



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 Transportation Authority

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State Government

Member since March 2010

Management and Leadership

Environmental Policy Statement

The Maryland Transportation Authority's (MDTA) initial Environmental Commitment Statement was signed by its former Executive Secretary, Ronald L. Freeland, on November 24, 2009. As part of the Environmental Management System (EMS) development process, the statement was enhanced on several occasions and signed by Executive Director, Bruce Gartner on January 3, 2014. The statement is added to the MDTA website.

Environmental Team

As the MDTA is actively involved with the development and implementation of an Environmental Management System (EMS), our previously established Environmental & Sustainability Oversight Council (ESOC) has evolved into our EMS working group. The EMS working group, comprised of representatives from the MDTA's Division of Operations, Office of Engineering and Construction, Division of Capital Planning, and Office of Environment, Safety & Risk Management, meets monthly with a consultant to review policies and procedures that will ultimately comprise the EMS. In addition to the 'standing members' of the EMS working group, our team also is strengthening relationships with the Office of Real Estate, Division of Procurement, and Division of Communications to ensure that all aspects of the EMS have been adequately addressed.

Environmental Restoration or Community Environmental Projects

The MDTA has directed several environmental mitigation projects along our roadways that have provided wetland creation, preservation and enhancement, stream restoration, wildlife passage, stormwater management, environmental conservation and reforestation.

Large development projects go beyond the regulatory requirements by considering watershed context and community interests. Examples are Inter-County Connector (ICC) and I-95 Section 100 Express Toll Lane projects. The design/construction included large-scale aquatic ecosystem restoration and unprecedented stormwater management to mitigate the effects of the roadways on a watershed approach, which in part included input from local watershed groups.

As part of the Chesapeake Bay restoration effort, MDTA is implementing stormwater retrofits to treat impervious areas that previously had no water quality controls. Initial efforts focus on highways constructed circa 1950's and 1960's, while planning retrofits within all watersheds that MDTA has roadways. Additionally the MDTA is pursuing retrofits at its facilities that also consider aesthetics and public outreach opportunities.

Waste

Recycling

Between 2009 and 2012, MDTA began establishing an Authority-Wide office recycling program. Office recycling materials are those materials required to be recycled under the Maryland Recycling Act (MRA): paper and cardboard products, aluminum and bi-metal cans, glass and plastic bottles, rubber, printer and toner cartridges, fluorescent lamps, and batteries (e.g., lead acid, alkaline, lithium ion, etc.). During this same time period, MDTA began improving the recordkeeping process for non-MRA materials. Non-MRA materials include: mechanical street sweepings, sludge/wastewater, used oil, construction and demolition debris (e.g., ceiling tiles), and scrap metal. The 2012 calendar year marked the first year that all MDTA facilities were fully operational and sustaining MRA material recycling. MDTA's recycling efforts are coordinated with regionally chosen contractors secured by the Department of General Services as well as MDTA- procured contractors.

Through House Bills and a Governor's mandate, Maryland State Agencies are required to minimize waste and this is achieved through recycling. The recycling rate State agencies are being asked to achieve is 30% in 2013. As a

Transportation Business Unit (TBU), MDTA's recycling data are compiled with the Maryland Department of Transportation's (MDOT) five (5) other TBUs, which are collectively reported to the Maryland Department of the Environment (MDE). MDOT has set a recycling goal of 45% for 2013. For calendar year 2012, MDTA's recycling registered a 30.9% recycling rate. This reflects an increase of 7.1% from the 2011 rate (23.8%).

MDTA promotes its recycling program and progress using various outreach methods. Employee training has the biggest impact and recycling is a topic of discussion for newly hired employees. In 2012, MDTA held its first annual recycling contest among all of its facilities across the State. The bi-weekly, internal employee newsletter is used to communicate information about the recycling program and the recycling contest. Lastly, the MDTA has an internal employee-only web site (i.e., intranet) that features a web page dedicated entirely to the recycling program and recycling contest.

Energy



Energy Efficiency

The MDTA has continually implemented measures over the years to improve the energy efficiency of our facilities. Also, the MDTA has worked with a State assigned Energy Service Company (ESCO), Energy Systems Group (ESG), to address critical infrastructure upgrades and replacements in response to the State's EmPower Maryland goals. The ESG project has been completed and allowed MDTA the opportunity to install new and renewable technology that will save energy, avoid capital expenditures, reduce operating costs and ultimately improve the environment. Current and planned activities include the following:

1. *Improve the energy efficiency of the building: Additional wall and attic insulation as well as weather stripping was installed on many doors and facility devices that open to the outside environment. The MDTA's Engineering Division has also revised our roofing specifications such that all new flat roofs will be COOL ROOFS with an SRI (Solar Roof Index) of 100.*
2. *Improve the efficiency of HVAC and other systems: New HVAC equipment installed has been energy efficient units and variable frequency drives were installed on pumps and fans to improve system operating efficiency. Programmable thermostats and time clocks as well as complete energy management control systems (EMCS's) were installed in many areas. The MDTA has also expanded its HVAC maintenance contracts to document increased levels of maintenance and quality assurance efforts. HVAC units at the MDTA Headquarters also have working economizers that allow greater*

use of outside air during the appropriate times of the year. This decreases the use of the units' compressors and in addition to saving energy allows more fresh air to enter the facility.

- 3. Improve the efficiency of office equipment: The MDTA's Division of Information Technology (DoIT) has upgraded hardware and computers to the latest operational and energy efficient types on the market. DoIT has improved the efficiency of computer servers by consolidating and using virtualization software that optimizes IT assets. In some instances they use a Thinclient (terminals connected directly to the network-there is no actual personal computer) to reduce the impact of a normal computer setup at a workstation. Monitors are the LCD type where energy savings is again realized. When the computer is not used for a certain period of time, it goes into a locked mode which shuts down the screen and provides an internal energy (as well as security) savings feature. The majority of the printers are networked all-in-one units that contain features for printing, faxing, scanning, and copying.*
- 4. Reduce the use and size of personal space heaters in the work place: The MDTA has reduced the use and size of space heaters in the work place by improving the control and efficiency of the facility HVAC system. This has resulted in the proper distribution of air in the work space which has improved the comfort level of the workers. We are now able to better control air distribution and provide varied temperatures depending on the facility layout. This has resulted in a significant reduction in kilowatt-hour consumption and therefore reduced electrical costs. Also, the formerly standard 1200/1500 watt space heaters are no longer the standard size of issue by the MDTA. They may be used in approved locations where the facility normal building heating system is limited in providing adequate HVAC to the area. The allowed heater size is a 200 watt unit which may only be used in approved locations. The 200 watt unit consumes many times less energy than the 1200/1500 watt unit. This unit is utilized to perform the needed work of a personal heater and heat the immediate area where the employee is working and not to attempt to heat the entire work space. This size unit has proven to work well and is an excellent energy cost saving item.*
- 5. Improve the efficiency of lighting: The MDTA Division of Operations personnel have been converting to more efficient lighting for many years. The lighting has involved changing to T-8 and T-5 fluorescent fixtures, LED'S, and ICETRON (inductively coupled electrodeless) lighting systems. Incandescent lighting has been converted to compact or mini fluorescent and in some instances eliminated where possible. LED exit signs have been installed in buildings when the old ones needed to be replaced. LED traffic control lighting has been in operation in some toll plazas for around twelve*

(12) years and is in use in many bridge operations in safety applications. The ICETRON fixtures are currently installed in the Baltimore Harbor Tunnel for roadway lighting, at the associated toll plazas, and for area overhead street lighting.

Under the ESG contract all of our roadway, bridge, and tunnel sign lights, building exit signs, and interior incandescent downlights were converted to LED fixtures. The largest LED project now under study is the conversion of the Fort McHenry Tunnel (FMT) roadway lighting to an LED system that doubles the existing light levels and provides a long life lighting solution requiring minimal maintenance. The estimated electric savings for the FMT LED roadway lighting project alone is \$1.6 million per year.

Lighting motion sensors have been installed in some offices and facility spaces. These devices have worked well and have turned lights off when personnel were not in the area. The plan is to increase these devices in all areas possible and realize further energy savings.

6. *Use energy management software system to control lighting, HVAC systems, and to turn off computers and printers, ending machines, and other equipment:*

The HVAC system of the MDTA Police Headquarters is controlled by an energy management control system (EMCS). The software allows the system to be monitored, and controlled from a remote laptop computer located in another building. HVAC units can be turned on and off to take advantage of shedding some load during peak utility periods.

The MDTA has added more EMCS systems to other facilities to control HVAC systems under the ESG contract. Most of these MDTA facilities have the HVAC systems remotely controlled whereby the building temperatures are more closely monitored and controlled. The temperature settings cannot be changed by personnel in the work space-only by authorized persons at the remote locations.

The HVAC operating schedules have also been reduced in all facilities where possible. In most instances the HVAC systems shut down (they go into the Unoccupied Mode) shortly after the vast majority of the workers have left for the day. Weekends and Holidays have further reduced operating times (normally six (6) hours per day). The operating schedules are only changed during extreme hot and cold weather conditions.

The MDTA is currently testing the WATTSTOPPER power strip and personal sensor. This device automatically turns off any electrical device desired by

shutting down electrical power to certain dedicated outlets when a sensor does not detect a person's movement at their work area. It automatically turns the power strip dedicated outlets, and therefore devices, back on when the person's movement (normally they have returned to their work station) is detected by the sensor. This device may be preferred over some others as it does not require the use of any software to be connected to your computer system.

7. *Decrease water usage: Water saving devices have been installed on all MDTA kitchen and restroom fixtures. Water flow has been reduced by 50% on the commodes (from 3 gallons to 1.5 per flush), 25% on the wall urinals, and 30% on the kitchen faucets due to changing the type of aerator used.*
8. *Improve the efficiency of industrial equipment: New and replacement equipment have been and are specified to be energy efficient types. Also, water heaters will be tankless or converted to this type of heater where possible.*
9. *Implement and educate employees on basic conservation practices: ESG has a training matrix in its contract. Most of the training will occur on site to enhance learning on our own specific equipment and realize our energy savings goals. Energy Management Teams (EMT's) will be maintained at each MDTA location to keep a core group of employees always easily accessible and able to be in touch with their co-workers. This will help keep the awareness up and allow for quick and thorough distribution of information. Connections, the MDTA's biweekly newsletter, will be utilized to communicate the MDTA's energy management program and information to all employees.*
10. *Modify operating schedules to limit peak energy use: The MDTA will continue to work with our utility companies on peak load management. Some of our new HVAC control systems will allow us to more easily turn off and on some large loads during peak periods. Other major loads that are associated with our tunnels run 24/7 and are needed for environmental and safety reasons and therefore cannot be shut down.*



Renewable Energy

In the spring of 2013, the MDTA contracted with the Maryland Environmental Service to perform high-level renewable energy assessments at all MDTA facilities for the purpose of identifying potential locations where renewable energy could be generated. Once several potential locations would be identified, more detailed study would be required to determine the true feasibility of renewable energy generation along with cost-benefit analysis.

Primary renewable energy options evaluated at each MDTA facility included:

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| <i>-Wind</i> | <i>-Solar Hot Water Collectors</i> |
| <i>-Solar Photovoltaics</i> | <i>-Exterior Solar Lighting</i> |
| <i>-Solar Ventilation Panels</i> | <i>-Ground Source Heat Pumps</i> |

Based on the initial evaluation performed, several MDTA facilities were recommended for additional study:

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| <i>-Francis Scott Key (FSK)</i> | <i>additional wind study</i> |
| <i>-Point Breeze</i> | <i>additional wind study</i> |
| <i>-JFK I & II, Hatem & Bay</i> | <i>installation of solar shingles on salt domes</i> |

Based on initial information from the assessment, a budget request was approved for FY 2015 for approximately \$50K to conduct a wind study at FSK. However, it is our hope to include a study of Point Breeze as well. The study will be necessary to evaluate wind patterns, sustained wind speed and other factors necessary in making decisions on whether wind power is a viable option.

Water

Stormwater Management and Site Design

MDTA developed an extensive Stormwater Program that comprehensively manages stormwater Best Management Practices (BMPs) and environmental resources. MDTA developed a GIS-based system to inventory, inspect, and maintain BMPs.. MDTA is developing a broad maintenance program and has prepared extensive maintenance procedures to ensure high-level of BMP performance and stability.

The program has expanded to pursue enhancement of existing BMPs and target retrofits to include new BMPs. MDTA is using a watershed-approach to strategically implement these improvements, which is important considering the proximity of MDTA properties to the Chesapeake Bay.

The improvements may include Low Impact Development (LID) type practices for both roadways and facilities that focus on localized drainage such as rain barrels, low-maintenance landscaping, and vegetated buffers.

MDTA also maintains landscapes around our facilities, which many are along key waterways of the Chesapeake Bay. As part of our environmental management system, Division of Operations personnel uses procedures that minimize environmental impacts where possible. Good housekeeping procedures

were developed to reduce the risk of pollutants entering surface waters and to minimize generation of waste during operations. These procedures, in return, conserve water, minimize waste disposal and promote recycling.

MDTA has organized efforts to educate our staff and the public on stormwater pollution prevention. MDTA is constantly evaluating ways of involving the public and keeping them informed. Efforts have included:

- Development of brochures to educate the general public and MDTA staff about the harmful impacts of oils, automotive products, litter, pet waste, and other non-stormwater pollutants to Maryland's tributaries and waterways of the Chesapeake Bay watershed.
- Stenciling of storm drain inlets to increase public awareness regarding drainage discharge to the Chesapeake Bay.
- Conducting training classes for all MDTA maintenance personnel to educate on procedures and practices to sustain clean surface water discharges.
- Conducting training classes for MDTA professional staff to educate on environmental regulations for design and construction.
- Conducting training classes for MDTA personnel and contractors on proper erosion and sediment control practices to ensure compliance during construction of the I-95 ETL project.

Several projects are also underway to remove underground fuel storage tanks (UST) at MDTA maintenance facilities and replace them with aboveground units to eliminate the potential of any contaminants entering the groundwater or the Chesapeake Bay from USTs. This was not mandated by any regulatory agency, but is a voluntary environmental protection project.

Green Building

LEED Silver

The Inner County Connector's Eastern Operations Facility was constructed and certified to a LEED Silver standard. Through a public-private partnership, the MDTA's two travel plazas, located on I-95 in northeast Maryland, will also be constructed and certified to a minimum LEED Silver standard when the re-development project of both locations is complete.

Profile Updated January 2014



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Learn more at www.green.maryland.gov/registry

