Maryland Green Registry MEMBER

The Maryland Green Registry promotes and recognizes sustainable practices at organizations of all types and sizes. Members agree to share at least five environmental practices and one measurable result while striving to continually improve their environmental performance.

Maryland Port Administration

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State Government
Member since June 2011

Management and Leadership

☑ **Environmental Policy Statement**

The Maryland Port Administration's (MPA) Environmental Policy: Stewardship and sustainability of the environment and protection of human health are essential elements of the MPA mission. The MPA is committed to:

- *Environmental compliance and improvement*
- *Reduction of its energy consumption*
- *Continual improvement of environmental and energy performance*
- *Pollution prevention*
- *Effective engagement with employees, communities, port users, and cargo owners*

☑ **Environmental Team**

MPA's environmental team is known as the CORE TEAM and consists of representatives from the departments of: Environmental, Engineering, Operation, Finance, Maintenance, and Safety and works under the direction of MPA's Deputy Executive Director, M. Kathleen Broadwater. The CORE TEAM meets 3 -4 times per year. The CORE TEAM's mission is continued management of a fully implemented Environmental Management System (EMS) based on the ISO Standard 14001 certification. The Team reviews its land-based and water-based actions and identifies potential initiatives for reducing adverse impacts to the environment and for minimizing greenhouse gas emissions.

MPA has developed an Environmental Strategy and Action Plan that is a roadmap to improve the environment and maximize efficiency.

☑ **Annual Environmental Goals**

MPA' s annual goals include: continuing to reduce air emissions at the Port of Baltimore, improving recycling and sustainability goals, actively working with State and local partners to meet goals for water quality in the Chesapeake Bay, known as Total Maximum Daily Loads (TMDLs), stormwater compliance planning, and reducing energy consumption and greenhouse gases.

☑ **Environmentally Preferable Products and Services**

MPA has made its publications, newsletters, and general Port related information available on-line to reduce paper use.

☑ **Environmentally Preferable Purchasing**

MPA utilizes service contracts for recycled and environmentally preferable products available through the Department of General Services (DGS) for office supplies.

The MPA recognizes the potential impacts of diesel engines associated with port activities and is developing plans to reduce diesel emissions. The steps set forth below to reduce diesel emissions build on previous MPA initiatives that effectively reduced and/or mitigated the potential adverse impacts of diesel engines at its terminals, including:

- *Retrofitting, replacing or upgrading more than 80 pieces of equipment*
- *Installing diesel oxidation catalysts on 12 rubber tired gantry cranes*
- *Replacing more than 100 dray trucks and obtaining funding to replace additional dray trucks*
- *purchasing hybrid vehicles when available*
- *Using ultra-low sulfur bio-diesel fuel on its diesel powered vehicles and equipment*
- *Replacing a heating oil furnace with natural gas*

☑ **Environmental Restoration or Community Environmental Projects**

When developing new dredged material placement facilities, the MPA mitigates its environmental impact in ways that benefit nearby communities as well as the Chesapeake Bay ecosystem.

Next to the Masonville dredged material placement site, MPA is refurbishing one of the Harbor's most contaminated areas into a site that benefits the environment and the local community.

As part of the Masonville project and associated mitigation:

- *Will restore 54 acres of uplands including vernal ponds and tidal wetlands, and 70 acres of cove bottom;*
- *Fish habitat will be enhanced through the placement of reefballs;*
- *Removed more than:*
    - *61,000 tons of trash and debris removed;*
    - *306,074 gallons of petroleum-tainted water;*
    - *17,398 tons of timber;*
    - *6,588 tons of concrete rubble;*
    - *5,265 feet of electrical wire;*
    - *4,047 pounds of PCB-containing electrical equipment;*
    - *27 abandoned vessels remediated or removed from the water*
- *Funded trash interceptors, eel passage, Alosinae (fish) stocking, and performed stream restoration. The Masonville Cove nature area is now equipped with walking trails, a fishing pier, and a floating dock.*

The MPA restored public access to the Patapsco River and constructed the Masonville Cove Environmental Education Center. More than 500 students attended the 9th annual Masonville Cove Environmental Education Festival in May 2015.

Nearly 1,000 new trees have taken root at Masonville Cove. Another round of work planned will increase the total number of trees to 1,450. The new trees will enhance bird habitat and reduce the flow of stormwater runoff into the Patapsco River.

In 2014, $75,000 was received from the U.S. EPA that was used to provide outreach and watershed education at the Masonville Cove environmental education center to about 600 students from Baltimore City Public Schools to increase awareness about stormwater runoff and ways to prevent it.

The U.S. Fish and Wildlife Service designated Masonville Cove as one of eight pilot Urban Wildlife Refuge Partnerships to be established this year. This effort is to connect city dwellers to nature. These partnerships are expected to inspire a connected conservation constituency of people who support fish and wildlife conservation.

MPA's Dredged Material Management Program looks for beneficial and innovative ways to reuse the dredged material including wetland restoration and island recreation. MPA is the largest creator of wetlands in Maryland.

Two Maryland islands have been restored to their approximate "historical" size before erosion using dredged material – Poplar Island and Hart-Miller Island.

Poplar Island has gained national recognition. To date, 204 bird species have been identified, including a number of rare, threatened and endangered species. Volunteers have played an important role in in the restoration of Poplar Island and in June 2015 the National Aquarium partnering with the MPA, U.S. Army Corps of Engineers, and Maryland Environmental Service planted native marsh grasses that will provide added site stability, reduce the potential for erosion, and enhance wildlife habitat.

Hart-Miller Island, now closed to further shipments of dredged material, has become a major stop for migratory shorebirds. The National Audubon Society lists Hart-Miller Island among its important bird areas.

Environmental restoration at Swan Creek, adjacent to the Cox Creek dredged material placement facility, not only revived wetland habitat but created a setting that draws birdwatchers to an area where "hard to find" species have been seen. Over 100 species have been sighted. The 126 acre Swan Creek wetlands area will be preserved in perpetuity.

In 2015, the Baltimore Port Alliance partnered with the Turner Station community and other volunteers for a cleanup at Turner Station Park and two sites along Bear Creek. Four dumpsters were filled with cans, plastic bottles, couches, books, and other debris, filling two-thirds of a 30-yard dumpster. In 2015, , along with Port partners, sponsored and/or conducted tours, events, and programs for over 16,000 students, community group members, and business reps on environmental initiatives and dredged material management projects.

Supports field experiences at Hart-Miller Island, Masonville Cove, Poplar Island and Swan Creek (at Cox Creek) to help students meet environmental literacy requirements.

Hawkins Point Terminal, a closed dredged material placement site, is looking greener. MPA is planning a 14.5 acre forested buffer along the Patapsco River. More than 2,000 trees have been planted. A reforestration project will provide an enhanced wildlife habitat and improve air and water quality. MPA will conduct a five-year monitoring plan to ensure survivability of the trees and will control invasive species to ensure the site regenerates as a viable native habitat.

MPA worked with DNR to develop an eel ladder at Daniel Dam in the Patapsco Valley State Park. The ladder helps eels move upstream in the River to reach areas of habitat that are otherwise blocked by the dam.

As part of a Small Watershed Action Plan, residents of 2 communities near the Port of Baltimore have joined with MPA and other groups to make their neighborhoods stay clean. The plan is to help Brooklyn and Curtis Bay residents identify and assess environmental hazards in their communities.

Created over 3000 square feet of floating treatment wetlands at the foot of the World Trade Center, the Masonville Environmental Education Center, and in Colgate Creek to study the biological activity in their root mass that acts as a natural filter for nutrients. Students at the Living Classrooms Foundation participated in some of the wetlands projects using plastic bottles pulled from the harbor for flotation devices. The floating wetlands are demonstrating the beneficial impact of living plants on water quality and aquatic habitat.

MPA hosted a Project Clean Stream event at Cox Creek in April 2015 organized by KCI Technologies. Volunteers from KCI along with members of the Alliance for the Chesapeake Bay and employees of MPA and Maryland Environmental Service cleaned up the shoreline which resulted in collection of 2,000 pounds of trash.

☑ **Independently-Audited Environmental Management System**

MPA uses an Environmental Management System (EMS) to blend environmental stewardship into the daily tasks and long-term planning of port operations. In 2011, the MPA won recognition for its EMS by receiving ISO 14001-2004 certification and has been re-certified, which signals that the MPA has met globally recognized standards for environmental management. The Port continues to meet its goal of being an advocate and steward of the environment by controlling and eliminating adverse environmental impacts. The MPA also provides environmental education and outreach to its contractors, tenants, and other Port users.

Waste

☑ **Solid Waste Reduction and Reuse**

MPA is reusing up to 1,000 tons of concrete accumulated during cleanup at the former Kurt Iron & Metal shipyard for substrate improvement in Masonville Cove, removed 5,400 tons of sunken wooden barges from the

Patapsco River at Masonville and shipped them via water to a recycler in Virginia, reusing waste oil from construction equipment for heating facilities at dredged material placement sites, and replacing steel and bituminous safety stops along wharf edges with stops made from recycled plastic.

☑ **Recycling**

In 2014, MPA recycled 188 tons of waste including cardboard, bottles and cans, antifreeze, asphalt, computers, concrete, glass, fluorescent light tubes, batteries, scrap metal, motor oil, tires, railroad ties, office paper, etc. from Dundalk Marine Terminal and the World Trade Center.

MPA is committed to 100% recycling of oil and fluids, fuel filters, wire rope from cranes, scrap metal, tires, batteries, fluorescent tubes, ballasts, paper, cardboard, bottles and cans at all MPA facilities. Asphalt and concrete is recycled. A universal waste collection and disposal system was installed.

MPA is capturing the liquids and gases from spent aerosol cans and recycling the cans.

MPA is reviewing ideas from the private sector about how to convert material from the Cox Creek Dredged Material Containment Facility into a lightweight aggregate used in masonry blocks, concrete, hot-mix asphalt, and geotechnical fill. This innovative reuse is being developed as a public-private partnership (P3) and could be part of long-term strategy to maintain Baltimore Harbor shipping lanes by increasing dredged material capacity while also creating an environmentally friendly construction product.

Energy

☑ **Energy Efficiency**

The MPA entered into an energy performance contract that implements several energy conservation measures including lighting upgrades, HVAC upgrades, high mast lighting controls that will significantly reduce energy consumption, and greenhouse gases.

Solar panels were installed on the Cruise Terminal and Shed 10 at South Locust Point Marine Terminal

Four massive electric powered cranes are now operating at the Seagirt Marine Terminal that yield increases in productivity and result in significant energy savings. The cranes do not burn fuel; they use heavy duty electric cables

to connect directly to the power grid, running on 13,200 volts, significantly higher than the older cranes. The higher voltage results in less demand on the power grid Implemented a Clean Diesel Program that replaced, repowered or retrofitted 79 pieces of diesel equipment that saves 33,818 gallons of fuel annually and reduces carbon dioxide emissions by 375 tons annually.

Established a Dray Truck Replacement Program in 2012 to improve air quality by replacing older diesel trucks that serviced the POB. To date, the program has helped replace more than 130 older dray trucks with cleaner models, reducing annual air emissions by approximately 108 tons of nitrogen oxides, 29 tons of carbon monoxide, 4 tons of particulate matter, and 4 tons of hydrocarbons.

Ports America Chesapeake is installing a new Gate Management System at the Seagirt Terminal that will incorporate weigh-in-motion scales and the latest Optical Character Recognition equipment to minimize truck idling time.

MPA and its tenants have been reviewing air emission reduction improvements on cargo handling equipment (CHE). Comparing a 2006 CHE inventory to the most recent inventory (2012) has confirmed positive strides have been made. The CHE emission inventory helps identify the pieces of equipment that can be targeted for retrofits, repowers or replacement. The inventory report found significant decreases in total tons of emission (greater than 32 percent) and in the rate of emissions in tons per hour (greater than 26 percent) for each pollutant measured. The average decrease in total emission across all pollutants was 56 percent. The most significant reduction was for sulfur dioxide which is directly related to switching from low-sulfur diesel to ultra-low sulfur diesel. The next largest reductions were in volatile organic compounds and particulate matter, at 54 percent and 53 percent, respectively.

Constructed the Masonville Cove Environmental Education Center, which is a net-zero energy efficient building. Features include geothermal heating, solar panels, solar hot water heater, efficient building envelope, double insulated windows, occupancy sensor-controlled lighting, CFL bulbs, moon tube lighting, use of recycled and local materials, and minimal water-use restrooms.

☑ **Renewable Energy**

MPA has initiated many activities to reduce its use of energy at the World Trade Center and its facilities at Port terminals, On two of its buildings' roof tops, a 750-kilowatt photovoltaic system was installed which is expected to produce 379,518 kilowatt hours a year – energy that is worth $37,952 which will reduce demand by 2,024 kilowatts.

Transportation

☑ **Efficient Business Travel**

MPA utilizes teleconferencing in lieu of business travel whenever practical.

☑ **Fleet Vehicles**

All MPA diesel-powered vehicles and equipment use ultra-low sulfur-bio diesel fuel, including the diesel-powered cranes and rubber tire gantry cranes. Flex-fuel vehicles, alternative fuel vehicles, and hybrid vehicles have been introduced into the MPA fleet.

Water

☑ **Water Conservation**

MPA redesigned its fire pumps to recirculate fire pump test water resulting in a savings of approximately 14 million gallons of water and improving the water quality of the Harbor by eliminating the discharge of chlorinated water.

☑ **Stormwater Management and Site Design**

MPA is an active participant in meeting the new federal pollution limits for the Chesapeake Bay, known as TMDL, and has developed a Water Quality Master Plan that characterizes MPA facilities, identifies areas for improvement, and recommends strategies for supporting TMDLs through its Environmental Management System.

MPA is monitoring and working to reduce the release of nutrients and sediments in outflow from dredged material placement sites while conducting a coordinated agency-wide effort to improve stormwater management at MPA terminals and other facilities. MPA voluntarily monitors water around the Hart-Miller Island, Masonville, and Cox Creek placement sites and has found no adverse impacts from discharges.

Port tenants are required to have stormwater management plans in place for their operations.

A stormwater vault at the Seagirt Marine Terminal, installed by Ports America Chesapeake, was installed to collect and treat stormwater before releasing it to the harbor.

A Perk Filter was installed in a storm drain inlet at the Dundalk Marine Terminal as a stormwater retrofit. The filter is designed to treat impervious surfaces by which a variety of contaminants can enter stormwater and eventually reach downstream waterways. The Perk Filter removes 80 percent of total suspended solids and 40 percent of total phosphorus. This innovative technology also retains oil, metals and trash from discharged stormwater.

At the Dundalk Marine Terminal, an algal turf scrubber was installed as a demonstration project and is testing how well controlled algae growth can remove potentially harmful nutrients from the water column. The 300 foot-long scrubber pumps water from the Patapsco River into a shallow screened trough. The water flows through the trough, where the growth of natural algae takes up nutrients from the water and releases dissolved oxygen. This improves water quality by reducing nutrients and increasing the amount of dissolved oxygen available to fish and other aquatic creatures. After the algae is removed, it is can be used for other projects, such as making biofuel, dietary supplements, soil amendments, animal feed, or compost.

MPA and its tenants conduct regular street sweepings which remove trash and sediment and installed trash collectors in several storm drains as part of its Clean Port Initiative to reduce water-borne litter.

MPA provided $500,000 to help fund a water wheel as part of its mitigation for the construction of the Masonville dredged material containment facility. The wheel is owned and maintained by the Waterfront Partnership of Baltimore. The Inner Harbor Water Wheel located at the mouth of the Jones Falls and is powered by sun and water. It has been clearing litter from Baltimore waters for a full year and it has since collected more than 150 tons of trash and debris. That's equal to the weight of about fifteen school buses.

MPA purchased and is installing six Big Belly solar powered trash receptacles that look like mailboxes. The waste receptacles have a solar powered panel on the top, used to compact the trash. The door opens like a mailbox so that trash can be deposited but birds and rodents cannot get in and humans don't have to put the lid on tight.

Green Building

☑ *Although MPA does not own or lease a certified LEED green building, Masonville Cove, the Port's newest dredged material placement site, has an environmental education center which is a showcase of green building techniques. The center has a solar hot water panel, two large photovoltaic panels for generating electricity, a geothermal heating system, and recycled materials were utilized in construction of the facility.*

MPA , supported by a $648,000 grant from the Maryland Department of Natural Resources, installed a lightweight green roof system. This demonstration project will evaluate the effectiveness of a green roof that is much lighter than traditional designs and could be used on buildings that can't support greater weight.

Solar panels were installed on the rooftops of the Port of Baltimore Cruise Terminal and Shed 10 of the South Locust Point Marine Terminal.

Other

☑ *The Poplar Island Environmental Restoration Project has been awarded the Innovation in Sustainable Engineering Award from the American Society of Civil Engineers. Poplar Island is one of Maryland's top environmental restoration projects built with dredged material from shipping channels. The award recognizes the Poplar Island Project's innovation that combines traditional design and construction such as dikes, dredging and grading with techniques for constructing wetlands to create productive intertidal wetlands and upland habitat.*

MPA received an Environmental Excellence Award from the Department of Transportation for its Water Quality Master Plan. The plan identifies strategies to mitigate stormwater runoff.

The American Association of Port Authorities awarded the MPA an honorable mention in the Comprehensive Environmental Management awards category for MPA's Water Quality Master Plan. The Plan supports Chesapeake Bay clean- up efforts by outlining steps to reduce the impact of stormwater runoff and pollutant loads from nutrients and sediment.

The Chesapeake Stormwater Network presented the MPA with an Innovative Best Management Award for the algal turf scrubber which is operating at the Dundalk Marine Terminal (discussed above).

Numerous awards were received for MPA's Dredged Material Management Program, including Coastal America 2010 Special Recognition Award (Masonville), National Association of Environmental Professional 2006 National Environmental Excellence Award (Poplar Island), and American Association of Port Authorities 2004 Environmental Improvement Award (Community/Public Involvement).

Carnival Cruise Lines' Carnival Pride returned to the Port of Baltimore with a multi-million dollar renovation and enhanced technology that meets new federal guidelines to burn cleaner, low-sulfur diesel fuel near land.

MPA publishes Green Port, a bi-monthly newsletter about MPA's projects, programs, and events that help protect natural resources in the Chesapeake Bay region. The information is available online at: www.marylandports.com and by clicking on the GreenPort icon. Anyone can sign up to subscribe to the newsletter for email distribution.

The staff at Masonville Cove has been working for a number of years to control invasive vegetation at the site. Historically, invasive vegetation has been controlled by the use of chemical herbicides. This year, in attempt to reduce collateral damage to desirable vegetation, a new method was explored - Goats! Using goats is less expensive than herbicides and prevents the unintentional release of herbicides into local waterways and the Chesapeake Bay.

Profile Updated February 2016