry: Incorporate CDOT’s Notice to Contractors Vehicle Emissions Controls in process of selecting/managing the site developer.	2009/2010	Reduction in diesel PM emissions from construction equipment by 20%+.
High-speed ferry: Spec solar/wind/tidal turbine power for new/expanded parking garage &/or waiting room. Construct new buildings, or remodel/expand existing buildings, to high Energy Star/LEED standard. Seek cold iron viability for interim and overnight docking.	2009/2010	Reduced demand for non-renewable energy. Demonstrate business case for solar energy.
High-speed ferry: Spec Tier 3 or 4 (low-emission) or hybrid engines, use of ULSD or biodiesel, and optimal hydrodynamics (hull and propulsion streamlining) for new ferries.	2009/2010	90%+ reduction in emissions over standard marine diesel & engines.
Container Barge Service: Incorporate the CDOT’s Notice to Contractors Vehicle Emissions Controls in process of selecting/managing the site developer.	2010	Reduction in diesel PM emissions from construction equipment by 20%+.
Container Barge Service: Encourage the new service operator, via the selection process or public financial incentives, to spec cleaner engines (Tier 3 or 4, or hybrid) and hydrodynamic hull design for new tugs towing barges (or articulated tug/barges).	2010	40 percent reduction in NOx emissions in port and on ocean. Negligible diesel engine idling in port. Increased fuel efficiency.
Container Barge Service: Encourage the new service operator to design efficiency into the landside facility through <ul style="list-style-type: none"> <li>- Efficient layout and container logistics to minimize truck movement and CHE use</li> <li>- Gate technology and scheduling software to minimize creep idle trucks entering/exiting</li> <li>- Stationary idle reduction technology (electrified truck parking, etc) or driver comfort station to minimize on-dock idling</li> </ul>	2010	Increased throughput for facility. Reduced diesel emissions from operations. Reduced turn times and idling lead to increased dray trucking profitability. More efficient pickup and delivery coordination with offsite locations/loads, leading to reduced fuel use.
Container Barge Service: Encourage the new service operator to construct new administration building and/or garage to high Energy Star/LEED standard to reduce energy demand and provide power via solar panels, wind turbine and/or tidal turbine.	2010	Reduced demand for non-renewable energy. Demonstrate business case for solar and wind energy.
Container Barge Service: Educate the new service operator about the benefits of building an EMS into the operation from its inception. Ask operator to sign a landlord-tenant MOU and use the compliance checklist as part of the EMS.	2010	Increased integration of environmental responsibilities into management framework.

O&G Industries: Encourage O&G to institute an Environmental Management System at their Bridgeport Harbor facility, in part to address concerns of nearby residents regarding dust and other emissions and noise. The EMS could later be expanded to include other O&G facilities in Bridgeport.	2009/2010	Increased integration of environmental responsibilities into management framework. Potential for increased neighbor & worker satisfaction.
Derektor Shipyard: Encourage tenant (via leveraged funding or other means) to retrofit, repower or replace on-dock equipment. Large pieces include a 6-year old diesel-driven travel lift (the second largest in the world), and two diesel-powered cranes with very old engines.	2010	Demonstrate reduction in diesel emissions and fuel savings.
Derektor Shipyard: With the tenant's site management consultant, help Derektor institute an Environmental Management System. Ask Derektor to sign a landlord-tenant MOU and use the compliance checklist as part of the EMS.	2010	Increased integration of environmental responsibilities into management framework.
<b>Long Term (Year 3)</b>		
Container Barge Service: Encourage the new service operator to acquire cranes with clean engines—all-electric, hybrid, or variable speed drive (using ULSD/biodiesel).	2011	Demonstrate reduction in diesel emissions and fuel savings.
Container Barge Service: Encourage the new service operator to acquire yard hostlers with clean engines—CNG, hybrid hydraulic, or 2010 onroad engines fueled with ULSD or biodiesel.	2011	Demonstrate reduction in diesel emissions and fuel savings.
Container Barge Service: Encourage the new service operator to offer preferential scheduling or fee reduction for cleaner dray trucks (those with 2010 or 2007 engines, emission controls retrofits, etc)	2011	Through incentives, leverage dray fleet upgrades and turnover.

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**REFERENCES AND RESOURCES**

Bridgeport Port Authority: [www.portofbridgeport.com](http://www.portofbridgeport.com)  
Port Jefferson Ferry: [www.portjeffferry.com](http://www.portjeffferry.com)  
Derecktor Shipyards: [www.derecktor.com](http://www.derecktor.com)  
O&G Industries: [www.ogind.com](http://www.ogind.com)  
City of Bridgeport: [www.ci.bridgeport.ct.us](http://www.ci.bridgeport.ct.us)

Connecticut Maritime Coalition: [www.ctmaritime.com](http://www.ctmaritime.com)  
CT DOT: [www.ct.gov/dot/cwp/view.asp?a=1402&q=259246&dotPNavCtr=](http://www.ct.gov/dot/cwp/view.asp?a=1402&q=259246&dotPNavCtr=)  
CT Maritime Commission: [www.ct.gov/dot/cwp/view.asp?a=2314&q=307038](http://www.ct.gov/dot/cwp/view.asp?a=2314&q=307038)  
CT Clean Energy Fund: [www.ctcleanenergy.com](http://www.ctcleanenergy.com)  
Greater Bridgeport Regional Planning Agency: [www.gbrpa.org](http://www.gbrpa.org)  
CT Department of Economic and Community Development:  
[www.ct.gov/ecd/site/default.asp](http://www.ct.gov/ecd/site/default.asp)

Northeast Diesel Collaborative Ports Workgroup: [www.northeastdiesel.org/ports.htm](http://www.northeastdiesel.org/ports.htm)  
EPA New England  
Options for the Marine Ports Sector: Green Strategies for Sustainable Ports

EPA CARE program (Bridgeport grant):  
<http://www.epa.gov/care/community2007.htm#bridgeportct>

EPA SmartWay Transport Partnership program for Freight  
[www.epa.gov/smartway](http://www.epa.gov/smartway)  
and Consumers  
[www.epa.gov/smartway/consumer](http://www.epa.gov/smartway/consumer)

EPA Clean Ports USA program: [www.epa.gov/otaq/diesel/ports/index.htm](http://www.epa.gov/otaq/diesel/ports/index.htm)  
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