MARYLAND INTER-AGENCY WORKGROUP AIR QUALITY VOLUNTARY AGREEMENT

2024 ACCOMPLISHMENTS

"The purpose of this Voluntary Agreement is to document and confirm the Parties' ongoing commitment to pursue mutually agreeable and cooperative efforts that will sustain and advance the economic health of the Port of Baltimore and protect the environment of the State of Maryland."

PORT OF BALTIMORE 1706 Helen Delich Bentley

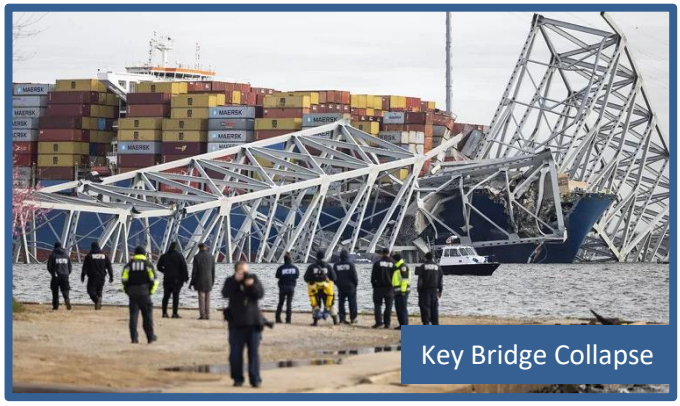
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

Maryland Department of the Environment

Maryland Energy Administration

Executive Summary

In April 2021, the Maryland Port Administration (MPA) signed an updated Interagency Voluntary Agreement along with the Maryland Department of Transportation (MDOT), the Maryland Department of the Environment (MDE), and the Maryland Energy Administration (MEA). Originally signed in 2015, the renewed agreement added MEA and set the goal to strengthen air quality initiatives at the state-owned Helen Delich Bentley's public marine terminals.



Key Bridge Collapse

The March 2024 collapse of the Francis Scott Key Bridge at the mouth of the Baltimore Harbor created major challenges for the Port of Baltimore (POB). For several months, the combined resources of state, federal and local agencies, as well as the private sector, focused on the safe re-opening of the POB. Despite this catastrophe, the Workgroup members worked together in 2024 to continue to improve air quality related to port activities.

In 2024, this unique collaboration of the signatory agencies, through Workgroup meetings held at least bimonthly, made major strides towards the shared goals of protecting the environment and combating climate change while pursuing economic gains and stakeholder engagement. As called for in the Voluntary Agreement, special attention was focused on strengthening relationships with environmental justice communities around the POB. The Agencies' Workgroup members actively promoted open, honest, and cooperative interactions with communities through virtual and in-person meetings, Port tours, air quality improvement updates, and frequent informal discussions. These actions directly resulted in a shared understanding of the community's and POB's interests, produced better grant proposals, and vastly improved project development and implementation.

Air quality benefited from the Workgroup's 2024 actions, collaborations and partnerships. As in the past, the Workgroup identified new federal and state grant opportunities to pursue. Since 2008, approximately $190 million has been secured to upgrade or replace older equipment and vehicles servicing the POB with cleaner models.

The Port's "Dollars for Drays" program continues to target diesel-powered dray trucks, which are often the oldest trucks servicing the POB. The program provides up to $35,000 per vehicle to help truck owners, who tend to be small businesses or individuals, acquire new, more efficient trucks that cause less pollution. To date, this program has replaced 318 trucks.

Stakeholder Engagement

The Workgroup continues to prioritize stakeholder engagement, especially focusing its efforts on underserved communities. Establishing and maintaining collaborative partnerships with communities, businesses and government agencies is integral to improving air quality. Workgroup meetings discussed funding opportunities, innovative technologies, and the needs of the underserved communities. This resulted in the successful award of various grants in 2024. For the most part, implementation of these grants will commence in 2025.

Although the Baltimore Port Alliance (BPA) did not conduct a Port stakeholder tour in the spring due to the Francis Scott Key Bridge collapse, a successful tour was held in October with 20 attendees representing a variety of local community organizations, Delegate Greg Sims of Montgomery County, the executive director of the Baltimore City Environmental Control Board, representatives from the U.S. Department of Energy (DOE) and Baltimore Gas & Electric (BGE), along with Interagency Workgroup member Tim Shepherd from MDE.

BPA Fall 2024 Tour

Funding Wins

The U.S. Department of Transportation (DOT) Federal Highway Administration announced that MPA was awarded $642,258 under its Reduction of Truck Emissions at Port Facilities Program. This program provides grants to reduce idling and emissions at port facilities, including through the advancement of port electrification. MPA's application included replacement of an older diesel-powered street sweeper with a battery electric-powered unit for use at MPA's marine terminals. Funding will also be used to support industry research into the potential to improve Power Take Off devices on automobile carrier trucks, with a goal to reduce truck idling at POB marine terminals.


Keen's BEV Dray Truck at Jan. BPA Legislative Reception

A Memorandum of Understanding was signed between MDE and Maryland Environmental Service (MES) for $1,500,000 from the Volkswagen Settlement Funds to be used for the Port's Dollars for Drays program to replace older dray trucks with newer, less polluting models. There is a growing list of truck owners interested in applying.

The Clean Corridor Coalition of New Jersey, Maryland, Connecticut, and Delaware were awarded a Climate Pollution Reduction Grant. Of the $248,900,000 award, approximately $82,000,000 was awarded to Maryland. The majority will go to the Maryland Department of Transportation (MDOT) with approximately $2,500,000 to MDE to assess and deploy zero-emission medium- and heavy-duty vehicles (ZE-MHDV) infrastructure along the I-95 freight corridor. One or more charging stations will be sited to support Port operations.

The Atlantic Conservation Coalition, led by North Carolina with Virginia, Maryland and South Carolina, received an award for a regional approach that uses natural climate solutions to reduce greenhouse gas (GHG) emissions. Approximately $1,000,000 will be provided to the MPA for tree planting over the next 5 years.

MPA received a Diesel Emission Reduction Act (DERA) award of nearly $3,500,000 to support equipment replacements for multiple Port-related businesses, with zero-emission forklifts, terminal tractors, and other cargo handling equipment upgraded to the new diesel-powered emission standards.

Maryland Governor Wes Moore welcomed President Joe Biden to celebrate more than $147,000,000 in federal funding from the Clean Ports Program to create good-paying, clean jobs and to expedite decarbonization and electrification efforts at the Port. The U.S. Environmental Protection Agency (EPA) awarded the funding to the POB to enable:

- MPA and its private partners to purchase approximately 213 pieces of new zero-emission vehicles, equipment, and charging infrastructure, replacing old, inefficient, and polluting diesel combustion engines.
- Capacity upgrades to the Port's electrical grid which will help significantly reduce GHG emissions with an estimated 35% decrease in carbon dioxide equivalency compared to 2020 levels.
- Funding to support Climate and Air Quality Planning.

Emissions Reduction & Energy Conservation Projects

Capital Logistics, a Sparrows Point transportation and logistics service, discussed their future plans of siting a Port Charging Hub or "E-Port" to serve their dray truck fleet as well as other fleet owners/operators serving the POB. Fleet owners/operators were surveyed to ensure there would be adequate numbers of "subscribers" to the concept for the project to be viable. At a typical three to five--acre site, the hub could support approximately 250 – 350 vehicles.

Energetics, an energy planning consultant, met with the Workgroup and discussed opportunities to collaborate on Port-related projects, especially hydrogen-focused grant opportunities.

The National Strategy to Accelerate Deployment of Zero-Emission Infrastructure for Freight Trucks was issued by the Joint Office of Energy and Transportation, coordinated by the U.S. DOE and DOT. The strategy is a guide to advance investments, planning and deployment for zero emission freight infrastructure across the nation. There are four phases: Establish Priority Hubs (2024-2027), Connect Hubs (2027-2030), Expand Corridors (2030-2035), and Complete Network (2035-2040). The Workgroup will monitor the implementation of this strategy.

ConnectedDMV briefed the Workgroup on the large network to develop and implement the production, delivery, and use of hydrogen in the D.C. region, including the maritime and aviation sectors involving hydrogen fuel cells.

Danish Onshore Power Supply pioneering firm PowerCon informed the Workgroup of their innovative and modular approach to constructing shore power systems. Their containerized design minimizes the footprint of shore power installation, allowing better utilization of valuable real estate for ports with space constraints. PowerCon has projects in Europe and Australia and spoke about their most recent project at the Port of Miami. Their system could also benefit Port facilities in Baltimore.

The DOE's Coast-Urban-Rural Atmospheric Gradient Experiment will assess the mechanisms governing the urban atmospheric environment. The Atmospheric Radiation Measurement mobile monitoring facility will be used in Hagerstown, Baltimore, and Kent Island to obtain measurements in rural, urban, and Chesapeake Bay locations.

A representative from the Mid-Atlantic Clean Hydrogen Hub (MACH2) briefed the Workgroup. MACH2 serves as the project manager for one of seven national hubs that will receive DOE awards up to $750,000,000 to advance the production, distribution, and consumption of clean hydrogen. Approximately 20 projects were identified that focus on reducing GHG and criteria air pollutants and producing and utilizing hydrogen made using either renewable or nuclear energy.

As part of the MEA's OPEN Energy Grant Program, Energetics, an energy sustainability consultant, is implementing Phase 1 of an eFishing Vessel Project to retrofit a commercial fishing boat to electric power.

Ports America Chesapeake (PAC) installed six hybrid rubber-tired gantry (RTG) cranes funded by the Volkswagen Settlement Fund. To date, PAC has placed 23 hybrid RTGs into service at Seagirt Marine Terminal. Fifteen of those are equipped to be fully electric-powered once the bus bar installation has been completed.

As required by the Advanced Clean Truck Rule, MDE received three proposals to conduct the Needs Assessment, which will assess electric grid infrastructure, market availability, etc. The study should be completed in late 2025.

MDE worked with Wallenius Wilhelmsen to use Volkswagen Settlement Mitigation Funds to replace an electric switcher locomotive, which was delivered in December.

MDE advised an owner about re-powering a tugboat. Due to costs and engine availability, this will be a diesel-to-diesel conversion, but switching from Tier 0 to Tier 4 engines will still result in significant air quality improvement.

MPA met with Moran Towing to discuss electric and hybrid tug options in the Port.

The first hybrid dredge was used to maintain shipping channels serving the POB. The DB Avalon Hybrid Dredge emits fewer pollutants and operates quieter than traditional dredges. It is the lowest carbon footprint clamshell dredge of any in its class.

The Spirit of Baltimore, a sightseeing and dining cruise vessel docked at the Baltimore Inner Harbor, has been upgraded to have new, cleaner, and greener engines with help from the MPA's Diesel Equipment Upgrade Program.

Work is continuing using Consolidated Rail Infrastructure and Safety Improvements program funds to modernize rail capacity by readying for double-stack container transport when the Howard Street Tunnel Project is completed by the end of 2025.

MDOT was awarded $760,000 under the Charging and Fueling Infrastructure Program to assess EV and alternative fueled vehicle sites at The Chesapeake House Travel Center along I-95 and the Travel Center of Baltimore. This approach involves both private and public facilities. Hydrogen was considered an alternative fuel and is generally more effective for long-haul, heavy-duty vehicles that serve the Port.

Community Air Monitoring

As ambient air pollution concentrations continue to decrease across the State, recent efforts have focused on the local impacts. Several local or community-based air quality monitoring projects are currently underway.

The American Rescue Plan funded a community air monitoring project locating air quality sensors alongside MDE's in Turner Station, Curtis Bay, and Cheverly. Air quality data was collected starting at the end of the year. This program will factor in the change in vehicle patterns resulting from the closure of the Key Bridge to assess its potential impact. A well-attended air quality monitoring workshop was held in Turner Station and Curtis Bay.

A report on the new air quality monitoring system in South Baltimore was released at the end of 2023. In early 2024, Johns Hopkins University and the community presented these results at a Workgroup meeting:

- The research conducted for the study was responsive to the community's concerns and can be used with other communities.
- One goal was assessing the prevalence and characterization of coal dust impacting the community, with a network of multi-pollutant air sensors set up to also assess the total air pollution burden and locate sources.
- Coal dust was found to be present up to 0.75 miles from the CSX coal terminal, with the closest monitor approximately 800 – 1,000 feet away. Coal dust was captured by the monitors within three days of installation.
- The sensors were able to differentiate diesel soot from noncombustible particles. Diesel particulates were most noticeable along Curtis and Pennington Avenues.
- The data gathered is preliminary and will be refined with input from the community and peer review.

Environmental Justice

MDE developed a collaborative process in Curtis Bay, driven by citizens and workers, to address environmental justice concerns. The steps include valuing community expertise and concerns by elevating citizens to be equal partners in addressing environmental issues in the community. This process helped in the development of the recent study entitled "Collaborative Investigation of Coal Dust, Air Pollution, and Health Concerns in Curtis Bay, South Baltimore 2022–2023," which showed the Curtis Bay area is in the 100th percentile when scored on MDE's EJ Screening Tool.

EPA Region 3's EJ Thriving Communities Technical Assistance Centers Program (TCTAC) held a workshop on July 13, 2024 at the Curtis Bay Recreational Center. Each TCTAC receives at least $10,000,000 to help remove barriers and improve accessibility for communities with environmental justice concerns and provide training and other assistance to help navigate federal grant application systems, develop strong grant proposals, and manage grant funding.

Climate Change

MDE released Maryland's Climate Pollution Reduction Plan on December 28, 2023, with implementation to begin in 2024.

MDE received a Climate Pollution Reduction Grant (CPRG) award to implement the Clean Corridor Coalition project. This includes the construction of four to seven charging stations along the I-95 corridor. The proposal involves a partnership between Maryland, Delaware, New Jersey, and Connecticut. The project will be implemented by 2029 – 2030.

Governor Moore issued an Executive Order requiring each agency to develop a Climate Implementation Plan as required by Maryland's Climate Pollution Reduction Plan. MDE created a template for agencies to follow. Climate Implementation Plans will be expected to:

- Identify steps, schedules, and resources necessary to fulfill the Climate Pollution Reduction Plan.
- Show how federal funding can be used to ensure resources are leveraged.
- Demonstrate how the plans meet environmental justice requirements.

A Subcabinet on Climate Change has been created since Maryland has the most aggressive state-wide goal of reducing GHG emissions by 2031 of 60%, and computer modeling shows that fully implementing all existing programs would only achieve a 51% reduction.

Potential Funding Sources

The Workgroup continued to identify potential funding sources for projects. Here are some of the funding opportunities considered for project implementation.

U.S. Environmental Protection Agency

- Climate Pollution Reduction Grants
- Clean Ports Program
- Clean Heavy-Duty Vehicle Program
- Greenhouse Gas Reduction Fund
- Diesel Emission Reduction Act (DERA)

U.S. Department of Transportation

- Federal Highway Administration's Congestion Mitigation and Air Quality Improvement Program
- U.S. Maritime Administration's Grant and Assistance Programs
- Port Infrastructure Development Program (PIDP)
- Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

Maryland Energy Administration

- Electric Vehicle Infrastructure Grant
- MEA's Resilient Maryland Program
- Medium-Duty and Heavy-Duty Zero-Emission Vehicle Grant Program
- OPEN Energy Grant Program

Other

- DOE Regional Clean Hydrogen Hub
- BGE's Green Grants Program
- U.S. Climate Alliance's grants
- MDE Volkswagen Settlement Mitigation Fund

Conclusion

The Workgroup continues to meet its goal of pursuing cooperative efforts to sustain and advance the economic health of the POB while protecting the environment and the public.

Over the past 30 years, Maryland's air quality has continuously improved. Air quality policies and regulations have lowered levels of six criteria air pollutants - fine particles, ozone, lead, carbon

monoxide, nitrogen dioxide, and sulfur dioxides - as well as numerous other toxic pollutants. Maryland's monitored air quality is at levels below all standards for all EPA's Clean Air Act and National Ambient Air Quality Standard (NAAQS) criteria pollutants except the 2015 ozone standard in the Baltimore area. Other portions of the state have been meeting all standards for several years. The 2024 monitoring data shows that Maryland's last remaining nonattainment area (Baltimore) is very close to attaining the 2015 ozone standard as well. The 2006 Maryland Healthy Air Act and 2007 Maryland Clean Cars Act have played a major role in reaching attainment for ozone.

Particle levels throughout the state of Maryland have continued to trend downward each year since 2010, with current levels being the lowest ever recorded. These results have largely been attributed to reductions in sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from power plants and other industrial sources. Overall, reductions in these harmful air pollutants have brought dramatic improvements in the quality of the air that we breathe and provided better public health protection.