



CITY OF ROCKVILLE

CLIMATE ACTION PLAN



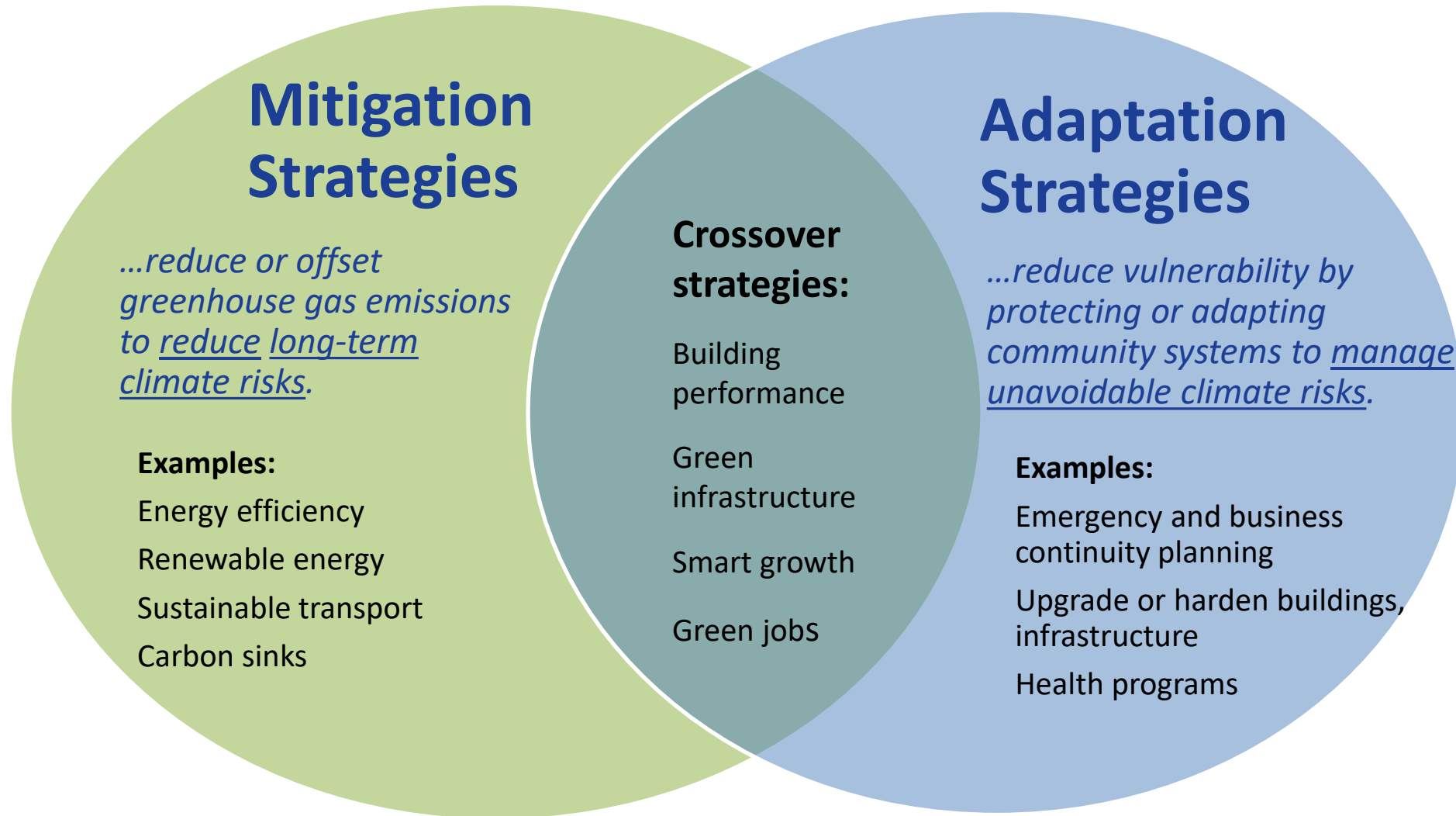
Draft Plan Update

July 22, 2021

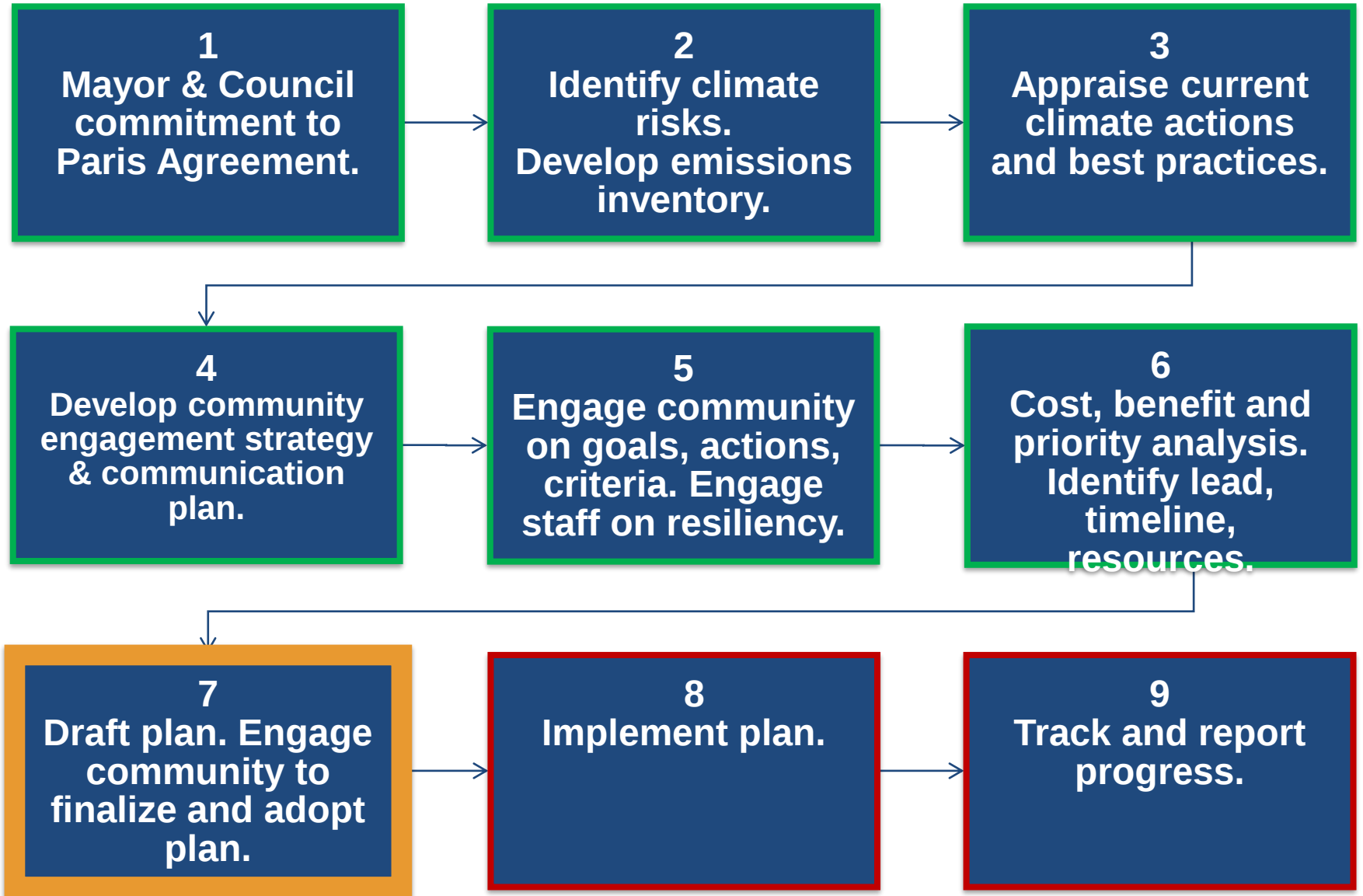
Contents

1. Climate planning background
2. Stakeholder engagement and survey results
3. Draft plan elements for feedback today
 1. Emissions goals
 2. Cadmus emission reduction pathways
 3. Cadmus cost-benefit findings
4. Draft Actions List introduction

What is a Climate Action Plan?



Climate Planning Process



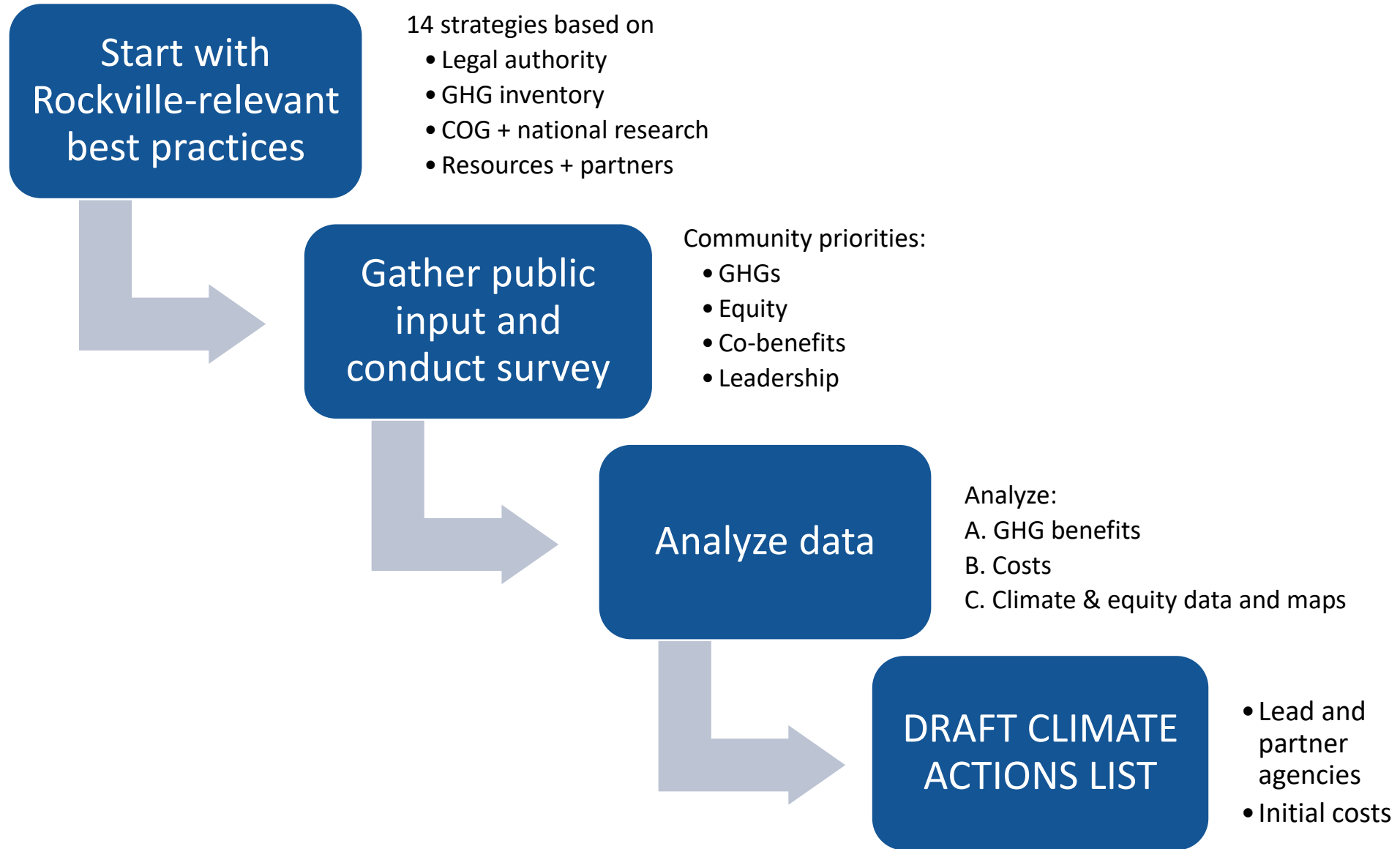
Green = Complete
Orange = In progress
Red = Planned

Approach

The Climate Action Plan intends to:

- Focus on cost-effective, fair, equitable, and reasonable actions to reduce greenhouse gases quickly and foster community resilience
- Ensure that benefits and savings are available to those who need it most
- Make the best use of available resources, partnerships, financing, and existing incentives (e.g., [Montgomery County](#), [Metropolitan Washington Council of Governments](#), and [Maryland Department of the Environment](#))
- Reflect community values and create environmental, safety, and economic benefits for a thriving Rockville
- Demonstrate City leadership
- Advocate for advancements at the county, state, regional, and federal level
- Evolve over time and be flexible to respond to new priorities and opportunities

Developing the List of Actions



Draft Climate Mitigation and Resiliency Actions Summary

Category	Community Actions	Municipal Actions
1. Energy Efficiency	6	3
2. Renewable Energy	3	2
3. Transportation	6	3
4. Land Management	2	1
5. Waste and Materials	2	1
6. Resilience	5	4
7. Public Engagement and Oversight	2	2
Total	26	16

Go to: www.rockvillemd.gov/climate to review Draft Actions List

Rockville Draft Climate Mitigation and Resiliency Actions List

Category	Action ID	Action
 Energy Efficiency	C-01	Adopt Montgomery County's Building Energy Performance Standard (BEPS) for existing commercial and multifamily buildings
	C-02	Expand low and moderate income (LMI) home repair and weatherization program to increase energy efficiency, resiliency and renewable opportunities
	C-03	Adopt net zero building codes for new construction
	C-04	Opt in to Montgomery County's point of sale energy disclosure (Chapter 40, Real Property, Section 40-13B)
	C-05	Expand home energy efficiency outreach program to increase participation in energy audits and utility rebates
	C-06	Coordinate with Montgomery County on electrification incentives for existing building systems
	M-01	Complete energy assessments of city facilities and develop a strategic plan to reduce facility energy consumption
	M-02	Convert City-owned streetlights to energy efficient LED (light-emitting diode) (CIP TA22)
	M-03	Advocate for a Pepco streetlight LED conversion agreement that serves the public interest
	C-07	Advocate to increase the Maryland Renewable Portfolio Standard by 2030
 Renewable Energy	C-08	Coordinate with Montgomery County on development of the Community Choice Energy Program to aggregate green power purchasing
	C-09	Promote private solar and geothermal installations (e.g., solar co-op, streamlined permitting, and expanding access for low-to-moderate income residents)
	M-04	Identify feasible opportunities for solar photovoltaic installations on City property
	M-05	Purchase renewable energy certificates (RECs) for municipal electricity
	C-10	Work with WMATA, MDOT, and Montgomery County to maximize transit accessibility and ridership and enhance mobility options
 Transportation	C-11	Develop a Rockville Electric Vehicle (EV) Readiness Plan
	C-12	Require new developments and redevelopments to be electric vehicle-ready
	C-13	Promote a regional electric vehicle buyer co-op
	C-14	Expand active transportation and shared micro-mobility network (implement improvements identified in Bicycle Master Plan and Vision Zero Plan)
	C-15	Adopt a Pedestrian Master Plan
	M-06	Convert the city fleet to cleaner and more efficient fuel sources
	M-07	Create a new Capital Improvement Plan to expand electric vehicle charging infrastructure on City property to serve employees, fleet and the community
	M-08	Update City teleworking and transit benefit policies to encourage City employees to reduce vehicle miles traveled (VMT)

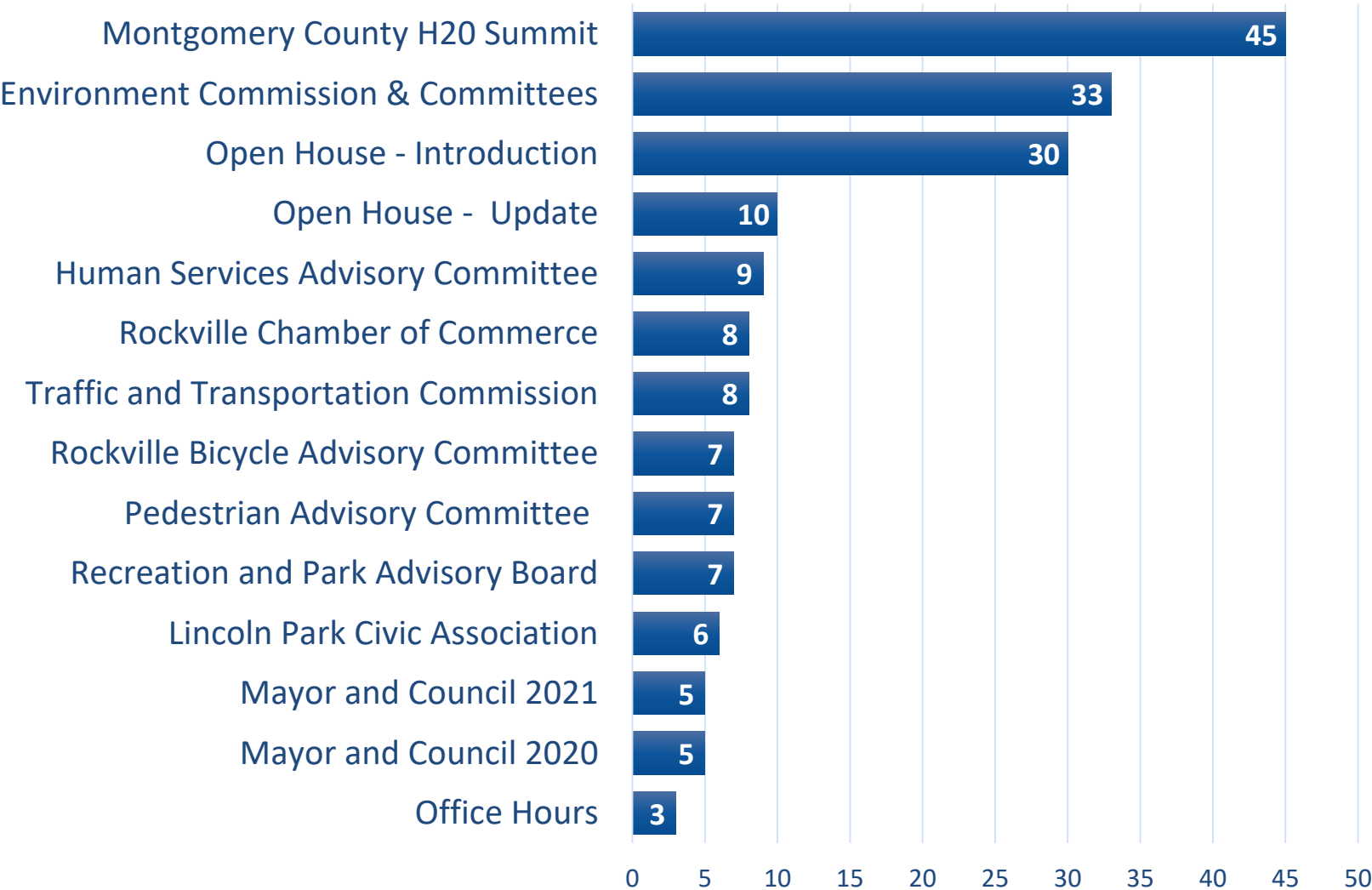
Category	Action ID	Action
 Land Management	C-16	Implement 2040 Comprehensive Plan to steer the most-dense development/redevelopment to mixed-use, transit-served locations to reduce VMT and conserve/restore environmental areas
	C-17	Expand education and incentives to support tree planting and native habitat landscaping conversions on private property and removal of non-native invasive plants
	M-09	Develop a Green Space Management Plan for public lands to assess and restore trees, forests, meadows, stream valleys and wetlands
 Materials and Waste	C-18	Develop a food waste composting program for residents
	C-19	Expand recycling and waste reduction outreach program to increase recycling compliance and waste diversion
	M-10	Develop a city sustainable procurement policy
 Resiliency	C-20	Incorporate climate resilient building and infrastructure design features in new buildings and retrofits
	C-21	Update floodplain maps and community program to incorporate new FEMA requirements
	C-22	Work with Montgomery County and state agencies to provide cooling centers and resilience hubs
	C-23	Work with Montgomery County and community partners to measure and map urban heat islands to mitigate exposure to extreme heat
	C-24	Increase tree planting, green and cool roofs, and cool pavements on public and private property
	M-11	Continue assessing the vulnerability of Rockville's critical infrastructure, facilities and services, and prioritize areas for improved climate resiliency
	M-12	Advocate for state and federal authorities to update stormwater infrastructure design, operations and maintenance standards to accommodate new rainfall/ storm event projections
	M-13	Update the storm drain conveyance capacity assessment and identify constraints and areas at risk for worsened flooding and drainage problems
 Public Engagement and Oversight	M-14	Develop and implement Heat Illness Prevention Plans for various city services and operations
	C-25	Work with community partners to conduct an inclusive public engagement campaign to reduce emissions and adapt to the impacts from climate change
	C-26	Develop metrics and performance indicators for climate actions to establish a data-driven assessment and reporting process
	M-15	Incorporate climate mitigation and resiliency considerations into the City's budget prioritization process
	M-16	Develop an interdepartmental climate action team to implement and track plan progress

Go to:

www.rockvillemd.gov/climate
to review Draft Actions List
and fill out Feedback Form

Stakeholder Engagement

Climate Action Plan Meeting Participation



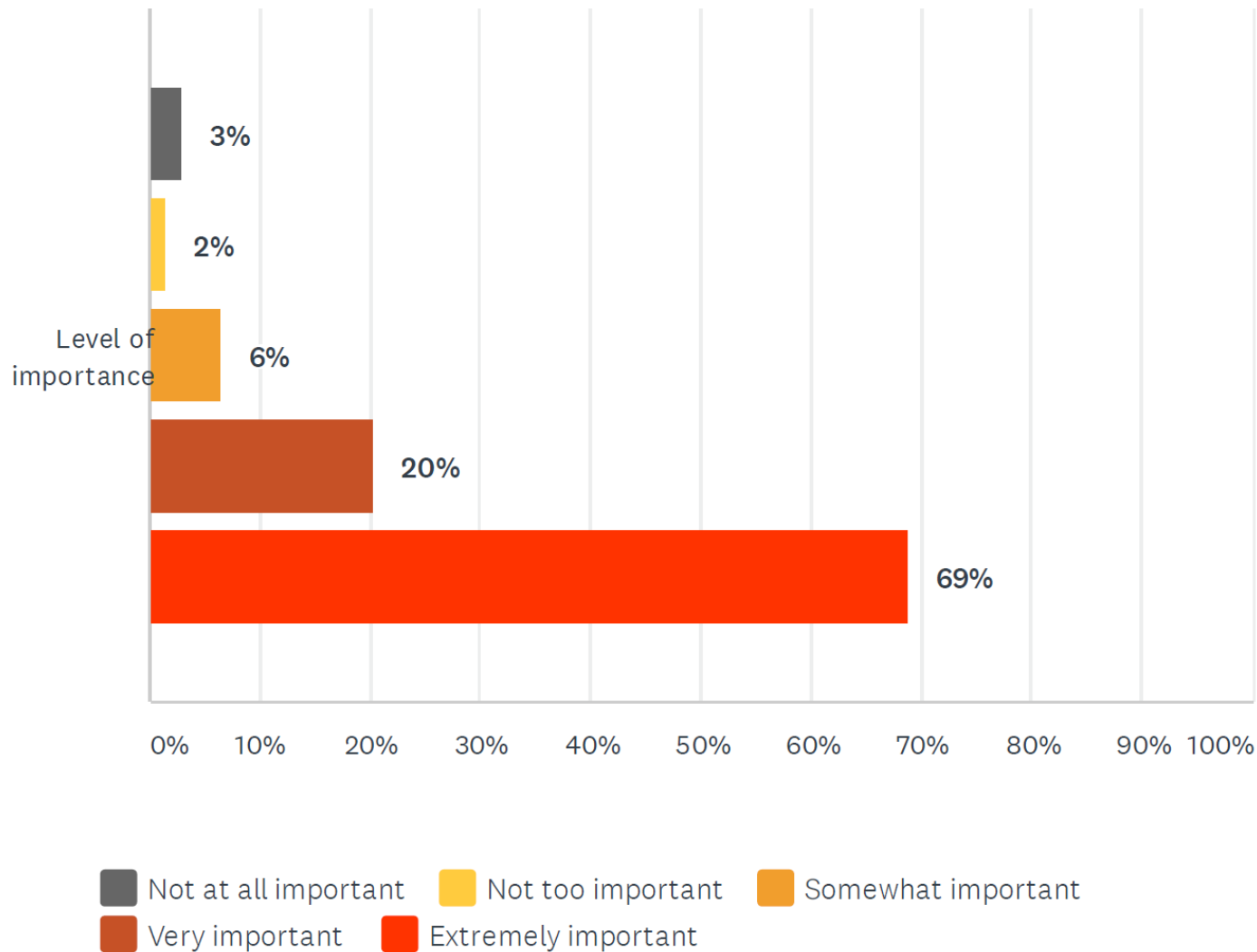
The City connected with more than **180 participants** during **15 virtual events** and received **525 survey responses**

Survey Overview

- Online format open Sept. 2020 – Feb. 2021
- Asked for opinions about climate actions, risks, approaches, and demographics
- 525 respondents; 700+ comments
- Promoted by M&C, Boards and Commissions briefings
- Environment Commission and city staff promotion through social media, newsletters
- Translated into Spanish and Mandarin Chinese languages



How important is the issue of global warming to you personally?



Comments Highlights

- "...local governments and individuals all need to do their part to address the issue as quickly as possible."
- "As a young person, I know that my friends and my entire future depends on whether we can get greenhouse gas emissions under control and implement a just transition in the next ten years."
- "We need to act!"
- "I'd like to see Rockville be a leader in this space, and a model for other cities."
- "We are living the effects daily."
- "No measurable impact on global climate disruption can be made at the city level."

Which climate change risks are you most concerned about for Rockville and Washington area?

At least 68% are concerned about a variety of potential climate change risks and hazards, including:

Most Concerning Risks

(82-87% Concerned/Very Concerned)

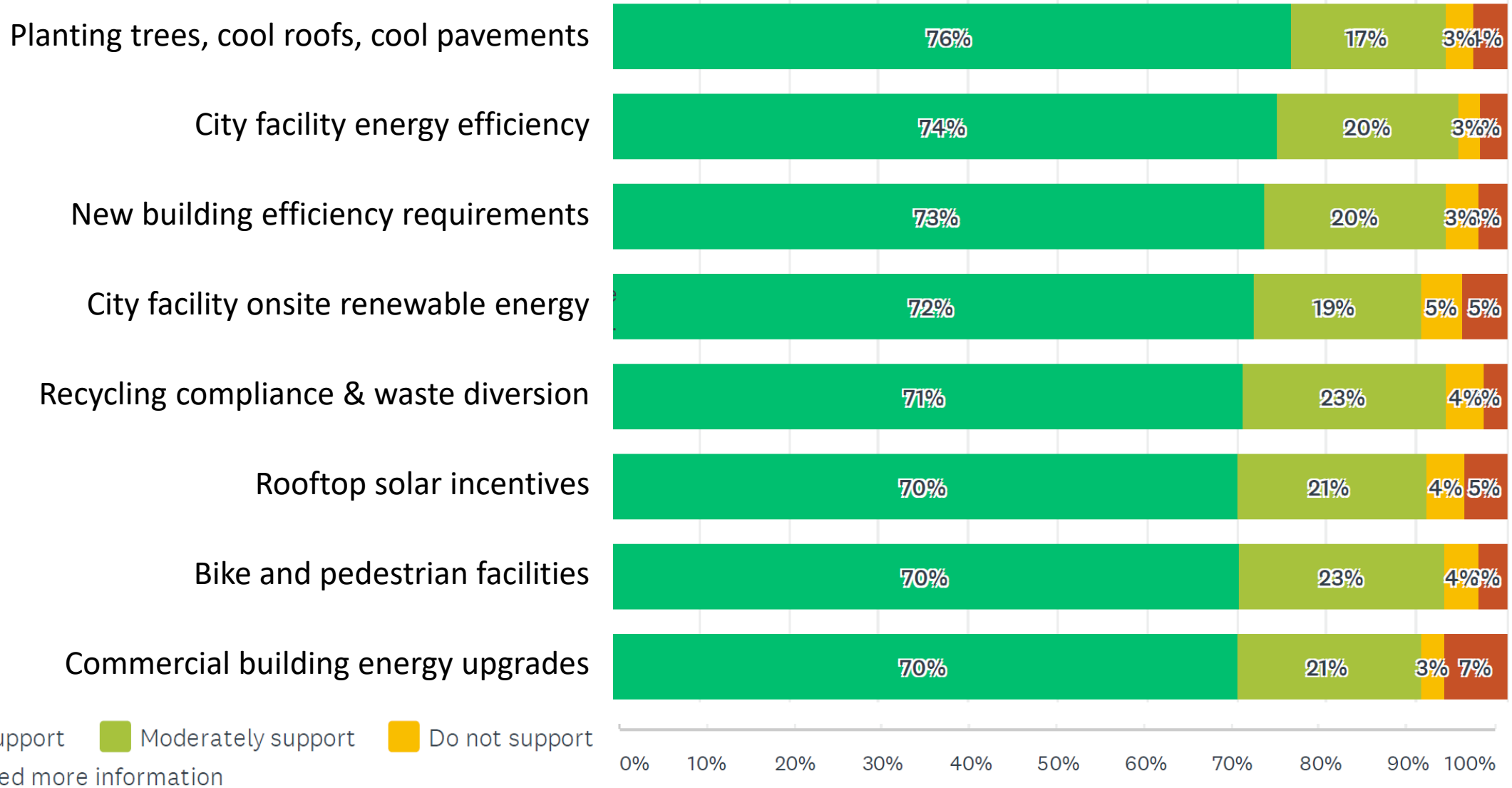
- Air Quality
- Infrastructure
- Natural areas
- Effects on vulnerable people
- Heat waves
- Stronger storms
- Increased pests
- Urban drainage

Next Most Concerning Issues

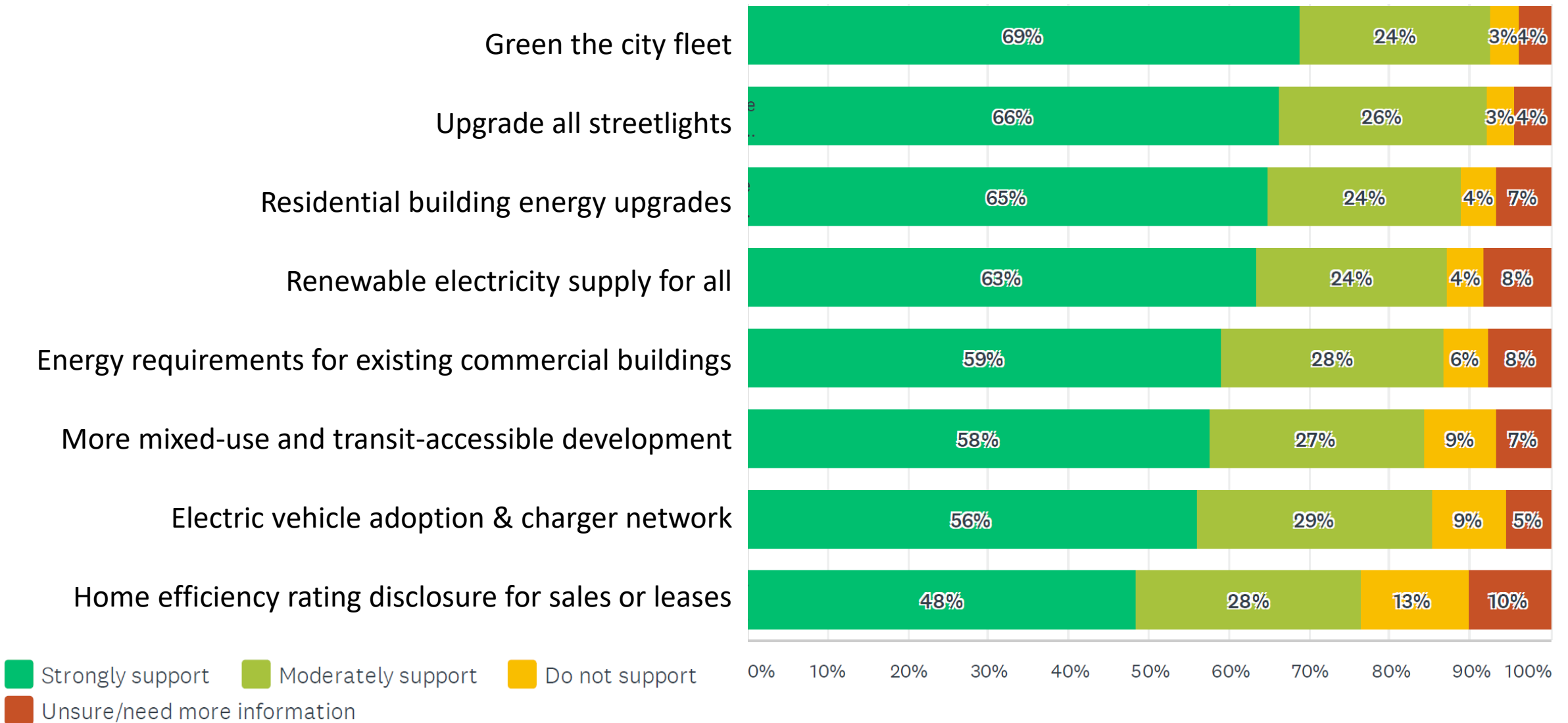
(68-79% Concerned/Very Concerned):

- Heavy rainfall
- Hurricanes
- Stream flooding
- Increased seasonal allergies
- Rising sea levels
- Potomac river flooding

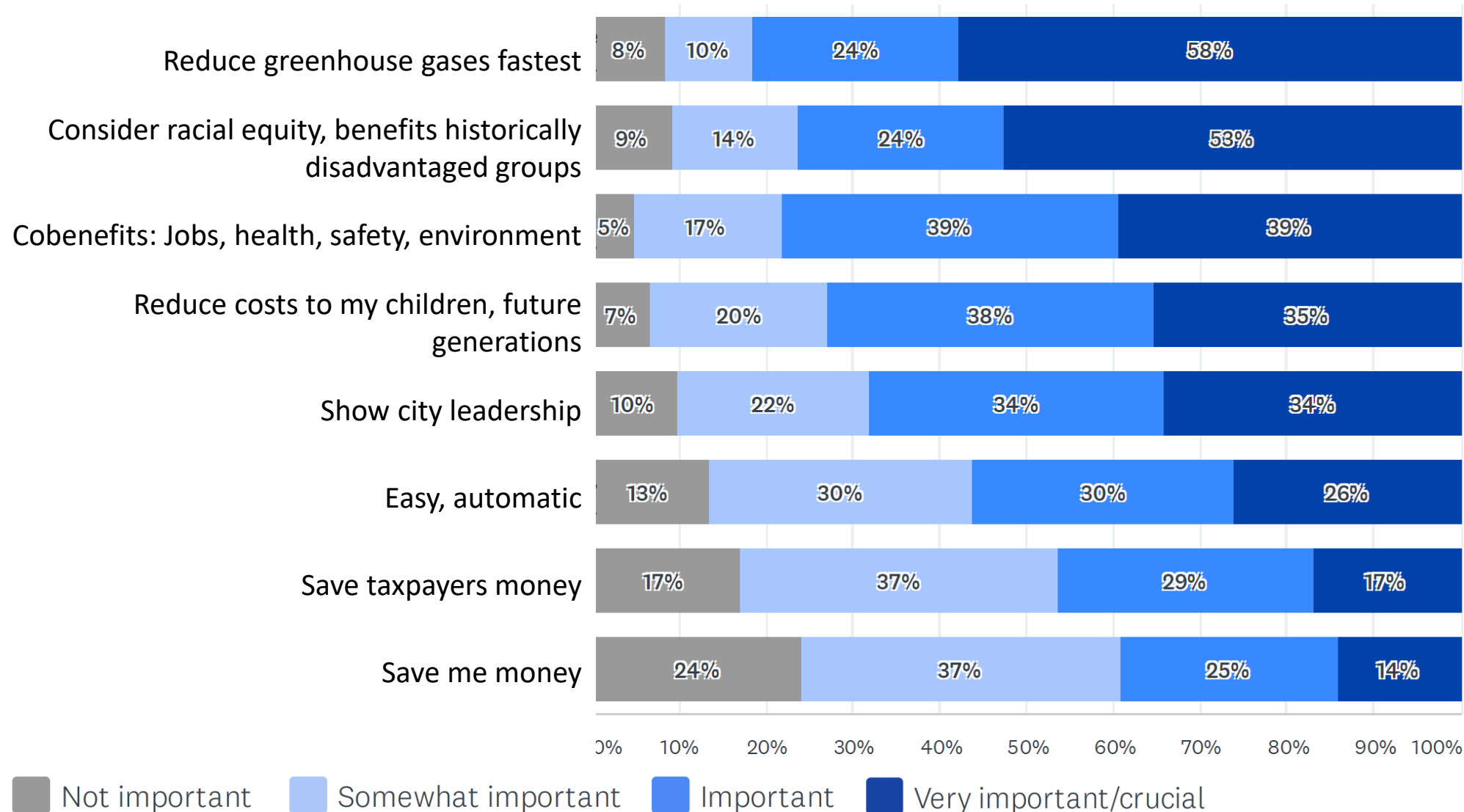
What actions should the city implement?



What actions should the city implement (cont'd)?



Criteria for Rockville Climate Actions and Programs



Comments on Strategies

It is imperative that we create a more livable and long-term viable city for all residents present and future, not at the expense of those least able to do more.

All of the actions to be taken must be done within a responsible financial framework and in coordination with Montgomery County.

“I would love a discount program for installation of home and commercial solar and geothermal systems. We could also use a program to promote butterfly- and pollinator-friendly native plantings on City, commercial, and home properties.”

Climate change is not a one-size-fits-all problem, and therefore requires a diverse range of solutions.

The more we can do the better, without creating an environment that is unfriendly to business.

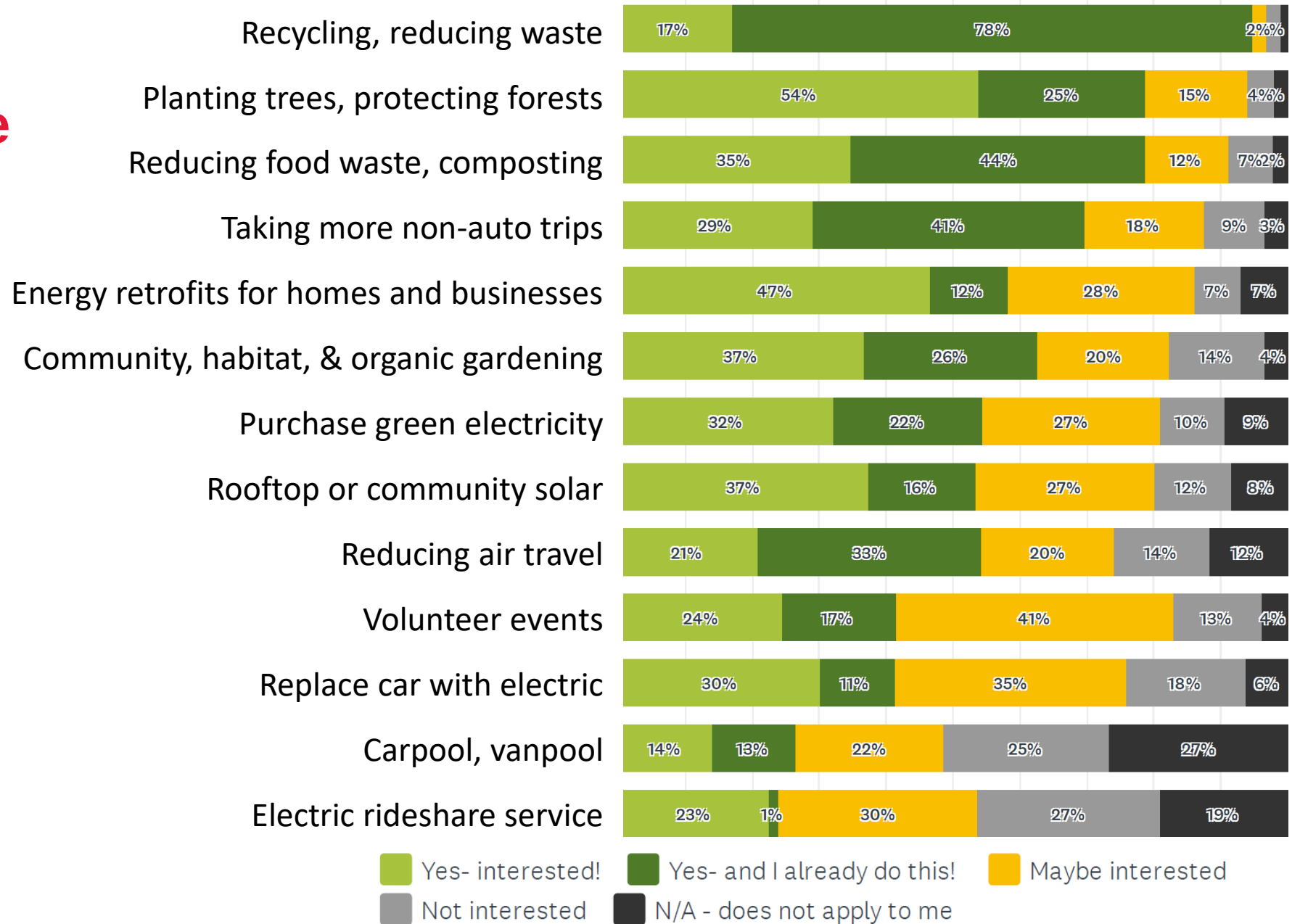
I would focus first on the actions that decrease negative economic and social pressures on people who are marginalized, like energy efficiency programs, discounted renewable energy programs, and support for public transit.

“Rockville must also consider ways to reduce and reuse water resources..”

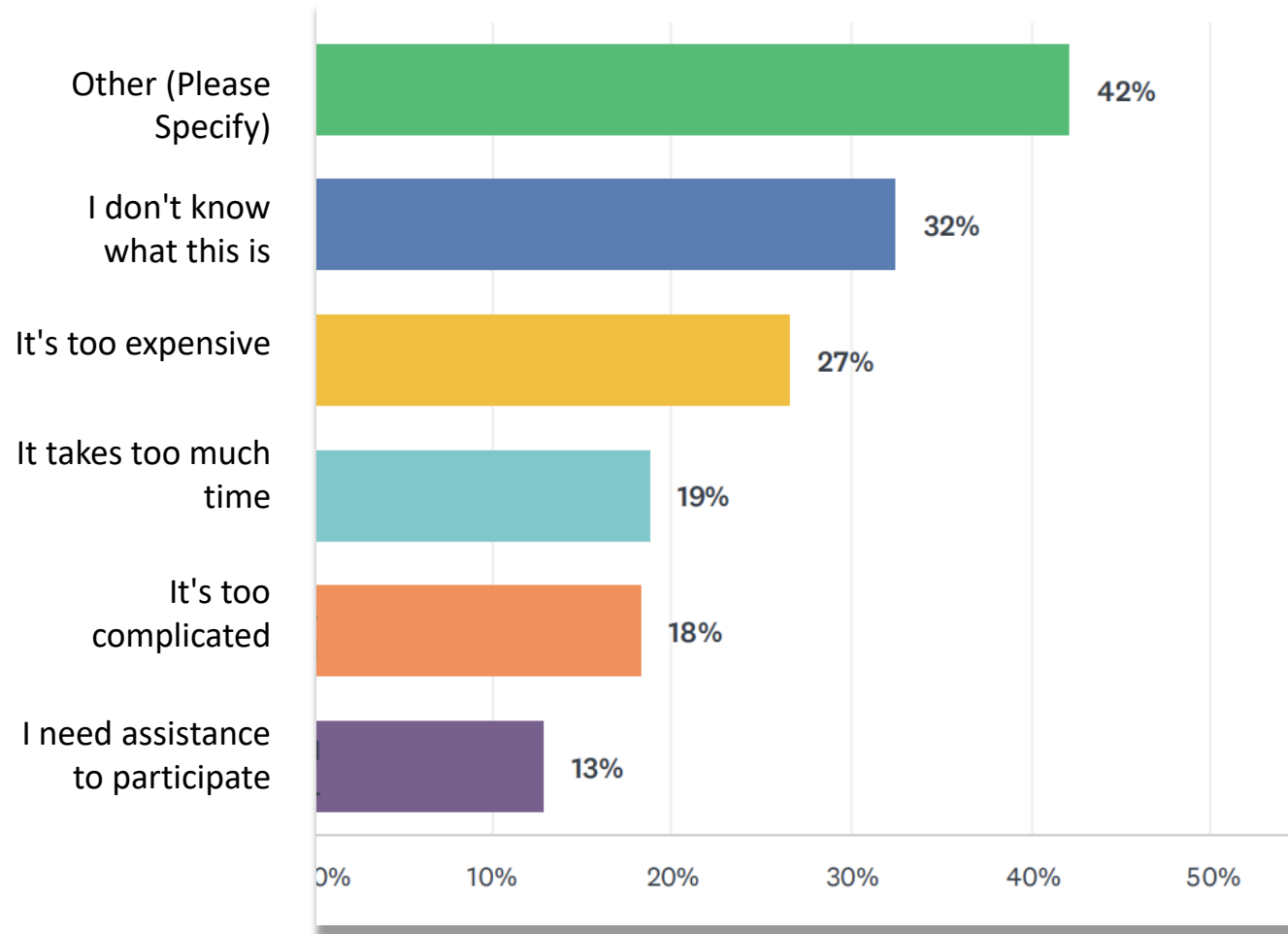
“Redgate Park should become (partially) an arboretum for climate assisting trees and plants.”

“Even if we solve climate change in Rockville and US, unless other nations do the same...we can only slow it down. And even if they do. There are other more urgent threats.”

What actions are individuals interested in pursuing?



Participant Barriers to Participation and Adoption



'Other' barriers:

- Does not suit current lifestyle circumstances (i.e. age, teleworking, rent and don't own, not enough time, pandemic, etc.)
- Don't know how or need more information

"You need to consider renters. I would love an electric car, but I rent so where would I plug in?"

Rideshare services are a great idea especially using electric power but given the ongoing pandemic and potential safety issues needs some thought.

Thank you

to all respondents

Rockville Environment
Commission

Rockville Mayor and Council

Public Information Office

Neighborhood Services

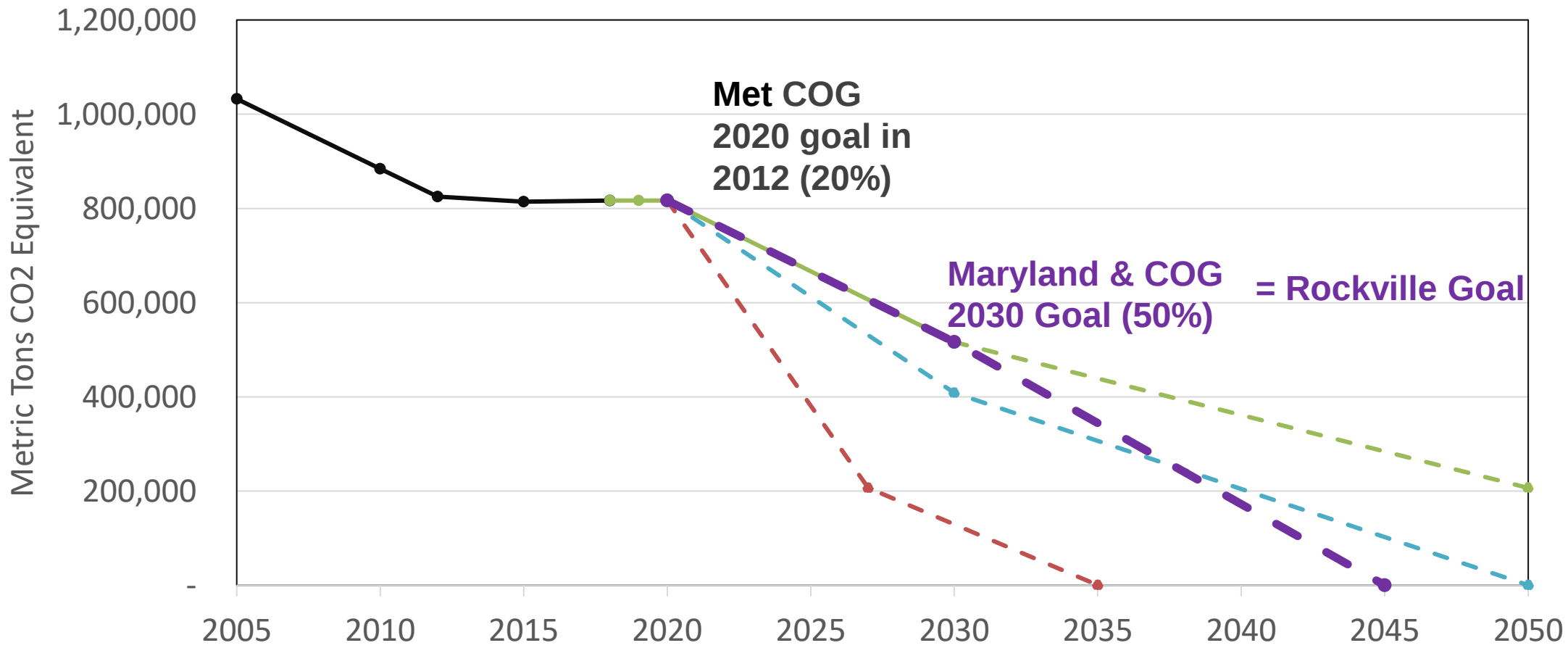
Environmental Management
Division

“If we try, Rockville really can be a model city for dealing effectively with climate change. We have so many talented, creative, resourceful, and clever people and we can work together to address this issue while minimizing costs/staying within our budget. Thank you so much for requesting resident feedback on this plan and issue in general.”

- Survey Respondent

Emissions Reduction Goals

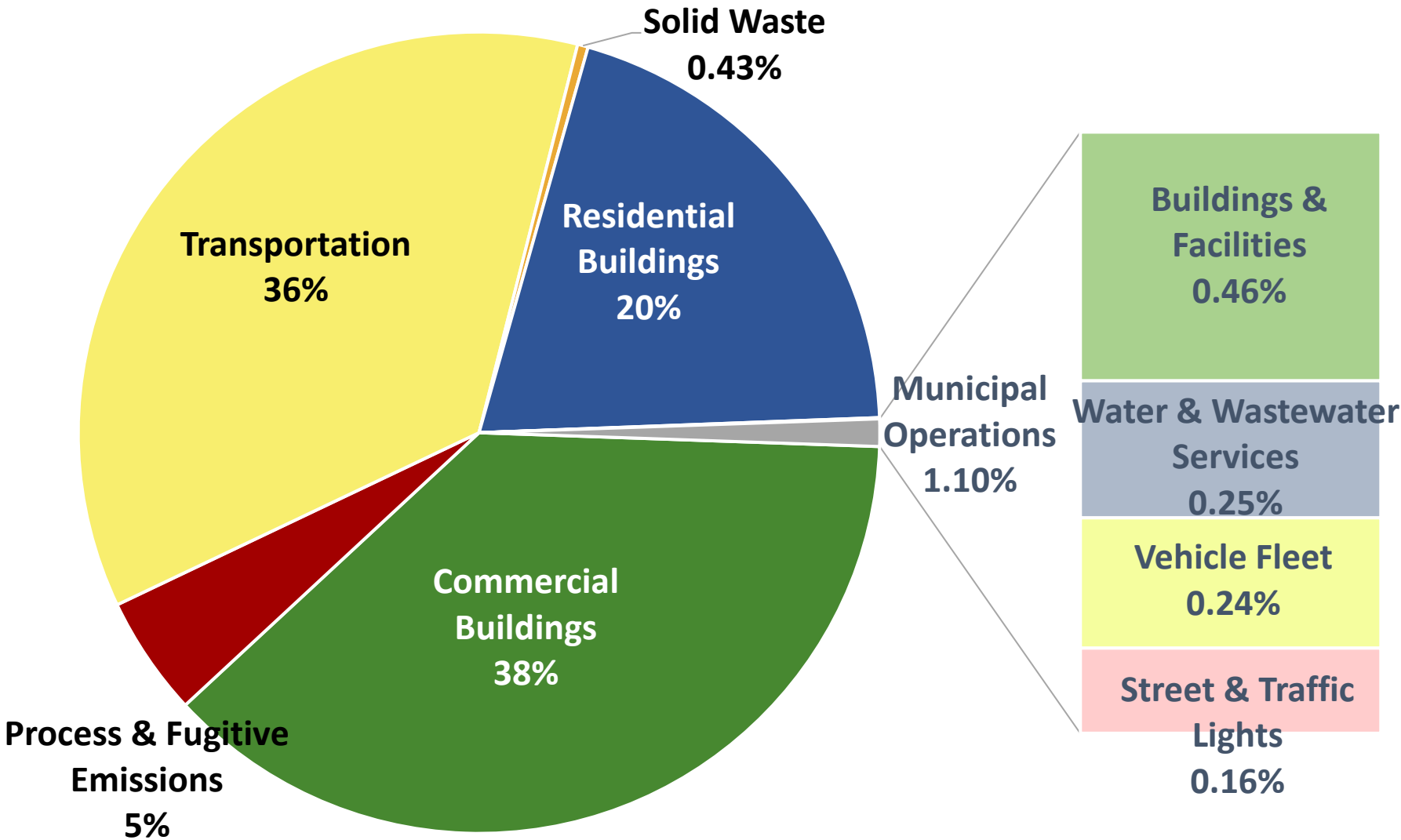
- Rockville Historical
- Montgomery Co. (Net zero by 2035)
- Maryland 2030 Plan (50% by 2030, Net zero by 2045)
- COG (50% by 2030; 80% by 2050)
- UN Paris 1.5C (Net zero by 2050)



Greenhouse Gas Emissions

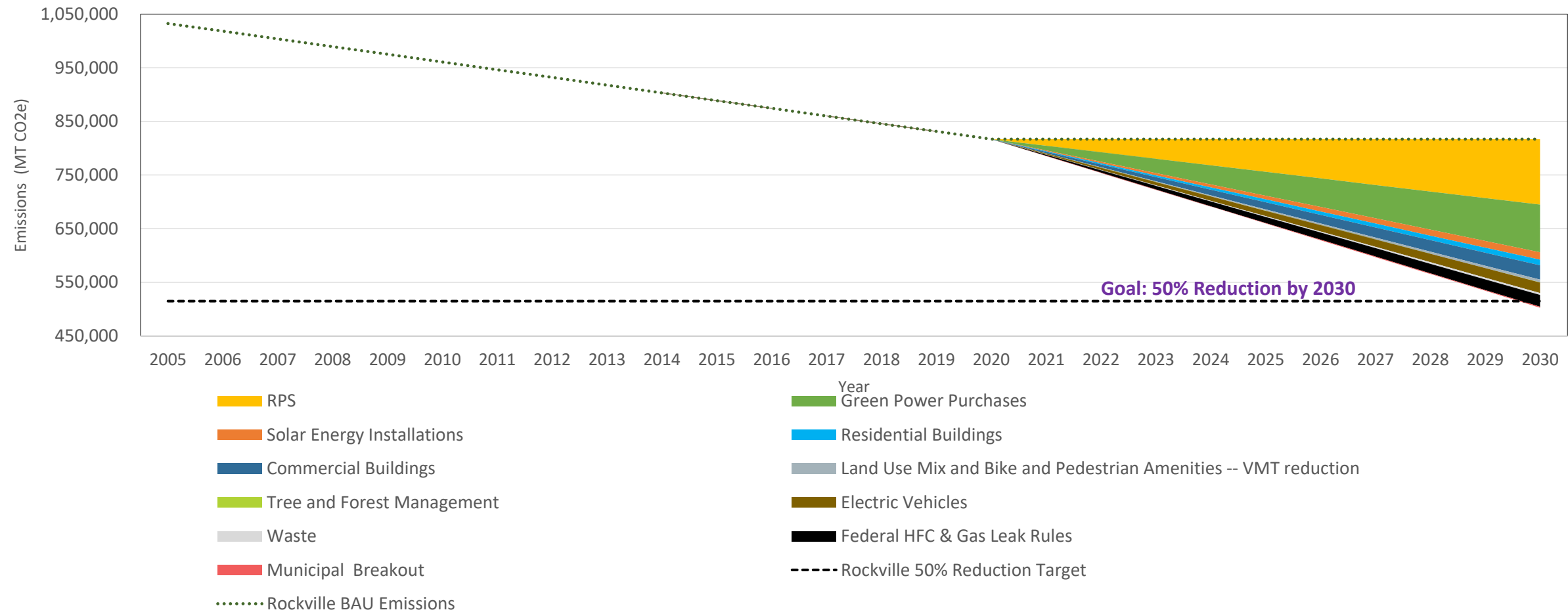
Community Total: 816,868 MTCO₂e

Municipal Total: 8,994 MTCO₂e



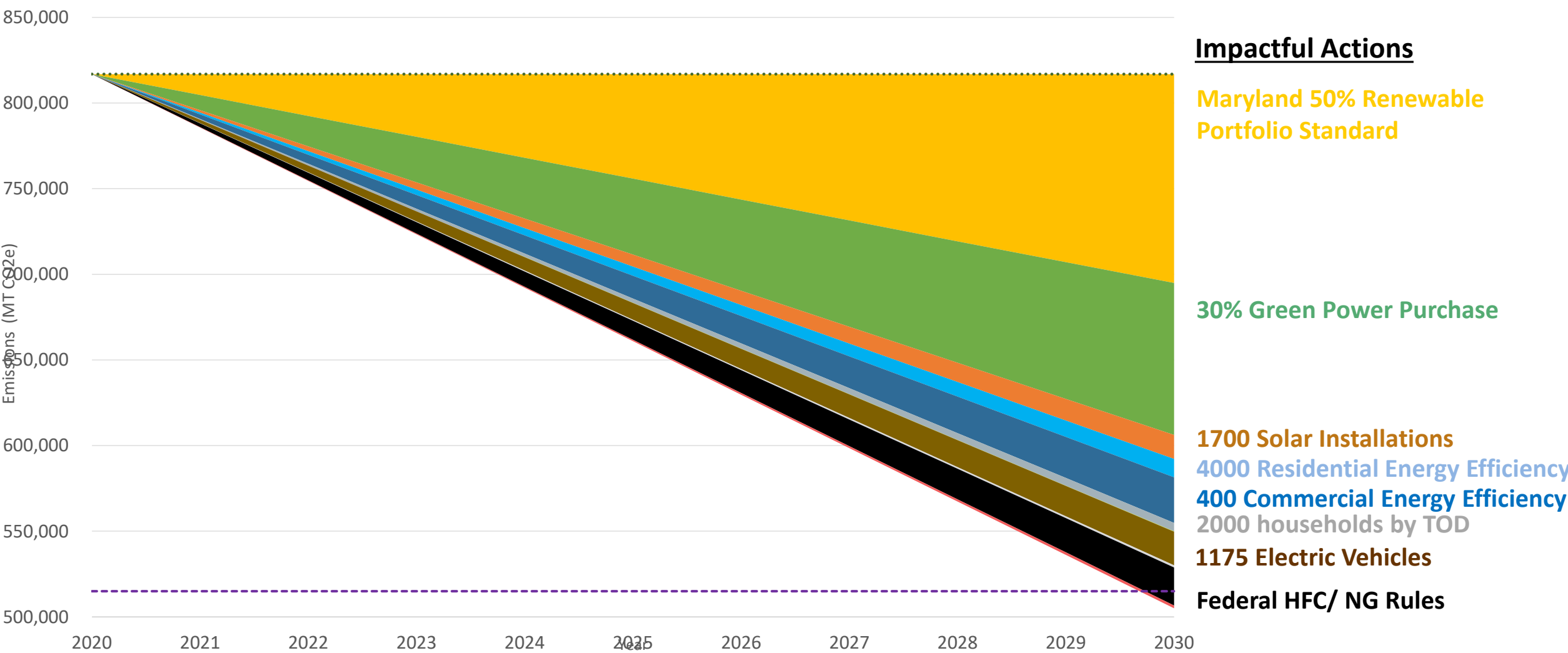
How Can We Reduce Emissions?

Emissions Reductions Pathway to Meet Rockville's Emissions Reductions Target



Source: Cadmus Reduction Analysis Tool, 2021. Based on COG Business as Usual Projections.

Emissions Reduction Pathway



Source: Cadmus Reduction Analysis Tool, 2021. Based on COG Business as Usual Projections.

Emissions Reduction Scenarios

	Strategy	Quantity or Target Implemented by 2030 (Assumptions in Emissions Model)	2030 Reduction Metric Tons (CO2e)	% Contribution to 50% Reduction Goal
1	Maryland Renewable Energy Portfolio Standard	Increasing to 50% renewable-sourced electricity target	-121,989	40.6%
2	Federal HFC/Natural Gas Emissions Reduction Actions	Increasing to 75% HFC emissions reduction	-22,214	7.4%
3	Green Power Purchases	Increasing to 30% of residents and businesses	-88,723	29.5%
4	Solar Energy Installations	1,700 additional single family, townhouse and commercial installations	-6,642	2.2%
5	Residential Building Energy Retrofits	4,000 electric and natural gas building upgrades	-7,114	2.4%
6	Commercial Building Energy Retrofits	400 Electric and natural gas building upgrades	-26,619	8.9%
7	Electric Vehicles	1,175 additional electric vehicle swaps	-19,836	6.6%
8	Land Use Mix + Bike/Pedestrian Amenities	2,000 households redirected to TODs/reduce VMT	-4,983	1.7%
9	Waste	2,000 metric tons of waste diverted over 10 years	-694	0.2%
10	Municipal Actions	Facility energy efficiency, fleet conversions, streetlights, solar, etc.	-1,694	0.6%
11	Tree and Forest Management	3,000 trees planted	-180	0.1%
	Total		-300,686	100%

Source: Cadmus Reduction Analysis Tool, 2021. Based on COG Business as Usual Projections. Factors in reductions from Maryland 50% RPS.



Emissions Reduction Strategies

Strategy	Lead	Partners
1 Maryland Renewable Energy Portfolio Standard	Maryland	Rockville (Advocacy)
2 Federal HFC/Natural Gas Emission Reduction Actions	Federal	
3 Green Power Purchases (residents and businesses)	Maryland/Montgomery County (Community Choice Energy)	Rockville
Solar Energy Installations (residential and commercial 4 installations)	Rockville	Montgomery County, Non-profit (Solar Co-op)
Residential Building Energy Retrofits 5 (electric and natural gas building retrofits)	Rockville	Montgomery County, Utilities, Non-profits
Commercial Building Energy Retrofits 6 (electric and natural gas retrofits)	Montgomery County (Building Energy Performance Std)	Rockville
7 Electric Vehicles	Rockville	Montgomery County
8 Land Use Mix and Bike and Pedestrian Amenities (reduce VMT)	Rockville	Montgomery County, Maryland, WMATA
9 Waste	Rockville	Montgomery County
Municipal Actions (facility energy efficiency, fleet conversions, 10 streetlights, solar, etc.)	Rockville	
11 Tree and Forest Management	Rockville	

Cadmus High-level Methodology Action Cost-Benefit Analysis

A cost-benefit analysis for each policy was estimated based upon a combination of the following sources:

- *Correspondence with the City of Rockville*
 - e.g. Department of Public Works and the Department of Housing and Community Development
- *Budgets of comparable policies published by other cities or municipalities*
- *Web articles published by reputable organizations*
 - e.g. National Resources Defense Council (NRDC)
- *Peer reviewed literature*

Cadmus Cost-benefit Methodology

Except for year-long contracts, the cost-benefit analysis was estimated on the basis of a *2030 timeframe*. An FTE estimate was calculated for each policy.

Factors considered as <i>costs</i>	Factors considered as a <i>benefit</i>
<i>Upfront costs</i> ▪ This may include contract procurement associated costs <i>Annual costs</i> ▪ The cumulative cost per year integrating a multiplier (e.g., number of households participating per year)	<i>Fiscal Savings</i> ▪ E.g., energy savings per household that participates in the program

Total cost = Upfront costs + (Annual Costs X 9 years)

Draft Cost-benefit Summary

Action	Full-time Equivalent staff needed	Upfront Cost	Annual Cost (not including FTE)	Cost Savings to Offset Costs Over Time
1. Contract to develop EV Readiness Plan over 1 year	0.1 FTE	\$100,000		EV operators see reduced life cycle costs
2a. Food Waste Compost - Contracted Curbside Service (18% participation)	0.2 FTE	\$100,000	\$1,476,310	City saves \$97,200 on fees for 360 tons annually – based on case in VT
2b. Food Waste Compost – Voluntary Community Drop-off (1% participation. 8 bins + maintenance)	0.2 FTE	\$680	\$7,588	City saves \$5,400 on fees (20 tons annually from 143 homes/1%)
3a. Outreach Program for Residential Energy Efficiency – Outsourced	0.2 FTE		\$50,000	Energy savings for households served (est. 500 households)
3b. Outreach Program for Residential Energy Efficiency – Staff	1.0 FTE		\$35,730	Energy savings for households served (est. 500 households)
4. Expanded Low-Moderate Income Home Repair/Weatherization & Solar Program	2.5 FTE		\$492,574	Revenue from solar and energy savings for households served (25 households/year)
5. Contract to develop Green Space Management Plan for public lands	0.1 FTE	\$115,000		Multiple co-benefits (shade, ecological, air quality, carbon sequestration, adaptation, etc.)

Action List – Energy Efficiency

Action ID	Energy Efficiency Actions	Lead
C-01	Adopt Montgomery County's Building Energy Performance Standard (BEPS) for existing commercial and multifamily buildings	Montgomery County
C-02	Expand low and moderate income (LMI) home repair and weatherization program to increase energy efficiency, resiliency and renewable opportunities	Rockville
C-03	Adopt net zero building codes for new construction	Rockville
C-04	Opt in to Montgomery County's point of sale energy disclosure (Chapter 40, Real Property, Section 40-13B)	Rockville
C-05	Expand home energy efficiency outreach program to increase participation in energy audits and utility rebates	Rockville
C-05	Coordinate with Montgomery County on electrification incentives for existing building systems	Montgomery County
M-01	Complete energy assessments of city facilities and develop a strategic plan to reduce facility energy consumption	Rockville
M-02	Convert city-owned streetlights to energy efficient LED (light-emitting diode) (CIP TA22)	Rockville
M-03	Advocate for a Pepco streetlight LED conversion agreement that serves the public interest	Pepco

Action List – Renewable Energy

Action ID	Renewable Energy Actions	Lead
C-07	Advocate to increase the Maryland Renewable Portfolio Standard by 2030	Maryland
C-08	Coordinate with Montgomery County on development of the Community Choice Energy Program to aggregate green power purchasing	Maryland & Montgomery County
C-09	Promote private solar and geothermal installations (solar co-op, streamlined permitting, including expanding access for low-to-moderate income residents)	Rockville
M-04	Identify feasible opportunities for solar photovoltaic installations on city property	Rockville
M-05	Purchase green power renewable energy certificates (RECs) for municipal electricity	Rockville (partner with County aggregate procurement)

Action List – Transportation

Action ID	Transportation Actions	Lead
C-10	Work with WMATA, MDOT, and Montgomery County to maximize transit accessibility and ridership and enhance mobility options	Rockville Public Works
C-11	Develop a Rockville Electric Vehicle (EV) Readiness Plan	Rockville
C-12	Require new developments and redevelopments to be electric vehicle-ready	Rockville
C-13	Promote a regional electric vehicle buyer co-op	MWCOG/ County
C-14	Expand active transportation and shared micro-mobility network (implement improvements identified in Bicycle Master Plan and Vision Zero Plan)	Rockville
C-15	Adopt a Pedestrian Master Plan	Rockville
M-06	Convert the city fleet to cleaner and more efficient fuel sources	Rockville
M-07	Create a new Capital Improvement Plan to expand electric vehicle charging infrastructure on city property to serve employees, fleet and the community	Rockville
M-08	Update city teleworking and transit benefit policies to encourage city employees to reduce vehicle miles traveled (VMT)	Rockville

Action List – Land Management

Action ID	Land Management Actions	Lead
C-16	Implement 2040 Comprehensive Plan to steer the most-dense development/redevelopment to mixed-use, transit-served locations to reduce VMT and conserve/restore environmental areas	Rockville
C-17	Expand education and incentives to support tree planting and native habitat landscaping conversions on private property and removal of non-native invasive plants	Rockville
M-09	Develop a Green Space Management Plan for public lands to assess and restore trees, forests, meadows, stream valleys and wetlands	Rockville

Action List – Waste and Materials

Action ID	Waste and Materials Actions	Lead
C-18	Develop a food waste composting program for residents	Rockville
C-19	Expand recycling and waste reduction outreach program to increase recycling compliance and waste diversion	Rockville
M-10	Develop a city sustainable procurement policy	Rockville

Action List – Resiliency

Action ID	Transportation Actions	Lead
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C-21	Update floodplain maps and community program to incorporate new FEMA requirements	Rockville
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M-13	Update the storm drain conveyance capacity assessment and identify constraints and areas at risk for worsened flooding and drainage problems	Rockville
M-14	Develop and implement Heat Illness Prevention Plans for various city services and operations	Rockville

Action List – Public Engagement & Oversight

Action ID	Public Engagement Oversight Actions	Lead
C-25	Work with community partners to conduct an inclusive public engagement campaign to reduce emissions and adapt to the impacts from climate change	Rockville
C-26	Develop metrics and performance indicators for climate actions to establish a data-driven assessment and reporting process	Rockville
M-15	Incorporate climate mitigation and resiliency considerations into the city's budget prioritization process	Rockville
M-16	Develop an interdepartmental climate action team to implement and track plan progress	Rockville

Next Steps

- Go to: www.rockvillemd.gov/climate and review Draft Actions and enter comments on Feedback Form – open **July 22 to August 5**
- Mayor and Council briefing -- **October 4**
- Rockville Climate Action Plan Adoption – **Fall 2021/Winter 2022**
- Developing related budget requests for city budget -- **underway**
- Implementation and monitoring progress – **ongoing**

THANK YOU

CADMUS



Rockville Environment
Commission



Contact: Amanda Campbell acampbell@rockvillemd.gov