

Agency Climate Implementation Plan

Maryland Department of the Environment

November 1, 2024





Maryland
Department of
the Environment

Agency Climate Implementation Plan

Maryland Department of the Environment (MDE) Climate Implementation Plan, required by Executive Order “Leadership by State Government: Implementing Maryland's Climate Pollution Reduction Plan”

In accordance with Executive Order 01.01.2024.19, MDE affirms its commitment to:

- Work to address climate change and ensure a just transition to a clean economy;
- Advance environmental justice by working to address the disproportionate impacts of climate change for underserved and overburdened communities, including the application of Justice40 goals, initiatives, and funding;
- Equitably implement all existing laws, regulations, and policies related to climate change, incorporating robust community and stakeholder engagement; and
- Continue to maximize federal funding opportunities on climate.

MDE hereby submits its Climate Implementation Plan (CIP) to demonstrate its commitment to a whole-of-government approach to address climate change and fully implement Maryland’s Climate Pollution Reduction Plan.

Part 1: Agency Actions Under the Climate Pollution Reduction Plan

Adopt a Zero-Emission Heating Equipment Standard (ZEHES) - FY25 Priority

MDE will propose and adopt a ZEHES regulation that will phase in standards requiring certain types of new space and water heating equipment installed in Maryland buildings to produce zero on-site emissions. Proposing a ZEHES regulation is also a specific requirement in Governor Moore's Executive Order 01.01.2024.19.

STEPS & TIME: MDE has been engaging with the Northeast States for Coordinated Air Use Management (NESCAUM); NESCAUM is developing a model rule along with many other states across the country. MDE intends to adopt a final ZEHES rule by the end of 2025 by completing the following steps:

- Summer 2024: Support the development of the Model Rule developed by NESCAUM
- Fall 2024: Seek input on the Model Rule
- Fall 2024: Discuss ZEHES with environmental justice leaders
- Fall 2024: Conduct emissions, health, and cost impacts analyses
- Fall 2024: Meet with key stakeholders
- Winter 2025: Convert the Model Rule into a Maryland Rule
- Spring 2025: Present a Draft Rule to the Air Quality Control Advisory Council (AQCAC)
- Summer 2025: Publish a Proposed Rule and hold a public hearing
- Fall 2025: Adopt the ZEHES Rule

RESOURCES: MDE will require three (3) additional staff members to implement outreach and compliance activities under the ZEHES program starting in FY27. The positions should be phased in over two fiscal years, adding one (1) new position in FY27 and two (2) new positions in FY28. These resource needs will be paid for with special funds where possible.

EJ CONSIDERATION: NESCAUM has an EJ advisory group involved in the model rule development. The group includes several Maryland-based organizations. MDE organized an in-person meeting of Maryland EJ organizations to foster early discussions on the model rule development and MD-specific implementation. ZEHES will reduce energy costs for all households, including low and moderate income households.

EXTERNAL FUNDING: MDE secured \$100,000 from the United States Climate Alliance (USCA) to enable the Regulatory Assistance Project (RAP) to help MDE implement the Clean Heat Standard (CHS) and ZEHES regulations. MDE is Maryland's state lead for the U.S. EPA CPRG for Planning and received \$3 million (2023-2027) to provide funding for the MDE Climate Change Program and robust technical assistance from the EPA. This grant will also be leveraged to support this action.

OUTCOMES: ZEHES will help ensure Marylanders pay the lowest heating and cooling costs by using highly efficient zero-emission heating and cooling systems. The average Maryland household saves approximately \$1000 annually using heat pumps for space and water heating compared with using less efficient equipment. ZEHES will also improve indoor air quality by phasing out fuel-burning inside buildings and improve outdoor air quality by reducing emissions of ozone-forming nitrogen oxides (NOx). ZEHES modeling shows it will help Maryland avoid annual GHG emissions of 800,000 metric tons of carbon dioxide equivalent (CO₂e) in 2031, and 3,400,000 metric tons of CO₂e in 2045.

PARTNERSHIPS: MDE is partnering with ten states through the NESCAUM model rule development process to create a consistent program for the industry, consumers, and energy system across states.

Adopt a Clean Heat Standard (CHS) - FY25 Priority

Maryland's Climate Pollution Reduction Plan and Governor Moore's Executive Order 01.01.2024.19 calls on MDE to propose a CHS regulation to reduce climate pollution from the building sector by requiring natural gas utility companies and heating oil and propane distributors to reduce the GHG emissions associated with their businesses by providing an increasing share of clean heat solutions to their customers.

STEPS & TIME: MDE intends to adopt a CHS Reporting Rule in 2025 and add Performance Standards in 2026 by the following steps:

- Fall 2024: Conduct emissions, health, and cost impacts analyses
- Fall 2024: Seek input from stakeholders
- Spring 2025: Present a draft reporting rule to AQCAC
- Summer 2025: Publish a proposed reporting rule and hold a public hearing
- Fall 2025: Adopt the reporting rule
- Winter 2026: Obligated parties begin reporting data to MDE.
- Spring 2026: Present a draft performance standards rule to AQCAC
- Summer 2026: Publish a proposed performance standards rule and hold a public hearing

- Fall 2026: Adopt a complete CHS Rule
- Winter 2027: Obligated parties begin registering “clean heat credits” to meet their annual obligation; consumers begin receiving additional information about and incentives for clean heat services.

RESOURCES: CHS is a complex regulatory program with staffing needs similar to those for the Building Energy Performance Standards (BEPS). MDE will require approximately ten (10) positions including Policy Analysts, Data Analysts, and Compliance Engineers to implement the CHS program. Up to five (5) of those positions can be met by transitioning existing positions that are implementing nearer term projects, including administering Federal grants, as those projects wind down in the coming fiscal years.

EJ CONSIDERATION: The CHS is also being discussed by the ZEHES EJ advisory group. Equity is a core goal and design element of CHS. CHS is the instrument that ensures ZEHES will be implemented in a way that helps lower-income households and energy-burdened communities afford the upfront cost that can occur when upgrading from fossil fuel heating systems to heat pumps. The regulation will require a certain percentage of the clean heat credits that must be retired each year to benefit low-income households and an additional percentage to benefit either low or moderate income households. The CHS will be designed to reduce energy costs for low and moderate income Maryland households.

EXTERNAL FUNDING: The United States Climate Alliance (USCA) has provided three technical assistance grants to support the development of the CHS rule. In August 2024, USCA awarded MDE the latest grant of \$100,000 to support the Regulatory Assistance Project (RAP)’s efforts to help MDE develop and roll-out the Clean Heat Standard (CHS) and Zero-Emission Heating Equipment Standard (ZEHES) regulation. Funds from the EPA CPRG for Planning (2023-2027) is also leveraged to support this action.

OUTCOMES: CHS, working together with ZEHES, can deliver the lowest-cost pathway for decarbonizing buildings. CHS is modeled to avoid annual GHG emissions of 800,000 metric tons of CO₂e in both 2031 and 2045.

PARTNERSHIPS: MDE is developing a CHS in parallel to Massachusetts, Vermont, and Colorado, and incorporating policy models from those states.

Modify the Regional Greenhouse Gas Initiative (RGGI) Program - FY25 Priority

Maryland’s Climate Pollution Reduction Plan calls on MDE to work with the other RGGI states to establish a new regional cap on the CO₂ emissions from fossil fuel power plants. RGGI requires fossil fuel electricity generators to acquire, through a regional auction or secondary market transactions, one CO₂ allowance for every short ton of CO₂ emitted over a three-year compliance period.

STEPS & TIME: In 2024, MDE will work with the other RGGI states to establish a new regional cap. MDE advocates the cap be strengthened to be consistent with the state's 100% clean energy and climate goals. MDE will eliminate underutilized components of Maryland's program under RGGI including offsets and the Limited Industrial Exemption Set Aside when it updates its CO2 Budget Trading Program regulation in 2024.

RESOURCES: Current MDE staff and resources will continue to carry out this work.

EJ CONSIDERATION: Revenue raised through RGGI is invested in programs including building electrification, energy efficiency, electric transportation, and public transportation. These programs reduce GHG emissions, reduce criteria pollutant emissions, improve health outcomes, reduce energy bills for consumers, and create jobs and economic growth. Per statute, the majority of Maryland's RGGI proceeds are allocated to energy bill assistance programs. The EPA is developing power plant rules that would result in additional emission reductions from power plants subject to RGGI. These federal standards are needed to solve the historical problem of disproportionate siting and operation of power plants, which increases the risk of exposure to harmful co-pollutants from the combustion of fossil fuels.

EXTERNAL FUNDING: N/A

OUTCOMES: Through RGGI, the participating states have cut power plant emissions in half while enjoying billions of dollars to strategically invest into the cleaner economy and the creation of thousands of jobs.

PARTNERSHIPS: RGGI is a multi-state collaborative program among Maryland, Delaware, New Jersey, New York, Connecticut, Massachusetts, Rhode Island, New Hampshire, Vermont, and Maine.

Advanced Clean Fleets (ACF) - FY25 Priority

Under the ACF program, owners of covered truck and bus fleets are required to make an increasing amount of their new purchases zero-emission vehicles. MDE is called on to determine if adopting ACF would result in emissions reductions beyond those expected by Maryland's adoption of the Advanced Clean Trucks regulation.

STEPS & TIME: In 2024, MDE will work with stakeholders and consultants to determine if adopting ACF would result in emissions reductions beyond those expected from adopting the Advanced Clean Trucks regulation.

RESOURCES: The 2024 evaluation is being completed with existing resources.

EJ CONSIDERATION: The transportation sector is very difficult to decarbonize and contributes to harmful air pollutant contaminants. While harmful air pollutants affect all Marylanders it is often felt first and worst by low-income and disadvantaged communities.

OUTCOMES: Transportation sector reductions in GHGs result in cleaner, healthier air for all Marylanders, especially those communities most heavily impacted by air pollution. ACF is modeled to avoid annual GHG emissions of 1,800,000 metric tons of CO₂e in Maryland by 2045, however, more detailed analysis is needed to determine the incremental emissions impact of ACF compared with ACT. In California, the ACF regulation is expected to result in \$26.5 billion in statewide health benefits from improved air quality and save fleet owners an estimated \$48 billion through 2050. For reference, California's new heavy-duty vehicle registrations are nearly six times the number in Maryland.

PARTNERSHIPS: The Advanced Clean Fleets program has been adopted in California, and is under consideration in Colorado, New Jersey, New York, Vermont, and Washington.

Advanced Clean Cars II (ACC II)

Maryland's Clean Car Act of 2007 required MDE to exercise its authority under federal law to adopt the California ACC Program and to continue to adopt revisions and updates to the program. The Climate Pollution Reduction Plan supports MDE's intent to continue to update and adopt new revisions to California's Program by adopting ACC II. ACC II requires all new passenger cars, trucks, and SUVs sold to be ZEVs by 2035; ACC II also requires internal combustion engine vehicles to meet increasingly stringent pollutant standards during the period in which they are continued to be sold.

STEPS & TIME: MDE adopted regulations in 2023, incorporating by reference the applicable multistate regulations. Maryland's implementation of the ACC II program will begin with the 2027 model year.

RESOURCES: MDE will continue to use current funding and staff to implement.

EJ CONSIDERATION: Transitioning cars from burning fossil fuels to electric cars will greatly reduce GHGs and the associated harmful air pollution like nitrogen oxides (NO_x), volatile organic compounds (VOCs), and particulate matter 2.5 micrometers or smaller (PM_{2.5}); reducing tailpipe emissions reduces the negative impacts on disproportionately affected communities, Marylanders with disabilities, and aged Marylanders who have increased sensitivity to poor air quality.

EXTERNAL FUNDING: Federal rebates provide \$7,500 to those who purchase new EVs, and \$4,000 for used EVs.

OUTCOMES: The ACC II program will result in significant additional emission reductions in Maryland as compared to the program currently in effect. This policy is estimated to reduce emissions by 902,000 metric tons of CO₂e in 2031, and 5.8 million metric tons of CO₂e in 2045.

PARTNERSHIPS: The ACC II program is a multistate standard adopted by California, Colorado, Delaware, the District of Columbia, Maryland, Massachusetts, New Jersey, New

Mexico, New York, Oregon, Rhode Island, Washington, and Vermont.

Advanced Clean Trucks (ACT)

Maryland's Clean Trucks Act of 2023 requires MDE to exercise its authority and adopt California's ACT regulation in Maryland.

STEPS & TIME: MDE adopted regulations in 2023 through incorporation by reference of the applicable California regulations.

RESOURCES: ACT will require at least two (2) additional employees starting in FY26 to fully implement. The need for this resource was noted during the legislative process, but was not granted. This resource need will be paid for with special funds where possible.

EJ CONSIDERATION: On-road diesel trucks are the largest contributor to NOx emissions in Maryland. This policy will reduce the exposure of overburdened communities that have high sensitivity to air-pollution associated with tailpipe emissions.

EXTERNAL FUNDING: Through the Climate Pollution Reduction Grant for Implementation project titled "CPRG Clean Corridor Coalition", MDE has secured \$2.46 million for five years (2024-2029) allocated for additional capacity as well as funds to support complementary workforce development efforts to deploy electric vehicle charging infrastructure for commercial medium- and heavy-duty (MHD) zero-emission vehicles (ZEVs) traveling along the I-95 freight corridor and adjacent roadways from Connecticut to Maryland.

OUTCOMES: Medium and heavy-duty trucks account for about a third of Maryland's transportation emissions, and transportation is the largest emissions sector with around 39% of net total emissions. The emissions from medium and heavy duty trucks continue to increase even as other sectors decrease. Adopting ACT will result in a significant reduction of harmful emissions associated with medium and heavy duty trucks and help Maryland attain its air quality goals. The ACT program will reduce NOx, PM2.5, and GHG emissions from the mobile source sector as cleaner, zero-emission trucks replace older internal combustion vehicles.

PARTNERSHIPS: The ACT program is a multistate standard adopted jointly by California, Colorado, Massachusetts, New Jersey, New Mexico, New York, Oregon, Vermont, Washington and Rhode Island. Maryland partnered with Delaware, New Jersey, and Connecticut to secure federal funding to deploy charging infrastructure on the I-95 corridor.

ZEV School Buses

In accordance with the Climate Solutions Now Act, the Climate Pollution Reduction Plan

calls for the prohibition of a county board of education to enter into a new contract for the purchase or use of any school bus that is not a zero-emission vehicle starting in FY25.

STEPS & TIME: MDE, alongside the Maryland Department of Transportation, will continue to provide technical assistance to county boards of education transitioning school buses to zero emission vehicles throughout the state.

RESOURCES: At present, all school districts are unable to meet the current goal of fully electrifying school bus purchases starting this year (FY25) and have applied for a waiver. To fully implement this policy, at least one (1) additional staff member is needed. This resource need will be paid for with special funds where possible.

EJ CONSIDERATION: This policy will reduce the exposure from several toxic air pollutants to overburdened communities and children that have high sensitivity to air-pollution associated with tailpipe emissions.

EXTERNAL FUNDING: Through the State's Volkswagen Settlement Program and Strategic Energy Investment Funds, MDE and MEA administer Zero Emission School Bus Transition Grants Programs to purchase zero emission school buses, install charging infrastructure, and transition to zero emission school bus fleets. Maryland school districts have also been successful in receiving federal funding under the EPA Clean School Bus Program. To date, seven school districts have received approximately \$31 million dollars in funding to purchase electric school buses and install charging infrastructure.

OUTCOMES: Given that transportation contributes more GHG emissions than any other sector and the overwhelming majority of buses run on diesel, transitioning school buses to ZEVs will greatly reduce GHGs and improve public health from air quality improvements. School districts would have the opportunity to save money year-over-year by switching from fossil-fuels to electricity which is much cheaper. Bi-directional charging infrastructure could further create budgetary relief and increase resilience by having robust back-up power via the batteries in buses. On-site renewable energy generation could increase savings and resilience even further. Replacing diesel fuel fired buses with electric buses will also create clean energy jobs in Maryland.

PARTNERSHIPS: MDE has partnered with the Department of Education and Maryland electric utilities, especially BGE, to provide technical assistance to school districts to apply for federal Clean School Bus grants.

Building Energy Performance Standards (BEPS) - FY25 Priority

State law requires MDE to adopt energy performance standards for large commercial and multifamily buildings 35,000 square feet and larger to reduce on-site GHG emissions and improve energy efficiency.

STEPS & TIME: MDE intends to adopt a BEPS regulation by the end of 2024. MDE will receive energy benchmarking reports from covered buildings in 2025 and each year thereafter. MDE will continue to engage with BEPS stakeholders during the implementation of the regulation and its technical support documentation. MDE intends to modify the BEPS regulation to include energy use intensity standards in 2027 after analyzing 2025 energy data and subsequently submitting a report to the legislature, per legislative requirements.

RESOURCES: The fiscal note on the Climate Solutions Now Act (CSNA) suggests that a total of seventeen (17) staff are needed to implement BEPS. Staff needs include one (1) Division Chief, one (1) Administrative Specialist, two (2) Natural Resource Planner II positions, ten (10) Regulatory and Compliance Engineer II positions, two (2) Assistant Attorney General IV positions, and one (1) Paralegal I. Another five (5) positions were noted to implement other parts of the CSNA requirements. More than two years after the CSNA became law, MDE reaffirms the resource needs listed in the fiscal note.

To date, MDE has received 19 of the 22 positions requested in the fiscal note. MDE received nine (9) positions in FY24 and five (5) positions in FY25 to implement the CSNA including BEPS. MDE also leveraged its Climate Pollution Reduction Grant - Planning Grant to secure an additional five (5) positions in FY25. To meet the CSNA requirements including BEPS, three (3) additional positions are needed along with an annual budget of \$500,000 for contractual support to implement a BEPS online data management and communication system. MDE will seek to pay for these needs with special funds where possible.

EJ CONSIDERATION: In FY24, MDE developed a list of 9,300 potentially covered buildings for the BEPS regulation. Of the 9,300 potentially covered buildings, approximately 2,500 buildings were identified as being located in low-income and disadvantaged communities (LIDAC). MDE is working with MEA, Department of General Services, and Department of Housing and Community Development to apply for federal funding to help owners of covered buildings, especially those located in LIDAC areas or housing low-income residents, comply with the standards.

EXTERNAL FUNDING: MDE applied for \$195 million via the EPA's Climate Pollution Reduction Grants (CPRG) Program application. Although MDE's Clean Buildings Accelerator CPRG application was not selected for funding, MDE will seek alternative federal funding opportunities. In September 2024, MDE led the submission of \$20 million via the DOE IRA Technical Assistance for the Adoption of Building Energy Codes. MDE is coordinating with the Governor's Office and partner agencies for further external sources within the Greenhouse Gas Reduction Fund as well as philanthropic sources. Additionally, funds from the EPA CPRG for Planning (2023-2027) is leveraged to support this action.

OUTCOMES: BEPS will greatly help reduce GHG emissions, reduce energy costs, manage

grid impacts costs for ratepayers, and improve air quality for Marylanders. When fully implemented with energy efficiency standards, BEPS is modeled to reduce emissions by approximately 18 million metric tons of CO₂e between 2025 and 2050 based on a study by the Lawrence Berkeley National Laboratory.

PARTNERSHIPS: Maryland joined the White House's National Building Performance Standards Coalition, which includes 46 states, cities, and counties working to deploy this policy mechanism. MDE is coordinating its standards development with Montgomery County, which is implementing a county-level standard, in order to be as consistent as possible between the state and county programs.

State Government Lead by Example

The Climate Pollution Reduction Plan calls on all State Agencies to lead by example to analyze and transition its facilities, fleets, and procurement of supplies.

STEPS & TIME: In FY25, MDE will revitalize its sustainability team to ensure the agency's operations are environmentally and economically responsible.

RESOURCES: MDE will use existing staff and resources for this initiative.

EJ CONSIDERATION: MDE headquarters is located in an area that is in the 98.7% percentile of climate vulnerable communities in Maryland. Improvements in MDE's operations may help to reduce the impacts of climate on this area.

PURSUIT OF EXTERNAL FUNDING: MDE staff will seek external funding sources to help support measures that result from the sustainability team's efforts. Additionally, MDE secured \$300,000 the EPA CPRG for Planning Grant to support a MD DGS Facility Decarbonization Planning Study.

OUTCOMES: The team will seek out measures that demonstrate environmental leadership and will result in monetary savings, utility savings, and/or reductions in climate pollution.

Hydrofluorocarbon (HFC) Regulations

The Climate Plan calls on MDE to enforce the State's HFC regulation that prohibits certain HFCs and HFC blends that have a high global warming potential (GWP) and pose a higher overall risk to human health and the environment. Maryland also supports national rules to achieve HFC reductions throughout the country.

STEPS & TIME: Current regulations prohibited the manufacture and importation of restricted HFCs on January 1, 2024. In most cases, the prohibition to sell, distribute, and export HFCs will begin January 1, 2025.

RESOURCES: To keep up with the expansion of this regulation, MDE will need one (1) additional staff member in FY26 to properly implement this policy, the Control of Methane Emissions from the Natural Gas Industry, and Landfill Methane Regulations. MDE will seek to pay for these needs with special funds where possible.

EJ CONSIDERATION: HFCs and HFC blends have a high GWP and pose a higher overall risk to human health and the environment. This regulation helps to protect over-burdened and climate vulnerable communities.

EXTERNAL FUNDING: Federal rules such as the AIM Act and the Inflation Reduction Act (IRA) promote the adoption of HFC compliant equipment. The IRA provides significant incentives for end users. Maryland will seek federal support to train contractors to expand their businesses by meeting the increasing demand for zero emission equipment.

OUTCOMES: The phase out of certain HFCs will encourage the use of widely available alternatives with lower GHG emissions. The regulation will also support the transition to a clean energy workforce. Manufacturers are adapting to state and federal regulations which creates economic opportunity for the state. This policy is estimated to reduce emissions by 611,000 metric tons of CO₂e in 2031, and 1.6 million metric tons of CO₂e in 2045.

Control of Methane Emissions from the Natural Gas Industry

The Climate Pollution Reduction Plan calls on MDE to enforce the state specific regulation to mitigate methane emissions from the natural gas transmission and storage sector.

STEPS & TIME: MDE will enforce state regulation that establishes requirements to reduce vented and fugitive emissions of methane from both new and existing natural gas facilities in Maryland. Affected facilities include all new and existing natural gas compressor stations, natural gas underground storage facilities and liquified natural gas facilities.

RESOURCES: The one (1) additional position mentioned under the HFC Regulations section above would also manage this regulatory program.

EJ CONSIDERATION: Methane is more than 80 times more effective at heating the planet than CO₂ and poses a higher overall risk to human health and the environment. This regulation helps to protect over-burdened and climate vulnerable communities.

EXTERNAL FUNDING: The IRA methane fee will serve as a financial incentive for fossil fuel companies to comply with state and federal methane rules. Sources subject to the EPA methane fee will be eligible for EPA grant programs to help pay for emission reduction equipment and procedures.

OUTCOMES: Maryland's regulation aligns with EPA's updated rules in the natural gas industry. EPA's updated rules add significant requirements beyond the Maryland rule for

the extended gathering and processing of these fossil fuels that will achieve reductions in surrounding states. Together, these rules will continue to bring down the total emissions of methane for the natural gas industry.

Landfill Methane Regulations

The Climate Plan calls on MDE to enforce the state regulation on all municipal solid waste (MSW) landfills. The regulation requires landfill owners to monitor surface emissions quarterly for one year, detect and repair gas leaks, keep records and report emissions, and install and operate emission control systems. The regulation was published in June 2023 and applies to landfills that have accepted waste since November 1987, have a design capacity of at least 2,750,000 tons, or have a methane generation rate of more than 8,548 tons per year.

STEPS & TIME: The MDE Air and Radiation Administration recently promulgated regulations imposing more strict monitoring and remedial requirements for methane emissions at landfills that will both dramatically reduce these emissions and encourage methane reuse.

RESOURCES: The one (1) additional position mentioned under the HFC Regulations section above would also manage this regulatory program.

EJ CONSIDERATION: Maryland's landfills are the state's largest source of methane pollution. Methane is more than 80 times more effective at heating the planet than CO₂ and poses a higher overall risk to human health and the environment. This regulation helps to protect over-burdened and climate vulnerable communities.

EXTERNAL FUNDING: The IRA includes funding mechanisms to facilitate landfill diversion projects including grants, loans, loan guarantees and tax credits.

OUTCOMES: The new regulations result in decreased methane emissions from MSW landfills in the state and MDE estimates this rule will achieve a 25-50% reduction in GHG emissions from affected landfills.

Food Residuals Diversion Law

The Climate Pollution Reduction Plan calls on MDE to reduce emissions associated with food residuals being sent to landfills or incinerators. MDE currently oversees the Food Residuals Diversion Law.

STEPS & TIME: The current law started in 2023 by requiring "persons" who generate at least two tons of food residuals per week to divert from landfill. On January 1, 2024, persons generating one ton (or greater) of food residuals per week are required to separate the food residuals from other solid waste, ensuring diversion from landfill and

incineration. In FY25 MDE will evaluate the benefit of expansion of the "persons" definition to include more entities, such as all businesses that generate lower quantities of food residuals than in the current law, and determine if the applicable range for compliance (within 30 miles of an organics recycling facility) is a hindrance for diversion.

RESOURCES: MDE has used existing staff and resources to oversee and implement the current law. To keep up and expand these efforts, MDE will need one (1) position for an Environmental Compliance Specialist and (1) for continued outreach and compliance efforts. MDE will seek to pay for these needs with special funds where possible.

EJ CONSIDERATION: Due to the location of existing organics recycling infrastructure, capacity and distance limitations have decreased the number of entities who would be required to divert those materials and they are therefore still being sent to landfills and incinerators in environmental justice communities for solid waste disposal. Additionally, as the understanding of the revised Federal Bill Emerson Good Samaritan Law is still not widespread and persons identified in this law find it easier to send to organics recycling over recovery for redistribution. MDE's outreach on the Food Residual Diversion law has included discussions on these topics along with representation on the Maryland Food System Resiliency Council.

EXTERNAL FUNDING: Through the Bipartisan Infrastructure Law, MDE is using its partial award to analyze where infrastructure could grow in support of the EPA's wasted food scale hierarchy. Specifically, identifying the best possible locations for additional cold storage to support diversion and feed people. Also, identifying the types of and locations for organics infrastructure that could be located around the state to aid in meeting the goals set forth in the Maryland Executive Order 01.01.2017.13 for a voluntary recycling rate of 60% of food scraps by 2035.

OUTCOMES: The Food Residuals Diversion Law with support from federal grants and loans in the IRA presents a significant opportunity to invest in Maryland's solid waste management infrastructure and our shift to a clean energy economy. Food waste landfill diversion projects can take advantage of existing federal resources and reduce the overall methane emissions from MSW landfills.

Sustainable Materials Management

The Climate Pollution Reduction Plan calls on MDE to continue to partner with relevant stakeholders to reduce the state's waste generation, improve recycling, and source reduction rates.

STEPS & TIME: The 2021 legislative session passed a non-regulatory law that describes MDE's role in collaboration with Commerce, MDOT, MES and DGS on identifying mechanisms to expand on regional recycling initiatives, expanding markets, and increasing

business development.

RESOURCES: MDE has used existing staff and resources to oversee and implement the current law.

EJ CONSIDERATION: Managing waste has health impacts on communities that are located near incinerators and polluting facilities. Reducing input to Maryland's landfills through source reduction and sustainable management will reduce inputs to MSW incinerators which are located in environmental justice communities.

PURSUIT OF EXTERNAL FUNDING: Through the Bipartisan Infrastructure Law, MDE is using its partial award to analyze where infrastructure gaps exist and where Maryland can partner with neighboring states to synergize efforts to maximize recyclability of feedstocks.

OUTCOMES: Through this work, MDE intends to scale market opportunities for recyclables to advance a more circular economy and reduce lifecycle greenhouse gas emissions.

Maryland 5 Million Trees Initiative

The Tree Solutions Now Act of 2021 (TSNA) mandates the State to plant and maintain 5 million native trees on public and private land by 2031. MDE leads the implementation of the 5 Million Trees Initiative (5MT) with leadership support from 5MT's State agency partners: Department of Natural Resources (DNR), Department of Agriculture (MDA), Chesapeake Bay Trust (CBT), and MDOT. This interagency data council reports tree planting data from planting programs and coordinates stakeholder/landowner outreach in alignment with MDE.

STEPS & TIME: MDE coordinates the tracking and implementation of 5MT in partnership with DNR, MDA, MDOT, and the CBT. MDE is required to report FY planting progress to the General Assembly annually by December 1. The reporting timeline is as follows:

- February-May - Spring Planting Season
- May-July - Tree Data Collection
- July-September - Tree Data Reporting
- September-August - Fall Planting Season
- December - Report progress over last FY

RESOURCES: The TSNA established a Tree Programs Coordinator position at MDE (1 contractual) for the duration of the Initiative.

EJ CONSIDERATION: To advance equity and environmental justice, 5MT directs that at least 10% (500,000) of these trees be planted in underserved urban areas as determined

by the TSNA. Urban tree plantings will provide improved air and water quality and reduce urban heat island effects in the surrounding community. MDE will use the newly established Climate Vulnerability Score Tool to identify where tree plantings are occurring relative to high climate vulnerability.

EXTERNAL FUNDING: Through the Climate Pollution Reduction Grant, MDE has secured \$50 million that will be used in part to advance afforestation (1500 acres) and restoration projects (217,700 trees) across the State. These funds will be distributed to MDA, MDOT, and DNR for implementation through programs and/or subawards.

OUTCOMES: Carbon sequestration is critical to achieving Maryland's net zero climate goal. This initiative will help to offset GHG emissions generated elsewhere in Maryland and provide air, land, and water quality co-benefits.

Part 2: Recommending Actions to Address Climate Change

MDE is taking the following additional actions to address the threat of climate change.

Climate Pollution Reduction Grants (CPRG) Program, Planning Grant

The EPA's CPRG Program is funding, orchestrating, and guiding the largest simultaneous climate planning initiative ever across the nation. Representing over 96% of the U.S. population, 45 states, D.C., Puerto Rico, 87 metropolitan statistical area planning groups, and over 200 tribes are writing climate plans and taking action with EPA support and guidance.

STEPS & TIME: MDE was notified of Maryland's Planning grant award in July of 2023. MDE worked with stakeholders and the public to publish the first of three deliverables for this grant in April of 2024, the Priority Climate Action Plan. The second deliverable, the Comprehensive Climate Action Plan, is due in December of 2025. The final deliverable, the Status Report, is due in June of 2027.

RESOURCES: MDE has used these federal funds from the EPA to build capacity and support the work described in the associated plans. This grant also made MDE eligible to apply for Implementation Grant funding in the CPRG Program which resulted in two of MDE's coalition applications (described below) to receive awards totaling more than \$670,000,000.

EJ CONSIDERATION: As part of the grant requirements, MDE will conduct a comprehensive analysis of the impacts of climate change on Low Income and Disadvantaged Communities and work to shape actions to better address these impacts.

EXTERNAL FUNDING: MDE was awarded \$3,000,000 in 2023 to support this work.

OUTCOMES: This grant has led to deeper analysis of climate change in Maryland and fostered robust stakeholder and public engagement with climate planning. This grant has also supported four pathways to workforce development program positions, including a Chesapeake Conservation and Climate Corps member through the Chesapeake Bay Trust for FY 24 and again in FY25, and two Maryland Climate Corps Fellows in FY25.

CPRG Implementation Grant: Clean Corridors Coalition (C3)

In an effort to tackle the difficult-to-decarbonize sector of transportation and maximize external funding opportunities, MDE teamed up with MDOT to join a multi-state coalition to apply for competitive funding to expand medium and heavy-duty charging infrastructure along the Interstate 95 corridor.

STEPS & TIME: MDE was notified of the application selection in July 2024. MDE is working with Coalition partners to reach a grant agreement with the EPA and subaward agreements with Coalition-lead states before the end of calendar year 2024. MDE will use CPRG Implementation Grant Funds to support its Mobile Sources Group to implement this project. The project will be implemented over a six year period (2024-2030).

RESOURCES: MDE will use federal funds from the EPA to build required capacity.

EJ CONSIDERATION: Reducing diesel emissions along the C3 project's corridors will cut hundreds of tons of mobile source criteria air pollution across the region, directly benefiting 456 LIDAC tracts (82 in MD), including 259 (39 in MD) that are classified by EPA as being at or above the 90th percentile for EJScreen's Traffic Proximity Supplemental Index. Workforce development and job creation in the C3 project prioritizes LIDAC residents.

EXTERNAL FUNDING: MDE & MDOT secured \$80,135,301 through the C3 CPRG Implementation Grant.

OUTCOMES: Investing in Zero-Emission Vehicle Infrastructure will create hundreds of jobs, bolster workforce development, and be a critical step to unlocking and enabling deep transportation sector decarbonization. Across the northeast region and by 2030, C3 is expected to convert around 82 million truck miles traveled from gasoline and diesel to electric power, yielding estimated reductions of 446.4 tons of NOx, 5.8 tons of PM2.5, and 53.9 tons of VOC.

CPRG Implementation Grant: Atlantic Conservation Coalition (ACC)

Maryland's Climate Pollution Reduction Plan calls for natural climate solutions achieved through afforestation, forest and coastal wetland management, and agricultural healthy

soils practices.

STEPS & TIME: In FY 2024 MDE teamed-up with MDA and the DNR to join a multi-state coalition with three other coastal states in the mid-Atlantic (South Carolina, North Carolina, and Virginia) to apply for a CPRG Implementation Grant. MDE was notified the project was selected from a highly competitive pool of applications in July 2024. MDE is currently working with staff from the lead partner state of North Carolina to reach a grant agreement with the EPA by the end of 2024. MDE will begin its hiring process to increase capacity to support this multi-year grant project. The project will be implemented over a six year period (2024-2030).

RESOURCES: MDE utilized staff hired from the first CPRG grant (Planning Grant awarded FY24) to secure this Implementation Grant. MDE will use newly awarded CPRG funding to implement this project.

EJ CONSIDERATION: In line with Justice 40 requirements MDE will work to ensure that at least 40% of the benefits of the natural working lands improvements benefit low-income and disadvantaged communities, as identified by the EPA.

EXTERNAL FUNDING: \$50 million has been awarded to Maryland State Agencies.

OUTCOMES: Carbon sequestration is a necessary part of Maryland's climate strategy. Overall, this project will reduce climate pollution, strengthen natural working lands and their ecosystems, enhance resilience and protection from storms, and bring benefits to overburdened and climate vulnerable communities.

Expand Service and Workforce Development Pathways

MDE is committed to supporting its peer agencies to advance service and workforce opportunities in the green economy. This commitment includes hosting members from the Chesapeake Conservation and Climate Corps and Maryland Climate Corps Fellows programs and chairing and supporting the Maryland Commission on Climate Change's (MCCC) Just Transition Employment and Retraining Working Group (JTWG). MDE has leveraged existing staff and resources from the Climate Pollution Reduction Grants Program and the U.S. Climate Alliance to support the agency's work in these areas.

Implement the Zero Emission Vehicle Infrastructure (ZEVI) Plan

MDOT is implementing round 1 of the NEVI Program to deploy charging along Maryland's EV Alternative Fuel Corridors; MDE will continue to support this decarbonization effort through its participation in the NEVI Advisory Group, providing comments and recommendations.

Expand the Climate Transition and Clean Energy Hub

MEA's Clean Buildings Hub is a critical piece in achieving the State's GHG reduction goals by acting as a one-stop-shop clearinghouse for building sector-wide decarbonization resources. MDE's Building Decarbonization Section of the Climate Program will continue to support MEA in the development of the Hub.

Implement the Maryland Transportation Plan

The Climate Pollution Reduction Plan calls on MDOT to implement the updated Maryland Transportation Plan, which includes making investments in new infrastructure projects and programs that will reduce vehicle miles traveled and enhance transportation choices in the state. MDE will support this effort by boosting promotion of its Alternative Transportation Group in FY25. MDE will coordinate with and use resources provided by MDOT to make staff members aware of ways to reduce VMT.

Embedding Climate into Permitting and Funding Decisions

MDE is assessing all of its water permits for climate change adaptation and resilience-building opportunities. Notable activities involve living shoreline coastal stabilization that have greenhouse gas sequestration co-benefits, updating stormwater and flood management regulations to account for projected increases in rainfall, and climate sensitive erosion and sediment control standards and specifications. MDE's water infrastructure funding prioritizes projects that increase resilience or help mitigate the causes of climate change, including through tree planting and other green infrastructure solutions.

Apply for Federal Funding

In addition to the various grants listed within each measure, MDE is part of the Governor's Federal Investment Team and is supporting State efforts to establish Elective Pay procedures and apply it to opportunities for state agencies.

Part 3: Considering Greenhouse Gas Emissions Reductions and Impacts on Disproportionately Affected Communities

MDE is taking the following steps to advance environmental justice by working to address the disproportionate impacts of climate change for underserved and overburdened communities:

- Building relationships with communities and making sure they have the tools and knowledge to be involved in planning, policy development, and the regulations.
- Appointed an assistant secretary for environmental justice, an environmental justice coordinator and a community liaison responsible for helping communities obtain resources and stay informed.
- Updating the Department's EJ Screening Tool, which scores communities with environmental justice concerns based on the percentile of that population affected by a series of socio-economic and environmental pollution indicators.
- Developed a methodology for identifying communities disproportionately affected by climate impacts. This methodology builds off the minimum requirements outlined in Md. Code, Envir. § 1-702, which specifies the inclusion of “underserved communities, overburdened communities, and areas that are vulnerable to climate impacts such as flooding, storm surge, and urban heat island.”
- Consulted with the Commission on Environmental Justice and Sustainable Communities (CEJSC) and the University of Maryland Department of Community Engagement, Environmental Justice, and Health (CEEJH) to advance planning and policy related to the agency’s environmental justice and climate vulnerability tools.
- Prepared an analysis that identified the total amount of state money spent on measures to reduce GHGs and calculated the percentage of that FY 23 funding that benefited disproportionately affected communities. The report is required annually. A similar analysis is being completed for FY 24 funding and will be submitted in December 2024.
- Ensure that the benefits of emission reductions, the creation of green jobs and health improvements due to cleaner air and water, are enjoyed by everyone throughout the state.

Moving forward, MDE is incorporating EJ Scores and Climate Vulnerability Scores into permitting review processes and investment decisions with state dollars wherever possible.

Part 4: Resources for Implementation

The steps, time, and resources needed to implement the actions in Maryland's Climate Pollution Reduction Plan that are within MDE's purview are listed in Part 1 above. MDE has successfully leveraged grant funding and third-party-funded technical assistance to accomplish many of its priorities, including developing BEPS and initiating rulemaking on CHS and ZEHES. Since 2023, MDE has brought grant awards to the state totaling almost \$174,000,000 to address climate change, stimulate the economy, and increase resiliency. MDE has also received support from the State budget to advance climate change programming.

Where additional resource gaps remain, MDE will seek to meet these gaps using allocated resources from the Strategic Energy Investment Fund, special funds, and by continuing to leverage existing staff to help cover short-term needs as these programs are developed and deployed.

Maryland's Climate Pollution Reduction Plan, Chapter 5: Funding the Transition, includes six potential sources of new revenue for the state to consider. The revenue mechanisms presented in the plan, each based on the "polluter pays principle," would generate significant revenue and allow the state to make strategic investments in buildings, transportation, public infrastructure, natural and working lands, and workforce development. A fraction of the new revenue could be used to support the resource needs of MDE and other agencies responsible for implementing the state's climate policies.

Part 5: Outcomes from Implementation

By fully implementing Maryland's Climate Pollution Reduction Plan, Marylanders will benefit from cleaner air and water, improved public health, lower energy costs, and more jobs with higher wages. As detailed in the plan, 27,400 additional jobs, \$2.5 billion in increased personal income, and a net gain of \$5.3 billion in Maryland's gross domestic product will be added to Maryland's economy by 2031. Average households will save up to \$4,000 annually on energy costs. Air quality and public health outcomes will improve for everyone, especially people living in historically underserved and overburdened communities. Maryland's Climate Pollution Reduction Plan, Chapter 3: Economic and Public Health Impacts, and Chapter 4: Lower Energy Costs and More Jobs, include additional detail on the specific benefits of implementing the plan and transitioning the state to clean energy for all.