

**American Association of Port Authorities  
2010 Environmental Improvement Award Application**

**MASONVILLE COVE ENVIRONMENTAL EDUCATION CENTER  
AND ENVIRONMENTAL EDUCATION OUTREACH PROGRAMS**



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## Masonville Dredged Material Containment Facility

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### SUMMARY

The Maryland Port Administration (MPA) recently completed the design, permitting, and construction of the Masonville Dredged Material Containment Facility (DMCF), a 141-acre facility that will accommodate dredged material placement needs for the Port of Baltimore. The construction of the Masonville DMCF project required mitigation to offset filling of 130 acres of open water, one acre of vegetated wetlands, and 10 acres of uplands in the Chesapeake Bay Critical Area. To offset loss of these habitats, the MPA developed a compensatory mitigation package that incorporated both in-kind and out-of-kind mitigation projects. The majority of the mitigation package components centered on the restoration of Masonville Cove, a Baltimore City designated Habitat Protection Area located adjacent to the DMCF.

In addition to the required mitigation package projects, the MPA proposed and supported additional enhancements that provided benefits to the nearby communities. The Masonville Cove Environmental Education Center (MCEEC) serves as the keystone project for these community enhancements. The MCEEC and the surrounding trails system at Masonville Cove, was conceived with community input and was designed specifically to improve community access to the natural areas at Masonville Cove and to provide recreational and environmental educational opportunities in the vicinity of neighboring communities of Brooklyn and Curtis Bay, in the City of Baltimore, Maryland. The incorporation of the education center into the overall Masonville DMCF project generated strong support for the project in the neighboring communities.

The MPA funded the design and construction of the Masonville Cove Environmental Education Center (MCEEC). The Center has been constructed and is currently open to community and school groups. The education center is a “near zero net energy building” which includes multiple “green design” elements. The MPA is also developing plans to remediate contaminated soils in the uplands of Masonville Cove, which will allow public access to the water. In addition to providing funds to design and build the MCEEC, the MPA has designated over \$2 million in grant funding for programs and research based out of the MCEEC. MPA has awarded grants to Living Classrooms Foundation, the National Aquarium in Baltimore, and the Brooklyn and Curtis Bay Coalition. During the 2008-2009 school year, 426 students and 19 teachers from 10 Baltimore City schools in the vicinity of Masonville Cove participated in programs at the MCEEC. During the same period, there were over 15 hands-on programs at the MCEEC, one professional development workshop for teachers, 52 outreach programs at participating schools, and creation or expansion of nine schoolyard greening projects.

The funding of an education center or community center is a project that any port authority could use as an outreach project to provide educational programs related to the environment, maritime activities, or other local interests. This type of program also provides opportunities for a port authority to form vital connections with local non-profit organizations, schools, and communities.



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### **INTRODUCTION**

The Maryland Port Administration (MPA) recently completed the design, permitting, and construction of the Masonville Dredged Material Containment Facility (DMCF), a 141-acre facility that will accommodate dredged material placement needs for the Port of Baltimore. The construction of the Masonville DMCF project required mitigation to offset filling of 130 acres of open water and one acre of vegetated wetlands and 10 acres of uplands in the Chesapeake Bay Critical Area. To offset loss of these habitats, the MPA developed a compensatory mitigation package that incorporated both in-kind and out-of-kind mitigation projects. The majority of the mitigation package components centered on the restoration of Masonville Cove, a Baltimore City designated Habitat Protection Area located adjacent to the DMCF.

In addition to the required mitigation package projects, the MPA proposed and supported additional enhancements that did not provide mitigation credit, but provided benefits to the nearby communities. The Masonville Cove Environmental Education Center (MCEEC) serves as the keystone project for these community enhancements. The MCEEC and the surrounding trails system at Masonville Cove, was conceived with community input and was designed specifically to improve community access to the natural areas at Masonville Cove and to provide recreational and environmental educational opportunities in the vicinity of neighboring communities of Brooklyn and Curtis Bay, in the City of Baltimore, Maryland. The incorporation of the education center into the overall Masonville DMCF project generated strong support for the project in the neighboring communities.

### **GOALS AND OBJECTIVES**

This award application package describes the development of the MCEEC as a component of the Masonville DMCF project, highlights the programs and events hosted by the MCEEC, and describes the upcoming plans for the MCEEC. This package also describes the applicability of this type of community enhancement project to other port authorities and the roles of MPA and other local organizations in developing the MCEEC.



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### **DISCUSSION**

#### **Background**

The MPA is working with the Brooklyn and Curtis Bay Coalition (Baybrook), the Living Classrooms Foundation, and the National Aquarium in Baltimore to operate the MCEEC. This center has served as a model for community involvement and environmental awareness from its inception to its opening as a landmark urban environmental education center.

Prior to the development of the MCEEC, the site was an abandoned and neglected parcel of land along the Patapsco River, Baltimore, Maryland. The MCEEC was designed as a community enhancement in conjunction with the compensatory mitigation package to offset impacts associated with the development of the DMCF. The MCEEC was one of multiple community enhancements associated with the mitigation that were developed at the recommendation of the communities neighboring the Masonville DMCF. Development of the MCEEC created an opportunity for the local residents and schoolchildren (from Brooklyn, Curtis Bay, and Cherry Hill) to connect with their natural environment and participate in meaningful stewardship projects related to the Chesapeake Bay Watershed.

#### **Objectives and Methodology**

The MCEEC was opened in April 2009. The objectives of the MCEEC are to:

1. Provide an opportunity for environmental education and research using the green elements of the building itself;
2. Integrate project-based learning with internships and job opportunities for local youth; and
3. Serve as a hub for school-based educational programs, environmental activities centered on the revitalized Masonville Cove shoreline, and a myriad of other community events.



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The building itself serves as an educational tool by displaying a number of “green” features. The building was designed as a “near zero net energy” building, meaning that the green principles and technologies used in the building are so efficient that the energy required for lighting, heat, and other purposes is next to nothing. The components of the building that help accomplish this are a geothermal HVAC system, solar energy generation for thermal and electric energy, a focus on the building envelope (such as insulation and air sealing), and siting and placement benefits (such as passive solar lighting and heating).

The MPA is in the process of identifying internships and job opportunities to provide project based learning. Onsite opportunities are not available until remediation work is completed on the upland areas. Project stakeholders are currently developing offsite opportunities, including working with the Chesapeake Center for Youth Development to provide jobs, such as landscaping work.

Environmental Programs are available to the community on weekday evenings and weekends. Partners such as the National Aquarium in Baltimore and Living Classrooms Foundation run programs with area schools on growing wetland grasses and reducing runoff pollution in the local communities. MPA has funded environmental programs that take place both at MCEEC and throughout the community.

Programs at the MCEEC include an annual environmental education festival, activities for Baltimore City public school students at the center, professional development workshops for teachers, and summer programs for students. The MPA has also funded several outreach programs, including programs at area schools, labeling of storm drains with “Chesapeake Bay Drainage – Do Not Dump,” trash and recyclable removal from area streets and schoolyards, and creation and expansion of a schoolyard greening program.

Since the inception of the MCEEC, 52 community programs have been held at the center. Approximately 200 individuals, both children and adults, participated in those programs. Four week-long summer programs for students were held during the summer of 2008 and another four such programs were held during the summer of 2009.



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During the 2007-2008 school year, 595 students and 27 teachers from 10 Baltimore City public schools in the vicinity of Masonville participated in programs at MCEEC or programs funded by MPA. Ninety-two outreach programs were held at participating schools and shipboard education programs were implemented for nine schools. Two professional development workshops for teachers and community members were held during the 2007-2008 school year. Programs operated by LCF and funded by MPA also included the stenciling of 15 storm drains with the words, "Chesapeake Bay Drainage – Do Not Dump," removal of more than 141 lbs of trash and 84 lbs of recyclables from schoolyards and school neighborhoods, creation and distribution of 575 brochures and letters to inform the community about storm water runoff issues and potential solutions, creation of 30 posters about runoff pollution that were posted in schools, and creation of 6 schoolyard greening projects.

During the 2008-2009 school year, 426 students and 19 teachers from 10 Baltimore City schools in the vicinity of the MCEEC participated in programs operated by the MCEEC. Fifty-two outreach programs were held at participating schools and 15 programs were held at the MCEEC. One professional development workshop was held for teachers. Programs operated by LCF and funded by MPA during the 2008-2009 school year included stenciling of 18 storm drains with the words "Chesapeake Bay Drainage – Do Not Dump," removal of more than 185 lbs of trash and 56 lbs of recyclables from schoolyards and school neighborhoods, creation or expansion of 9 schoolyard greening projects (plus potting of native plants), and administration of two sets of student assessments with 'data dialogues.'

### **How the Project Fulfills the Award Criteria**

#### ***The level and nature of benefits to environmental quality, beautification or community involvement***

The MCEEC was designed based on input from the community in the vicinity of the proposed Masonville DMCF. The mitigation package for the DMCF focused on the restoration of Masonville Cove, a Baltimore



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City designated Habitat Protection Area. The community recommended the development of a community center or environmental education center at Masonville Cove as a supplement to the mitigation projects at the site. The MCEEC has since opened and has been the site of numerous community and school environmental education programs. In addition to environmental-themed programs for the community and school groups, other outreach efforts have been completed: 1) to educate the community regarding the functions and importance of the port, 2) to decrease negative human impacts to the environment, and 3) to improve the environmental quality in the communities surrounding the MCEEC. This includes programs related to Baltimore's storm water system and promoting awareness of the fate of items passing into the storm drains (e.g., trash) and creation and expansion of schoolyard greening programs. Over 200 programs have been operated at or by the MCEEC since efforts began to design and build the center. By helping the local community become more aware of the environment and their potential effects on it, MCEEC program participants are reducing the amount of trash and other runoff pollution that ends up in Masonville Cove and the Chesapeake Bay.

### ***The level of independent involvement and effort by the port***

The MPA funded the design and construction of the MCEEC. The MPA also provided over \$2 million in funding for grants to support research and educational programs at the MCEEC. MPA has worked with community partners, specifically the Living Classrooms Foundation, the National Aquarium in Baltimore, and BayBrook to coordinate long-term use of the MCEEC. Grant funds have been awarded to these three organizations. Each of these organizations provided matching funds to those provided by the grants. One of the concerns raised by the community was that the MPA would construct the MCEEC and that there would then be no funding for programs at the center. By making grant funds available for the programs at the MCEEC, the MPA addressed community concerns for ensuring funding.





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### ***The creativity of the solution or programs***

During the development of the Masonville DMCF, the MPA worked closely with community members, non-profit organizations, state and federal agencies, and other interested parties to meet both the needs of the Port of Baltimore and the goals of other entities. As part of this outreach, the MPA considered all requests of stakeholders during public scoping and outreach efforts. It was MPA's goal to address objections to the project and to gain support for the Masonville DMCF. MPA's outreach efforts lead to the suggestion of a nature, community, or environmental education center at Masonville Cove. MPA worked closely with community members as they developed the design of the MCEEC, constructed the building, and funded programming at the center. The development of the overall compensatory mitigation package and community enhancements for the project resulted in overwhelming support for the project from the community, because of the development of the MCEEC.

### ***Whether the project or program results are apparent (the project must be complete through some beneficial increment)***

As described previously, the construction of the MCEEC building was completed in 2009 with funding from MPA and is currently open to the public. MPA has funded over 200 programs that were operated at or by the MCEEC since efforts began to design and build the center. Environmental Programs are available to the community on weekday evenings and weekends. These include bird watching, nature walks, and workshops on composting. Partners such as the National Aquarium in Baltimore and Living Classrooms Foundation are leading programs with local schools on growing wetland grasses and reducing runoff pollution in the local communities. MCEEC's environmental programs take place onsite and throughout the community. By helping the local community become more aware of the environment and their potential effects on it, the stakeholders are reducing the amount of trash and other runoff pollution that ends up in Masonville Cove and the Chesapeake Bay.



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In the 2008-2009 school year, 426 students and 19 teachers at 10 Baltimore City schools in the vicinity of the MCEEC participated in programs operated by MCEEC. These programs are ongoing. In addition, there is a continually updated schedule of activities and events open to the public that are posted on the MCEEC website, which is found at [www.masonvillecove.org](http://www.masonvillecove.org). April 2010 events include Earth Day programs for a variety of age ranges, a composting workshop, star gazing, pondside investigations, a homemade paper workshop, and green building tours.

### ***The cost effectiveness of the activity or the program***

The cost-effectiveness of this activity has been dictated by the parameters set by the MPA. The MPA worked with its contractors to design and build a nature center that was able to support educational programs and to also stay within a budget of available funds. Further, to ensure that the maximum amount of programs possible are held at the center or held by MCEEC staff at other locations, MPA developed a grant award program that required matching funds from the grant awardees. The program ensures that for every dollar MPA spends on programs for the MCEEC, another source is providing additional funding for programs at the center.

### ***The transferability of the technology or idea to the port industry.***

This project serves as an example that could easily be replicated by other port authorities with interest in the development of a community enhancement project or an educational benefit or program. A similar environmental education center could be developed by any other port authority or private entity in the maritime industry. The limiting factors to development of such a center are: 1) available funding and 2) an available site on which to develop the facility. The development of an environmental education center provides a net environmental benefit through the implementation of programs applicable to the port's watershed and local environment. For example, issues related to stormwater, such as trash entering or being disposed of in stormdrains and dumping of waste liquids into stormdrains is a problem in any urbanized port or watershed. The MCEEC has implemented an educational outreach program to teach



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the surrounding neighborhoods about stormwater in the area, which included posters and educational materials, as well as labeling stormdrains to say that they drained into the Chesapeake Bay.

### **CONCLUSION**

The MPA has participated in a unique outreach and community venture with the development of the MCEEC. The MCEEC provides environmental education programs and other activities for the community. These programs increase the awareness of community members and students about the importance of the port, the local environment, and ways that their actions affect the environment. The programs run through the MCEEC are working to improve local behaviors toward the environment, to increase awareness of area residents, and to provide opportunities to interact with or improve their local environment. The MCEEC has provided over 200 programs for the community and school groups and continues to be a valuable community resource.

# Photographic Record

Masonville Cove Environmental Education Center  
Baltimore, Maryland

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**MCEEC Building**



**MCEEC Building**



**Planting Program**



**Children Share Visions of MCEEC  
at the Groundbreaking Ceremony**



**Children Share Visions of MCEEC  
at the Groundbreaking Ceremony**



**Groundbreaking Ceremony with  
Governor Martin O'Malley**

# Photographic Record (continued)

## Masonville Cove Environmental Education Center Baltimore, Maryland

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**Environmental Education Festival**



**Environmental Education Festival**



**MCEEC Building**



**MCEEC Sign**