State of Maryland

Greenhouse Gas Reduction Spending Analysis

2025 Annual Report

![Maryland Department of the Environment logo]

State of Maryland Greenhouse Gas Reduction Spending Analysis

2025 ANNUAL REPORT

December 15, 2025

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ii. Acronyms

Acronym	Long Form
CSNA	Climate Solutions Now Act of 2022
DAC	Disproportionately Affected Communities
MCCC	Maryland Commission on Climate Change
GHG	Greenhouse Gas
MDE	Maryland Department of the Environment
DBM	Department of Budget and Management
MDOT	Maryland Department of Transportation
DHCD	Maryland Department of Housing and Community Development
MDA	Maryland Department of Agriculture
MDP	Maryland Department of Planning
DGS	Maryland Department of General Services
DNR	Maryland Department of Natural Resources
MEA	Maryland Energy Administration
MDSE	Maryland State Department of Education
UMBC	University of Maryland Baltimore County
Morgan	Morgan State University
UMB	University of Maryland Baltimore
UB	University of Baltimore
UMES	University of Maryland Eastern Shore
UMD	University of Maryland College Park
UMCES	University of Maryland Center for Environmental Science
St. Mary's	St. Mary's College
FSU	Frostburg State University
Towson	Towson University

iii. Acknowledgements

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- The Commission on Environmental Justice and Sustainable Communities
- The team at University of Maryland's Center for Global Sustainability

iv. Executive Summary

Background

As required by the Climate Solutions Now Act of 2022 (CSNA), the Maryland Department of the Environment (MDE) must annually produce a report that analyzes the total amount of state money spent on measures to reduce greenhouse gases during the previous fiscal year, including what percentage benefited disproportionately affected communities (DACs). This report will be released as an attachment to the Maryland Commission on Climate Change's (MCCC) Annual Report.

This report for fiscal year 2025 is the third publication of State Spending on Greenhouse Gas Reduction since the requirement took effect on June 1, 2023. In addition to greenhouse gas reduction spending data, this year's report outlines the improved data collection process through the newly formed partnership between the Department of Budget and Management (DBM) and MDE, as well as the new methodology for determining benefits to DACs.

Given the new approach to data collection, certain key agencies (listed in Section 2) that do the vast majority of GHG reduction spending were included to report data for this year's analysis. Reporting agencies were asked to report GHG spending data at the program level. Since there is no central mechanism for tracking GHG reduction spending and state agencies are not currently required to track spending specific to GHG measures, these data are, in many cases, rough estimates. These data are, however, the most precise information about State GHG reduction spending that can be provided at present.

Key Findings

- Combined, reporting agencies estimated spending $3.58 billion on measures intended to reduce GHG emissions in fiscal year 2025.
- Due to the capital intensive nature of transportation infrastructure and public transit, 88% of State spending on GHG reduction measures, totaling $3.15 billion, was by the Maryland Department of Transportation (MDOT).
- MDOT, the Maryland Department of Agriculture ($128.9 million), and the Department of Housing and Community Development ($102 million) account for approximately 94% of the total spending in FY25.
- Across all entities, nearly half of the total spending is allocated to DACs, but individual entity spending ranges.
- The aggregate percentage of spending allocated to DACs is 41%, totaling approximately $1.69 billion.

1. Introduction

The Climate Solutions Now Act of 2022 (CSNA), specifically Maryland Environmental Code § 2-1304, requires the Maryland Department of the Environment (MDE) to produce an annual report, due each December 15th, with an analysis of the following:

> (1) the total amount of State money spent on measures to reduce greenhouse gases (GHGs) and, to the extent practicable, co-pollutants, during the immediately preceding fiscal year; and

> (2) the percentage of that funding that benefited disproportionately affected communities identified according to the methodology adopted by the Department under § 1-702 of this article.

The report is delivered as an attachment to the 2025 MCCC Annual report to the Governor and General Assembly, in accordance with § 2-1257 of the State Government Article, on the status of the State's efforts to mitigate the causes of, prepare for, and adapt to the consequences of climate change, including future plans and recommendations for legislation, if any, to be considered by the General Assembly.

In addition to this reporting requirement, the CSNA provided MDE with a science-based directive to develop a plan to meet Maryland's climate targets of reducing greenhouse gas emissions by 60% from 2006 levels by 2031 and achieving net-zero emissions by 2045. MDE partnered with a multitude of stakeholder groups, other governing authorities, national science laboratories, and subject matter experts to analyze the lowest-cost, greatest-benefits pathway to achieve the State's GHG reduction requirements and, in December 2023, published *Maryland's Climate Pollution Reduction Plan*.

While it is difficult to predict exactly how much public spending will be necessary to implement Maryland's Climate Plan and bring about the transformation of Maryland's economy to produce net-zero emissions, tracking State spending on greenhouse gas reduction measures is a vital tool for State Government to continue to lead the way and to make progress. Since there is no centralized data source that tracks GHG reduction spending in the manner required for the report, MDE partnered with the Maryland Department of Budget and Management (DBM) to use a process that has been successful in capturing spending for the Governor's Chesapeake Bay Subcabinet.

While pivoting to this type of data collection and working in close collaboration with DBM will be an improvement, data from each agency is, in many cases, still a rough estimate. The outputs from this report, however, are the most precise numbers that can be provided at present, given data limitations and time constraints.

2. Analysis

Definitions

Greenhouse Gas Reduction Spending

Greenhouse gas reduction spending is State spending intended to reduce, avoid, or remove greenhouse gas (GHG) emissions from the atmosphere. This includes, but is not limited to, operational expenses, capital expenses, programs, initiatives, planning or preparation related activities, and the procurement of goods and services. Funds from the private sector, philanthropic sources, the federal government, or local jurisdictions are not included in this analysis.

Spending on climate change adaptation and resiliency measures is also excluded from this analysis. Since capturing adaptation and resiliency efforts are equally important, the State of Maryland, led by the Comptroller's Office, is working to collect and quantify these efforts.

While there are state agencies that potentially spend funds that indirectly reduce greenhouse gases as a result of their spending, the enhanced methodology targets state spending that is "intended" to reduce GHG emissions. Spending from a comprehensive list of state agencies surveyed for the study likely represents the vast majority of funds that were budgeted to support GHG emission reductions, but does not represent the total funds spent by the state to fight climate change, including increasing resiliency or adapting to the changing climate.

Disproportionally Affected Communities

In accordance with § 1-702 "Policies and programs for funding communities disproportionately affected by climate impacts," disproportionately affected communities are defined as those that are both overburdened and underserved. Our definitions of overburdened and underserved are based on the definitions provided in the Maryland Climate Solutions Now Act of 2022 and those that are codified in State law.

Overburdened census tracts are defined as those that are exposed to significant pollution, in proximity to infrastructure that produces negative environmental effects, and composed of individuals who are more sensitive to environmental issues. Those three broad areas are measured through a list of 21 specific indicators. For a census tract to be considered overburdened, it must score above the 75th percentile statewide for at least three out of the following 21 indicators:

1. Particulate matter (PM) 2.5
2. Ozone
3. National Air Toxic Assessment (NATA) diesel PM;
4. NATA cancer risk;
5. NATA respiratory hazard index;
6. Traffic proximity;
7. Lead paint indicator;
8. National priorities list superfund site proximity;
9. Risk management plan facility proximity;
10. Hazardous waste proximity;
11. Wastewater discharge indicator;
12. Proximity to a concentrated animal feeding operation (CAFO);
13. Percent of the population lacking broadband coverage;
14. Asthma emergency room discharges;
15. Myocardial infarction discharges;
16. Low-birth-weight infants;
17. Proximity to emitting power plants;
18. Proximity to a toxic release inventory (TRI) facility;
19. Proximity to a brownfields site;
20. Proximity to mining operations; and
21. Proximity to a hazardous waste landfill.
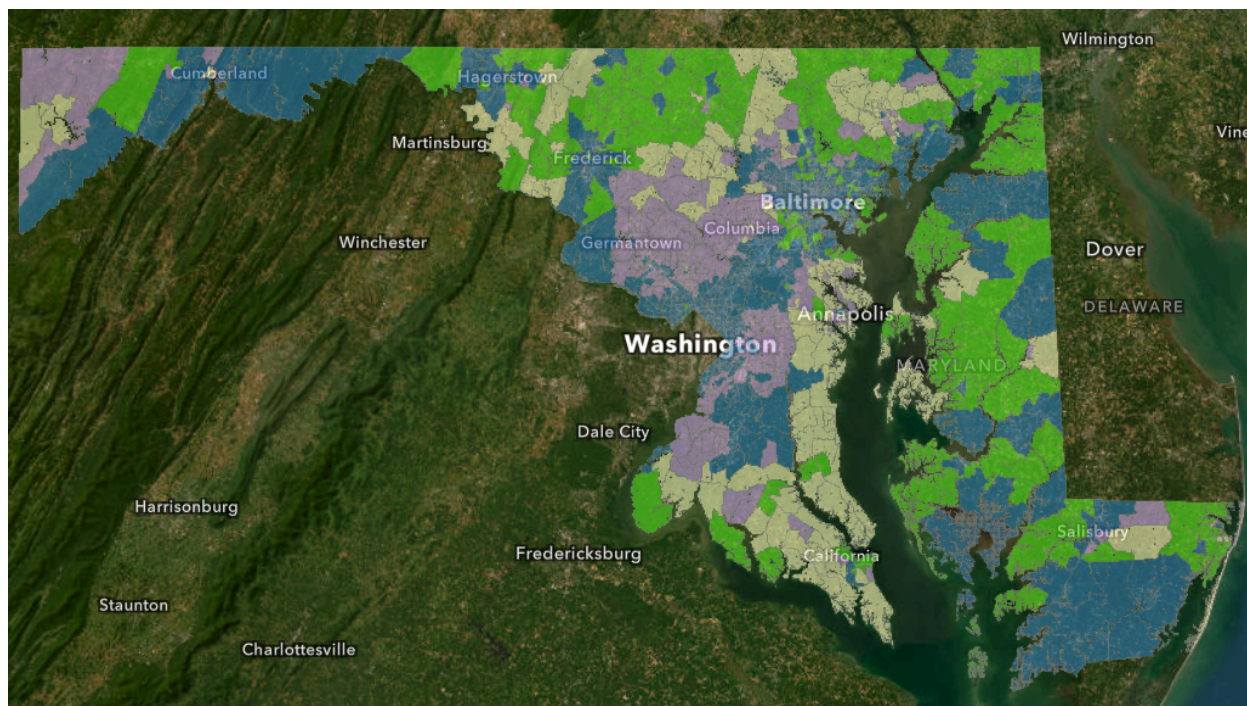
Map of Overburdened and Underserved Communities in Maryland Using MDEnviroScreen

Key for the map of overburdened and underserved communities:

■ Blue represents overburdened and underserved

■ Green represents only overburdened

■ Purple represents only underserved

■ Beige represents areas not defined as overburdened or underserved.

Underserved census tracts are identified as those that, based on their socioeconomic and demographic indicators, have historically been shown to receive largely inadequate public services. For our purposes, census tracts that meet one or more of the following thresholds are considered underserved:

- at least 25% of the residents qualify as low-income;
- at least 50% of the residents identify as nonwhite; or
- at least 15% of the residents have limited English proficiency.

Based on these definitions and the best available data, a list of DACs was generated using the recently updated MD EnviroScreen Tool created by the Maryland Department of the Environment.

Reporting Agencies

The agencies listed below reported greenhouse gas reduction spending for this report.

1. The Maryland Department of Agriculture
2. The Maryland State Department of Education
3. The Maryland Energy Administration
4. The Maryland Department of the Environment
5. The Maryland Department of General Services
6. The Maryland Department of Housing and Community Development
7. The Maryland Department of Natural Resources
8. The Maryland Department of Planning
9. The Maryland Department of Transportation
10. Higher Education
    a. Frostburg State University
    b. Morgan State University
    c. Towson University
    d. University of Baltimore
    e. University of Maryland Baltimore County
    f. University of Maryland Center for Environmental Science
    g. University of Maryland College Park
    h. University of Maryland Eastern Shore

Methodology

Greenhouse Gas Reduction Spending

Although GHG emissions are reported regularly in the state's GHG inventory, Maryland agencies have had no existing process to track spending. MDE and DBM collaborated to collect data during the budget development process. MDE served as the climate change subject matter expert to ensure the interpretation and contextualization of the data collected.

Highlights from this year's newly established process include:

● A new template for agencies to use to report GHG reduction spending data

● More precise criteria for what is included in GHG reduction spending

● A webinar on the new process and resources

● Connecting climate change staff and fiscal officers within each agency to increase the accuracy of data collection

- MDE provided technical assistance to departments through office hours, and one-on-one direct support

Disproportionally Affected Communities

To ensure consistency across reported data, a standardized formula was created to be used in conjunction with MDEnviroScreen to determine the percentage of spending that benefited DACs. Reporting agencies were asked to include which county or counties any given spending item occurred in. With county-level location information, the percentage of persons living in a DAC was used to discount the spending amount. If spending was on a statewide program, the percentage of persons in DACs across all counties was used to discount the total spending.

Opportunities to Improve Future Reporting

In just its third year, the annual report has already demonstrated meaningful improvements in data collection accuracy. Project leads across agencies have built capacity and partnerships within agencies and are dedicated to improving the process in the future. To further improve the accuracy of future annual spending reports, creating a budgetary tagging mechanism to track spending is highly recommended. The current State accounting system is not capable of using a tagging mechanism to track spending attributes.

MDE will continue to work with DBM and the Comptroller's Office to ensure that State accounting system upgrades can track spending attributes related to State priorities, including greenhouse gas reductions, more comprehensively. This will help to track projects that serve multiple state priorities. For example, a project may be intended to improve air quality and reduce GHG emissions.

3. Greenhouse Gas Reduction Spending

A total of nine State agencies and nine State academic institutions provided data for this report. In total, those agencies reported an estimated $3.585 billion in spending on GHG reduction measures throughout fiscal year 2025. In the context of this report, spending refers to the money spent, including funds initially appropriated in previous fiscal years, in FY 2025. The authors recognize that there were inconsistencies in how agencies interpreted the definition of money spent in FY 2025, which creates some uncertainty about the reported totals. Although this uncertainty may have affected the precision of the reported spending for some agencies, the most significant spending (MDOT) was reported using the precise definition used by the authors. Examples of measures submitted by reporting entities include:

- Staff salaries to implement climate action measures
- Climate planning software and services
- Agricultural land preservation
- Forest services and tree plantings
- Air quality monitoring and control/corrective measures
- Building efficiency retrofits, energy audits, and retrocommissioning
- Renewable energy deployment
- Purchase of renewable energy credits and carbon credits
- Electric vehicle supply equipment incentives
- Transportation infrastructure
- Measures to reduce vehicle miles traveled

Due to the capital intensive nature of transportation infrastructure and public transit, 88% of State spending on GHG reduction measures, totalling $3.15 billion, was by MDOT, as shown in Figure 1 below. MDOT spending can be divided into three categories: Consolidated Transportation Program (CTP) spending, capital costs for the Maryland Transit Authority (MTA) and Maryland's portion of the Washington Metro Area Transit Authority (WMATA), and operational costs for MTA and WMATA. The projects that are always tagged as GHG-reducing, meaning their full share of funding is counted as "GHG-reducing" funding, comprise the following:

- MDOT programs that encourage alternative (and more carbon efficient) modes of travel, such as the Transportation Alternatives Program, or support dense development around transit stations
- Congestion mitigation projects with the explicit purpose of reducing congestion and increasing the efficiency of travel, including intelligent transportation systems

(ITS), system efficiency programs and projects such as traffic signal upgrades, and Coordinated Highway Action Response Team (CHART) initiatives

- Projects that strictly improve pedestrian and/or bicycle infrastructure, and do not include any component that improves or expands automobile infrastructure
- Multimodal improvements to facilitate or encourage shifting of freight movements to lower-emissions modes (e.g., truck to rail or marine)
- Electrification and/or transition of existing fleets (agency, passenger, and freight) to more fuel efficient vehicles or alternative fuels
- All transit projects, since transit service can reduce vehicle trips
- Any other projects that reduce single occupancy vehicle trip reduction (e.g., travel demand management, carpool and vanpool)
- Any other projects that clearly possess GHG-mitigation potential because they either improve transportation technology to reduce fuel consumption, reduce vehicles miles traveled (VMT), mitigate congestion, or are a sustainable infrastructure design (subject to MDOT staff or consultant team's interpretation of its emissions reduction/environmental benefit)

MDOT projects that include capacity additions or reconfiguration of roadway geometry (including turn-lanes and approach configurations) are not counted towards GHG-reducing spending. Additionally, interchange or intersection projects with bicycle and pedestrian components are also generally not included in the sum of GHG-reducing.

Table 1: Agency GHG Spending and % of funds spent in Disproportionately Affected Communities

Agency	Total GHG Spending by Entity	Total Spent on DAC by Entity	% Spent on DAC
MDOT	$3,150,000,000	$1,486,431,777	47%
MDA	$128,939,999	$53,414,281	41%
DHCD	$102,013,622	$47,093,917	46%
DNR	$40,162,064	$18,951,799	47%
DGS	$28,285,093	$13,347,257	47%
MEA	$27,492,794	$13,195,448	48%
UMBC	$24,011,227	$15,220,192	63%
Morgan	$17,688,190	$6,695,205	38%
UMB	$17,265,660	$6,535,272	38%
MDP	$15,348,447	$8,808,727	57%
MDE	$13,606,657	$6,151,867	45%
Towson University	$9,506,815	$6,026,162	63%
UMCP	$4,596,257	$3,074,720	67%
St. Mary's	$3,716,941	$419,948	11%
FSU	$1,227,224	$156,315	13%
UMCES	$935,684	$119,180	13%
MSDE	$433,188	$204,414	47%
UMES	$421,841	$0	0%
UBalt	$23,884	$9,040	38%

* A standardized formula was created to use in conjunction with MDEnviroScreen to determine what percentage of spending benefited DACs.

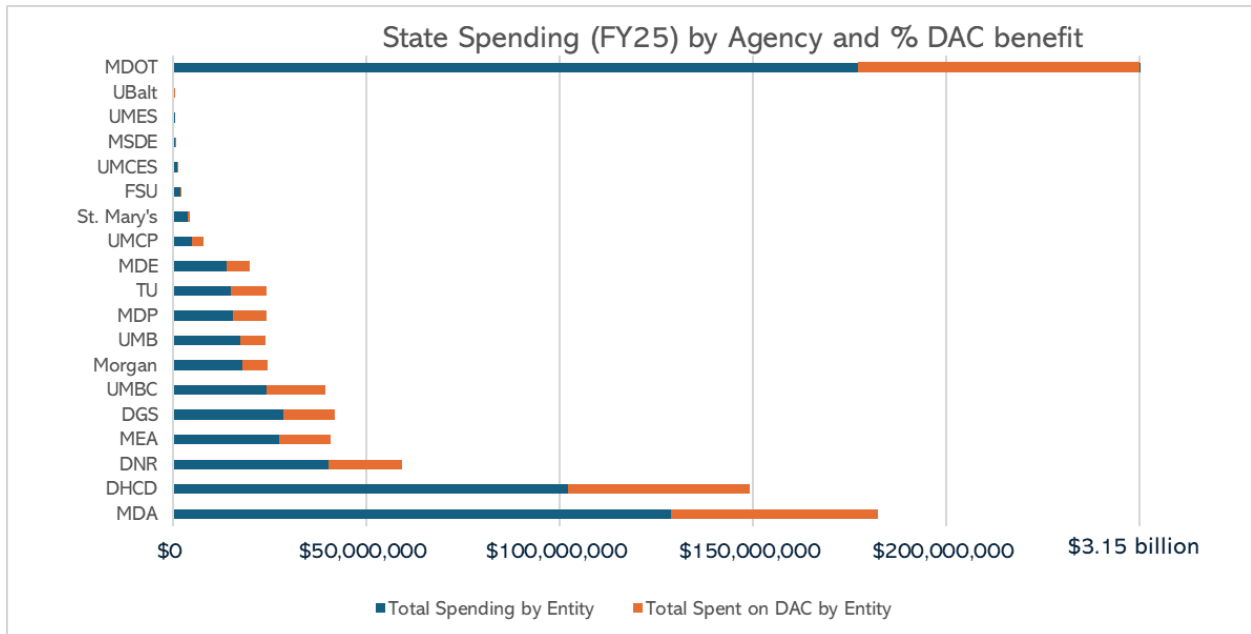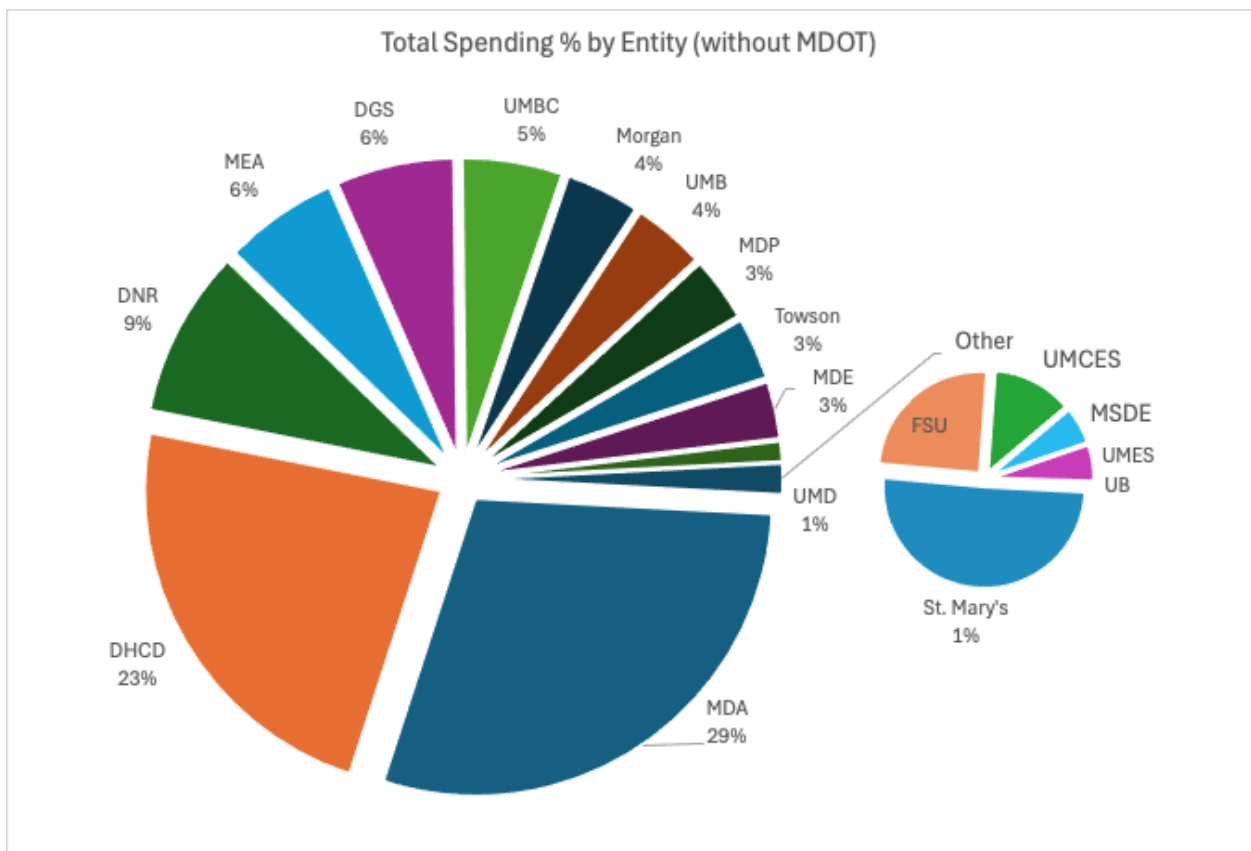*Figure 1: FY 2025 spending by Agency and Percent DAC benefit*

Figure 2: FY 2025 spending by Agency and Percent DAC benefit (not showing MDOT spending)

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