



**Maryland**  
Department of  
the Environment

# **Celebrating 30 Years Protecting Maryland**





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<http://msa.maryland.gov/megafile/msa/speccol/sc2900/sc2908/000001/000769/pdf/am769--1375.pdf>

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## Message from Governor Hogan

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Dear Friends and Colleagues:

Congratulations to the Maryland Department of the Environment for 30 years of progress in protecting our state's precious land, air, and water resources.

From the majestic Chesapeake Bay to the beautiful mountains of Western Maryland to the farmland in our rural communities, our citizens understand the essential value of preserving our environment, as well as the strong connection it holds to building a vibrant economy, creating good-paying jobs, and improving the overall quality of life for Marylanders for generations to come.

For three decades, the hardworking men and women of the department have enabled Maryland to be a leader in restoring and protecting our natural assets. My administration is committed to continuing this progress and meeting new challenges and opportunities with even better results through our unwavering commitment to customer service, innovation, and collaboration.

My sincerest thanks go to all of the staff, families, and partners for your ongoing support of the Maryland Department of the Environment's work to improve our state's communities and ecosystems. With your continued commitment, we will continue to Change Maryland for the Better.

Sincerely,

Larry Hogan

AN ACT concerning

Reorganization of State Government -  
Environmental Area

FOR the purpose of creating in the Executive Branch of Maryland government a new department to be known as the Department of the Environment; consolidating existing environmental regulatory programs into a single cabinet level agency; providing for the appointment of a Secretary of the Environment; providing that the Secretary shall be responsible for the operation and administration of the new department; providing for the appointment of a Deputy Secretary and other staff personnel as may be necessary to carry out the transferred functions; transferring certain environmental regulatory functions from the Department of Natural Resources and the Department of Health and Mental Hygiene to the new Department of the Environment; providing that the new department shall be responsible for certain programs involving sediment control, stormwater management, oil pollution control, well drilling, radiation control, hazardous and solid waste management, and air and water quality control; transferring certain environmental boards, commissions, and councils from the Department of Health and Mental Hygiene to the Department of the Environment; making certain technical changes; making provisions of this Act



Governor William Donald Schaefer, third from right, signed a bill into law which reorganized state government and created the Maryland Department of the Environment.

## A History of Service

MDE has protected Maryland's air, land and water for 30 years with great distinction

When Maryland Governor William Donald Schaefer signed a bill 30 years ago reorganizing state government to include an "environmental area," it wasn't celebrated with fireworks over Baltimore's Inner Harbor or a big bash up Charles Street at the Washington Monument. But the creation of the Maryland Department of the Environment was of major importance because of the department's mission to protect and restore the environment for the health and well-being of all Marylanders.

MDE employees touch the lives of Maryland residents in so many ways. Water quality inspectors ensure that the public drinking water systems provide safe and sustainable drinking water to more than five million customers statewide. When an environmental emergency occurs, like a tanker truck overturning and spilling oil on a highway near a stream, the agency's emergency response division is on duty 24/7 to answer the call. Meteorologists provide air quality forecasts that families can plan their days around and minimize their exposure to pollutants. Staff members work tirelessly to prevent lead poisoning among our children.

States throughout the country felt the need to form their own environmental regulatory authorities in the late 1970s and 1980s after a number of Congressional measures to protect America's air,

water and land. That flurry of activity strained the states' existing public health and natural resource agencies. Businesses throughout the country also clamored for single agencies on the state level to control environmental permitting and compliance.

The Clean Air Act of 1970 resulted in regulations to limit emissions from industrial and mobile sources, the same year that the U.S.

Environmental Protection Agency (EPA) was formed. That was followed closely by the Clean Water Act of 1972, which regulated pollutant discharges into legally defined "Waters of the United States." The EPA was

given the authority to address the growing volume of municipal and industrial waste in the country with the Resource Conservation and Recovery Act of 1976. Then, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 made the purchaser of any property liable for any contaminants on the property. Brownfields programs became important in helping redevelop land contaminated by industrial activities.

In Maryland, elected officials expressed a desire to deliver services more efficiently and group related



**Maryland**  
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the Environment

Current logo

### 1987

Clean Water Act establishes Water Quality State Revolving Loan Fund Program.

### 1988

Maryland Recycling Act passes encouraging recycling and creating MDE's recycling program.



The agency moved into its current offices at Montgomery Park in 2002, where it celebrated its 30th birthday this year with Secretary Ben Grumbles, center, and all its ex-Secretaries.

functions more logically. Environmental regulatory work was transferred from the then-Department of Health and Mental Hygiene (DHMH) and Department of Natural Resources (DNR) to the new Environment department. MDE had responsibility initially to oversee programs involving stormwater management, oil pollution control, well drilling, radiation control, hazardous and solid waste management and air and water quality control. That would later include many more programs like sediment control, mining, wetlands, emergency response and brown-

fields for the staff located in Baltimore City and regional offices in Frostburg, Annapolis, Hagerstown, Salisbury, and Cambridge.



Previous logo

In the beginning, MDE's staff shared a building on Preston Street in downtown Baltimore with DHMH, and in Annapolis with DNR. But the close quarters necessitated a move a little more than a year later to more office space in a building on Broening Highway near Seagirt Marine Terminal, where the agency was headquartered for the next 13 years. But the most noteworthy move was yet to come shortly after the turn of the millennium.

The huge, art deco-style Montgomery Ward Catalog Building in southwest Baltimore at 1800 Washing-

ton Boulevard was built in 1925 to be a regional mail-order distribution center. It was abandoned in 1985 after the company's sales declined and became an abandoned brownfield site for 15 years when Himmelrich Associates of Baltimore bought the property. That purchase coincided with MDE searching for a new home and Himmelrich searching for an anchor tenant to fill 250,000 square feet of space on four floors while at the same time implementing Leadership in Energy and Environmental Design (LEED) strategies in renovations. In addition to an abundance of natural light, the building minimizes the heat island effect by a vegetated roof over its food court, uses waterless urinals and captured stormwater to flush toilets, diverts stormwater from the parking lot to an onsite bioretention facility and uses a host of sustainable and recycled materials in its workstations and carpeting.

MDE moved into the refurbished eight-story Montgomery Park Business Center in September 2002. The rest, shall we say, is history. The responsibilities have only grown with time for the State of Maryland's environmental regulatory authority. During fiscal year 2016 MDE provided regulatory oversight for a record 179,779 regulated entities with 67,438 permits in effect in 33 different enforcement areas.

While there has been a growth in the regulatory arena, the mission has remained the same – to protect all Marylanders.

**1989**

State legislature passes the Nontidal Wetland Protection Act.

**1990**

Ozone Transport Commission (OTC) created to address the ozone transport phenomenon in the northeast.



Agency staffers uphold rigorous standards in water quality testing to help protect the state's famed species, the Maryland blue crab.

## Restoring the Chesapeake Bay

Aggressive action brings national treasure back from brink of collapse

When the Maryland Department of the Environment was established in 1987, the Chesapeake Bay was ailing. Cleanup attempts faltered. Pollution persisted. Aquatic life suffered.

In the three decades since, the Maryland Department of the Environment has worked to restore this national treasure. Now, success is within reach.

The Chesapeake Bay is the largest estuary in the United States. It is among the most productive and valuable ecosystems in the world. Blue crabs, striped bass and oysters – the bay is famed for these and other seafood delights.

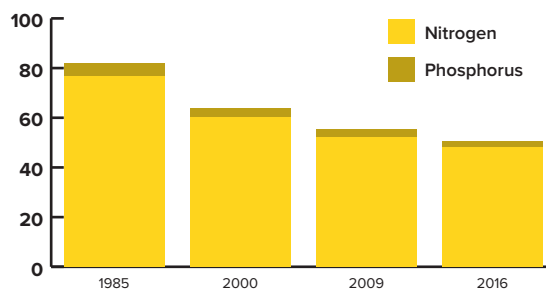
Moreover, the bay is part of Maryland's identity and crucial to the state's economic well-being.

But decades of development in its 64,000-square-mile watershed brought the bay, as a living system, to the brink of collapse. Unchecked nutrient pollution causes "dead zones" – areas of water depleted of the oxygen that crabs and fish need to survive. Sediment clouds the water, hindering the growth of the underwater grasses that filter the water and serve as nurseries for baby aquatic life.

Early efforts to fix this problem included the 1983 Bay Agreement, which established the multistate Bay Executive Council. Another agreement, in

### Total Nutrients Delivered to Chesapeake Bay

(million pounds/year)



1987, established goals to reduce nitrogen and phosphorus pollution. Yet another agreement was struck in 2000. All included only voluntary actions by the watershed states.

But Maryland – with the most to gain, and the most at stake – took aggressive steps to improve the quality of the bay and its tributaries. A key turning point was the establishment in 2004 of the Bay Restoration Fund, which uses money collected from public sewer customers and septic system owners to reduce pollution. That fund pays for Enhanced Nutrient Removal upgrades to large wastewater treatment plants – arguably the single biggest factor in improving the bay's health – and septic system upgrades.

#### 1991

Scrap Tire Recycling law passes, establishing mechanism for cleanup and recycling of stockpiled scrap tires.

#### 1992

Vapor recovery nozzles are installed at large gasoline stations to reduce smog forming emissions from gas station pumps.



Many new developed rain gardens greatly aid stormwater in soaking into the ground.

The Bay Restoration Fund has provided nearly \$1.3 billion in grants. Counting grants and loans from the Water Quality State Revolving Fund, which MDE administers, \$4 billion has been invested in clean water.

In addition to reducing pollution from wastewater, the department has taken steps to reduce pollution from stormwater and other sources. A 2007 law allowed the department to tighten regulations to control polluted stormwater runoff from new construction and redevelopment. The department enforces permits that require local jurisdictions to create space for stormwater to soak into the ground.

Maryland was the first bay watershed state to issue permits to prevent water pollution from Animal Feeding Operations. And the state issued an enhanced Phosphorus Management Tool for farmers to improve water quality. Another key turning point: the Chesapeake Bay Total Maximum Daily Load, which established enforceable pollution limits for all states in the bay watershed and the District of Columbia. Cleanup efforts, before voluntary, were now required by the federal government.

The Maryland Department of the Environment headed the state's response. Working with other state agencies, local jurisdictions and the private sector, the department developed a Watershed Implementation Plan – a blueprint for Chesapeake Bay restoration. Maryland's pollution reduction goals are now within reach.

## Facts About: Water Quality

- Investments in cleaning the Chesapeake Bay since 2009 have resulted in reducing nitrogen 3.9 million pounds and phosphorus 500,000 pounds.
- The number of female crabs has increased 59 percent and the amount of bay grasses has increased 16 percent in the Chesapeake Bay since 2009.
- The agency has trained, tested and certified nearly 47,000 Marylanders in erosion and sediment control.
- Cleanup of Aaron Run watershed in western Maryland wins 2014 abandoned mine reclamation award from U.S. Office of Surface Mining Reclamation and Enforcement.
- MDE guidance and oversight of MS-4 program responsible for about 40,000 Best Management Practices (BMPs) being constructed during the past three decades.
- The department has provided \$392 million in loans and \$86.72 million in grants to local governments to upgrade drinking water systems throughout the state the last 30 years.
- MDE has overseen creation, restoration and enhancement of more than 212,000 acres of wetlands through partnerships with private landowners and state and federal funding agencies since 1998.
- Grant funding has been provided for 9,408 nitrogen-removing systems installed on septic systems since 2012.
- A total of 12.3 miles of nontidal streams were created, restored or enhanced from 1996-2017.

### 1993

Controlled Hazardous Substance Task Force established to develop a comprehensive management strategy for reduction, treatment, reuse and disposal of hazardous waste in Maryland.

### 1994

Lead poisoning prevention program law passed.



A look at the contrast in air pollution from atop State Center in downtown Baltimore in the early 1970s, left, and currently.

## Cleaning Maryland's Air

Once with worst air east of Mississippi, state makes huge gains in improving air quality

Maryland held a dubious distinction: home to the dirtiest air east of the Mississippi.

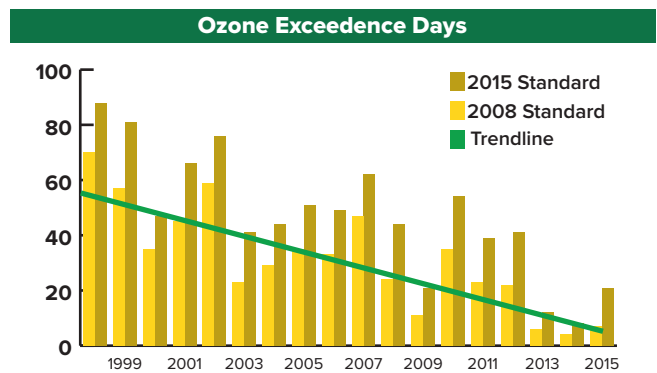
By 2005, smog from Maryland industry, households and the vehicles traveling the state's roads and highways, when combined with pollution blowing in from other states and concentrated by geography and weather, made for some foul air.

The Maryland Department of the Environment works to allow Marylanders to breathe more easily. The department applies science to this effort and uses the knowledge gained to press for strong regulations to reduce pollution both at home and in those upwind states.

The air is now cleaner than it's been in years— but there's more to do, and the effort continues.

You might say the story begins at an air monitor in suburban Harford County. Why would a monitor in Edgewood, away from the industry concentrated in Baltimore, record the highest levels of a key pollutant in the country's eastern half? What could be done?

Maryland, in partnership with several local universities, has for many years run one of the country's most effective air pollution research programs. As understanding grew of the crucial role of nitrogen oxide (NOx) emissions in creating the pollutant ground level



ozone, researchers also found that on many days 70 percent of Maryland's ozone problem comes from upwind states. This pollution descends upon Maryland on summer days, mixes with locally generated pollution and is steered by a wall of Chesapeake Bay breezes to places like Harford and Cecil counties.

To reduce pollution generated in-state, the department implemented the 2006 Maryland Healthy Air Act, the toughest power plant emission law on the East Coast. The law significantly reduced emissions of nitrogen oxide (NOx), sulfur dioxide (SO<sub>2</sub>, which helps form particle pollution), mercury and other toxic pollutants from coal-fired power plants. In 2015, Maryland implemented regulations to further reduce NOx emissions from these plants.

### 1995

Color coded ozone mapping begins in Maryland on local television stations and becomes national tool for communicating air quality in 1999.

### 1996

Maryland achieves a 29 percent statewide recycling rate surpassing both state and federal goals.





Maryland is working with other states to increase use of Zero Emissions Vehicles.

The Clean Cars Acts of 2007 and 2016, which require vehicles bought in Maryland to have the lowest emissions allowed by law and provide incentives for electric vehicle purchases, also helped to dramatically reduce air pollution. Meanwhile, department regulations have reduced air pollution from such household products as paints and perfumes.

By 2012, all of Maryland met the standards for fine particle pollution, a particularly high-risk air pollutant. Fine particle levels continue to go down. In 2015, Maryland met federal standards for ground level ozone throughout the state for the first time. A new, more stringent ozone standard has now been finalized by the federal government, which requires Maryland to continue its efforts to reduce ozone-forming emissions.

Through entities such as the Ozone Transport Commission and other state collaborations, the department is focused on working with upwind states to reduce pollution that blows into Maryland. But the department will take other steps as needed. In 2017, Maryland filed suit against the U.S. Environmental Protection Agency for its failure to act on a petition requiring power plants in five upwind states to reduce pollution that significantly affects Maryland's air quality.

The department tracks all these efforts in annual Clean Air Progress Reports. And it provides daily air quality forecasts and guidelines for Marylanders to protect their health and help to reduce air pollution.

## Facts About: Air Quality

- Fine particle pollution has been reduced more than 40 percent since 2000 and has met the health based standard statewide since 2012.
- The levels of carbon monoxide have been reduced by 82 percent since 1990 and have been in compliance with health based standards since 1996.
- Despite a 41 percent increase in vehicles and 39 percent increase in vehicle miles traveled between 1990 and 2014, Maryland had a 31 percent reduction in ozone and expects to meet the new, strengthened standard being implemented in 2018 over the next few years.
- Lead in air virtually eliminated in 1999 and levels have complied with national lead standard since 1978.
- Maryland meeting health based standards for nitrogen dioxide since 1971.
- Air toxics like benzene, acetaldehyde, 1,3 butadiene and toluene down about 75 percent since 1990.
- Power plant emissions of nitrogen oxide (NOx), sulfur dioxide and mercury reduced by more than 90 percent since 2000.
- Statewide greenhouse gas emissions on track to be reduced by 25 percent by 2020 and 40 percent reduction goal by 2030.
- Maryland has one of the most ambitious Zero Emissions Vehicle goals in the country with a target of 300,000 such vehicles on the road by 2025.

### 1997

Two key land restoration programs enacted to foster redevelopment of contaminated property and to streamline hazardous waste cleanup.

### 1998

Water Quality Improvement Act enacted to limit nitrogen and phosphorus runoff in the Chesapeake Bay.



The smokestacks of Sparrows Point (top) have been replaced by clean industry like Under Armour and FedEx at the revamped Tradepoint Atlantic.

# Revitalizing Maryland's Land

## MDE specializes in overseeing complex cleanups for job-creating reuse

For more than a century, the mills at Sparrows Point turned out steel by the ton. The immense operation helped supply a nation, even as it employed generations of Marylanders.

But much of that productivity predated modern environmental regulations, leaving a peninsula that is arguably the most complex cleanup site in the state, if not the entire Chesapeake Bay watershed. And it is just one of hundreds of properties across Maryland that has been or is being cleaned up – in many instances for job-creating reuse – under the oversight of the Maryland Department of the Environment.

The department's efforts protect the public and the environment at sites historically contaminated by hazardous waste or petroleum. These cleanups stop any ongoing pollution and ensure that contaminated soil or groundwater do not threaten drinking water or otherwise pose a health risk. An estimated 26,000 gallons of gasoline leak from a service station? The department holds the fuel company responsible for cleaning up the groundwater that serves wells in the Jacksonville area of Baltimore County.

One of the largest dry cleaner chemical spills in Maryland history stains a prime piece of real estate?

### Noteworthy Brownfields Success Stories

Year	Place	Project
2017	Baltimore	Former rail yard to Port Covington redevelopment project
2017	Baltimore	Former GM Broening Plant to Chesapeake Commerce Center
2011	Baltimore	Chesapeake Paperboard to residential, commercial uses
2009	Annapolis	Dry cleaner chemical spills to Annapolis Town Center
2006	Baltimore	Exxon oil terminal to First Mariner Tower
2003	Cumberland	Railroad company bolt fabrication to retail shopping
1999	Cambridge	Ex-state psychiatric hospital to Hyatt Regency hotel
1998	Baltimore	Ex-metal can producer to Canton mixed-use development

It's quickly cleaned up under department oversight as part of an award-winning brownfields redevelopment at Annapolis Towne Center. These projects span the state, from the former CSX Bolt and Forge site in Cumberland that's redeveloped for retail space to a former state hospital property that is cleaned up to become the Cambridge Hyatt resort.

One theme runs through it all: jobs.

When the General Motors factory on Broening Highway closed, the property was cleaned up to become home to an Amazon "fulfillment center" that employs thousands. The sprawling Dundalk Marine Terminal, where work continues to prevent chromium from polluting the Baltimore Harbor, is crucial to Maryland's economy.

#### 1999

Law enacted requiring all public water systems in Maryland to provide Consumer Confidence Reports to their customers.

#### 2000

Chesapeake Bay agreement sets goal of improving bay water quality enough to remove it from Clean Water Act's list of impaired waters.



The sparkling Harbor East development in Baltimore replaced a chemical plant.

An 18-acre waterfront site near Fells Point was used to produce chromium chemicals from the mid-19<sup>th</sup> century until 1985. A 1989 consent decree required a full investigation and cleanup of the site – work that included construction of a hydraulic barrier around the perimeter and a thick cap over the top. The Department of the Environment has overseen extensive planning and environmental monitoring as the site is redeveloped for a 21-story Exelon headquarters building and other office, residential and commercial use in the glistening area on the Inner Harbor.

A few miles to the south, additional environmental cleanup is planned at Port Covington, site of a former railroad terminal on the Middle Branch of the Patapsco River. Plans are for homes, stores, entertainment venues and a waterfront park.

Then there's the 3,100-acre Sparrows Point steel mill property. A 1997 consent decree led to extensive assessment of the environmental harm done by that century of steelmaking. In 2014, after the mill had shut down, another agreement launched a series of studies and cleanups, both off-shore and on the land. The new Tradepoint Atlantic Sparrows Point peninsula is home to a FedEx Ground distribution center, an operation that imports cars and a Harley-Davidson Riding Academy. Soon to come, an Under Armour warehouse.

And the cleanup continues.

## Facts About: Land

- Issued permits for 625 animal feeding operations that require no waste discharge, greatly reducing nutrients into Chesapeake Bay.
- Oversaw cleanup of 12,169 leaking underground and above-ground fuel storage tanks as of March 2017.
- Responsible for statewide waste diversion rate of 47.2 percent during 2015, the most recent year data is available, 10 percentage points above national average.
- Assisted in cleaning up nearly 11 million scrap tires from 1,074 illegal dump sites since 1992.
- State's eCycling program is national leader in electronic waste recycling with 142 million pounds collected and 42 manufacturers participating in free takeback program.
- Permitted and monitored 34 lined landfills that each have third party quality assurance protocols.
- Reclaimed nearly 9,000 acres of active mine lands, resulting in more than 5,600 acres of additional forested land and more than 800,000 trees.
- Nearly four square miles of abandoned coal mines put to beneficial reuse and 56 acid mine drainage treatment systems improved 93 miles of streams.
- Collected more than 78,000 mercury switches and 172 pounds of mercury from end-of-life vehicles.

### 2001

Commission established to correct environmental justice issues in Maryland communities.

### 2002

Baltimore City signs consent decree with MDE and EPA to repair its aging sewer system and prevent illegal discharges.



Cleaning up lead paint, especially in dilapidated properties, has greatly reduced the number of lead poisoning cases in children throughout the state.

## Protecting Public Health

### Efforts to clean up lead paint pay big dividends in improved children's health

Childhood lead poisoning is completely preventable. But, in 1993, the disease wasn't prevented at least 14,546 times.

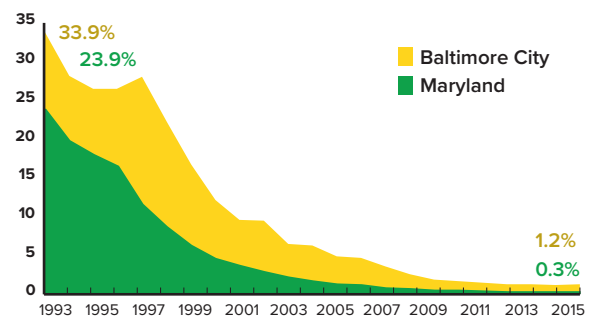
That's the number of Maryland children tested that year who were found to have elevated levels of lead in their blood. A year later, Maryland's landmark lead law was passed – and lead poisoning in Maryland has been dropping ever since.

Exposure to lead is the most significant and widespread environmental hazard for Maryland children. Children are at the greatest risk from birth to age six, while their neurological systems are developing. Exposure to lead can cause long-term neurological damage that may be associated with learning and behavioral problems and decreased intelligence.

The Maryland Department of the Environment serves as the coordinating agency for statewide efforts to eliminate childhood lead poisoning. The department works with the Maryland Department of Health and the Department of Housing and Community Development, along with the U.S. Environmental Protection Agency, Baltimore City and other local jurisdictions, property owners and non-profit organizations such as the Green & Healthy Homes Initiative to prevent childhood lead poisoning.

#### Reduction in Childhood Lead Poisoning Cases

By Percentage of Children Tested with Elevated Blood Levels



Much of the decline in blood lead levels is the result of implementation and enforcement of Maryland's 1994 Reduction of Lead Risk in Housing Act. That law requires owners of pre-1978 rental units to register their properties and reduce the potential for children's exposure to lead paint hazards by performing specific lead risk reduction treatments prior to each change in tenancy.

Under the law, the Department of the Environment: assures compliance with mandatory requirements for lead risk reduction in rental units built before 1978; maintains a statewide listing of registered and inspected units; and provides sur-

#### 2003

Board of Public Works finances statewide projects as Maryland becomes a national leader in recycling electronics and collecting mercury thermometers.

#### 2004

Chesapeake Bay Restoration Fund, which creates fund for removing more nutrients from wastewater, signed into law.



MDE's efforts to ensure healthy beaches have almost eliminated closures recently.

veillance of blood lead levels through a registry of test results of all children tested in Maryland.

The lead program also: oversees case management follow-up by local health departments for children with elevated blood lead levels; certifies and enforces performance standards for inspectors and contractors conducting lead hazard reduction; and performs environmental investigations of lead-poisoned children. The lead program provides oversight for community education to parents, tenants, rental property owners, homeowners and health care providers to enhance their roles in lead poisoning prevention.

Maryland's lead law initially covered rental units built before 1950, when lead paint was banned in Baltimore City. After a growing share of lead poisoning cases were linked to properties not covered under the law, legislation was passed in 2012 to cover rental units built before 1978 – when the use of lead paint was prohibited nationwide.

In 1993, one in five Maryland children tested had lead poisoning. In 2016, the number of childhood lead poisoning cases in Maryland decreased to 355, less than 0.3 percent of children tested and the lowest levels since data has been collected in connection with the lead law. This represents a decrease of more than 98 percent in the percentage of young children that were reported to have lead poisoning more than 20 years ago.

## Facts About: Public Health

- MDE, in conjunction with several state universities, has one of the country's best air pollution research programs flying airplanes, using satellite data from ozone-monitoring balloons and collecting pollution and wind data from mountaintop monitors of incoming ozone.
- The agency's healthy beaches efforts have resulted in nearly 99 percent of the state's 185 monitored beaches being open with no health based advisories during the last five years. MDE has raised attention about *Vibrio*, a naturally occurring bacteria that can cause serious infections, and issued guidelines for protection.
- Fish consumption advisories are issued for specific species of fish when elevated levels of contaminants are found and consumption levels determined to minimize health risks.
- MDE's Water Supply Program ensures safe and sustainable drinking water for more than five million Marylanders and water quality standards are reviewed every three years with standards revised as necessary.
- The agency monitors bacteriological water quality and conducts pollution source surveys to determine which areas are safe for shellfish harvesting and informing the public when harvesting areas open and close.
- Maryland required preventive maintenance on about 14,000 radiation machines in 2009 with compliance rates now at more than 90 percent.

### 2005

MDE begins enforcing more stringent regulations that require property owners to reduce risk of lead poisoning and assist with uncovered medical and relocation costs.

### 2006

Passage of Healthy Air Act, the East Coast's strictest power plant emissions law, that targets sources of smog, greenhouse gases and nitrogen entering the Chesapeake Bay.



The agency's emergency responders handle many situations like leaks from overturned trucks, left, to subterranean pipe ruptures and spills of environmentally harmful materials.

## Answering the Call

### Emergency Response team a rare mix of knowledge, dedication and bravery

Each day in Maryland, thousands of individuals work with substances that are potentially harmful to our environment. When proper care fails and accidents happen, the Emergency Response team is called into action as the state's frontline experts in hazardous materials spills, chemical fires and other environmental concerns.

For the past three decades, the team has been made up of a tight-knit group of employees who possess a unique mix of scientific knowledge, environmental expertise and bravery. Their skills are challenged almost daily responding to more than 500 environmental emergencies and 3,500 oil spills each year.

One time they responded to a call in Baltimore City and found two canisters of World War I era chemical agents in a resident's garage. In the aftermath of Hurricane Isabel, they contained and removed oil and chemical spills on land and in water statewide. In 2000, the team responded to a ruptured pipeline at Chalk Point that caused 111,000 gallons of oil to leak into the Patuxent River and tributaries. Using booms, the team helped contain the spill along 17 miles of shoreline.

Team members agree that the 2001 Howard Street Tunnel fire in Baltimore City was the most

memorable. A train with many cars of hazardous materials derailed in the Howard Street tunnel beneath one of the busiest sections of downtown Baltimore. Nine of the cars contained chemicals, including five tanks full of acids. A tanker car hauling the chemical tripropylene and several box cars carrying wood products and paper caught fire.

The intense heat from the fire caused weld seams on a tank of hydrochloric acid to leak, before making evaluation of the incident extremely difficult and dangerous. The fire cancelled Baltimore Orioles games, hindered East Coast rail traffic and created heavy congestion throughout the downtown area.

For the next several days, the team became the environmental experts on the ground, assisting other emergency response agencies in removing dangerous chemicals from train cars so that they could be safely extracted from the tunnel.

Since 2001, MDE has provided nearly 96,000 bags of absorbent materials statewide to local fire departments and hazmat teams to help protect the environment from spills. The team's combined 358 years of experience in the emergency response field assists it in providing key services and backup to state and local emergency responders across Maryland.

#### 2007

Stormwater Management Act passed which requires environmental site design to help treat polluted stormwater runoff to protect local and Chesapeake Bay water quality.

#### 2008

Living Shoreline Protection Act signed into law, which requires environmentally sensitive shoreline stabilization measures.



Maryland Green Registry award winners demonstrate a strong commitment to sustainable practices, measurable results, and continual improvement.

## Maryland Green Registry

### Business going beyond compliance with laws to improve environment

While the Maryland Department of the Environment is committed to assuring compliance with laws protecting the state's air, land and water, many businesses and organizations understand the importance of going beyond compliance to reduce their environmental impacts.

They can even save money by doing so.

Enter the Maryland Green Registry, which was created in 2009 to promote these practices and celebrate their successes. The membership has grown to nearly 500 members since that time, and collectively they are saving about \$104 million annually through sustainable practices like energy efficiency, water conservation and waste reduction. Members are scattered throughout the state, from Ocean City in the east to Deep Creek Lake in the west and Elkton in the north to St. Mary's in the south.

Each year, the Maryland Green Registry Leadership Awards are presented to five member organizations that have shown a strong commitment to sustainable practices, measurable results and continual improvement. The winners represent a variety of facility types and sizes, but all have the same key factors that contribute to their success: a commitment to continual improvement of environ-

mental performance, an active green team, annual environmental goals and tracking and measurement of results.

For example, Thermo Fisher Scientific, a biotechnology company located in Frederick. The company has won the Maryland Green Registry's Leadership Award three times because of its reuse projects, reduction of hazardous waste and expansion of recycling. Since becoming a member of the registry, Thermo Fisher Scientific has cut its landfill waste in half and been certified as a Zero Waste Facility.

A voluntary program, the registry offers tips and resources for greening facilities through implementing environmental best practices as well as the opportunity to share environmental successes with others. Members receive information, technical support and invitations to upcoming webinars and conferences, and there is no cost to join.

These voluntary actions make a difference. Collectively, members are reducing electrical usage by 459 million kilowatt hours annually, conserving more than 190 million gallons of water, and reducing 13 million pounds of waste. Thanks to a growing membership, these numbers continue to increase each year.

#### 2009

Greenhouse Gas Emissions Reduction Act signed into law with goal of reducing greenhouse gases 25 percent by 2020.

#### 2010

Maryland submits final Phase 1 Watershed Implementation Plan. Plan provides assurance that state will meet EPA Total Maximum Daily Load requirement.



The rehabilitation of the coast line at Ferry Point Park in Kent Narrows over a five-year period is a great example of planning and construction techniques that adapt to climate change.

## Fighting Climate Change

### Maryland a national leader in reducing greenhouse gas emissions

In April 2016, Governor Larry Hogan signed into law the Greenhouse Gas Emissions Reduction Act of 2016, making Maryland one of a handful of states with long-term greenhouse gas goals. The law also requires that the Maryland plan to reduce greenhouse gas emissions must have a net positive impact on Maryland's economy and on job creation in the state.

This landmark 2016 legislation builds from Maryland Department of the Environment efforts, starting in 2007 with the state's first "Climate Action Plan" and 2009 legislation to reduce greenhouse gas emissions by 25 percent by 2020. MDE led a successful collaboration with a diverse group of stakeholders to build support to pass the 2009 legislation. Similar bills in 2007 and 2008 failed.

In 2015, Governor Hogan also signed the Maryland Commission on Climate Change Law. The commission, chaired by MDE Secretary Ben Grumbles, has 26 members representing state agencies, the legislature, local government, businesses, environmental non-profit organizations, organized labor, philanthropic groups and the state university system.

A total of 106 others serve on the commission's four working groups. The mitigation group focuses on

regulatory, voluntary and market-based programs to reduce greenhouse gas emissions while supporting economic development and job creation. The adaptation and response group advances a strategy to reduce the state's climate change vulnerability and increase resiliency. The scientific and technical group updates and informs the commission on the science of climate change and the education, communication and outreach group conducts outreach programs and educates state residents about the commission's work.

MDE's involvement in climate change has attracted national attention not only through the commission and the GGRA laws but involvement and investment in the Regional Greenhouse Gas Initiative (RGGI). A regional cap-and-invest program aimed at reducing power plant emissions and encouraging energy efficiency, the RGGI program continues to grow and prosper because of MDE's involvement. Other initiatives arising from the climate commission and MDE's climate change program include public outreach on climate change, the Strategic Energy Investment Fund -- funded through RGGI -- that assists with funding energy efficiency programs for Maryland's citizens, and MDE's greenhouse gas emissions inventory process that has earned national acclaim.

#### 2011

MDE puts out official guide of how to use mechanisms to control erosion and reduce build up of sedimentation in the state's waterways.

#### 2012

Maryland achieves fine particulate matter standard, dramatically reducing air pollution risks to residents.





Children have their picture taken with a "green" message, left, and MDE Secretary Ben Grumbles assists students at a water quality testing event.

## Outreach at MDE

### Connecting Marylanders through innovative approaches to the environment

Children gather around to look at results of a water quality sampling from their neighborhood creek.

Dog owners line up to take the "Scoop the Poop" anti-pollution pledge at a local Humane Society event.

A community cleanup brings in more than 50 bags of litter, several car tires and an old television.

It's all part of fulfilling the Maryland Department of the Environment's mission to "protect and restore the environment for the health and well-being of all Marylanders." Workers in Environment's Communications Office take that mission to heart and fulfill it with gusto.

Communications staffers and numerous volunteers within the department realize the importance of sharing knowledge about Maryland's environment with state residents, especially during numerous activities in April's Earth Month. But the staff offers more than environmental tips on a flyer. It offers Marylanders ways to understand how their day-to-day activities affect the planet.

The outreach is making an impact. The "Waste-Free Lunch Challenge" encourages students and schools to take one day out of the week to reduce their lunch waste. Schools set up stations to divert lunch

leftovers from the trash to compost and recycle bins all the while learning that reducing, reusing, composting and recycling just once a week can make a tremendous difference. Participants who take the challenge have seen their trash reduced by 50 percent or more on a "waste-free" day as compared to a normal lunch hour.

Many dog owners are surprised when told that their domesticated pet waste is not fertilizer for their lawn, but rather contributes nearly a quarter of the bacteria in their nearby urban and suburban waterways. MDE staff is always happy to provide citizens with "Scoop the Poop" campaign waste bags to help remind them to pick up after their pet.

After listening to the agency's lesson on the connection between stormwater and the quality of a local waterway, students learn to associate their actions toward bettering the health of the ecosystem around them.

We don't only talk the talk, we walk the walk. Environment's dedicated employees participate in several large community cleanups near the agency's headquarters every year. Partnering with local watershed and other non-profit organizations, MDE covers more ground and makes a big impact in its own southwest Baltimore neighborhood.

#### 2013

MDE employees begin leading by example adding composting bins to each headquarters breakroom.

#### 2014

Maryland joins eight-state ZEV Action Plan coalition to develop infrastructure and policy that promotes zero emissions vehicles.

# By the Numbers

**4** 

Administrations at MDE including Air & Radiation, Land & Materials, Water & Science and Operational Services.

**9** 

States, including Maryland, in Regional Greenhouse Gas Initiative to cap and reduce carbon dioxide emissions from power sector.


**28**   
Boats owned by MDE for use in water bodies throughout the state.

**29** 

Streams designated as "exceptional waters" in Maryland since 2010.

**32** 

Monitoring sites for ozone and fine particles from Piney Run in western Maryland to Horn Point on Eastern Shore.

**36**   
Power plant units in upwind states which significantly contribute to Maryland's ozone problems.


**45**   
Dams repaired or removed to protect public safety overseen by MDE's Dam Safety Division.

Public meetings, hearings and other outreach events conducted by MDE in 2016.


**93** 

**126**   
Percentage increase in residential and commercial recycling in Maryland since 1992.

**564**   
The completed number of contaminated properties restored through the Voluntary Cleanup Program since 1997.

**846**   
Sculptures designed by students entered in MDE's Rethink Recycling sculpture art contest since 2001.

Full-time employees in MDE Baltimore City headquarters and in five regional offices throughout Maryland.  
**942** 

**14,800**   
Feet of boom to capture oil spills in the state's waterways by MDE's Emergency Response Division.

**19,100**  
Miles of streams and rivers in Maryland. 

**26,000**   
Number of trees planted in MDE Arbor Day events on former mine sites since 2005.

## 2015

Maryland Climate Change Commission codified by General Assembly and will submit report annually on state's efforts to mitigate and prepare for impacts of climate change.

## 2016

First meeting of Maryland Water Quality Trading Advisory Council, formed to foster public marketplace to buy and sell nutrient credits.



## Secretary's Remarks

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Dear Colleagues and Friends,

I hope you have enjoyed these stories, which describe the many ways in which the Maryland Department of the Environment has furthered our mission to protect and restore the environment for the health and well-being of all Marylanders in our first three decades as a state agency. I am extremely grateful for all the efforts of our hard-working staff and partners over the years in making this a reality.

When Captain John Smith of England explored and mapped the Chesapeake Bay area in the first decade of the 1600s, he noted in his journal, "Heaven and earth have never agreed better to frame a place for man's habitation." And because of that over the last 400 years, our challenges and opportunities are many.

Like restoring former industrial sites on the waterway like Sparrows Point for effective reuse. Also, protecting wetlands and restoring areas of the natural world like Poplar Island. And continuing the progress against nutrient and sediment pollution in the streams and rivers and ultimately in the bay and its effects on aquatic life including oysters and striped bass and, of course, blue crabs. And reducing air pollution from upwind sources, which impact public health and water quality. All geared to restoring the bay that John Smith described so eloquently.

We invite all Marylanders to join us in this experience of keeping our home such a special place, because our agency works for you. Our mission is vital, as is your continued support.

Sincerely,

Ben Grumbles



# Maryland

Department of  
the Environment

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