

# The Port of Virginia – Environmental Programs and Awards

## July 2009

### Environmental Management System – (2008)

- The Port of Virginia received the ISO 14001 certification in June 2008 for its environmental management system, or EMS.
- This is the **first major port on the East Coast to receive the ISO 14001 certification**
- The scope of the EMS includes air and water quality improvements at Newport News Marine Terminal and Portsmouth Marine Terminal.
- Portsmouth Marine Terminal and Newport News Marine Terminal are certified facilities. Nit will receive certification prior to 6/30/10.
- Many of the programs listed below are incorporated into the system.

### AIR QUALITY

#### 1. Cargo Handling Equipment Replacement (1999 to present)

- In 1999, this port voluntarily implemented emissions reduction program through a series of revisions to its equipment purchasing policies.
- The policy specifies that all new cargo handling equipment have the lowest emission engine available on the market.
- From 1999 to 2005, **air emissions from cargo handling activities at this port decreased by 30%. That reduction comes despite a 55% increase in cargo volume.**
- From 2005 to 2015, emissions are expected to decline by an additional 38% while cargo volume is forecast to increase 49%.

#### 2. Voluntary Use of Ultra Low Sulfur Diesel Fuel (2007)

- In July 2007, Virginia International Terminals voluntarily began using ultra-low sulfur diesel (ULSD) fuel port-wide, **three years ahead of a federal mandate.**
- This switch has resulted in a 30% reduction in particulate matter emissions and a 99% reduction in sulfur-oxide emissions.

#### 3. Hybrid and Ultra-Low Emission Locomotives (2008)

- In July 2008, this port received a \$750,000 grant from the U.S. Environmental Protection Agency for the purchase of a 2,000-horsepower hybrid locomotive and two 2,000-horsepower ultra-low emission gen-set locomotives.
- These locomotives are expected to reduce nitrogen oxide emissions by 80%
- The hybrid locomotive, which has been in use for six months, uses approximately **90 gallons of diesel fuel a day compared with 180 gallons a day for a conventional locomotive.**

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**4. Inter-Terminal, Intra-Harbor Barge Service (2008)**

- In December 2008, a container barge service was launched connecting The Port of Virginia to the Port of Richmond.
- The “64 Express” extends the reach of this port 100 miles inland to the Port of Richmond’s multimodal freight and distribution gateway.
- The tugboats in this service are powered by low-emissions Tier II engines that are fueled with ultra-low sulfur diesel.
- The barge service is expected to eliminate 100-200 weekly truck trips from the I-64 corridor between Richmond and Norfolk.
- The Virginia Port Authority (VPA) has identified more than 100,000 annual container moves that might qualify for inter-terminal and intra-harbor barge services. The goal is to develop an intra-harbor barge service to transport containers between terminals in Norfolk and Portsmouth. This would take even more trucks off the road.
- The project has the potential to preserve/create approximately 100-150 regional maritime industry jobs and eliminate approximately 1,500 tons of nitrogen oxides over the next five years.

**5. “Green Operator” – Voluntary Diesel Truck Retrofit Program (2007-2009)**

- In January, this port teamed with the Virginia Department of Environmental Quality and the US EPA to re-launch its diesel retrofit program. It is a program that encourages local trucking companies to voluntarily retrofit and reduce emissions from trucks servicing the Port.
- The port received **\$1M in federal stimulus money** for this effort.
- Virginia was the **first state in nation to receive federal money** and build a voluntary program specifically for creating a cleaner, more fuel efficient fleet of local trucks.
- The retrofit of 10 local owner-operator trucks is complete as of June 30. Four trucking firms with local operations have committed to an additional 120 retrofits prior to September 2010.
- This program, called “Green Operator” or “GO”, hopes to have up to 200 trucks retrofitted by September 2010.

**WATER QUALITY**

**Water Quality Master Planning & Under-Wharf Detention Basin (2003)**

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- Through a series structural controls and terminal master planning, the pollutant removal from storm water discharges at the Virginia Port Authority's three marine terminals **exceeds state requirements by 50%**.
- Where feasible, treatment devices, structures, or ponds are designed to exceed pollutant removal requirements for a specific drainage areas on the marine terminals, this compensates for areas on the marine terminals that are not slated for redevelopment or areas where installation of storm water treatment controls are not practical and storm water runoff is not treated.
- The key element of the Water Quality Master Plan is an innovative **under-wharf stormwater detention basin** located at Norfolk International Terminals.
- Combined with several manufacture treatment devices, the under-wharf detention design eliminates the need for a conventional treatment pond while maximizing the land area available for cargo operations. **Twelve acres of valuable cargo storage area is saved while providing space for 42,000 additional TEU's annually.**
- The under-wharf system creates a detention area to hold storm-water runoff. The system allows heavy sediment, debris and other pollutants to fall to the bottom of the detention basin and keeping from entering the Elizabeth River.

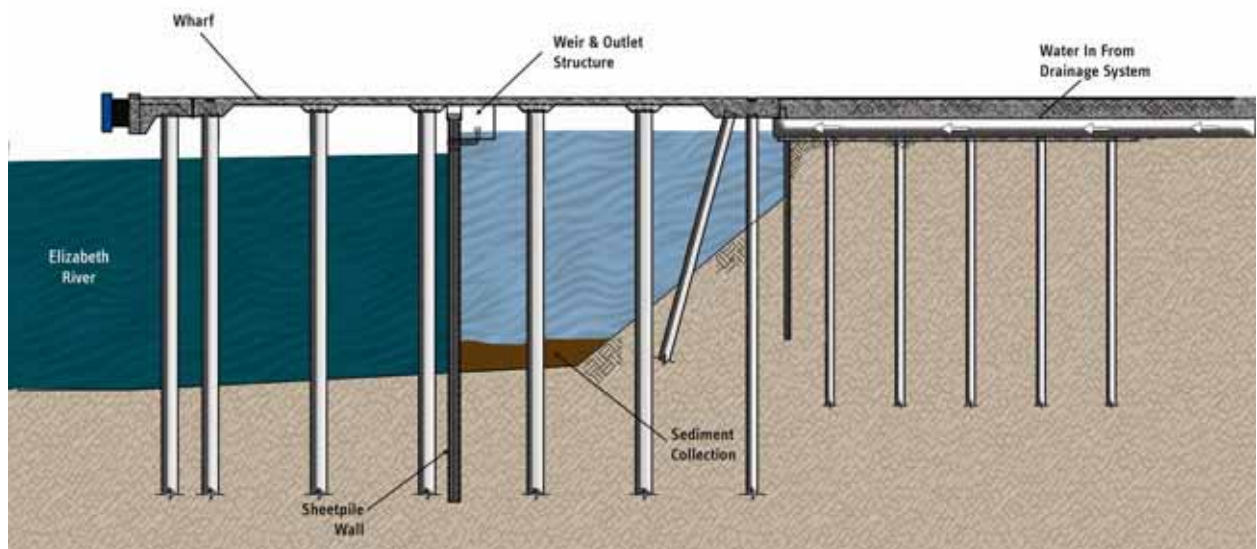
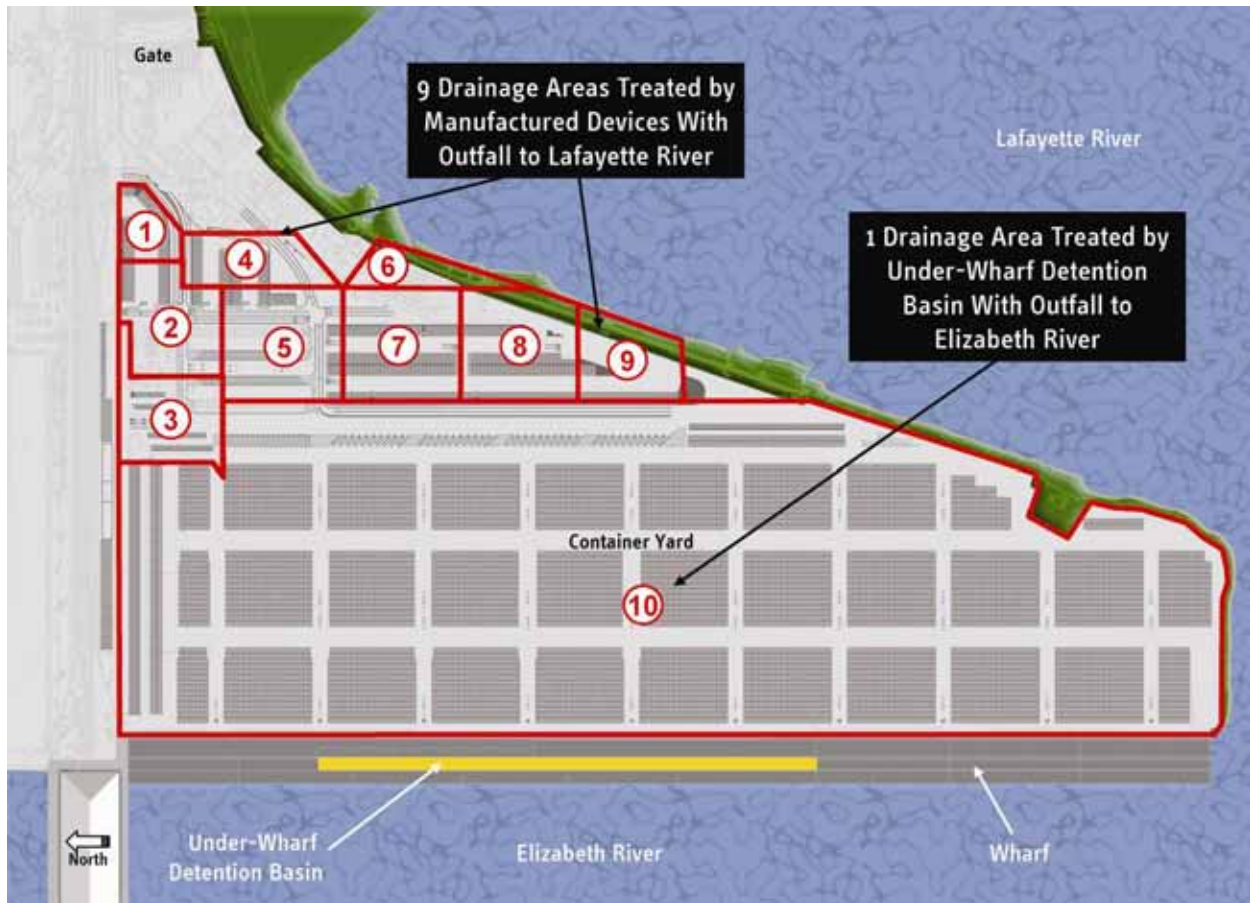


Figure 1 – Under-Wharf Detention Basin Alternative – Section View

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*Figure 11 – New Drainage Areas at NIT South*

**Open Space Preservation and Wetlands/Habitat Creation (2002-2004)**

- **NIT Forested Buffer (2002):** A two-acre forested, riparian buffer was planted along the shoreline of the Elizabeth River between Norfolk International Terminals and residential community. The forested area provides a visual and sound screen between terminal operations and waterfront residents, as well as two acres of native habitat/open space for various species of wildlife. The buffer also serves to reduce impacts to water quality from shoreline erosion; more than 700 trees were planted.
- **PMT Oyster Reef (2002):** In 2002, 1.5 acres of oyster reef was constructed in the Elizabeth River adjacent to Portsmouth Marine Terminal. To date, the reef is one of the more populated man-made reefs in the Chesapeake Bay.
- **NIT Wetland Pond (2003):** In 2003, 1.6 acres of non-tidal wetlands were created within a storm-water pond at Norfolk International terminals. This project provided valuable wildlife habitat without sacrificing valuable cargo storage area.
- **Plum Point Park (2004):** In 2004, the VPA collaborated with the City of Norfolk to create Plum Point Park, near downtown. The project preserved five acres of open space, removed 500 tons of debris from the Elizabeth River and restored an acre of tidal wetlands.

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**AWARDS and RECOGNITION:**

The Virginia Port Authority has been recognized by the following groups for its work to improve and protect the environment.

**ISO 14001 Certification** – Port of Virginia Environmental Management System – June 2008

**U.S. Environmental Protection Agency** – Environmental Achievement Award - 2008

**Elizabeth River Project** – Model Level River Star, Sustained Distinguished Service 2002-2008.

**American Association of Port Authorities** – Environmental Improvement Award 2003, 2006.

**Norfolk Environmental Commission** – Environmental Excellence Award – 2004.

**Virginia Governor’s Environmental Excellence Award** – Gold Medal 2006.

**The Chesapeake Bay Program** – Outstanding Environmental Improvement 2006.

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**Craney Island Eastward Expansion Environmental Mitigation Plan**

- Developed over three years by 12 state and Federal Agencies and 3 local interest groups.
- Utilizes a “landscape approach” recommended by the Virginia Institute of Marine Science (VIMS). Encourages biodiversity and connectivity of three major aquatic habitats, oyster reefs, wetlands, and benthic sediments.
- Targets a 411-acre section of the Southern Branch of the Elizabeth River prioritized by the Commonwealth’s Watershed Action Plan for the Elizabeth River.
  - **52-acres of tidal wetlands**
  - **15 acres of oyster reefs**
  - **67 acres of sediment remediation**
  - **145 acres = total land conservation**
- **Cost = \$50 million**

**Future Initiatives**

- Feasibility study to explore solar power options for the future Craney Island Marine Terminals.
- Feasibility study in conjunction with ODU to explore algae to biodiesel production for alternative use at the Port.
- Introduce 5% Biodiesel into fuel supply for all port operations by 6/30/2010.