

HoCo Climate Forward 2024 Annual Report

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Introduction

Message from County Executive Calvin Ball

I am pleased to issue this first annual report on the status of our “Howard County Climate Forward: Climate Action and Resiliency Plan.” When I launched “Climate Forward” in June 2023, we set bold goals to reduce our county’s greenhouse gas (GHG) emissions 60% by 2030 and achieve net zero emissions by 2045. This aligns with the State of Maryland’s goals and what the science tells us is needed to help preserve a livable planet. Over the past year, we have experienced the impacts of climate change manifesting as a record-warm winter, extreme storms, and continued flood risk. Conversely, Howard County has made great strides on clean energy, community resiliency, environmental conservation, and pollution reduction. The collective efforts of County departments, residents, businesses, and community organizations demonstrate why Howard County is a leader in climate action and resiliency. This report highlights the progress we have made to make the Howard County community more climate-smart and sustainable for all. Thank you to the dedicated county staff, partners, and community members for helping to make this plan our reality. We are just getting started, and I am committed to seizing the opportunities that come with stronger climate action to make Howard County more prosperous, resilient, and sustainable. Together, we are moving Howard County forward on climate.

Climate Forward Action Status

In fiscal year 2023, 25 actions were awaiting resources, and 36 actions were in progress. In fiscal year 2024, 16 actions are awaiting resources, 43 actions are in progress, and 2 actions are complete.

Howard County has reduced its community-wide GHG emissions 23% since 2005.

Prior to 2019, the annual rate of GHG reductions was 1%. From 2019 to 2022, we nearly tripled our annual GHG reductions to 2.7%. The report contains a line graph showing the reductions achieved in greenhouse gas emissions in Howard County. In 2005, emissions were around 4.6 million metric tons of carbon dioxide equivalent emissions. In 2019, Howard County reduced these emissions by 15%. In 2022, Howard County further reduced emissions by 23% from the 2005 baseline. The line graph then shows the projected emissions scenario needed to achieve a 60% reduction in emissions by 2030 and achieve net-zero by 2045.

We have made good progress, but we need to accelerate our annual rate of GHG emission reductions significantly in the next six years to reach our GHG emissions reduction targets for 2030 and 2045.

Governance

The Climate Action Subcabinet

Through an Executive Order dated October 12, 2022, County Executive Calvin Ball established the Climate Action Subcabinet to oversee the implementation of the Climate Action Plan and ensure that its implementation is a County-wide priority. The Climate Action Subcabinet is composed of County Department and Office heads and appointees who are responsible for interdepartmental coordination, establishing targets and milestones, and guiding County staff in implementing the strategies outlined in the Climate Action Plan.

The Climate Forward Dashboard

Howard County launched its Climate Forward Dashboard in December 2023 to ensure transparent communication on the progress of the Climate Forward Plan. Residents can track the status of each action in real time and view co-benefits. The Dashboard also serves as an easy-to-navigate summary of the plan itself, outlining specific actions that residents, businesses, and organizations can take to help advance climate action in Howard County.

Funding for Climate Action

Putting Howard County's Climate Forward plan into action requires significant financial support. Building on the County's previous investments, in May 2024 the Howard County Council approved the Administration's proposed FY25 operations budget. This includes funding for a pilot Climate Infrastructure Rebate Program for Low- and Moderate-Income County Households to Install Energy and Climate Infrastructure in the amount of \$250,000. It also includes \$75,000 in Howard County Climate Forward Implementation Funds.

At the federal level, Congress' passage of the Inflation Reduction Act (IRA) and the Bipartisan Infrastructure Law (BIL) opened significant new opportunities for local communities to obtain climate-related funding. As a result, Howard County expects to pursue a nearly five-fold increase in the total

value of climate-related grants over the coming year, going from nearly \$3 million in FY24 to over \$17 million for FY25.

Major funding wins over the past year include the DOE Energy Efficiency and Conservation Block Grant (EECBG) for \$327,000, MDOT Climate Focused Funding for \$750,000, MEA Clean Energy and Community Development (CECD) for \$210,000, and various MD Smart Energy Communities (MSEC) Grants totaling over \$240,000. Howard County also participated in the Power Forward Coalition, the Solar for All (S4A) coalition, and the Charging and Fueling Infrastructure (CFI) coalition.

Energy

Solar Power Purchase Agreement

Howard County has completed about 94% of its portfolio of solar projects that are part of the largest Power Purchase Agreement (PPA) in Maryland. Projects developed under the PPA already generate approximately 50% of the County Government's electricity usage. Remaining projects are expected to be complete by the end of 2025.

The report shows a picture of sheep grazing underneath a County PPA solar panel project in West Friendship, MD. The dual use of land for solar & agriculture is called "agrivoltaics."

Solar Progress in Howard County

In the last two years, Howard County has added 13.2 megawatts of residential solar and 12.8 megawatts of commercial solar. Howard County's total solar capacity as of June 30, 2024, is 134 MW. While this signifies progress toward the Climate Forward goals of 437 MW of solar capacity by 2030, County staff are working to develop new programming, education and outreach, and other tools to accelerate solar adoption.

All-Electric New Construction: The CB-5 Report

In March 2023, the Howard County Council adopted Council Bill 5-2023 (CB5), which required a report to the Council with recommendations regarding all-electric standards for new construction. The County Executive published the report in April 2024. [View the full report.](#)

Energy Efficiency Improvements

Building energy efficiency improvements and conservation efforts in the public and private sectors, as well as efforts to decarbonize the electric grid, have led to modest reductions in CO₂-equivalent (CO₂e) GHG emissions from 2019 to 2022.

The report shows a bar chart of the metric tons of CO₂-equivalent emissions from different sectors in 2019 and 2022. The four sectors shown are electric residential, electric commercial and industrial, natural gas residential, and natural gas commercial and industrial. All sectors except for natural gas commercial and industrial have decreased their emissions slightly from 2019 to 2022.

Key Programs Have Helped Drive Energy Use Reductions

Weatherization services are available at no cost to low-to-moderate income (LMI) households. Weatherization can include air sealing, insulation, and upgrades to water heaters, lighting, and heating and cooling systems. The Community Action Council of Howard County weatherized 294 units in 2023. [FAQs](#). Weatherization services resulted in the reduction of 27,667 MMBtu in 2023.

EmPOWER Maryland is a utility-run program that offers rebates on energy efficient appliances, building tune-ups, and energy audits. In 2023, 11,786 HoCo households and 1,133 HoCo businesses participated. In total, participants saved the equivalent of 3,720 homes' electricity use and received \$9.7 million in incentives. EmPOWER Maryland resulted in the reduction of 27 million kWh in 2023.

Howard County partnered with nonprofit Civic Works to provide education and outreach, energy audits, and weatherization to Howard County residents, engaging 10,000 people. Civic Works switched seven income-qualified homes from gas to electric induction stoves. Civic Works also conducted 103 energy audits in the County from 2023-2024.

In 2024, Howard County expanded its LED Lightbulb Exchange to all County libraries and the Roger Carter Community Center. Participants bring old, inefficient lightbulbs to these collection points and receive free LED bulbs. Since 2022, the County has distributed more than 5,000 LED bulbs, reducing electricity use by nearly 493,000 kWh and saving households approximately \$68,640.

Nature-Based Climate Solutions

Soil Health

Improving soil health has major implications for climate change. Healthy soils and land ecosystems capture and store more carbon dioxide from the atmosphere.

County Land - In 2023, the County replaced invasive species with native plants at the George Howard Government Complex. Success is ensured through ongoing maintenance by a contractor with Chesapeake Bay Landscape Professional certification.

Outreach - The Howard Soil Conservation District (SCD) secured a grant designed to enhance its education and outreach program. This funding was used to develop a display on soil health, highlighting farming practices for conservation, protecting natural resources, and improving soil health. This soil health display will be used at a variety of seminars, public events, workshops, and the County Fair to help educate the public about soil health and promote these valuable practices to other farmers and landowners.

Howard County Bee City Registered Habitat

Outreach efforts through Howard County Bee City, a County-led program in coordination with external partners, resulted in Pollinator Habitat Registrations reaching over 130 acres in 2024. This number reflects the public and private habitats registered since 2019, displaying both County and community commitment to sustaining pollinators. The report contains a map that shows pollinator habitat registrations and is accessible on the County's [interactive map](#).

With an emphasis on native plants, these habitats not only support pollinators and other wildlife, but they decreased mowed areas which reduce overall GHG emissions. Habitats that feature deep rooted native plants also sequester carbon in the soil and reduce stormwater runoff, both of which are key factors in reducing the impacts of a changing climate.

The report shows a bar chart of the acres of habitat added each year from 2020 to 2024. There has been a steady increase in acres registered over the past four years, going from 71 acres in 2020 to 130 acres in 2024.

Project Spotlight: Electric Landscaping Conversion

The Department of Recreation and Parks, with support from the Office of Community Sustainability, identified Savage Park as a pilot site for transitioning ground maintenance operations from gas-powered to battery-powered equipment. Savage Park was selected based on its moderate size, concerns from the surrounding community regarding noise within the park, and its location within the North Laurel-Savage Sustainable Community, as designated by the Maryland Department of Housing and Community Development.

Trees for Bees Giveaway by the Numbers

Howard County's "Trees for Bees" tree giveaway program restores pollinator habitat while meeting climate goals. Shrubs are also included so that residents with restricted space can participate. 1,000 trees were given away in 2021, then 1,300 in 2022, then 1,650 in 2023. This includes 18 different species.

Transportation

Howard County Government and Electric Vehicles

The report shows a few different maps and graphics in this section. The first is a stacked bar chart with the new electric vehicle chargers installed on County property per year from 2019 to 2024 and separates it by chargers for Howard County fleet and for the public. The largest amount of chargers were installed in 2021 and the least were installed in 2019. Overall, Howard County Government has installed 106 chargers on County property.

There is also a map of where residents can find electric vehicle chargers in the County, and a photo of a vehicle with the caption: Howard County Sheriff's Department Utilizes An All-Electric Ford Mustang Mach-E.

Electric Vehicle Adoption in the Community

The report shows a line graph with the number of plug-in vehicle registrations in Howard County per year from 2020 to June 2024, and then it projects out to the goal for plug-in vehicle registrations by 2030. As of June 2024, 4.2% of cars registered in Howard County are either fully electric or plug-in hybrid. To reach the 2030 Climate Forward goal of EVs representing 26% of total vehicles, Howard County will need to accelerate EV adoption exponentially over the next 6 years. By the end of 2024, we need to reach the goal of 4.9% of cars being plug-ins. By the end of 2025, this needs to be 6.5%, then 8.5% in 2026, 11.3% in 2027, 14.9% in 2028, 19.7% in 2029, and finally 26% in 2030.

Transit Route Expansions

Transit bus ridership has improved over the past two years due to the increased service reliability. In the past three fiscal years, the County added 29 new buses into the fleet. During the last year, several bus routes were expanded, including the 505 to connect Howard County to Catonsville, along with service modifications to the 301, 302, and 502 routes serving Laurel and the 405 serving Ellicott City.

Ridership in fiscal year 2022 was 603,074, then 711,570 in fiscal year 2023, then 803,191 in fiscal year 2024. This represents a 33% increase in ridership over the past two fiscal years.

Project Spotlight: New sidewalks and bike lanes on Montgomery Road

This project provides access to Elkridge Elementary School and Elkridge Landing Middle School. The community previously did not have safe ways to walk or bike to the schools. After phase one of the project, pedestrian activity jumped from almost zero to over 180 average weekday pedestrians.

Providing safe and accessible pedestrian and bicycle infrastructure is critical to increase the number of trips made by walking and cycling and decrease vehicle miles traveled.

Waste

The Compost Break-Down

When food waste ends up in the landfill, it creates methane, a greenhouse gas that is 27-30 times more potent than carbon dioxide. By diverting and composting organic waste locally, we reduce these emissions, generate a rich soil amendment, and foster a circular economy.

Feed the Green Bin

The Bureau of Environmental Service's Curbside Composting Program composted 399 tons of organics in 2023, avoiding 139 metric tons of CO₂e. This is the equivalent of planting and growing over 2,300 trees. 12,000 homes gained access in FY24.

The report shows a double line graph titled "number of households with access to the green bin program." There are two lines, one for the actual number of households and one for the Climate Forward goals. It shows that the County is ahead of schedule on this climate forward action with over 48,000 households having access in 2024, compared to the goal for the same year which was 43,400.

County Government Waste Reduction

The most effective way to reduce waste is to not create it in the first place. County Departments are leading by example on waste reduction.

The Bureau of Facilities reduces waste when constructing new County buildings. The East Columbia 50+ Center obtained LEED Gold, in part by keeping 66% of their construction waste out of the landfill. The building also utilized more sustainable materials that reduced the building's carbon footprint by 6.3%.

The Department of Recreation & Parks launched its "Plastic Free Summer" initiative, which extends the National Plastic Free July Challenge. All Summer Camp attendees either bring their own reusable water bottle or will be provided one, keeping everyone hydrated while reducing single-use plastic waste at the source.

The Plastic Reduction Fund

Howard County's 5-cent plastic bag fee Funds the Disposable Plastics Reduction Fund, which is used for waste reduction and other environmental initiatives. FY24 deliverables include: \$349,312 in grants for 10 community groups, 6,200 bags distributed to underserved communities, 3,000 pounds of plastic reduced, and 20 litter cleanups.

Emergency Preparedness

Improving Community Engagement for Emergency Preparedness

Improving communication, education, and outreach about climate resiliency and preparedness are priorities of the County's Emergency Preparedness Workgroup. During summer 2024, the workgroup distributed a county-wide Community Engagement Survey. About 1,054 Howard County residents answered questions on communications, accessibility, well-being, and environment. The County will use these survey results to help identify the most important resources and services the County can provide to maintain residents' well-being before, during, and after a disaster.

Planning for Resiliency Hubs

The County has pursued opportunities to implement resiliency hubs at existing community centers, as called for in the Climate Forward plan. Resiliency hubs are community-based facilities that serve multiple purposes to support residents before, during, and after a disaster. These energy resilient facilities provide a reliable space for residents to access community resources, heating and cooling, charging, and other services. Resiliency hubs would help to enhance community resilience, mitigate GHG emissions, and strengthen disaster preparedness.

In FY24, the County was notified that it will receive \$24,000 from the Maryland Energy Administration's "Resilient Maryland Program." The funds will be used to support resiliency hub planning by conducting feasibility assessments and investigating options for solar and battery storage systems at the North Laurel and Gary Arthur Community Centers.

Incorporating Climate Resiliency into the Hazard Mitigation Plan

Recognizing that climate change creates and exacerbates natural hazards, Howard County addresses climate hazards in its 2024-2029 Natural Hazard Mitigation Plan (NHMP). The NHMP is reviewed and maintained every five years by members of the County's Joint Steering Committee (JSC). Progress on mitigation actions are reviewed each year, and new actions are included as needed. This year, the JSC voted on new actions to support resiliency efforts outlined in the Climate Forward plan. These actions include implementing resiliency hubs, promoting building weatherization, and exploring cool surface technologies to help protect the public from acute disasters and the long-term impacts of climate change.

Water

Vulnerable Watersheds

The County made significant progress on developing, defining, and prioritizing projects within vulnerable watersheds. The County partnered with the U.S. Army Corps of Engineers through the Corps' Technical Assistance Cost Share Program to develop a county-wide assessment and prioritization of sub-watersheds within the County for future capital projects. This assessment is nearing completion. A sub-watershed specific and detailed analysis is simultaneously in process for an area of known concern, and a FEMA grant award is being finalized to continue sub-watershed analyses in priority areas.

Making Ellicott City “Safe and Sound”

Following the devastating floods of 2011, 2016, and 2018, it was imperative that a comprehensive flood mitigation plan was enacted to safeguard Ellicott City from future flooding and the impacts of climate change. After taking office in December 2018, County Executive Ball has prioritized the town’s needs to develop the comprehensive “Ellicott City Safe and Sound” plan to mitigate flood risks in Historic Ellicott City (EC) while carefully preserving the area’s historic character. Howard County has made significant advances to implement the EC Safe and Sound plan, which represents our greatest investments in strengthening Howard County’s climate resiliency. The plan outlines five stormwater retention ponds and two water conveyance projects, including the single largest public works project in County history, and the North Tunnel, which broke ground in June 2024. These projects will collectively capture and convey millions of gallons of stormwater to prevent future floods. [Learn more about EC Safe and Sound.](#)

Watershed Protection and Restoration Fee

In May 2024, the County Council adopted Resolution CR 57-2024, which provided a critical Watershed Protection and Restoration Fee rate increase, the first increase since the funds’ creation 10 years ago. These funds will enable countless water quality improvements, such as repairing degraded stormwater pond systems, thus improving public safety. These funds will enable the County to expand programs available to property owners through partnership and grant opportunities such as the Community Stormwater Partnership Grant. Additionally, the County will continue to pursue pilot projects through interdepartmental partnerships, such as the Green Streets program.

The Council’s May 2024 action also enabled the County to expand eligibility for its CleanScapes program to residents of varying income levels, enhancing equitable access to this program. After meeting with various County departments and assessing the needs of residents, OCS proposed changing the CleanScapes reimbursement hardship level from 250% to 350% of federal poverty level. Residents meeting the new, more inclusive income criteria are eligible to receive a full reimbursement (less \$1) for qualified stormwater treatment installations.

Infrastructure and Heat Resiliency

Reducing Urban Heat Islands with Trees

Howard County is building resiliency to heat waves and hotter average temperatures in our most densely populated areas with populations most vulnerable to heat impacts. The County made great progress in this Climate Forward strategy over the past year by securing grant funds from the Chesapeake Bay Trust to plant 300 native street trees in targeted areas to provide increased shade and reduce urban heat island effects. The County has already planted 150 native trees in County neighborhoods and provided information to local residents about the importance of the program.

In addition to planting street trees, the County is focusing other tree planting projects in underserved and heat vulnerable communities. In the past year, the County planted 73 native trees in partnership with the Howard County Housing Commission, at their Columbia Landing sites.

Smart Maps for Resilient Planting

The County has added heat vulnerability map data from the Climate Forward plan to the Howard County [Interactive Map](#). This includes several map layers showing the areas of the County that are expected to have the greatest increases in local temperatures over the next decades, as well as populations that are most vulnerable to heat exposure impacts, which typically include people ages 65 and over, people with disabilities, people of color, outdoor workers, people with lower incomes, and people who lack personal transportation. Visualizing these variables in the map tool allows County staff and the public to integrate this information with other critical data, such as tree canopy and easements. This helps identify high priority neighborhoods for improving climate resiliency.

Ecosystem Services

Expanding Forest and Tree Canopy

The Office of Community Sustainability connected with the Maryland Department of Natural Resources (DNR) to initiate an ongoing HoCo/DNR partnership that will begin with 82 acres of tree seedling planting within the Green Infrastructure Network during Spring 2025. OCS also worked with the Kings Contrivance Village CARES group and Patapsco Heritage Greenway to plant another 239 native trees and bushes. 13,000 trees were planted in fiscal year 2024 through Department of Recreation and Parks Programs.

The report also contains a photo of the County Executive speaking with the caption: County Executive Calvin Ball Launches the Tremendous Tree Planting Partnership, Accelerating Climate Forward's Tree Planting Goals

The Plantable Areas Map

The Climate Forward Ecosystem Services Work Group refined the Howard County Plantable Areas Map, a tool that will assist in identifying areas with high potential or high priority for tree planting. This tool will accelerate the County's progression toward the ambitious Climate Forward goal of attaining 50% tree canopy by 2030. The goal was originally set for 2045, but advanced to 2030 by County Executive Ball in recognition of the need to accelerate climate action.

Protecting Existing Forest and Canopy

The Department of Recreation and Parks (DRP) managed 40 invasive species projects covering 206 acres during FY24. Projects included cutting and treating invasive vines on native trees, cutting and treating invasive bamboo, and treating noxious and invasive plants such as Thistle, Oriental Bittersweet, Mile-A-Minute, Kudzu, and Wisteria. After managing invasive species, DRP planted 650 native trees and shrubs in existing Forest Conservation Easements. DRP launched the Howard County Tree Savers program, managing 35 volunteers to perform over 100 volunteer hours of invasive species management on County trees. As part of this launch, DRP also created a Vine ID guide and Tree Savers instructional video, demonstrating the "window method" for cutting invasive vines.

The report contains a photo of volunteers planting on an Agroforestry Plot at the Avalon Area of Patapsco State Park through the cooperation of Howard County, Patapsco Heritage Greenway, The Maryland Department of Natural Resources, and Under Armour.

Looking Forward

Howard County has made good progress in implementing our Climate Forward plan over the past year by undertaking a “whole of government” approach. We are deploying innovative projects and programs, modernizing existing County processes to adapt to the climate crisis, and seeing an increased appreciation for how climate change impacts daily County operations. This year, the National Association of Counties (NACO) has recognized Howard County’s efforts with nine awards in the category of “County Resiliency: Infrastructure, Energy, and Sustainability.” These accolades recognize our commitment to implementing the Climate Forward Plan through interdepartmental coordination and transparency. They also recognize specific efforts to promote flood resilience, protect our forests, reduce waste, create habitat for native species, and plant trees in underserved communities. These strides in progress toward our climate action goals have been propelled forward by dedicated County employees responsible for implementing the Climate Forward Plan.

Community partners such as residents, nonprofits, businesses, HOAs, and other entities play an essential role in implementing the Climate Forward Plan, as the County Government only represents 1% of county-wide emissions. The County works with these entities by partnering with or providing funding opportunities and technical assistance for projects that contribute to the implementation of the plan.

Looking forward to the next year, the County will continue its implementation of Climate Forward through improving, amending, and innovating its internal operations. We are committed to meeting our ambitious goals for a 60% reduction in GHG emissions by 2030 and net zero emissions by 2045. While emissions reduction initiatives have been ongoing for several years, the implementation of this science-based work plan remains in its early stages.

Our challenge over the balance of this decisive decade is to achieve broad-based climate action across major institutions, the private sector, and others in Howard County to accelerate our annual GHG reduction rate from about 2.7% a year to at least 4.7% a year. Federal and state level policy, technological innovation, and the dedicated County institutions and residents who adopt and advocate for system-level change will play an integral role in achieving the Climate Forward goals.

We invite those organizations and individuals interested in reducing their greenhouse gas emissions and helping to tackle the climate crisis to review the “What You Can Do” tab on the [Howard County Climate Forward Dashboard](#). We also invite you to keep up to date with programs specific to your needs and interests by signing up for the Office of Community Sustainability’s monthly [“Live Green Howard” newsletter](#).

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