



ANNAPO LIS
Maryland

CLIMATE ACTION PLAN



Contents

Acknowledgments	3
Acronyms	4
Figures and Tables	5
Introduction	6
Phase 1: Community Engagement	10
Phase 2: Greenhouse Gas Inventory	11
Phase 3: Climate Action Planning	20
Action Plan Details	23
 Buildings & Energy	26
 Transportation	42
 Waste	53
 Forestry & Land	63
Looking Ahead	74



More information at:
www.annapolis.gov/395/resilient-and-sustainability



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The CAP represents a shared vision for the community and outlines practical steps to achieve climate goals. Built through collaboration, its success will depend on continued partnership. Implementation will involve coordination among the City, residents, businesses, and visitors in bringing this plan to life.

The individuals listed below are recognized for their contributions to the development of this plan.

Office of Resilience and Sustainability ('Project Team') Jacqueline Guild Dylan Laconich Ashleigh Diaz	Project Consultant Livable Cities Team KERAMIDA Inc. 	The City of Annapolis engaged KERAMIDA's Livable Cities team based on its experience supporting more than 20 community projects nationwide in greenhouse gas reduction, community engagement, and the development and implementation of climate and sustainability strategies. Working alongside the Annapolis Resilience and Sustainability Team, KERAMIDA provided technical expertise and facilitation support to help ensure this Plan reflects both best practices and local priorities.
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Acronyms

AEC	Annapolis Environmental Commission
BAU	Business As Usual
BGE	Baltimore Gas & Electric
BiCRS	Biomass Carbon Removal and Storage
CAP	Climate Action Plan
CIP	Capital Improvement Program
COC	Chamber of Commerce
CO ₂ e	Carbon Dioxide Equivalent
DOE	U.S. Department of Energy
DPZ	Department of Planning and Zoning
EV	Electric Vehicle
GHG	Greenhouse Gas
GWh	Gigawatt-hour
HOA	Homeowners Association
HVAC	Heating, Ventilation, and Air Conditioning

ICLEI	Local Governments for Sustainability (formerly International Council for Local Environmental Initiatives)
LIDAC	Low-Income and Disadvantaged Communities
kWh	Kilowatt-hour
MDOT	Maryland Department of Transportation
MEA	Maryland Energy Administration
MT CO ₂ e	Metric Tons of Carbon Dioxide Equivalent
MTA	Maryland Transportation Authority
N/A	Not Applicable
RM	Reduction Measure
ROI	Return on Investment
TWG	Technical Working Group
VMT	Vehicle Miles Traveled





Figures and Tables

Figures

Figure 1	2040 Climate Impacts for the City of Annapolis - Anne Arundel County	6
Figure 2	Community-Wide GHG Inventory Results	12
Figure 3	Building Emissions by Building Type	13
Figure 4	Waste Emission Results (%)	14
Figure 5	Municipal GHG Emissions by Sector	15
Figure 6	City of Annapolis Emission Reductions Pathway	19
Figure 7	Buildings & Energy Reduction Pathway	26
Figure 8	Transportation Reduction Pathway	42
Figure 9	Waste Reduction Pathway	53
Figure 10	Land Use Reduction Pathway	63

Tables

Table 1	2006 vs 2024 Community Emission Trends Explained	17
Table 2	2006 vs 2024 Municipal Emission Trends Explained	17

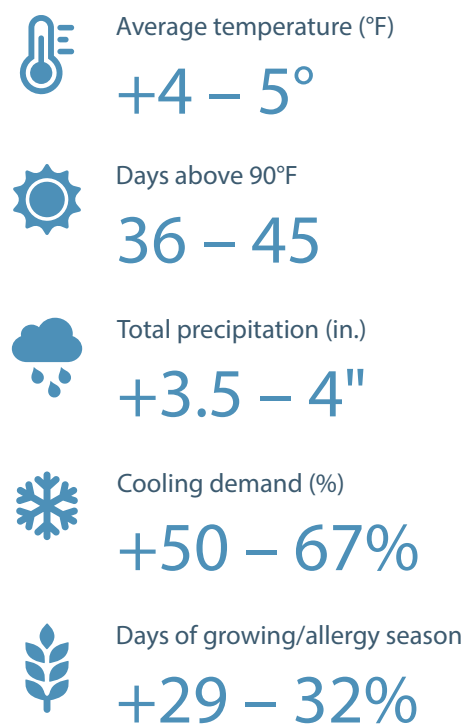
Introduction

Climate Impacts in Annapolis

Climate change refers to long-term changes in temperature, precipitation, and weather patterns. It is primarily caused by greenhouse gas (GHG) emissions created from everyday activities, such as driving cars, heating and cooling buildings, using electricity, and managing waste. As these emissions increase, they build up in the atmosphere and trap heat, leading to changes in how and when rain falls, how seasons shift, and how often extreme weather events occur.

FIGURE 1

2040 Climate Impacts for the City of Annapolis - Anne Arundel County



For communities, this means more than just warmer temperatures. Climate change can lead to more frequent and intense storms, heavier rainfall, rising water levels, and longer periods of extreme heat. These changes impact infrastructure, public health, natural systems, and everyday life. In Annapolis, residents have already started feeling these effects. Climate impacts in Annapolis are not experienced equally. Low-income and disadvantaged communities (LIDAC), particularly communities of color and residents in public housing, face heightened exposure to flooding, extreme heat, and environmental health risks such as mold.

Many of these impacts are closely tied to the City's relationship with water. Surrounded by the Chesapeake Bay, the Severn River, and several creeks, Annapolis is defined by its waterfront. This geography supports the City's identity and economy but also increases its vulnerability to flooding and sea-level rise. In addition to flooding, the region is experiencing more frequent and severe weather events. The number of billion-dollar weather disasters affecting Maryland has more than doubled, rising from about two events per year historically to more than five per year since 2020¹.

Looking ahead, climate projections show that by 2040, Annapolis will be warmer and wetter than it has been historically. The number of days exceeding 90°F is expected to increase, raising both cooling demand and public health risks². Annual precipitation is also projected to rise, contributing to more frequent and intense rainfall events and increasing the risk of urban and flash flooding. Seasons are also expected to shift, with earlier springs and later winters. These changes can affect ecosystems, increase exposure to allergens and insects, and impact residents' daily lives. Our most vulnerable community members often have fewer financial and institutional resources to adapt, despite contributing less to overall greenhouse gas emissions.

Together, these trends highlight the need to prepare for a changing climate while protecting the people and natural systems that define Annapolis. Reducing GHG emissions is essential to limiting the severity of these impacts over time. By taking meaningful action across Buildings & Energy, Transportation, Waste, and Land Use, Annapolis joins cities, states, and nations around the world in the collective effort to slow climate change and reduce future risks for all communities. This CAP focuses on actions the City and community can take now to address the causes of climate change and support a more sustainable future.

Purpose

Maryland has set some of the most ambitious climate goals in the country.

2031 Feasibility Target

13%

Reduction from 2024 baseline emissions



2045 Feasibility Target

57%

Reduction from 2024 baseline emissions



The Climate Solutions Now Act of 2022 establishes a statewide greenhouse gas reduction target of 60% by 2031 and net zero by 2045. Annapolis is committed to contributing toward their achievement.

This CAP provides a clear and coordinated approach for the City and community to contribute to these goals. It identifies a set of feasible, practical actions to reduce GHG emissions across the highest-emitting sectors, including Buildings & Energy, Transportation, Waste, and Land Use.

The plan offers tailored community-specific recommendations that will have the greatest impact on achieving local emissions reduction targets while also supporting broader community benefits. While this CAP is designed to align with Maryland's ambitious GHG reduction targets, Annapolis has also evaluated what is currently feasible at the local level. TWGs assessed potential actions across sectors to identify strategies that are both impactful and achievable within Annapolis's authority and resources. This analysis also highlights where gaps remain between feasible local reductions and state targets. Additional detail on this feasibility assessment and associated assumptions is provided in Appendix X.

This plan includes

20 Reduction Measures (RM):

A specific approach to reduce GHG emissions by replacing high-emission activities with lower-emission alternatives while maintaining the same service or outcome. For example, encouraging public transit instead of single-occupancy vehicle trips.

Actions:

The specific programs, policies, technologies, incentives, or educational campaigns that enable the RM and support its implementation.

Beyond emissions reductions, this plan highlights additional "win-win" impacts that reduce GHG emissions while providing a positive benefit to the community. These are referred to as co-benefits. Co-benefits are positive, broader impacts on the community such as improved public health, economic vitality, quality of life, resilience, environmental stewardship, equity, and accessibility that result from the systemic changes facilitated by implementing the actions outlined in this CAP.

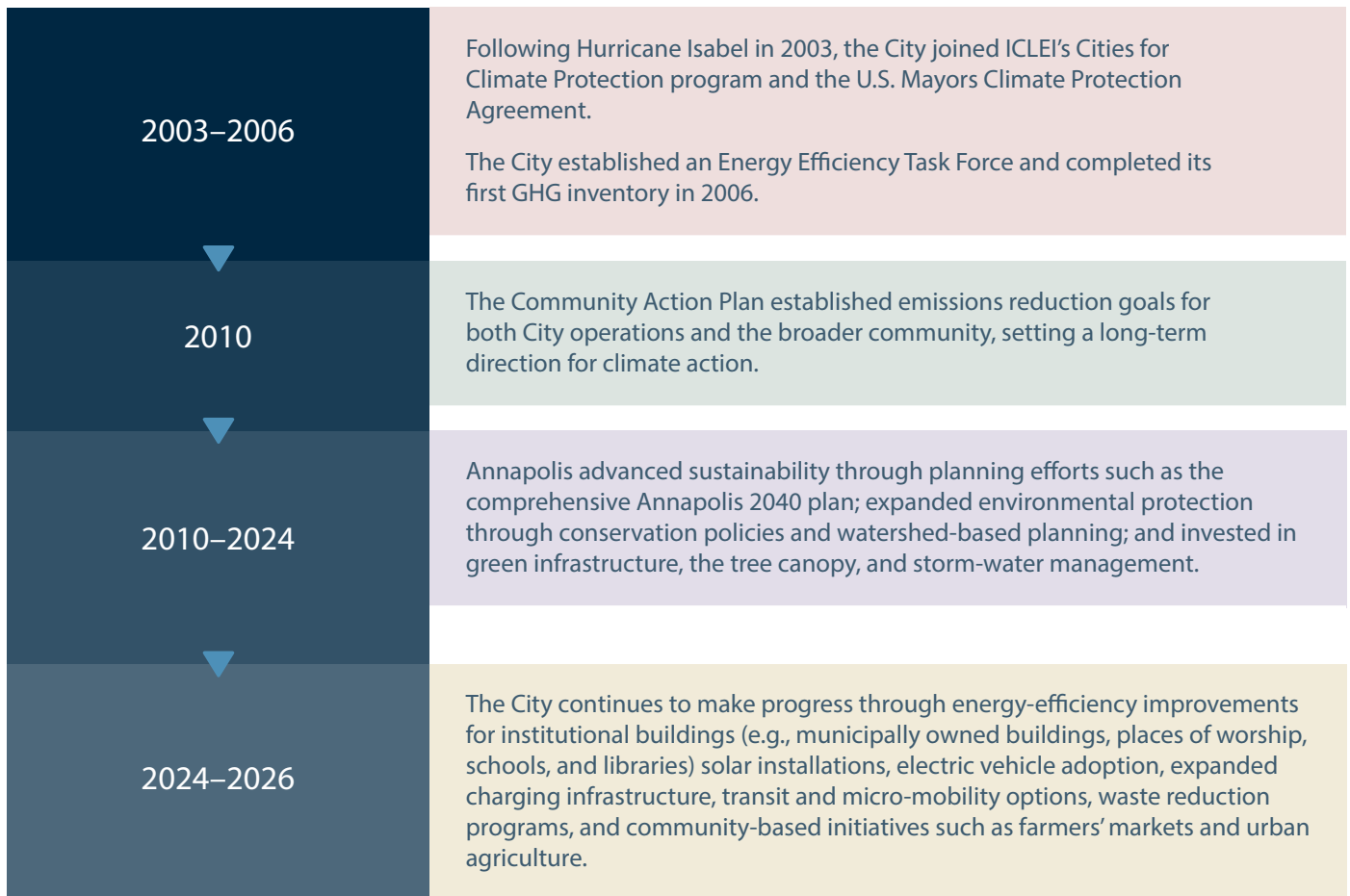
Taking action now will help Annapolis reduce future climate risks and support a healthy, livable community. By aligning local efforts with state goals and building on existing programs, this plan creates a shared path forward to lower emissions and support a more sustainable future.

Background

Annapolis has a long history of environmental stewardship and climate action.

Over the past two decades, the City has taken steps to protect natural resources, improve energy efficiency, and reduce environmental impacts. This CAP builds on that work by bringing together existing efforts into a shared, updated framework for future action.

Key milestones in Annapolis's sustainability efforts include:



These efforts demonstrate that Annapolis has already made meaningful progress in addressing climate change. This CAP builds on that foundation by aligning existing programs, identifying new opportunities, and providing a clear path forward.

Together, the City and community can continue to reduce GHG emissions and create a cleaner, healthier, more livable city for generations to come.



Approach

This CAP was developed through a place-based, people-centered, data-driven, and economically viable process.

This approach was carried out over a multi-phase process from April 2025 through June 2026 and included three interconnected components:

Community Outreach, GHG Inventory and Reduction Modeling, and Climate Action Planning. As shown in the figure below, these components were developed together throughout the process to inform and strengthen one another.

The following sections provide additional detail on each phase and its outcomes.





Phase 1: Community Engagement

Technical Working Groups

The City conducted a stakeholder mapping exercise to identify subject-matter experts in the areas with the greatest emissions impact, including Buildings & Energy, Transportation, Waste, and Land Use. These individuals were invited to participate in sector-based TWGs.

Each TWG met multiple times throughout the planning process to provide input on key components of the plan. Early sessions focused on identifying and evaluating potential RMs. RMs reduce GHG emissions by replacing high-emission activities with lower-emission alternatives while maintaining the same service or outcome. Later sessions focused on refining actions. Actions include policies, projects, programs, incentives, educational campaigns, and other initiatives that support the implementation of each RM. TWG members also provided input on implementation considerations, including responsible parties and implementation authority.

TWG members participated in structured exercises to assess RMs and generate ideas for actions. Their input provided critical insight into what is technically, operationally, and socially feasible within the Annapolis context.

Community Feedback

In addition to TWGs, the City engaged the broader community through multiple participation opportunities. These included an in-person public meeting, a virtual webinar, an online survey, and a public comment period.

The initial community meeting was designed as an interactive session in which participants could review potential strategies and provide input on the types of actions they would like to see implemented. Additional opportunities for input were provided through a virtual session and survey to ensure broader accessibility.

These engagement efforts allowed residents and businesses to share ideas, identify priorities, and highlight barriers to implementation. Community input played a key role in shaping the final set of actions included in the CAP.

Input from both TWGs and the broader community was integrated throughout the planning process. Feedback helped refine the list of RMs, generate and prioritize actions, and ensure that proposed strategies are practical, locally relevant, and responsive to community needs.





Phase 2: GHG Inventory and Reduction Modeling

The City of Annapolis completed two greenhouse gas (GHG) inventories for 2024:

1. A community-wide inventory (“community inventory”)
2. A municipal operations inventory (“municipal inventory”).

The community inventory captures emissions generated across Annapolis as a whole, including energy use in residential and commercial buildings, transportation activities, and waste treatment, as well as carbon sequestration from trees and other natural systems. The municipal inventory is distinct and includes only emissions from municipal-owned and municipal-operated sources, such as municipal buildings and the municipal vehicle fleet.

Together, these two inventories provide updated progress relative to the 2006 baseline inventory. For the full 2024 GHG Inventory Report, see Appendix X.





Community-Wide Inventory Results



41% ▶ **165,150** MT CO₂e
Total emissions

Buildings & Energy



58% ▶ **231,946** MT CO₂e
Total emissions

Transportation



1% ▶ **4,995** MT CO₂e
Total emissions

Waste

FIGURE 2

Community-Wide GHG Inventory Results

In 2024, the Annapolis community emitted 402,091 metric tons of carbon dioxide equivalent (MT CO₂e) in GHG emissions. Following standard practice, this number reflects emissions only and does not include the carbon absorbed by the City's urban tree canopy.

Those carbon sequestration figures appear as negative numbers (in italics) in the summary table below. The U.S. Naval Academy, while located within Annapolis, operates under its own federal jurisdiction, and so its emissions were excluded from this inventory. For more details on assumptions and methodology, see Appendix X.



402,091 MT CO₂e
Total community-wide emissions



9.88 MT CO₂e
per person

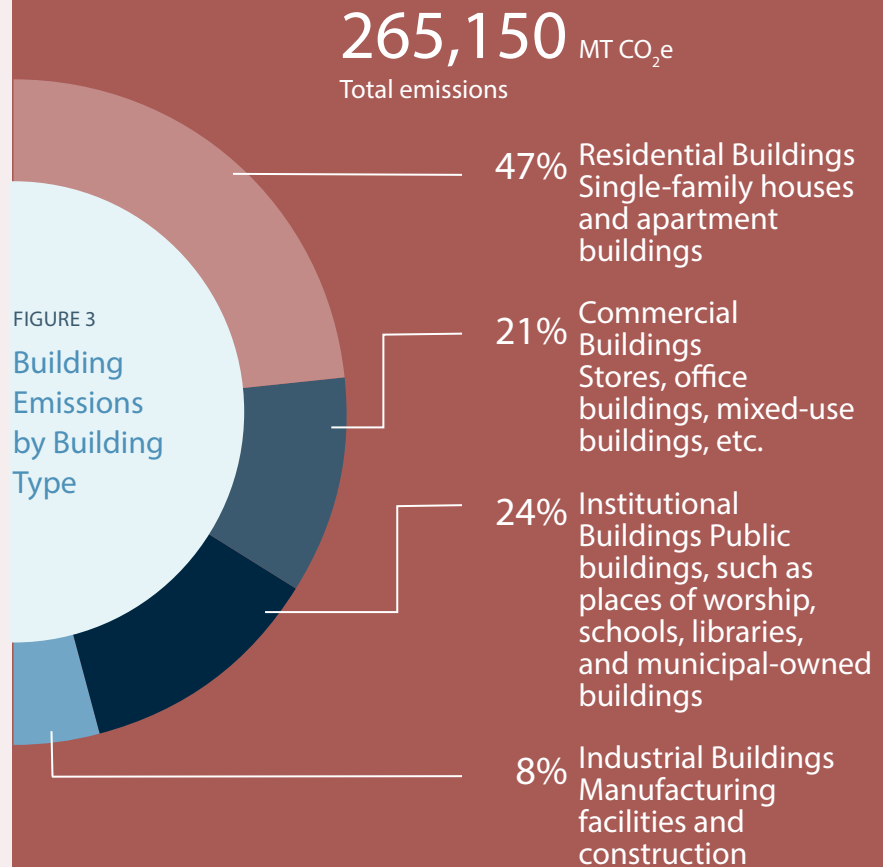
about **30% less**
than the national average
emissions rate of 14.2 MT
CO₂e per person in 2024.

Buildings & Energy

Emissions from the Buildings & Energy sector totaled 165,150 MT CO₂e in 2024. The majority of emissions came from residential buildings, as expected, given that about 46% of the City's land is zoned for residential buildings.

Overall, the Annapolis community used about 411 GWh of electricity, roughly the same amount of energy it would take to burn nearly 90,000 tons of coal. Of the emissions coming from buildings, about 68% came from electricity usage and 32% from natural gas combustion. This points to a growing trend toward electrification within the City, which will help prepare for a cleaner grid.

FIGURE 3
Building Emissions by Building Type



Transportation

Transportation emissions totaled 231,946 MT CO₂e in 2024, with the majority coming from everyday on-road transportation, such as personal vehicles and trucks

Emissions from boats and other off-road vehicles (i.e., forklifts, tractors) were also calculated, but make up a small fraction of the total.

231,946 MT CO₂e
Total emissions



39

Annapolis has 39 publicly available EV charging stations and counting.





Waste

Waste-related emissions accounted for just 1% of Annapolis's overall community emissions, totaling 4,995 MT CO₂e. Of all solid waste generated in Annapolis, 22% was recycled, and 14% was composted, keeping more than a third of waste out of landfills.

The remaining 64% was sent to landfills, indicating a real opportunity for the community to further reduce emissions through expanded recycling and composting.

FIGURE 4
Waste
Emissions by
Treatment
Type

4,995 MT CO₂e
Total emissions

89% Landfilled Waste

5% Recycled Waste

4% Composted Waste

2% Wastewater Treatment



Land Use

Roughly 42% of Annapolis is covered with tree canopy, and those trees are doing important work for the community. Every year, the City's urban forest quietly removes 10,246 MT CO₂e from the City's emissions profile.

Annapolis has set a goal to reach 50% tree canopy coverage by 2050. Achieving that goal would remove about 3% of the City's total 2024 emissions.

10,246 MT CO₂e
Sequestered yearly

50%
tree canopy
coverage by
2050





Municipal Inventory Results

Fleet & Transit

63% ▶ **2,255** MT CO₂e

Fuel and electricity consumed by on-road and off-road vehicles and equipment

Buildings

34% ▶ **1,234** MT CO₂e

Stationary fuel combustion, grid electricity consumption

Streetlights & Traffic Lights

3% ▶ **116** MT CO₂e

Grid electricity consumption

Emissions from Annapolis's municipal operations released 3,604 MT of CO₂e in 2024 from the following sectors.

FIGURE 5

Municipal GHG Emissions Results by Sector



3,604 MT CO₂e
Total municipal emissions



2006 to now

Two decades ago, Annapolis started its sustainability journey by calculating a baseline GHG inventory for both community⁴ and municipal⁵ operations.

Published in 2008, those inventories reflected the best available methods and data at the time. However, methodologies and the quality and quantity of data have progressed tremendously over the past 20 years. To ensure the work reflects current best practices, the City will follow the 2024 inventory methodology for future inventories and set emission-reduction targets based on the most recent available data.

Maryland has set ambitious climate targets: a 60% reduction in emissions by 2031 and net-zero by 2045. Annapolis has a gap of about 43% of 2024 baseline emissions between the feasible targets and net-zero in 2045. The gap will be assessed annually to determine whether new technology or expedited decarbonization of the electricity grid can help close it. With those goals in mind, Annapolis looks back on the progress the City has made since 2006.

By 2031

60%

Reduction in emissions

By 2045

Net Zero



Community-wide emissions

Table 6 below compares community-wide emissions in 2006 and 2024. Overall, Annapolis reduced its emissions by 18% over that period, driven by a cleaner electricity grid, changes in energy use, and

improvements in how emissions are measured. For a closer look at what changes took place and why, see Table 6. More details are available in the 2024 GHG Inventory Report in Appendix X.

TABLE 1

2006 vs 2024 Community Emission Trends Explained

Activity	2006 Value	2024 Value	Percent Difference	Change Reasoning
Total Emissions (MT CO ₂ e)	492,109	402,091	-18%	See below
Building Emissions (MT CO ₂ e)	329,673	165,150	-50%	Cleaner electricity, decreased energy usage
Transportation Emissions (MT CO ₂ e)	133,895	231,946	+73%	Increased VMT, substantially different methodology and data sources.
Waste Emissions (MT CO ₂ e)	28,541	4,995	-82%	Decrease in total generated waste

Municipal emissions

The City has made significant progress in reducing emissions from its own operations, cutting them by 70% from 2006 to 2024. Some of this reduction reflects real operational improvements, while some reflects differences in how the two inventories were measured. For example, the 2006 inventory

included emissions from waste generated in City building operations, which were not counted in the 2024 inventory. The methodologies used to calculate fleet vehicle emissions also changed between the two inventories. Municipal activity changes from 2006 to 2024 are summarized in Table 7.

TABLE 2

2006 vs 2024 Municipal Emission Trends Explained

Activity	2006 Value	2024 Value	Percent Difference	Change Reasoning
Total Emissions (MT CO ₂ e)	11,979	3,605	-70%	See below
Building Emissions (MT CO ₂ e)	2,258	1,234	-45%	A cleaner electricity grid, decreased natural gas usage, and increased electricity usage
Fleet Vehicles & Transit Emissions (MT CO ₂ e)	3,404	2,255	-34%	Differences in vehicle fuel usage data, natural changes in vehicle use, increased number of vehicles
Outdoor Light Emissions (MT CO ₂ e)	1,246	116	-91%	A cleaner electricity grid, and differences in lighting data available
Waste Emissions (MT CO ₂ e)	79	N/A	N/A	An optional category that was not included in the 2024 analysis.
Water Delivery Facilities (MT CO ₂ e)	3,171	N/A	N/A	Energy use for these facilities were included under municipal buildings in 2024 and could not be distinguished.

Reduction Pathway

Annapolis aims to reduce community-wide GHG emissions by 14% by 2031 and 58% by 2045, using the 2024 inventory as the baseline.

Maryland has set a 60% reduction target for 2031 and a net-zero target for 2045, both relative to 2006 emissions. Targets for each reduction measure (RM) identified in this CAP were selected based on what is feasible and fundable, and together they chart a clear path toward meeting the City's goals.

These four scenarios are explained below and visualized in Figure 6 on the next page.

Scenario 1 Business as Usual (BAU)

Business As Usual (BAU) shows what emissions would look like if current trends continue. This scenario projects emissions based on Annapolis's expected population growth from 2024 to 2045, using Anne Arundel County population projections scaled to Annapolis. Each year's estimated population was multiplied by the 2024 per capita emissions to project total emissions for Annapolis in that year.

2031 Target

+9%

2045 Target

+15%

Scenario 2 Grid Greening

Grid Greening assumes the electrical grid will get cleaner over time, even if electricity consumption and non-electricity emissions follow BAU trends. This scenario projects emissions using a utility-specific emission factor aligned with Baltimore Gas & Electric's goal of reaching net-zero by 2050.

2031 Target

+1%

2045 Target

-10%

Scenario 3 Grid Greening + Reductions

Grid Greening + Reductions builds on Scenario 2 by adding the expected annual emissions reductions that would result from implementing the RMs outlined in this CAP. RMs represent the physical shift from high-emission activities to lower-emission alternatives while maintaining the same service or outcome.

2031 Target

-13%

2045 Target

-57%

Scenario 4 Net Zero



Net Zero projections show a static reduction from the 2024 baseline emissions to zero emissions in 2045. This scenario serves as a reference point for what full decarbonization would require.

2031 Target

-33%

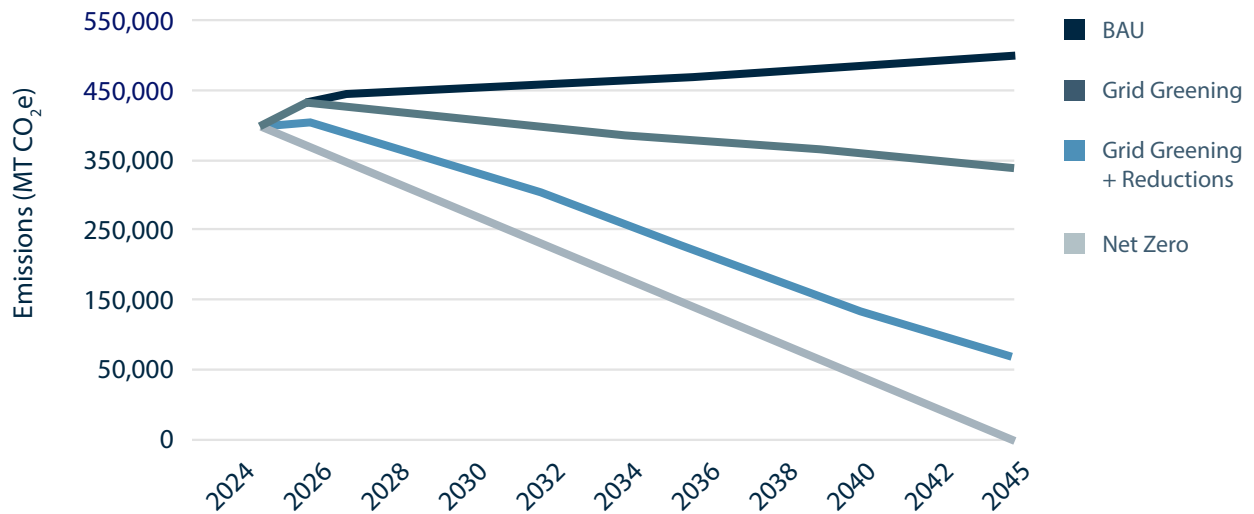
2045 Target

-100%

Closing the gap between Scenarios 3 and 4 would require significant change across the entire community. First, the electricity grid would need to run on 100% renewable energy by 2045, and all buildings and vehicles would need to be fully electric. Unavoidable emissions can be offset through carbon sequestration, the most well-known method of which uses trees.

However, more extreme methods, such as biomass carbon removal and storage (BiCRS) or direct air capture, would be required to achieve net-zero. Carbon sequestration technology is expected to improve over the next 20 years, becoming more readily available, with fewer drawbacks and greater benefits.

FIGURE 6
City of Annapolis Emission Reductions Pathway





Phase 3

Climate Action Planning

Climate action planning builds on GHG data and community input to identify the most effective and achievable ways to reduce emissions in Annapolis. This step reflects a shared effort to translate analysis and ideas into practical strategies that address local needs and priorities.

RM Identification and Feasibility Assessment

The process began by identifying a broad list of potential RMs across key sectors. These measures represent high-level shifts from higher-emission activities to lower-emission alternatives, while still meeting the same everyday needs.

To narrow the list, each RM was evaluated using three primary inputs:

1. GHG reduction potential
2. Local review of existing efforts
3. Feasibility

Reduction potential was assessed using the emissions inventory to determine whether each measure would have a high, medium, or low impact on emissions. Local context was evaluated by reviewing existing plans, policies, and programs to understand where the City already has momentum and where additional effort may be needed. Feasibility was assessed across four areas: social, financial, technical, operational, and timeline. Together, these criteria helped determine whether each RM is realistic to implement in Annapolis within the timeframe of this CAP.

TWG members participated in a structured scoring exercise to evaluate each RM across these criteria. The results were used to establish a threshold and identify a focused subset of high-impact, feasible measures for inclusion in the CAP.

Action Development

Once RMs were selected, the next step was to determine the actions needed to actually achieve these high-level shifts.

Actions are the specific policies, programs, investments, and educational efforts that enable implementation. Actions were developed through a combination of TWG sessions and community input. TWG members participated in dedicated sessions to generate and refine actions for each RM. At the same time, community members contributed ideas through a public meeting, a virtual webinar, and a community survey.

This process resulted in a comprehensive list of actions that reflect both technical expertise and community priorities. The Project Team and Project Consultant then refined the list to make sure every action is practical and achievable. Special consideration was given to actions that reduce climate burdens and increase adaptive capacity of residents, ensuring that climate action advances both emissions reduction and environmental justice outcomes.

Reduction Measures (RM): A specific approach to reduce GHG emissions by replacing high-emission activities with lower-emission alternatives while maintaining the same service or outcome.

Actions: The specific programs, policies, technologies, incentives, or educational campaigns that enable the RM and support its implementation.

Implementation Analyses

Implementing the CAP will require coordinated efforts across the City, community organizations, businesses, and residents.

With RMs and actions defined, the project team evaluated additional implementation elements to support execution and put this plan into motion. These elements help translate the plan into actionable steps and provide the information needed for decision-making.

Implementation elements include co-benefits, responsible parties, authority to implement, costs, funding opportunities, timelines, and potential workforce impacts. Together, these components ensure that actions are not only well-defined but also practical and achievable within the Annapolis context.

Co-Benefits Analysis

Actions taken to reduce GHG emissions often provide additional benefits beyond their primary climate impact. These co-benefits improve community well-being and are often experienced locally and in the near term.

The CAP evaluates co-benefits across the following categories:



Economic Prosperity

Supports jobs, cost savings, or economic stability.



Public Health

Reduces health risks, or improves physical/mental well-being.



Quality of Life

Improves comfort, safety, or daily experience.



Resilience

Improves the ability to withstand and recover from climate impacts.



Stewardship

Protects or promotes natural resources and environmental quality.



Equity and Accessibility

Equity co-benefits prioritize reducing disparities in climate vulnerability and environmental health outcomes, particularly in historically marginalized communities, including low-income and predominantly Black and Brown neighborhoods.

Co-benefits are identified using established research and applied within the local context of Annapolis. Each action includes a high-level summary of expected co-benefits, highlighting how climate action supports goals that go beyond emissions reduction.

Authority To Implement

Successful implementation depends on clearly identifying who is responsible for carrying out actions and who has the authority to make decisions.

Using the RACI framework to clarify implementation roles and responsibilities, this plan identifies lead entities and supporting partners responsible for delivering and supporting implementation activities.



Responsible – Leads implementation and completes the work



Accountable – Holds decision-making authority



Consulted – Provides input or expertise



Informed – Kept updated on progress

The Implementation Analyses provide a framework to support decision-making, define roles, and identify the resources needed to move from planning to action.

Funding

Implementing climate actions requires identifying and leveraging funding opportunities across multiple levels.

This analysis identifies key funding resources at the local, state, and federal levels and connects them to specific strategies. Key insights include:

- Funding opportunities are available across all sectors
- A wide range of applicants and uses are eligible
- Resources exist at multiple levels, from local programs to federal grants
- The funding landscape continues to evolve over time

A summary of funding opportunities is included in the Appendix to support ongoing implementation.



Cost

Understanding the cost of implementing climate actions is an important part of moving from planning to action. Costs are estimated based on available data, comparable projects, and input from TWGs. These estimates are intended to provide general guidance rather than precise projections, as actual costs will vary depending on project scope, timing, and implementation approach.

Cost estimates reflect the anticipated financial impact to the entity responsible for implementing that action. In some cases, this may be the City; in others, it may include residents, businesses, or external partners.

Sectoral Growth & Workforce Needs

Implementing the CAP will influence workforce needs across sectors such as Buildings, Transportation, Waste, and Land Use.

This analysis identifies areas where job demand may increase and highlights the importance of workforce development and training. A key focus is ensuring equitable access to employment opportunities, particularly for historically underserved communities.

These insights provide a general understanding of how climate action can support local economic development while preparing the workforce for a low-carbon future.

Action Plan Details

Each RM page outlines a specific strategy to reduce GHG emissions in Annapolis. These pages are designed to provide clear, consistent information on what each strategy aims to achieve, how to implement it, and what resources may be required.

1. GHG Reduction Potential

Comparison of feasibility targets against the Maryland net-zero emissions reduction pathway.



2. Actions

Recommended solutions to facilitate the adoption of each RM. For each action, the following will be included:

Action ID

Unique identifier for tracking and reference

Action Name and Description

Summary of the activity

Action Type

Category of action

	Policy
	Programming
	Financial
	Technical
	Educational
	Operational

Level of Effort

Effort required to initiate implementation

	Minimal	Ready to implement; little to no setup required
	Moderate	Some coordination required before starting
	Extensive	Significant development required before starting

Time Horizon

When implementation is expected to begin

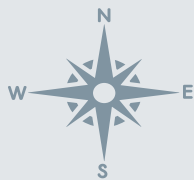
	Current/Ongoing		
	Short-term Actions	0-3 years	Immediate, achievable steps that lay the groundwork for climate action.
	Medium-term Actions	4-7 years	Building on the foundation by scaling and institutionalizing successful efforts.
	Long-term Actions	8+ years	Driving the transformative changes needed to achieve the Village's long-range climate goals.

3. Implementation Snapshot

Authority to Implement Lead entities and supporting partners		Co-Benefits Additional community benefits such as improved public health, economic vitality, and quality of life
Estimated Costs Relative cost to implement the action Primary Funding Resource: Leading funding resources or organizations	Workforce Growth Areas Sectors and jobs likely to be supported	
		or impacted Equivalent Metrics to show real-world

Together, the RMs in this plan form a coordinated roadmap for action across the City, community organizations, businesses, and residents. Each RM can be implemented individually, but the greatest impact will come from advancing multiple strategies together. This information is intended to support decision-making, coordination, and implementation over time.

This plan includes



Reduction Measures (RM):

A specific approach to reduce GHG emissions by replacing high-emission activities with lower-emission alternatives while maintaining the same service or outcome. For example, encouraging public transit instead of single-occupancy vehicle trips.

Actions:

The specific programs, policies, technologies, incentives, or educational campaigns that enable the RM and support its implementation.



Governance and Coordination Actions

These actions focus on the policies, partnerships, and systems needed to support implementation of the Climate Action Plan across all sectors. By integrating climate considerations into City decision-making, procurement, governance, and public communication, they strengthen the foundation for coordinated action. These actions help Annapolis move from planning to implementation in a consistent and accountable way.

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
0.1	Climate Action Governance and Coordination	Identify and establish an appropriate governance structure to support the coordination and implementation of the CAP. Evaluate options for a steering committee or similar body, which may include leveraging an existing board or commission or creating a new entity if needed, to guide implementation, track progress, and support cross-departmental coordination.			
0.2	Climate Integration into Capital and Operating Budgets	Integrate climate action priorities into the City's Capital Improvement Program (CIP) and departmental operating budgets by establishing climate-related criteria for project selection and funding decisions. Ensure climate initiatives are considered and, where appropriate, reflected as line items within existing budget processes.			
0.3	Annual Climate Action Progress Reporting	Prepare and publish an annual report documenting progress on Climate Action Plan implementation, including performance against targets, key achievements, challenges, and updated actions. Establish reporting requirements across municipal departments to ensure consistent tracking and reporting of relevant metrics, support transparency and accountability, and inform ongoing implementation efforts. The CAP will be assessed every two to three years to assess priorities and effectiveness.			
0.4	Equity Integration in Climate Investments	Incorporate equity considerations into climate-related planning and funding decisions, including prioritizing investments in heat-vulnerable, flood-prone, and underserved areas through existing City processes such as the CIP, including directing a significant portion of climate-related funding and resources toward communities most vulnerable to climate impacts and least responsible for emissions, such as low-income public housing communities.			
0.5	Green Workforce Development Program	Support workforce training, career pathways, and apprenticeship opportunities in climate-related industries, prioritizing access for underserved communities.			
0.6	Climate Action Guide for Residents & Businesses	Create a clear, user-friendly guide that explains how residents and businesses can use CAP programs and policies. Include step-by-step instructions, sector-specific pathways, decision trees, and a centralized online portal. Maintain this resource as a living tool, promote it through ongoing outreach and engagement efforts, and review and update it annually to reflect changes in programs, incentives, technologies, and policies.			



Buildings & Energy

In 2024, building emissions accounted for 41% of the City's total emissions. Energy use in buildings is a major contributor to the City's emissions and offers several opportunities for emission reductions.

Emissions in this sector arise from energy used in buildings for heating and cooling, appliances, cooking, lighting, and other uses. Natural gas and electricity are the two most commonly used energy sources for these activities.

Reducing emissions from buildings requires energy-efficiency improvements and a transition to renewable energy sources, as well as accountability from both utilities (grid) and individuals (solar). This sector is most affected by the electrical grid's carbon intensity, as building electrification can significantly reduce emissions, provided the electricity is sourced from renewables.

Energy, housing, and building improvements present a critical opportunity to address both emissions and long-standing environmental health disparities, including mold caused by increased precipitation and flooding.

2031 Target

13%

Of building & energy emissions reduced

2045 Target

66%

Of building & energy emissions reduced

Cumulative Reductions

402,091

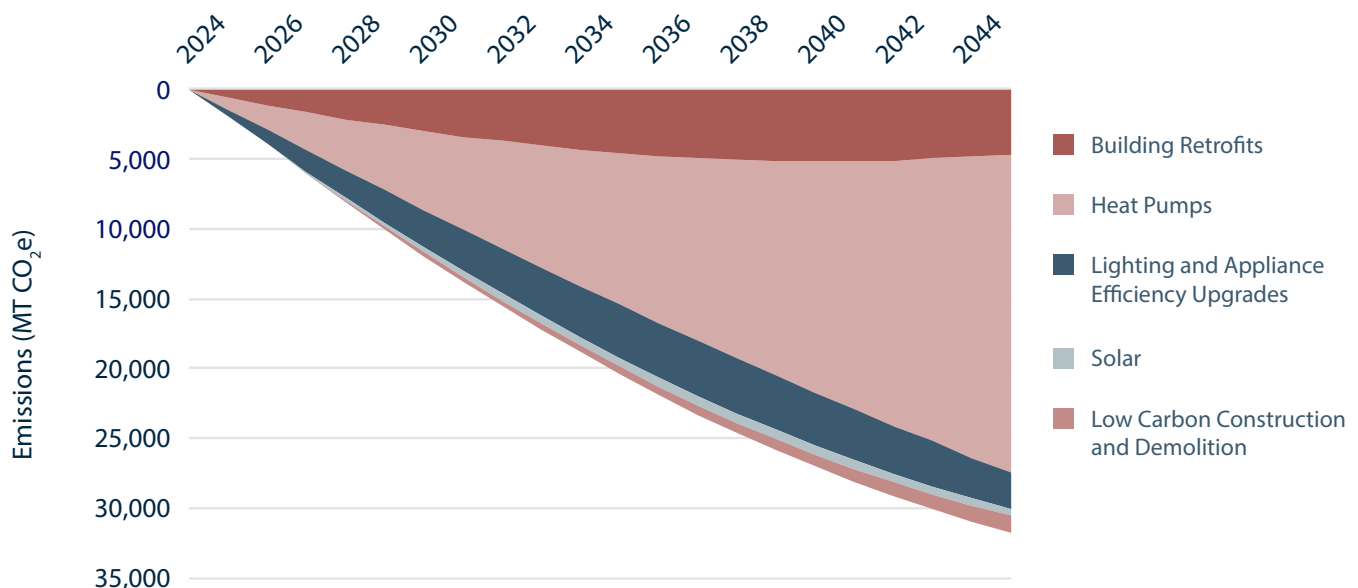
MT CO₂e

20%

Contribution to total reductions

FIGURE 7

Buildings & Energy Reduction Pathway





Twelve RMs contribute to the Buildings & Energy reduction pathway.

RM		Activity Metric	Activity Shift	2031 Activity Shift Target	2045 Activity Shift Target
1	Residential Building Retrofits	Building floor area retrofit	25,047,653 sq. ft. retrofit	15%	45%
	Commercial Building Retrofits	Building floor area retrofit	2,759,042 sq. ft. retrofit	10%	30%
	Institutional Building Retrofits	Building floor area retrofit	14,998,133 sq. ft. retrofit	30%	90%
2	Residential Heat Pumps	Number of households heated with heat pumps	10,309 households	15%	45%
	Commercial Heat Pumps	Number of buildings heated with heat pumps	98 buildings	10%	30%
	Institutional Heat Pumps	Number of buildings heated with heat pumps	441 buildings	25%	75%
3	Efficient Lighting	Number of public, commercial, and residential lights upgraded	288,753 lights	33%	100%
4	Residential Equipment and Appliance Upgrades	Electricity avoided (kWh)	97,976,257 kWh saved	25%	75%
	Commercial Equipment and Appliance Upgrades	Electricity avoided (kWh)	24,081,601 kWh saved	27%	80%
5	Low-Carbon Construction and Demolition	Commercial building floor area built using low-carbon practices	105,529 sq. ft.	26%	100%
6	Solar Rooftops	Number of residential, commercial, and public solar rooftop installations	595 installations	1%	2%
7	Renewable Energy Procurement	Assuming BGE's Net Zero 2050 goal is reached		24%	80%



RM1

Building Retrofits

Building retrofits focus on improving the performance of existing residential, commercial, and institutional buildings. By using audits, controls, financial support, policy tools, and implementation assistance, this measure helps reduce energy waste and improve building efficiency over time. This measure lowers emissions, reduces operating costs, and improves comfort and building performance across Annapolis.

Sector overall CO₂e reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 1 feasibility

- Residential: 37,930 MT CO₂e
- Commercial: 8,580 MT CO₂e
- Institutional: 34,420 MT CO₂e

Other RMs in
this sector

1,375,078
MT CO₂e

Gap to Net Zero

2,541,073
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
1.1	Comprehensive Energy Audit Program	Encourage the use of Empower's subsidized audits for municipal, residential, and commercial buildings that deliver prioritized retrofit roadmaps and direct connections to contractors, rebates, and financing.			
1.2	Dedicated Climate Incentive Reviewer	Create a one-stop assistance service (guides, staff support, pre-application meetings) to help applicants, like residents and businesses, navigate permits, review submitted projects, and stack incentives successfully.			
1.3	Building Energy Performance Standards Threshold	Expand Building Energy Performance Standards (BEPS) applicability to include smaller commercial buildings, municipal facilities, public housing, multifamily residential buildings, and large private development projects, where feasible.			
1.4	Building Automation and Smart Thermostat	Install or incentivize the use of building automated controls and smart thermostats. Provide training on reducing after-hours waste by scheduling and setting controls without sacrificing comfort.			
1.5	Retrofit Financing Assistance	Support retrofits by providing performance contracting guidance and access to financing options that leverage energy cost savings to offset project costs and incentivize participants, including renters, multifamily properties, and income-qualified households.			
1.6	Include Retrofits in CIP Criteria	Include audit findings for municipal buildings in the CIP, which prioritizes projects by ROI, emissions reduction, and maintenance risk, and aligns implementation with budget cycles. Include retrofits into CIP criteria moving forward.			



1.7	Green Lease Toolkit	Provide landlord–tenant templates and case studies that address split incentives and enable efficiency and electrification upgrades in rental buildings.			
1.8	Retrofit Progress Tracking	Track participation, costs, savings, and emissions reductions annually and publish results to guide program refinement and accountability.			

Implementation Snapshot

Authority to Implement

Leads:

Hired engineer/contractor, Baltimore Gas & Electric (BGE), Maryland Energy Administration (MEA), U.S. Department of Energy (DOE), Planning and Zoning Department (DPZ), Public Works Department (DPW), State of Maryland Licensed Contractors, Inspectors, Building Owners, Ward Representatives

Partners:

Housing Authority of the City of Annapolis (HACA), Central Services, Fire Marshall, Sustainability Team, Planning Commission, Historic Preservation, Business and Civic Associations, Home Owners Associations (HOAs), Chamber of Commerce (COC),

Co-Benefits

- Economic Prosperity
- Public Health
- Quality of Life
- Resilience
- Stewardship
- Equity & Access

Estimated Costs

\$500M

Primary Funding Resource: MEA

Workforce Growth Areas

Construction Firms, Architecture and Engineering Firms, Real Estate Firms, Electrical Contractors

Equivalent

Residential:

7,966 average single-family residential houses and

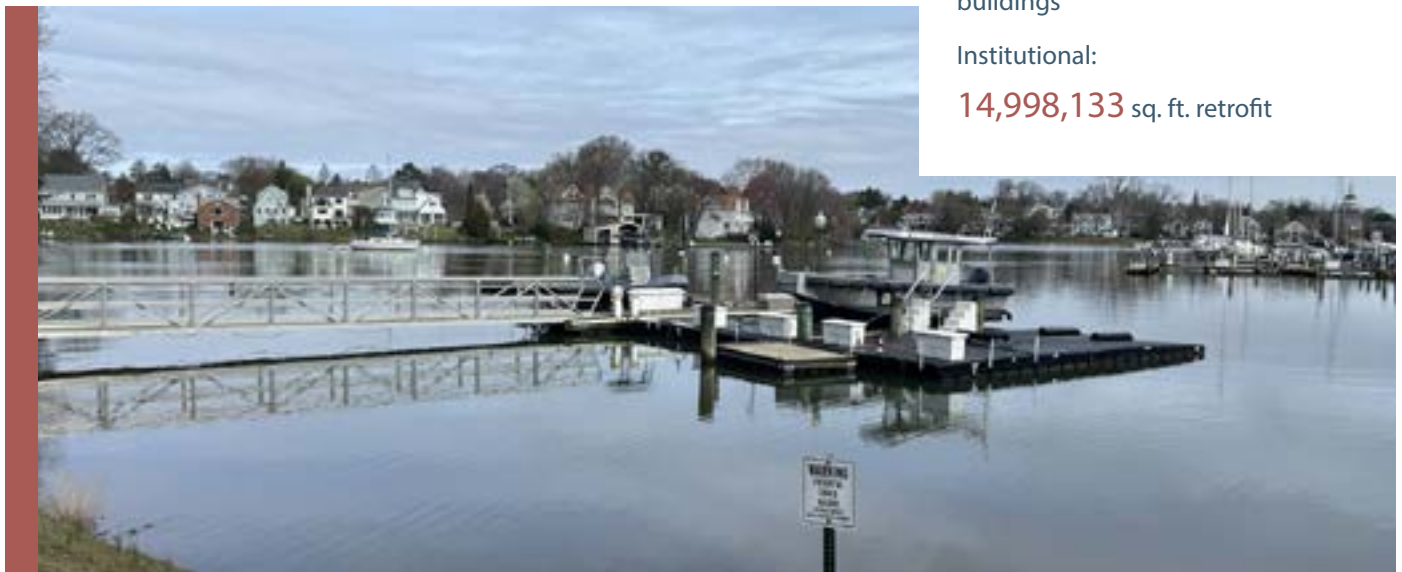
8,202 average multi-family residential units

Commercial:

139 average commercial buildings

Institutional:

14,998,133 sq. ft. retrofit





RM2

Heat Pumps

Heat pumps focus on replacing fossil fuel-based and inefficient heating and cooling equipment with high-efficiency electric systems in homes, businesses, and public buildings. By combining installer support, incentives, pilot projects, education, and municipal evaluation, this measure helps make electrified heating and cooling more practical and accessible. This measure reduces emissions, improves indoor comfort, and supports long-term building electrification in Annapolis.

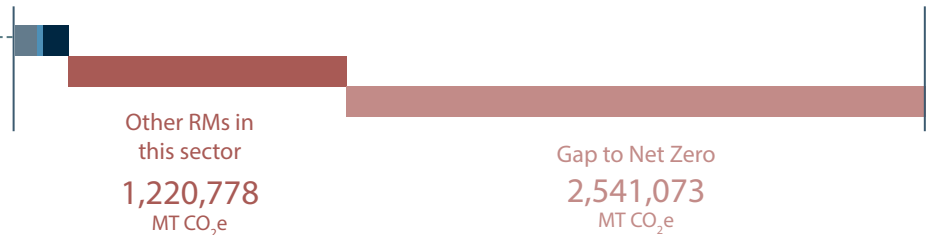
Sector overall CO₂e
reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 2 feasibility

- Residential: 100,360 MT CO₂e
- Commercial: 24,380 MT CO₂e
- Institutional: 110,490 MT CO₂e



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
2.1	Qualified Installer Registry	Maintain and publicize a vetted list of qualified heat pump installers to improve installation quality and consumer confidence.			
2.2	Heat Pump Workshops & Guidance	Host recurring workshops and publish practical guides on sizing, electrical panels, comfort expectations, and contractor selection to increase successful adoption.			
2.3	Municipal Heat Pump Investigation	Evaluate opportunities identified in the 2019 energy audit to install or replace existing systems with heat pumps in municipal buildings, including an assessment of feasibility, cost, and operational impacts.			
2.4	Residential & Commercial Pilot Programs	Recruit volunteer homes and businesses for early installations, negotiate pricing/quality requirements, and publish measured results to reduce perceived risk.			
2.5	Heat Pump Incentives & Group Purchasing	Offer rebates that stack with state/federal incentives and enable group purchasing to reduce upfront costs and accelerate residential/commercial adoption.			
2.6	Heat Pump Performance Tracking	Track installations, energy use changes, maintenance issues, and emissions reductions annually and publish summaries for transparency and improvement.			



Implementation Snapshot

Authority to Implement

Leads:

Hired Engineer/Contractor, BGE, MEA, DOE, DPZ, DPW, State of Maryland Licensed Contractors, Inspectors, Building Owners, Ward Representatives

Partners:

Central Services, Fire Marshall, Sustainability Team, Planning Commission, Historic Preservation, Business and Civic Associations, HOAs, COC, Economic Development Director, Economic Development Director

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Stewardship

Equivalent

Residential:

4,896 average single-family residential houses and

5,413 average multi-family residential units

Commercial:

98 average commercial buildings

Institutional:

441 average institutional

Estimated Costs

\$750M

Primary Funding Resource: MEA

Workforce Growth Areas

HVAC Contractors and Manufacturers



RM3

Efficient Lighting

Efficient lighting focuses on replacing outdated lighting systems with LEDs and smart controls across municipal, residential, and commercial buildings. By combining municipal retrofits, business support, controls, and updated standards for new construction, this measure reduces unnecessary electricity use and maintenance needs. This measure lowers emissions and operating costs while improving lighting quality and building performance.

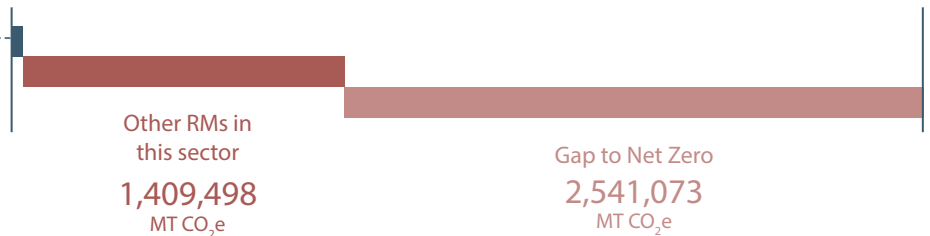
Sector overall CO₂e reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 3 feasibility

46,510
MT CO₂e



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
3.1	Business LED Incentive Assistance	Proactively contact local businesses about LED rebates and provide hands-on application/project support so incentives turn into completed lighting upgrades.			
3.2	Municipal LED Retrofit Program	Continue to replace all remaining fluorescent/incandescent lighting in municipal buildings with high-efficiency LEDs, prioritizing high-use spaces and standardizing fixture specifications to reduce maintenance and enable bulk purchasing. Implementation applies across municipal facilities, including City buildings, parking garages, pump houses, and street lighting.			
3.3	Smart Lighting Controls	Identify funding and install occupancy sensors, daylight dimmers, and scheduling controls; commission and calibrate by space type to prevent overrides and ensure persistent savings.			
3.4	Lighting Standards Policy	Require LED fixtures and smart controls in all new building construction and major renovations through enforceable standards within the Department of Planning and Zoning (DPZ) permitting and review process, including inspection checklists and potentially building codes in the future.			



Implementation Snapshot

Authority to Implement

Leads:

DPW, Department of Planning and Zoning, Facilities Managers, Homeowners, Central Services, BGE, MEA

Partners:

Sustainability Team, Materials Suppliers

Co-Benefits



Economic Prosperity



Public Health



Equity & Access

Equivalent

288,753 lights

Estimated Costs

\$90M

Primary Funding Resource:
MEA

Workforce Growth Areas

Lighting Retailers, Lighting Manufacturers



RM4

Equipment and Appliance Upgrades

Efficient lighting focuses on replacing outdated lighting systems with LEDs and smart controls across municipal, residential, and commercial buildings. By combining municipal retrofits, business support, controls, and updated standards for new construction, this measure reduces unnecessary electricity use and maintenance needs. This measure lowers emissions and operating costs while improving lighting quality and building performance.

Sector overall CO₂e
reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 4 feasibility

15,800
MT CO₂e

Other RMs in
this sector

1,440,208
MT CO₂e

Gap to Net Zero

2,541,073
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
4.1	Efficient Appliance Rebate Promotion Program	Promote available rebates and incentives for high-efficiency appliances, including refrigerators, dishwashers, clothes washers and dryers, and electric heat pump water heaters, through utility communications, permitting processes, and community outreach, with application support to increase participation by residents and businesses.			
4.2	Municipal Equipment and Appliance Replacement Strategy	Develop a phased strategy to replace municipal appliances and equipment, including kitchen appliances, water heaters, and other plug-load systems, with high-efficiency models. Where feasible, incorporate asset tracking during replacement cycles to prioritize upgrades based on age, condition, and efficiency.			
4.3	ENERGY STAR® Appliance Requirement	Assess existing building codes and policies to determine whether ENERGY STAR® (or equivalent) high-efficiency appliance requirements are already in place for new residential and commercial construction, and identify opportunities to strengthen or expand such requirements and to improve compliance verification during inspections.			



Implementation Snapshot

Authority to Implement

Leads:

DPW, Facilities Manager,
Homeowners, Central Services,
BGE, MEA

Partners:

Sustainability Team, Materials
Suppliers

Co-Benefits



Economic Prosperity



Public Health



Stewardship

Estimated Costs

\$3.5B

Primary Funding Resource:
MEA

Workforce Growth Areas

Appliance Manufacturers,
Installers, Appliance Retailers

Equivalent

122,057,858 kWh saved



RM5

Low-Carbon Construction and Demolition

Low-carbon construction and demolition focuses on reducing emissions associated with new construction, renovation, and building turnover. By encouraging adaptive reuse, stronger code adoption, and review processes that consider climate and lifecycle impacts, this measure supports lower-carbon development practices. This measure helps reduce embodied carbon, avoid unnecessary waste, and improve the long-term sustainability of growth in Annapolis.

Sector overall CO₂e
reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 5 feasibility

11,876
MT CO₂e

Other RMs in
this sector

1,444,133
MT CO₂e

Gap to Net Zero

2,541,073
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
5.1	Stretch Energy Code Adoption	Adopt higher-performance stretch codes for new buildings with enforcement checklists and inspector training to ensure consistent compliance, improve energy performance, support electrification, and reduce emissions from new development.			
5.2	Residential Building Adaptive Reuse Education	Encourage reuse of existing residential buildings over teardown/new construction by streamlining permits, reducing barriers, and offering incentives tied to reuse outcomes.			
5.3	Climate Impact Review Ordinance	Investigate case studies in which communities have instituted a Climate Impact Review Ordinance under which all major public and private development projects must submit a climate impact statement quantifying emissions, resilience risks, and mitigation measures before approval.			
5.4	Environmental Impact Reviews	Require lifecycle-oriented environmental impact reviews for major developments and attach mitigation requirements to approvals.			
5.5	Native Landscaping	Incorporate native and pollinator-friendly landscaping requirements into development and redevelopment projects.			



Implementation Snapshot

Authority to Implement

Leads:

Hired Engineer/Contractor,
BGE, MEA, DOE, DPZ, DPW Civil
Engineers, State of Maryland
Licensed Contractors,
Inspectors, Building Owners,
Ward Representatives

Partners:

Central Services, Fire Marshall,
Sustainability Team, Business
and Civic Associations, HOAs,
COC, Economic Development
Director, City Manager's Office

Co-Benefits



Resilience



Stewardship

Equivalent

9,804 square meters of building
space built with low-carbon
practices

Estimated Costs

\$40M

Primary Funding Resource:
MEA

Workforce Growth Areas

Waste Haulers, Building
Materials Manufacturers



RM6

Solar Rooftops

Solar rooftops focus on expanding on-site solar generation on residential, commercial, and municipal buildings. By improving incentive navigation, residential program design, and targeted deployment on larger roofs and City facilities, this measure helps increase local renewable energy production. This measure reduces reliance on grid electricity, lowers emissions, and supports long-term energy cost savings and resilience.

Sector overall CO₂e
reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 6 feasibility

9,917
MT CO₂e

Other RMs in
this sector

1,446,091
MT CO₂e

Gap to Net Zero

2,541,073
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
6.1	Solar Incentive Navigation	Provide practical guidance on incentives, financing, permitting, and interconnection (help desk, guides, and pre-application support) to reduce project delays.			
6.2	Residential Solar Program Development	Establish a coordinated residential solar program that includes streamlined permitting, group purchasing options, contractor guidance, and accessible, step-by-step materials to make rooftop solar more affordable and easier for residents to adopt. Expand incentives, financing assistance, and technical support to increase residential and commercial solar adoption.			
6.3	Commercial & Municipal Solar Program	Target large roofs and city-owned facilities with feasibility screening and standardized procurement to accelerate commercial and municipal rooftop solar buildout.			



Implementation Snapshot

Authority to Implement

Leads:

Hired Engineer/Contractor, BGE, MEA, DOE, DPZ, DPW, State of Maryland Licensed Contractors, Inspectors, Building Owners, Ward Representatives

Partners:

Central Services, Fire Marshall, Sustainability Team, Planning Commission, Historic Preservation, Economic Development Director, Business and Civic Associations, HOAs, COC, City Manager's Office

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Resilience
-  Stewardship
-  Equity & Access

Estimated Costs

\$20M

Primary Funding Resource: MEA

Workforce Growth Areas

Electric Utilities, Roofing Contractors, Structural Engineers, Renewable Energy Developers, Battery and Storage Manufacturers

Equivalent

595 average solar rooftop installations



RM7

Renewable Energy Procurement

Renewable energy focuses on expanding access to clean electricity beyond individual rooftop systems. By combining municipal renewable procurement, demand response, microgrids, and virtual power plant development, this measure supports a more flexible, resilient, and lower-carbon energy system. This measure helps Annapolis reduce emissions while improving energy reliability and access to clean power.

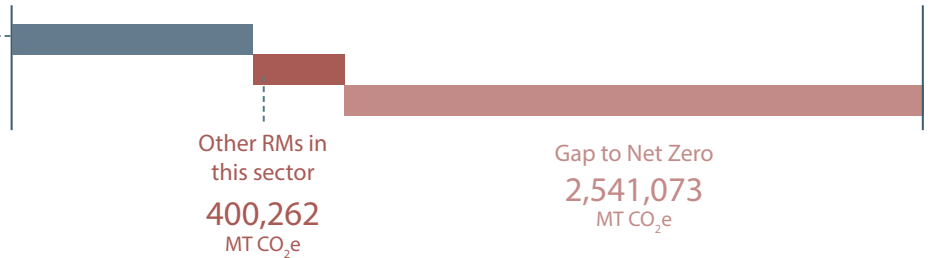
Sector overall CO₂e reduction potential:

3,997,081
MT CO₂e

GHG Reduction Potential

RM 7 feasibility

1,055,746
MT CO₂e



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
7.1	Renewable Energy Procurement	Purchase renewable electricity for municipal operations through contracts/renewable energy certificates/supply arrangements and publicly report the quantities and sources procured.	\$	☒	~
7.2	Community Demand Response Program	Incentivize residents and businesses to shift electricity use during peak periods (smart thermostats, EV charging schedules, controllable water heating/commercial controls) using metered verification.	⚙️	☒	≈
7.3	Virtual Power Plant Development	Aggregate distributed energy resources, such as rooftop solar, battery storage, and controllable loads, across multiple buildings into a coordinated program that reduces peak demand, improves resilience, and delivers measurable grid services. Unlike a microgrid, which serves a single site, a virtual power plant coordinates systems across many locations to operate as a unified resource.	⚙️	☒	≈
7.4	City Microgrid Pilot	Pilot a municipal microgrid to improve energy resilience and continuity of operations. A microgrid is a localized energy system that integrates on-site generation, such as solar power, with battery storage and controls to operate independently of the main electric grid during outages.	⚙️	☒	≈



Implementation Snapshot

Authority to Implement

Leads:

Hired Engineer/Contractor, BGE, MEA, DOE, DPZ, DPW, State of Maryland Licensed Contractors, Inspectors, Building Owners, Ward Representatives, Utility Liaison, City Manager's Office, Community Groups

Partners:

Fire Marshall, Sustainability Team, Planning Commission, Historic Preservation, Business and Civic Associations, HOAs, COC, Economic Development Director, City Manager's Office

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Resilience
-  Stewardship
-  Equity & Access

Estimated Costs

\$180M

Primary Funding Resource: MEA

Workforce Growth Areas

Electric Utilities, Renewable Energy Developers, Battery and Storage Manufacturers

Equivalent

BGE reaches **net zero** target in 2050



Transportation

Transportation accounted for 58% of Annapolis's total emissions in 2024, almost entirely from on-road transportation. This sector offers the greatest opportunities for emissions reductions.

Emissions in this sector stem from the use of vehicle fuels and electricity, including passenger cars, heavy-duty trucks, buses, fire trucks, water transportation, and off-road vehicles. A complete list of vehicles included in the on-road transportation analysis is available in the 2024 GHG Inventory Report. About

5% of all vehicles registered in Maryland are electric, plug-in hybrid electric, or hybrid vehicles. Another 7% of vehicles operate on biofuels. Within Annapolis's city-owned vehicle fleet, roughly 13% of vehicles are powered by electricity or biofuels.

Transportation emission reductions are most likely driven by vehicle electrification, assuming renewable energy sources power the vehicles. However, minimizing car travel, whether by walking, cycling, or using public transportation, is the easiest way for a city to reduce emissions.

2031 Target

10%

Of transportation emissions reduced

2045 Target

50%

Of transportation emissions reduced

Cumulative Reductions

1,547,000

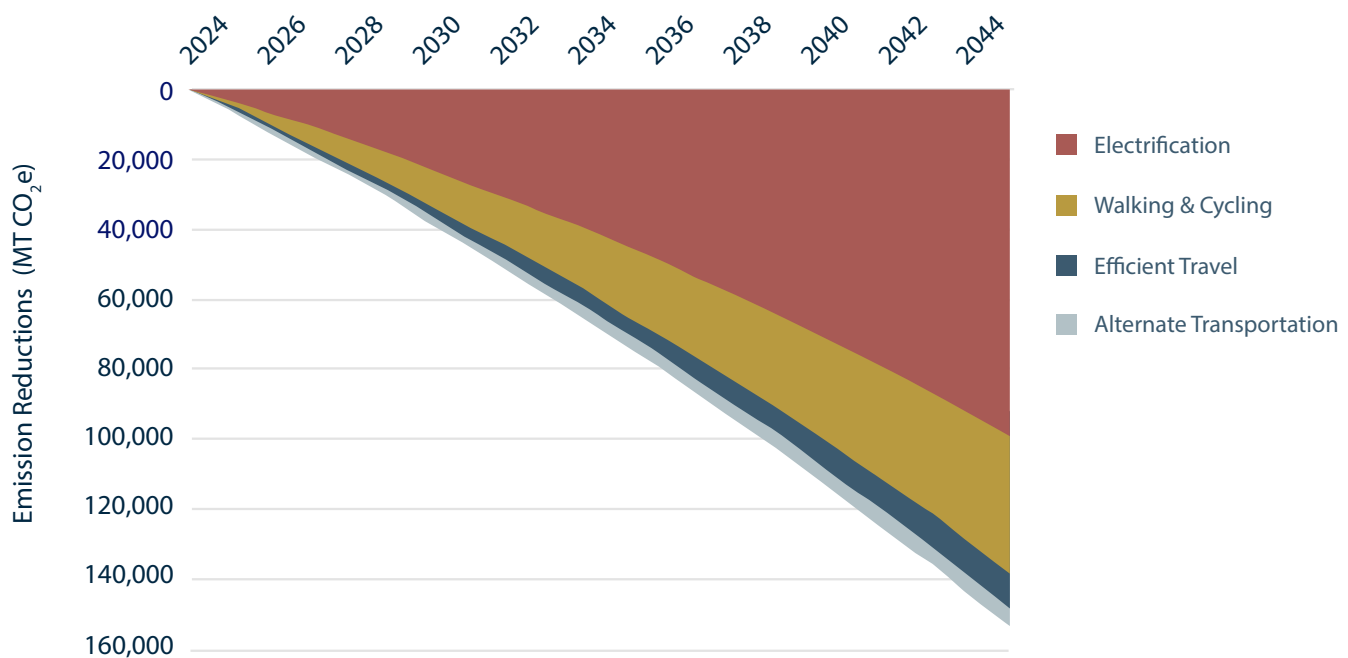
MT CO₂e

78%

Contribution to total reductions

FIGURE 8

Transportation Reduction Pathway





Six RMs contribute to the Transportation reduction pathway.

RM		Activity Metric	Activity Shift	2031 Activity Shift Target	2045 Activity Shift Target
8	Walking & Cycling	30% of travel by car has been replaced with walk/cycling	12,394 vehicles off the road	10%	30%
9	Public Transportation	20% of car miles traveled by bus instead	106,670,161 miles traveled by bus instead of car	7%	20%
10	Efficient Travel	5% of commutes in cars with a higher average occupancy	571,069 commutes traveled efficiently	2%	5%
11	Electric Vehicles	40% of miles traveled with EV	19,438 vehicles electrified	13%	40%
12	Electric Public Transit	100% of buses are electrified	763,241 bus miles driven with electric buses	33%	100%



RM8

Walking and Cycling

Walking and cycling focus on replacing short vehicle trips with safer, more convenient active transportation options. By improving planning, policies, infrastructure, safety, and access to micromobility, this measure helps more people walk, bike, and use small electric mobility devices for everyday travel. This measure reduces transportation emissions while improving safety, health, and connectivity across Annapolis.

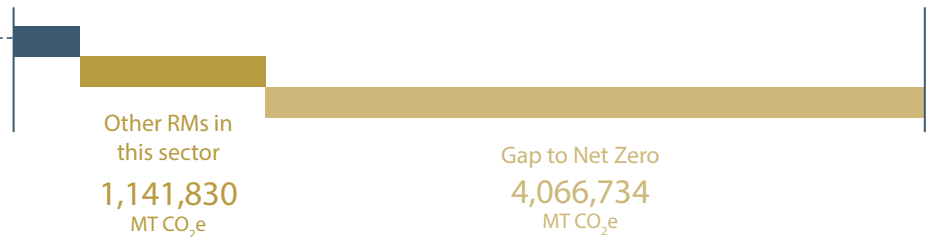
Sector overall CO₂e reduction potential:

5,613,734
MT CO₂e

GHG Reduction Potential

RM 8 feasibility

405,170
MT CO₂e



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
8.1	Active Transportation Planning	Align with the Mobility Action Plan to conduct network and safety assessments (including equity and crash risk) to prioritize pedestrian/bike projects and build a costed project pipeline.			
8.2	Complete Streets Ordinance	Require all street projects to include safe infrastructure for pedestrians, cyclists, and transit users by default. Mandate protected bike lanes where feasible, prioritize equity, and require public reporting on implementation.			
8.3	Traffic Calming Program	Implement speed-reduction and street-safety measures (raised crossings, intelligent traffic signals, curb extensions, road diets, signage/enforcement coordination) focused on priority areas.			
8.4	Safe Routes to School	Partner with Anne Arundel County to implement Safe Routes to School recommendations by combining targeted infrastructure improvements with school- and community-based programming to improve safety and increase walking and biking to school, particularly along key corridors such as Forest Drive.			
8.5	Bike Parking Installation	Install secure bike racks/lockers at key destinations and nodes, with siting standards and maintenance responsibility to support everyday cycling.			
8.6	Bicycling and Scooter Safety	Educate riders on rules of the road, where to ride/park, safe speeds, and yielding behavior; pair with signage and targeted outreach.			



8.7	Shared Micromobility Program Expansion	Expand and optimize shared micromobility services, including bikeshare and e-scooters, through coordinated program management with the existing operator. Improve coverage, transit integration, and equitable access, while using ridership and safety data to refine station placement, operating zones, pricing, and program rules.			
8.8	E-Bike Incentives	Provide rebates and outreach (often via employers) to increase e-bike adoption for car-trip replacement; track uptake and estimated VMT reduction.			
8.9	Protected Bike Lane Network	Accelerate the design and construction of physically separated bike lanes on priority corridors, including intersection treatments and maintenance plans to ensure year-round usability.			
8.10	Sidewalk Gap Closure	Accelerate the construction of priority connections based on safety, accessibility, and connectivity; integrate into capital planning.			

Implementation Snapshot

Authority to Implement

Leads:

County, DPW, DPZ, City Manager's Office, Sustainability Team

Partners:

Annapolis Transportation Department, Baltimore Metropolitan Council (BMC) Bike and Pedestrian Advisory Group, Parks and Recreation, Residents, Visit Annapolis, Environmental Groups, Annapolis Housing Authority

Co-Benefits

- Economic Prosperity
- Public Health
- Quality of Life
- Equity & Access

Equivalent

12,435 average vehicles not driven

Estimated Costs

\$850K per mile of walking trail

Primary Funding Resource: Clean Energy Credit Union

Workforce Growth Areas

Urban Planners, Civil Engineering Firms, Bicycle Retailers/Shops



RM9

Public Transportation

Public transportation focuses on increasing the use, quality, and accessibility of shared transit services in Annapolis. By improving service coordination, rider information, fare policy, stop quality, shuttle service, and ridership data, this measure helps make transit a more reliable and attractive alternative to driving. This measure reduces transportation emissions while supporting mobility, affordability, and access.

Sector overall CO₂e reduction potential:

5,613,734
MT CO₂e

GHG Reduction Potential

RM 9 feasibility

42,550
MT CO₂e

Other RMs in
this sector

1,504,450
MT CO₂e

Gap to Net Zero

4,066,734
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
9.1	Transit Ridership and Performance Tracking	Utilize the Department of Transportation (DOT) system to track transit ridership, service performance, and user trends across routes and programs. Use this data to inform service planning, improve operations, and measure progress toward CAP goals.			
9.2	Transit Fare Evaluation	Evaluate transit policies to improve affordability, increase ridership, and reduce barriers to access. Consider fare-free transit options and opportunities to expand existing fare subsidies for students and City staff to additional riders.			
9.3	Transit Marketing Campaign	Promote transit benefits and "how to ride" information in various languages through social media, signage, and newsletters to enhance comfort, trust, and ridership.			
9.4	Transit Service Coordination and Expansion	Coordinate with City, County, and State transit providers to improve service frequency, reliability, and coverage, particularly in underserved areas. Align efforts with recommendations from the City's Transit Development Plan and support demand-building strategies.			
9.5	Transit Stop Improvements and Coordination	Coordinate with the Maryland Department of Transportation (MDOT) and other partners to improve transit stops, including shelters, lighting, accessibility, and weather protection, prioritizing high-use and underserved locations.			
9.6	Event Shuttle Services	Operate and expand seasonal and event-based shuttle services, such as beach and major-event shuttles, to reduce vehicle trips and improve access.			



Implementation Snapshot

Authority to Implement

Leads:

County, DPW, Annapolis
Transportation, Maryland
Transportation Authority (MTA)

Partners:

Central Services, City
Manager's Office ,
Sustainability Team, Residents,
Economic Development,
Environmental Groups,
Annapolis Housing Authority

Estimated Costs

\$50 per bus mile

Primary Funding Resource:
MDOT, MTA

Workforce Growth Areas

Bus drivers – transit and
intercity

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Stewardship
-  Equity & Access

Equivalent

8,262 vehicles not driven



RM10

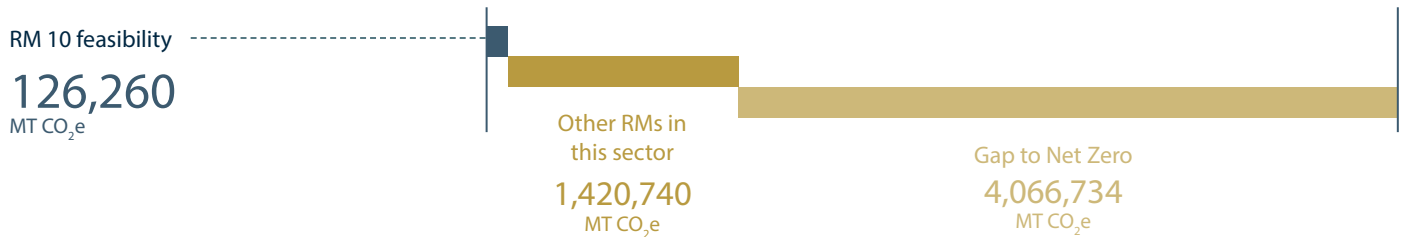
Efficient Travel

Efficient travel focuses on reducing unnecessary single-occupancy vehicle trips and improving how existing trips are made. By supporting employer commute programs, telework, carpooling, and parking reform, this measure helps reduce vehicle miles traveled and increase travel efficiency. This measure lowers emissions, eases congestion, and supports more efficient use of transportation infrastructure.

Sector overall CO₂e reduction potential:

5,613,734
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
10.1	Employer Commuter Benefits Program	Encourage employers to offer commuter benefits, such as transit subsidies, bike incentives, and carpool support, by leveraging existing State programs and providing local outreach, toolkits, and recognition.	\$	☒	≈
10.2	Comprehensive Parking Reform	Eliminate or reduce parking minimum requirements and establish footprint maximums in new developments to prevent overbuilding. Improve footprint management through pricing, time limits, and shared parking strategies to reduce unnecessary driving, limit impervious surface coverage, and support alternative modes of transportation.	🛡️	☒	≈



Implementation Snapshot

Authority to Implement

Leads:

Annapolis Transportation, Planning and Zoning, Rideshare Vendors, City Manager's Office, Sustainability Team

Partners:

MTA, DPW, Residents, Visit Annapolis, Environmental Groups, Annapolis Housing Authority

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Stewardship

Estimated Costs

\$25M

Primary Funding Resource:
No direct cost incurred by behavioral shift

Workforce Growth Areas

Urban Planners, Civil Engineering Firms

Equivalent

571,069 commutes will be traveled efficiently annually by 2045



RM11

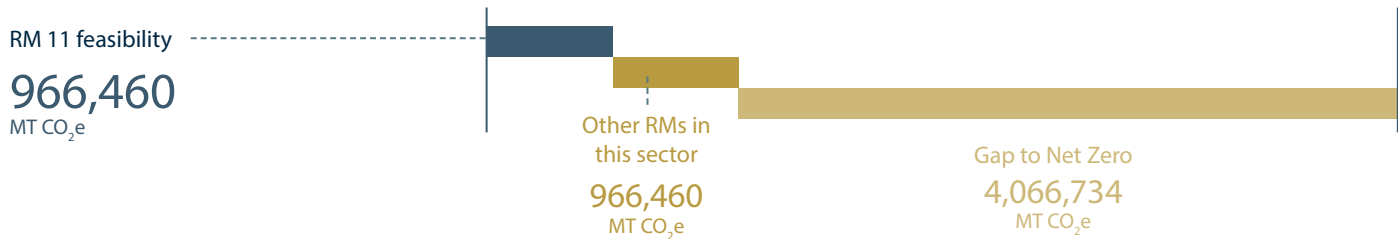
Electric Vehicles

Electric vehicles focus on replacing gasoline-powered travel with electric vehicles and expanding the systems needed to support adoption. By combining fleet electrification, incentives, charging access, development standards, and tracking, this measure helps make electric mobility more practical for residents, businesses, and the City. This measure reduces transportation emissions while supporting cleaner air and long-term operating and maintenance savings and create workforce development opportunities.

Sector overall CO₂e reduction potential:

5,613,734
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
11.1	EV Infrastructure Master Plan	Identify priority public/private charger locations based on travel patterns and equity, define phased buildout, partner with providers, and develop a funding and siting strategy. Install and expand Level 2 and DC fast chargers at high-traffic and equity-priority locations.			
11.2	EV-Ready Building Codes	Require EV-ready wiring in new residential and commercial developments by pursuing compliance with the Maryland Electric Vehicle Charging Infrastructure Act of 2023 and operationalizing standards through plan review and inspections. Investigate extending requirements to additional building types, including multi-family housing, to increase charger availability and support broader EV adoption.			
11.3	Curbside EV Charging Program Development	Develop and implement a curbside EV charging program to support residents with street parking. Establish permitting processes, right-of-way guidelines, utility coordination, and streetscape standards, in coordination with City departments, including Risk Management.			
11.4	EV Incentives and Support Program	Provide rebates, technical assistance and hands-on application support (and/or non-financial incentives) to reduce upfront barriers and increase EV adoption for single-family and multi-family housing.			



11.5	Municipal Fleet Electrification Strategy	Continue transitioning municipal vehicles to electric vehicles at end of life, prioritizing those with the greatest feasibility and impact. Build on ongoing fleet assessments, including a detailed fleet inventory being conducted in partnership with BGE and participation in EV planning initiatives, to inform investment decisions and identify the most effective electrification opportunities.			
11.6	EV Installation and Performance Tracking	Track EV registrations, charger installations, and estimated annual emissions reductions, and publish progress updates.			

Implementation Snapshot

Authority to Implement

Leads:

County, Resilience Authority, BGE, Annapolis Transportation, Central Services, Planning and Zoning, Commercial Fleet Managers, City Manager's Office, Sustainability Team, Economic Development, COC

Partners:

MTA, DPW, BMC, Vendors, Residents, Bikeaaa, Environmental and Community-based Organizations, Annapolis Housing Authority

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Stewardship

Estimated Costs

\$8B

Primary Funding Resource: Federal Transit Authority (FTA), EPA, US Department of Transportation (US DOT)

Workforce Growth Areas

Automotive Manufacturers/Dealers, EV Charging, Fuel Suppliers

Equivalent

19,438 vehicles electrified



RM12

Electric Public Transport

Electric public transit focuses on transitioning buses and related transit infrastructure from conventional fuels to electric power. By planning vehicle replacement, charging infrastructure, maintenance readiness, and route deployment, this measure helps modernize public transit operations and reduce emissions from shared transportation. This measure lowers air pollution, supports long-term operating efficiency, and advances cleaner public transportation in Annapolis.

Sector overall CO₂e reduction potential:

5,613,734
MT CO₂e

GHG Reduction Potential

RM 12 feasibility

6,560
MT CO₂e

Other RMs in
this sector

1,540,440
MT CO₂e

Gap to Net Zero

4,066,734
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
12.1	Electric Transit Bus Transition	Accelerate the transition to electric transit buses by planning routes and depot charging, phasing procurement, pursuing grants, training maintenance staff, and tracking reliability and emissions, while creating long-term operating and maintenance savings and expanding workforce development opportunities.			

Implementation Snapshot

Authority to Implement

Leads:

DOT, County, DPW, Annapolis Transportation, BGE, Central Services

Partners:

MTA, Planning and Zoning, City Manager's Office, Sustainability Team, BMC, DPW, Residents, Environmental Groups, Annapolis Housing Authority

Co-Benefits

- Economic Prosperity
- Public Health
- Quality of Life
- Resilience
- Stewardship

Estimated Costs

\$30M

Primary Funding Resource:
FTA, EPA, US DOT

Workforce Growth Areas

Automotive Manufacturers/
Dealers, EV Charging, Fuel
Suppliers

Equivalent

100% of the Annapolis
bus fleet



Waste

Emissions from waste treatment accounted for only 1% of Annapolis's total emissions in 2024. These emissions come from the treatment processes of landfilling, recycling, composting, and wastewater treatment.

Emissions from waste hauling are already included in the transportation sector. This sector is comprised of mostly methane emissions, with some nitrous oxide emissions. Despite its low impact on the City's

emissions, the RMs in this sector are among the most readily achievable in this plan. Reducing waste generation and increasing waste diversion are largely attributable to behavioral changes and City support through recycling and compost pickup services.

Annapolis currently recycles 22% of its waste, 10 percentage points below the national average of 32%. Annapolis's composting rate, however, is significantly higher than the national average of 4.1%, with roughly 14% of total waste composted in 2024.

2031 Target

3%

Increase in waste emissions

2045 Target

4%

Of waste emissions reduced

Cumulative Reductions

10,125

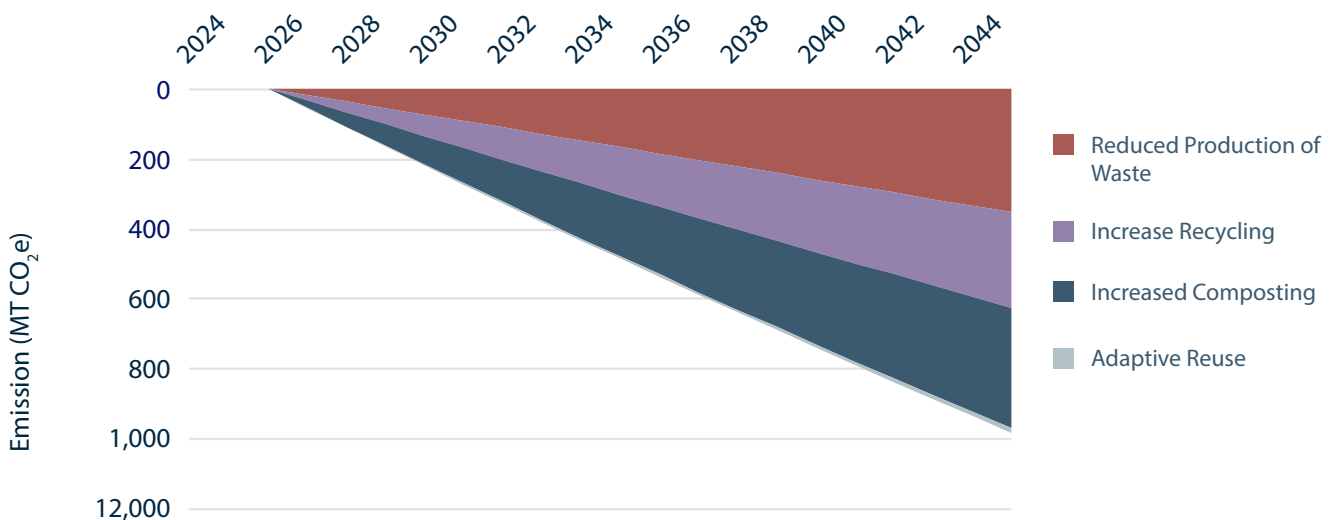
MT CO₂e

1%

Contribution to total reductions

FIGURE 9

Waste Reduction Pathway





Four RMs contribute to the Waste Reduction pathway.

RM		Activity Metric	Activity Shift	2031 Activity Shift Target	2045 Activity Shift Target
13	Reduced Generation of Waste	10% of landfilled waste diverted	766 fewer tons of waste will be produced annually by 2045	3%	10%
14	Increase Composting	45% of the current landfilled waste is composted	1,012 tons of waste will be composted instead of landfilled annually by 2045	12%	45%
15	Increase Recycling	25% of the current landfilled waste is recycled	923 tons of waste will be recycled instead of landfilled annually by 2045	7%	25%
16	Adaptive Reuse	5% of landfill waste avoided	65 tons of waste will be diverted from landfill through adaptive reuse annually by 2045	1%	5%



RM13

Reduced Generation of Waste

Reduced waste generation focuses on preventing waste before it is created. By supporting zero-waste event standards, reducing single-use plastics, and expanding access to hard-to-recycle diversion options, this measure helps residents, businesses, and the City send less material to landfill. This measure reduces waste-related emissions and supports more sustainable consumption and materials management.

Sector overall CO₂e reduction potential:

120,889
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
13.1	Zero-Waste City Event Standards	Formalize and expand existing zero-waste practices for municipal events by establishing standards that limit single-use plastics and require the use of reusable or compostable materials. Provide vendor guidance and support on-site waste sorting and signage, and coordinate implementation through event planning and permitting processes.			
13.2	Single-Use Plastic Reduction Policy	Evaluate and implement policies to reduce or restrict targeted single-use plastics, building on the Sustainable Annapolis program's education and behavior change campaign with the hospitality sector (including restaurants and hotels). Consider phased requirements, business transition support, and enforcement strategies, and coordinate across municipal departments to support implementation.			
13.3	Hard-to-Recycle Materials Collection Partnerships	Coordinate with Anne Arundel County and partner organizations to expand access to collection and diversion programs for hard-to-recycle materials, such as textiles, batteries, and film plastics. Explore opportunities for additional collection locations, partnerships, and public outreach, while considering operational needs and staffing capacity.			
13.4	Packaging EPR Advocacy and Manufacturer Engagement	Coordinate with the Annapolis Workforce Committee to support continued advocacy for Maryland's Extended Producer Responsibility (EPR) legislation, advancing producer responsibility for reducing packaging waste, improving recyclability, and shifting system costs upstream to manufacturers. Explore opportunities to align local waste reduction goals with emerging state policy.			



13.5	Municipal Procurement Policy	Develop and implement a sustainable procurement policy that prioritizes low-carbon, energy-efficient, and sustainably sourced products and services in municipal purchasing decisions. Build on existing procurement procedures to incorporate sustainability criteria, support staff training, and identify high-impact purchasing categories that can reduce emissions and advance municipal sustainability objectives.			
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Implementation Snapshot

Authority to Implement

Leads:

Sustainability Team, Grants, Bloustine Family Foundation, Residents, Food and Beverage, COC

Partners:

Surfrider, Restaurant Owners, Suppliers of Reusable Materials, Maryland Recycling Network

Estimated Costs

\$75K

Primary Funding Resource: US Department of Agriculture (USDA)

Workforce Growth Areas

Waste Haulers

Co-Benefits

- Economic Prosperity
- Public Health
- Quality of Life
- Resilience
- Stewardship

Equivalent

766 tons of waste will be avoided annually by 2045



RM14

Composting

Composting focuses on diverting food scraps and organic materials from landfills into composting systems and related organics programs. By improving business support, evaluating residential collection options, maintaining access points, and supporting school partnerships where feasible, this measure helps expand organics diversion in ways that fit Annapolis's local context. This measure reduces methane emissions and supports healthier soils and more sustainable materials management.

Sector overall CO₂e
reduction potential:

120,889
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
14.1	Organics Compost Program Tracking and Reporting	Track participation and estimated diversion from existing organics programs and explore opportunities to improve data collection and reporting over time.			
14.2	Commercial Organics Compost Support Program	Provide businesses with guidance on organics separation, including site setup, contamination prevention, and available service options, while considering space constraints and potential impacts on collection costs.			
14.3	Neighborhood Organics Compost Drop-Off Optimization	Maintain and optimize existing organics drop-off programs, including site management, cleanliness, and user experience. Evaluate the need for additional locations based on participation, operational capacity, and community demand.			
14.4	Residential Curbside Compost Exploration	Evaluate opportunities to expand residential organics collection, including curbside service, based on cost, community interest, and operational feasibility. Consider coordination with private service providers and alternatives to increase access without significantly increasing solid waste costs.			
14.5	School Composting Partnership Support	Support and partner with Anne Arundel County Public Schools to explore composting opportunities in schools, including student-led initiatives, education, and pilot programs, where feasible.			



Implementation Snapshot

Authority to Implement

Leads:

Sustainable Maryland
Certified, Residents,
Grants, DPW, Sustainability
Team, Solution Providers,
Prince George's Organics
Composting Facility, Economic
Development, Surfrider

Partners:

Food and Beverage

Co-Benefits

-  Quality of Life
-  Resilience
-  Stewardship

Equivalent

1,012 tons of waste
composted annually by 2045

Estimated Costs

\$285K

Primary Funding Resource:
USDA

Workforce Growth Areas

No net change in workforce
anticipated



RM15

Recycling

Recycling focuses on improving the capture and quality of recyclable materials across the community. By strengthening education, infrastructure, data collection, commercial participation, and construction-related waste planning, this measure helps divert more material from landfills and improve the performance of the recycling system. This measure reduces emissions associated with disposal and supports more effective resource recovery in Annapolis.

Sector overall CO₂e
reduction potential:

120,889
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
15.1	Recycling Education and Outreach	Continue to provide and enhance clear, consistent recycling guidance, with targeted outreach to multifamily properties and businesses to improve participation and reduce contamination. Increase transparency around how recycling programs operate and where materials are processed.			
15.2	Recycling Infrastructure and Contamination Reduction	Improve recycling infrastructure in public spaces and multifamily settings by enhancing bin placement, signage, and user guidance to reduce contamination and improve material quality. Explore targeted solutions for specific sources of contamination, such as boating activity.			
15.3	Commercial Recycling Policy Evaluation	Evaluate opportunities to expand or strengthen commercial recycling requirements, including participation, compliance, and enforcement strategies, while considering staffing and implementation capacity.			
15.4	Recycling Data and Reporting Improvement	Improve data collection and reporting for City-managed recycling programs, including tonnage, contamination rates, and participation rates. Explore opportunities to expand data collection from private haulers where feasible, while considering staffing and resource constraints.			
15.6	Construction and Demolition Waste Policy Evaluation	Evaluate opportunities to incorporate construction and demolition waste management requirements into existing development and green building standards. Focus on requiring project-specific waste management plans that outline diversion strategies, while considering cost, contract limitations, and staff capacity for implementation and enforcement.			



Implementation Snapshot

Authority to Implement

Leads:

Sustainable Maryland
Certified, Residents, Grants,
DPW, Sustainability Team,
Economic Development,
Surfrider

Partners:

Recreation Center, Food and
Beverage

Co-Benefits



Economic Prosperity



Stewardship

Equivalent

831 tons of waste will be
recycled instead of landfilled
annually by 2045

Estimated Costs

\$170K

Primary Funding Resource:
EPA

Workforce Growth Areas

Material Recovery Facilities,
Waste Haulers



RM16

Adaptive Reuse

Adaptive reuse focuses on extending the life of products, materials, and equipment through repair, sharing, and reuse. By supporting community repair and reuse events, tool-lending partnerships, and education on circular-economy practices, this measure helps reduce waste and lower demand for new products. This measure lowers emissions while supporting resource conservation and community-based reuse.

Sector overall CO₂e reduction potential:

120,889
MT CO₂e

GHG Reduction Potential



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
16.1	Circular Economy Education and Partnerships	Coordinate with Anne Arundel County and community partners to expand education on reuse, repair, and waste reduction through schools, libraries, and public resources. Support the development and sharing of practical guidance on reuse and repair opportunities.			
16.2	Community Repair and Reuse Events Support	Support and promote community-led repair and reuse events, such as repair cafés and swap events, by partnering with local organizations and providing space, outreach, and coordination assistance. Encourage event models that minimize waste and clarify participants' responsibilities.			
16.3	Community Tool Lending Partnerships	Establish a community lending program by exploring partnerships with libraries, community organizations, or other institutions to expand access to tool and equipment lending programs, reducing the need for new purchases and increasing shared access.			



Implementation Snapshot

Authority to Implement

Leads:

Sustainable Maryland
Certified, Residents, Grants,
DPW, Sustainability Team,
Economic Development,
Surfrider

Partners:

Sustainability Team

Estimated Costs

No additional funding
required. Actions could be
completed with existing staff
time and budget allocations

Primary Funding Resource:
EPA

Workforce Growth Areas

Donation Centers, Resale

Co-Benefits

-  Economic Prosperity
-  Quality of Life
-  Resilience
-  Stewardship
-  Equity & Access

Stores

Equivalent

65 tons of waste will be
diverted from landfill through



Land Use

The Land Use sector offers various opportunities for emission reductions.

As Annapolis has minimal farming and livestock operations, no emissions are released into the atmosphere from this sector. Instead, the sector primarily reflects emissions removals from trees and other natural systems. Trees capture and store carbon dioxide (CO₂), making tree canopy the primary mechanism for reducing net emissions within this sector.

In 2024, 42% of Annapolis was covered by tree canopy, removing over 10,000 MT of CO₂e. Transforming urban land to support other sustainable actions or to create more green space does not yield large reductions in GHG emissions. Still, it has several added benefits, such as improved quality of life.

2031 Target

671

MT CO₂e

2045 Target

2,696

MT CO₂e

Cumulative Reductions

26,297

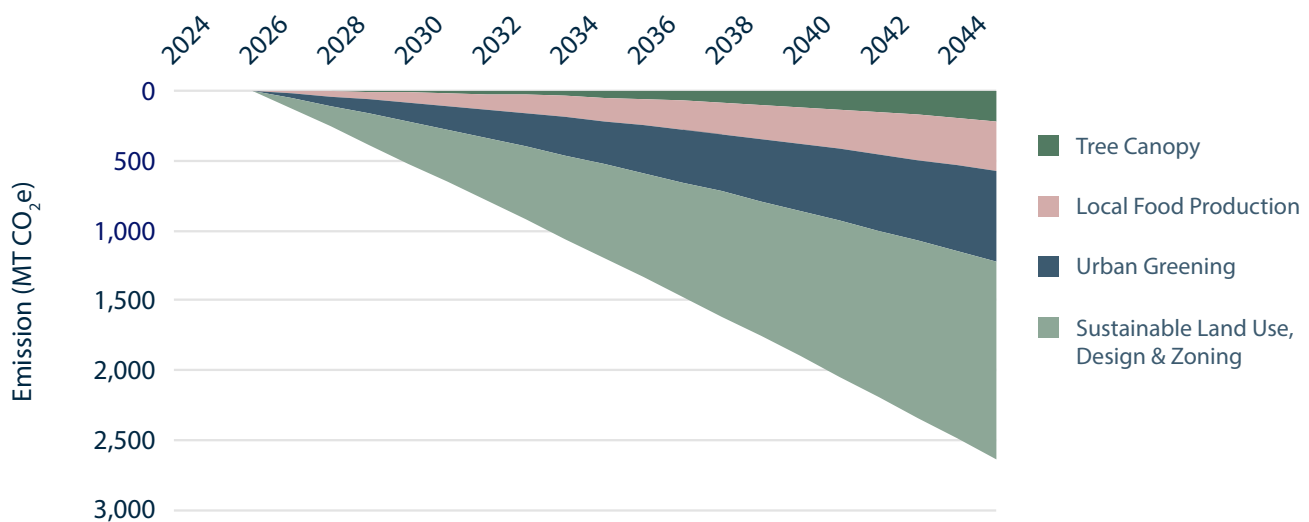
MT CO₂e

1%

Contribution to total reductions

FIGURE 10

Land Use Reduction Pathway





Four RMs contribute to the Land Use reduction pathway, but only some contribute to active reduction of emissions. The Land and Water Quality and Conservation RM does not contribute to the reduction pathway, as avoiding potential emissions from future land development does not constitute a reduction of existing emissions. Instead, this RM focuses on preservation of existing carbon sinks. Similarly, the Tree Canopy and Urban Greening RM primarily supports the creation of potential carbon sinks through sequestration, rather than reducing existing emissions sources. Both RMs are important for climate mitigation but fall outside the scope of direct emissions reductions.

RM		Activity Metric	Activity Shift	2031 Activity Shift Target	2045 Activity Shift Target
17	Land and Water Quality and Conservation	85% of the land under potential easement will be conserved	340 acres of land conserved by 2045	22%	85%
18	Tree Canopy and Urban Greening	50% of the land area will be covered with tree canopy		13%	50%
		1.2 square miles of land will be converted to green space		26%	100%
19	Local Food Production	5% of food consumed will be sourced locally by 2045	1,192 tons of food sourced locally annually by 2045	1%	5%
20	Sustainable Land Use, Design, and Zoning	1% of road lane-miles in Annapolis will be zoned to be pedestrian-only	5,299,609 vehicle miles will be avoided annually by 2045	0.3%	1%



RM17

Land and Water Quality and Conservation

Land and water quality and conservation focus on protecting open space, natural systems, and ecologically important land from future degradation or conversion. By using conservation tools, long-range planning, stormwater and flood-resilience coordination, and development review, this measure helps preserve natural resources that support water quality, habitat, and long-term resilience. This measure strengthens environmental protection in Annapolis while supporting lower-emission land use patterns and healthier natural systems.

Sector overall CO₂e reduction potential:

731,872
MT CO₂e

GHG Reduction Potential

RM 17 feasibility

693,700
MT CO₂e

Other RMs in this sector

38,172
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
17.1	Flood and Stormwater Resilience Plan Coordination and Updates	Continue to update and coordinate existing flood and stormwater planning efforts, including the Hazard Mitigation Plan and other resilience initiatives, to reflect current climate projections and sea-level rise scenarios. Use these plans to identify high-risk areas, prioritize infrastructure investments, integrate nature-based solutions, and align capital planning and emergency management with evolving flood risks.			
17.2	Open Space Preservation	Preserve remaining open land using zoning tools, easements, and acquisition priorities; embed protections in development review and long-range planning.			
17.3	Green Infrastructure Implementation Support	Support the implementation of green infrastructure practices, such as rain gardens, bioswales, permeable pavement, and green roofs, by addressing barriers related to cost, space, and site feasibility. Provide guidance, incentives, or technical assistance where appropriate to complement existing State requirements.			



Implementation Snapshot

Authority to Implement

Leads:

DPW, Planning and Zoning, Developers, Parks and Recreation, City Manager's Office, Conservancy Board

Partners:

City Capital Improvement Plan, Sustainability Team, Chesapeake Bay Trust (CBT), Community Environmental Groups, Environmental Protection Agency, Office of Law, Scenic Rivers Land Trust

Co-Benefits

-  Public Health
-  Quality of Life
-  Resilience
-  Stewardship

anticipated

Equivalent

340 acres of land conserved by 2045

Estimated Costs

No additional funding required. Actions could be completed with existing staff time and budget allocations

Primary Funding Resource: USDA, Maryland DNR

Workforce Growth Areas

No net change in workforce



RM18

Tree Canopy and Urban Greening

Tree canopy and urban greening focus on protecting, expanding, and managing trees and green spaces across developed areas. Trees capture and store carbon dioxide (CO₂), making them a key strategy for reducing net emissions. This measure includes policy improvements, canopy and heat analysis, targeted planting, and natural area management to expand and sustain canopy where it is most needed. In addition to carbon sequestration, these actions reduce urban heat, improve air quality, and support public health.

Sector overall CO₂e
reduction potential:

731,872
MT CO₂e

GHG Reduction Potential

RM 18 feasibility

5,117
MT CO₂e

Other RMs in this sector

726,754
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
18.1	Urban Heat and Tree Canopy Analysis	Build on existing tree canopy data to assess canopy gaps and urban heat vulnerability across the City. Enhance analysis and reporting as needed to identify priority areas for investment and to guide equitable tree-planting and cooling strategies.			
18.2	Native and Climate-Resilient Species Strategy	Update planting standards to prioritize native and climate-resilient species. Provide training for staff and contractors and align procurement and design specifications. Implement invasive species management strategies to protect and improve urban forest health.			
18.3	Sustainable Landscaping Education and Training	Provide training and technical resources for landscaping professionals on native and climate-resilient planting practices. Guide low-input landscaping, native plantings, and reduced chemical use through workshops, demonstration sites, and seasonal materials.			
18.4	Tree Canopy Protection and Replacement Policy Enhancement	Evaluate and strengthen tree canopy conservation and replacement requirements to improve canopy outcomes in priority areas, improve easement preservation, expand mitigation options, integrate canopy considerations into development review, and track program effectiveness through established performance metrics.			
18.5	Tree Protection Ordinance	Strengthen protections for mature and significant trees through diameter-based requirements, supported by clear permitting, inspection, and mitigation standards. Update and expand the Urban Forest Strategy to support canopy growth, mature tree protection, climate resilience, urban forest health, and equitable tree distribution.			



18.6	Targeted Urban Cooling and Canopy Expansion	Expand and coordinate programs that increase tree canopy and reduce urban heat, including residential tree distribution and complementary cooling strategies such as shade structures, cool roofs, and pavement treatments. Prioritize investments in areas identified through canopy and heat analysis.			
18.7	Natural Area Management Program	Establish a program to proactively manage the City's natural areas through dedicated staffing, partnerships, or contracted services. Develop a long-term approach to maintenance, restoration, and risk reduction, supported by appropriate funding and resources.			
18.8	Tree Canopy Mitigation Strategy	Evaluate and expand options for off-site tree canopy mitigation, including identifying and securing suitable planting locations. Consider approaches such as land acquisition, partnerships, or designated mitigation areas to address current constraints on replacement planting.			
18.9	Seasonal Forest Clearing Restrictions	Prohibit forest clearing during nesting season with defined dates, exemptions, and enforcement tied to permits and inspections.			
18.10	Partnerships for Urban Forestry Capacity	Establish and expand partnerships with forestry non-profits, professional foresters, educational institutions, and community organizations to support urban forestry goals. Collaborate on volunteer recruitment, workforce development, training opportunities, and stewardship programs to increase local capacity for tree planting, maintenance, and long-term canopy management.			
18.11	Resident Education	Provide education and outreach on the selection, planting, and maintenance of native and climate-resilient trees.			
18.12	Municipal Native Landscaping Demonstration Sites	Install and maintain native landscaping demonstration sites on municipal properties to showcase best practices and encourage adoption.			



Implementation Snapshot

Authority to Implement

Leads:

DPZ, Developers, Parks and Recreation, Watershed Stewards Academy, City Manager's Office, Conservancy Board

Partners:

City Capital Improvement Plan, DPW, Sustainability Team, CBT, Community Environmental Groups, Residents

Estimated Costs

\$160K

Primary Funding Resource: Maryland DNR, Maryland Urban and Community Forestry Council, Chesapeake Bay Trust

Workforce Growth Areas

Urban Forestry Services, Landscape Architects, Tree Nurseries

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Resilience
-  Stewardship
-  Equity & Access

Equivalent

~15,000 trees planted by 2045, with a minimum soil depth of two feet provided to support healthy, mature tree growth along both sides of all City-owned roadways.



RM19

Local Food Production and Recovery

Local food production focuses on supporting community-based food growing and ecological systems that make local production more viable. By supporting urban agriculture and pollinator-friendly practices, this measure helps strengthen local food access and community stewardship. This measure reduces supply-chain emissions while supporting resilience, biodiversity, and access to fresh food in Annapolis.

Food recovery focuses on redirecting surplus edible food to people in need instead of sending it to the landfill. By recovering and redistributing food, this measure reduces methane emissions from decomposing organic waste and decreases demand for additional food production. This measure supports community well-being, strengthens food security, and reduces waste-related emissions in Annapolis.

Sector overall CO₂e
reduction potential:

731,872
MT CO₂e

GHG Reduction Potential

RM 19 feasibility

7,007
MT CO₂e

Other RMs in this sector

724,865
MT CO₂e

Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
19.1	Urban Agriculture Support Program	Establish a program to support community-led urban agriculture by improving access to land, water, and technical resources. Provide guidance, coordination, and long-term stewardship support for gardens operated by community groups, including those on City-owned or partner sites.			
19.2	Pollinator Habitat Standards and Program	Develop and implement standard operating procedures (SOPs) for integrating pollinator-friendly landscaping into the management of City-owned and managed lands, including planting standards, maintenance practices, and contractor guidance. Complement these efforts with voluntary programs, education, and resources to encourage adoption of pollinator habitat on private property.			
19.3	Food Recovery Network	Support the creation of a Food Recovery Network by working with community partners to identify food donors, pantries, and transport logistics companies that can collaborate to keep edible food out of landfills.			



Implementation Snapshot

Authority to Implement

Leads:

Sustainability Team, Economic Development, Unity Gardens, Emergency Management, City Manager's Office, Office of Community Services, Food and Beverage, Planning and Zoning, Food Banks or Pantries, Restaurants, Grocery Stores, Churches

Partners:

Annual City Budget, Parks and Recreation, Grants, HOAs, Historic Preservation, Food Banks, Local Farmers, Grocery Stores, Sustainability Team, OCF

Co-Benefits

-  Economic Prosperity
-  Public Health
-  Quality of Life
-  Resilience
-  Stewardship
-  Equity & Access

Estimated Costs

\$25K

Primary Funding Resource:
EPA

Workforce Growth Areas

Nonprofits and food banks, Food warehousing and storage, Grocery store

managers, Organics haulers, Landscapers

Equivalent

74 tons of food waste will be recovered from landfills annually by 2045 and

1,192 tons of food sourced



RM20

Sustainable infrastructure, Design, and Zoning

Sustainable land use, design, and zoning focus on shaping growth patterns and site design to reduce emissions and improve resilience. By preserving open space, coordinating flood planning, guiding landscaping practices, and using land-use tools that support more compact and connected development, this measure helps reduce sprawl and support more efficient use of land. This measure lowers long-term emissions while supporting walkability, resilience, and better development outcomes in Annapolis.

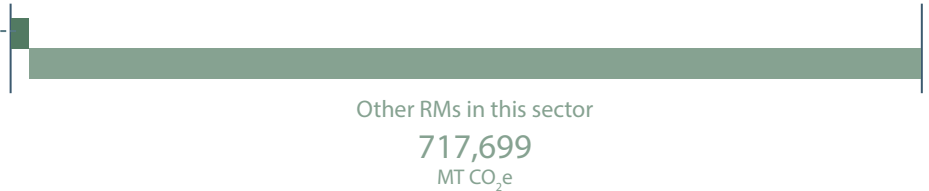
Sector overall CO₂e reduction potential:

731,872
MT CO₂e

GHG Reduction Potential

RM 20 feasibility

14,172
MT CO₂e



Action ID	Name	Description	Action Type	Time Horizon	Level of Effort
20.1	Designated Parking Zones	Create designated bike parking spaces and charging areas to reduce sidewalk clutter, improve accessibility, and manage device operations.			
20.2	Pedestrian-Only Zone Ordinance	Establish permanent or seasonal pedestrian-only streets in key commercial and community areas. Restrict private vehicle access while allowing emergency, delivery, and accessibility vehicles during limited hours. Redesign street space for outdoor dining, seating, trees, and safe walking routes. Pilot locations first, track foot traffic and business performance, and expand based on success.			



Implementation Snapshot

Authority to Implement

Leads:

Planning Commission, City Budget, Capital Improvement Plans, Contractors, DPW, Sustainability Team

Partners:

Planning and Zoning, City Council, Residents, Community Environmental Groups, Economic Development

Co-Benefits



Economic Prosperity



Resilience



Stewardship

Estimated Costs

\$20K

Primary Funding Resource:
USDA

Workforce Growth Areas

Architecture and Engineering Firms, Urban and Land Planning

Equivalent

About **400** drivers will be taken off the road by 2045



Looking Ahead

This CAP provides the community with a clear, actionable roadmap to reduce GHG emissions and build the future we need to become a resilient and sustainable community. By defining RMs, actions, and responsibilities for implementation, the plan creates a shared framework for coordinated action across the City staff, residents, businesses, and community organizations.

Implementation of this plan will take continued collaboration, investment, and adaptation over time. While some actions can begin immediately, others will build as partnerships are strengthened and resources are secured. The City will continue to build partnerships with community-based organizations to guide implementation, monitor outcomes, and ensure accountability in climate investments. Tracking the progress and adjusting the strategies will be

essential to maintaining momentum and responding to changing conditions.

Everyone in Annapolis has a role to play. From individual choices to community initiatives and municipal leadership, it is collective action that will drive meaningful progress toward state climate goals while improving our quality of life, strengthening resilience, and supporting a healthy, vibrant community.



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