

CLIMATE AND ENERGY GOALS

2030 Regional Greenhouse Gas Emission Reduction Goals & Action Plan

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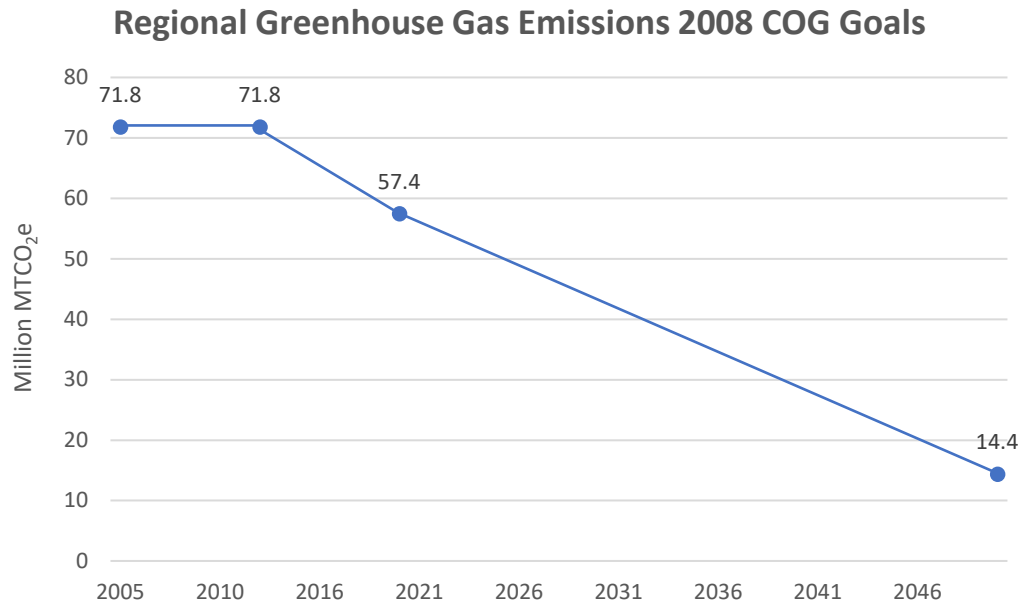
Agenda Item # 2

Briefing topics

- Region's GHG emission reductions goals
- Regional GHG inventory – Report Card
- 2030 GHG emission reduction Goal
- 2030 Regional Resilient Ready Goal
- Next Steps

Regional GHG Reduction Goals

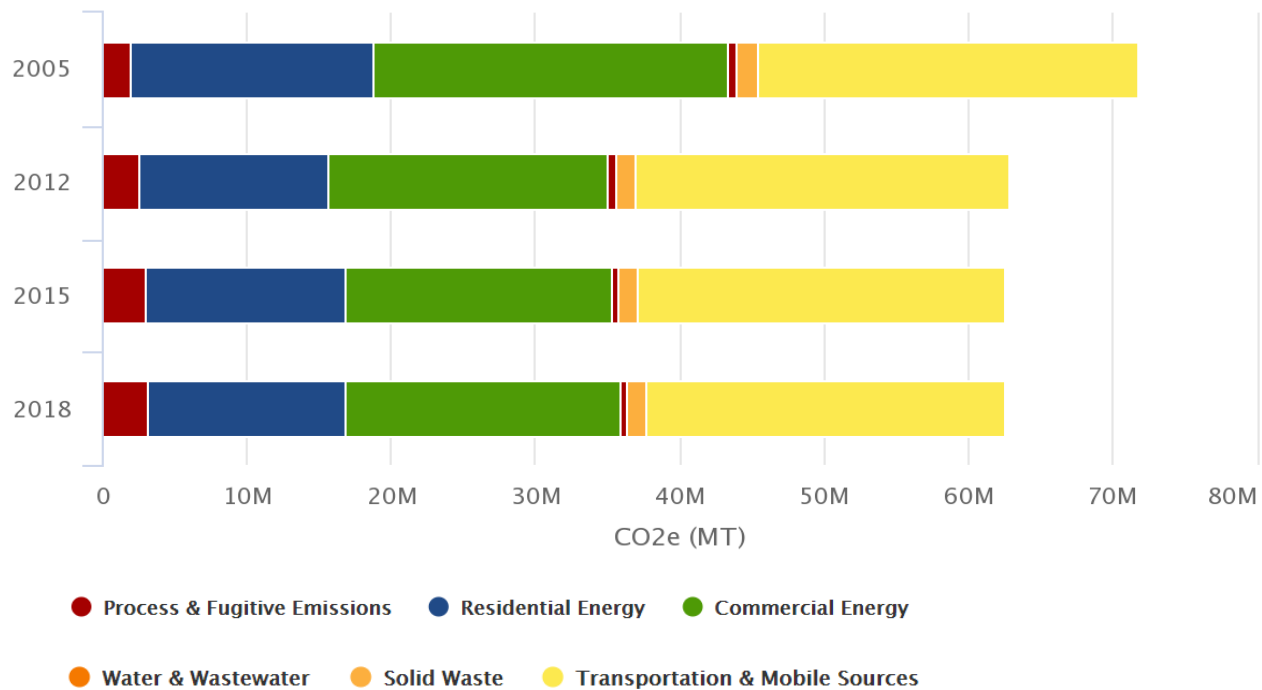
- COG Board adopted the Climate Change Report & goals - (R60-08)
 - 2012 – Reduce from business as usual by 10% ≈ 2005 emissions
 - 2020 – Reduce 20% below 2005
 - 2050 – Reduce 80% below 2005



- TPB accepted goals in the 2010; affirmed the goals (R10-2015)

Regional GHG Inventory

- 2012 goal - 10% below BAU \approx 2005 emissions
 - 2012 - actual 12% below 2005
- 2020 goal - 20% below 2005
 - 2018 - actual 13% below 2005



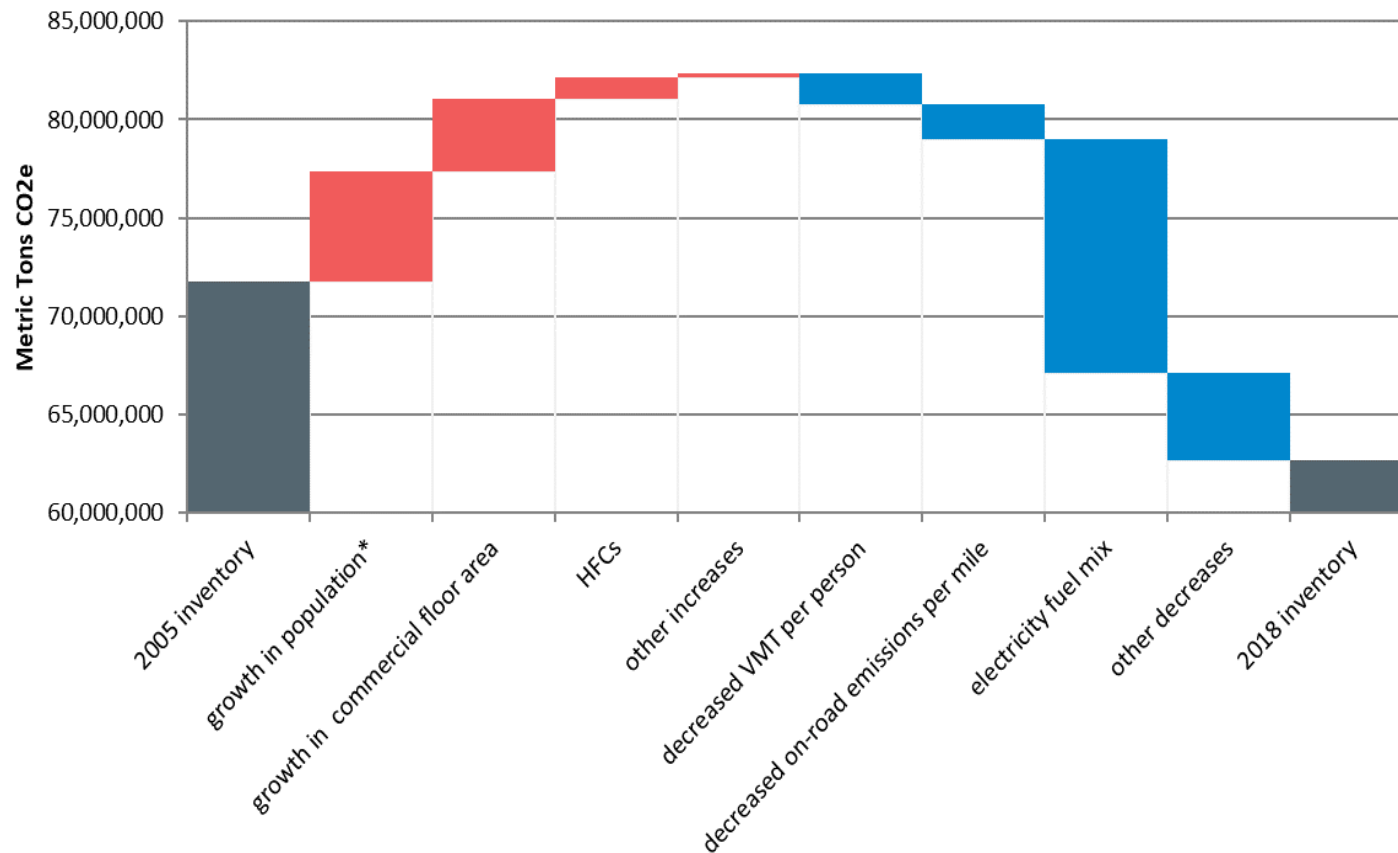
Source: ClearPath output

Note: ClearPath is an online greenhouse gas inventory tool. ClearPath is a product of ICLEI - Local Governments for Sustainability.



Drivers of Regional GHG Change

- What has caused regional GHG emissions to change over time?



Climate Planning – Cost of Inaction

- Storm intensity and frequency
 - Increased local flooding
 - Degraded MS4 performance and threaten compliance
 - Increased risk of tropical storms
 - Increased risk of winter ice storms
- Heat
 - Higher day/night temperatures – increased health & safety risk
 - Damage infrastructure – transit tracks, roads, energy
 - Increased drought risk
 - Wildfires & smoke
 - Worse ozone pollution
 - Utility bill increases – equity impact
- Public Safety
 - Increased need for emergency response



Global Covenant of Mayors



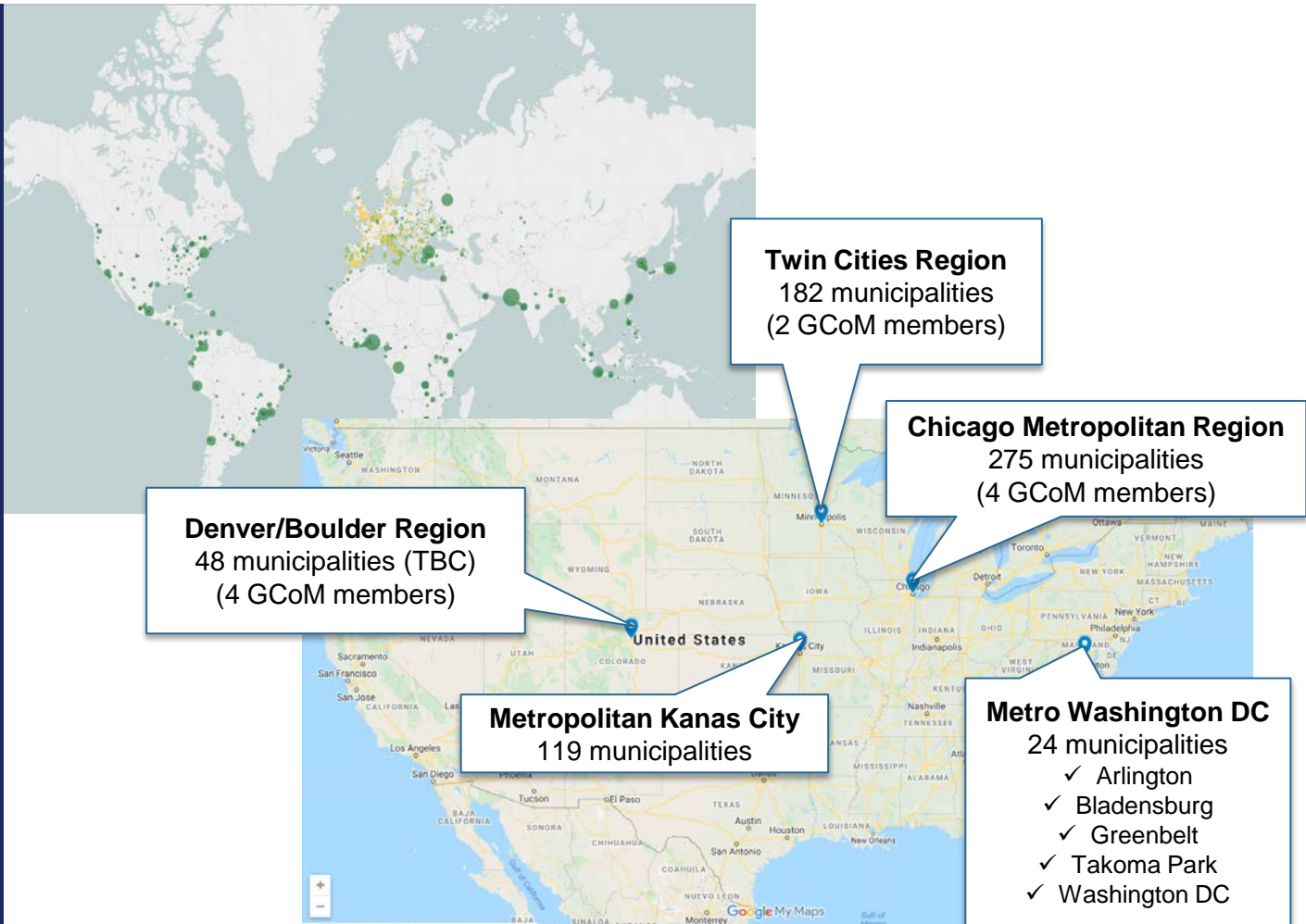
10,000+ CITIES

130+ COUNTRIES

800+ MILLION PEOPLE

100+ GLOBAL PARTNERS (city networks, private partners, research institutions)

10+% OF THE GLOBAL POPULATION



Global Covenant of Mayors



- International framework for comprehensive, best-practice climate action planning, with validation
- Networking, cooperation and knowledge exchange
- Amplifying the voice of local governments at the global level
- Collaboration across all levels of government
- Support
 - Data4Cities
 - Innovate4Cities
 - Invest4Cities
- GCOM Commitments
 - GHG emission inventory;
 - An assessment of climate risks and vulnerabilities;
 - Ambitious, measurable and time-bound target(s) to reduce GHG emissions;
 - Ambitious adaptation vision and goals;
 - A formally adopted plan

COG Climate Planning

- 2008 National Capital Region Climate Change Report
 - Regional goals
 - Recognize need for adaptation (resiliency)
 - Endorsed by Region Forward Coalition, TPB
- Climate and Energy Action Plans
 - Shorter-term plans recommending voluntary actions to reach goals
 - 2030 Plan is the 5th version of the Climate and Energy Action Plan



COG Climate Planning

- Guiding Principles

- Collective action
- Effective partnerships
- Lead by example
- Integration
- Flexibility
- Transparency
- Innovation
- Community leadership
- Inclusive engagement
- Advocacy

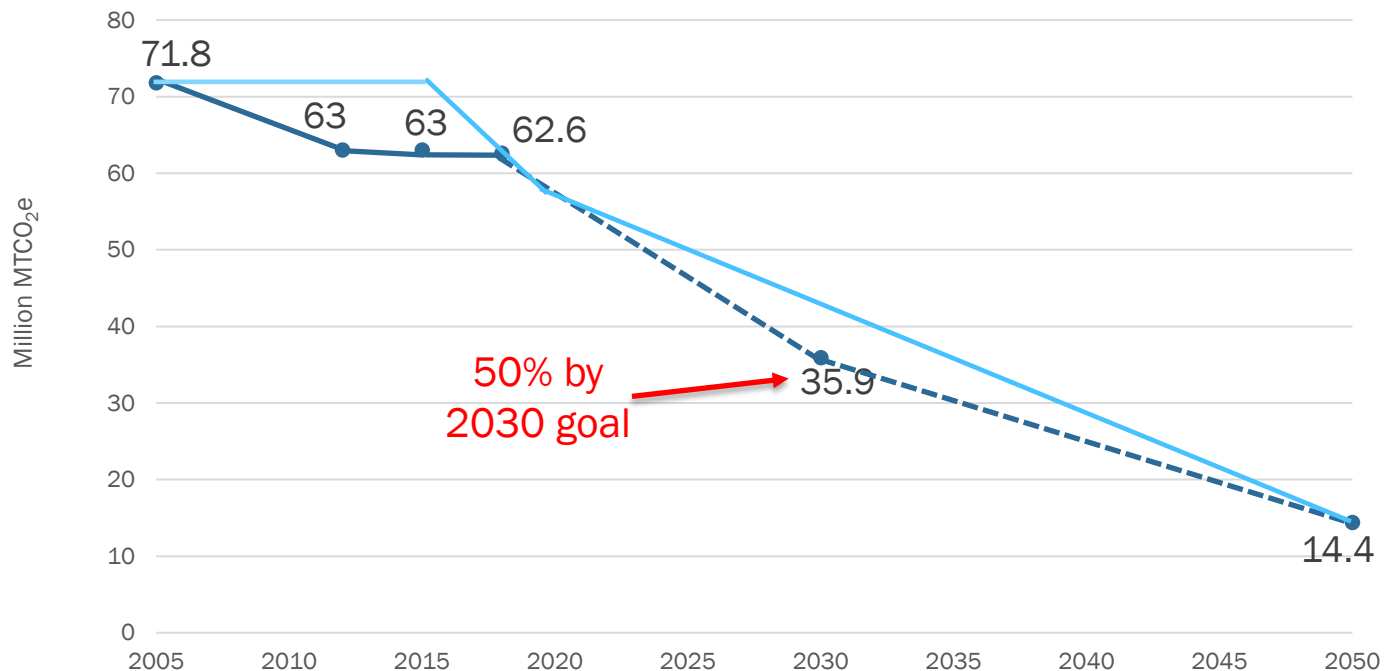
- Outcomes on Climate & Energy Dashboard

- <https://www.mwcog.org/environment/data-and-tools/climate-and-energy-progress-dashboard/>

2030 Regional GHG Goal

- 50% below 2005 base line by 2030

2030 Regional Greenhouse Gas Emission Goal



Local GHG Goals

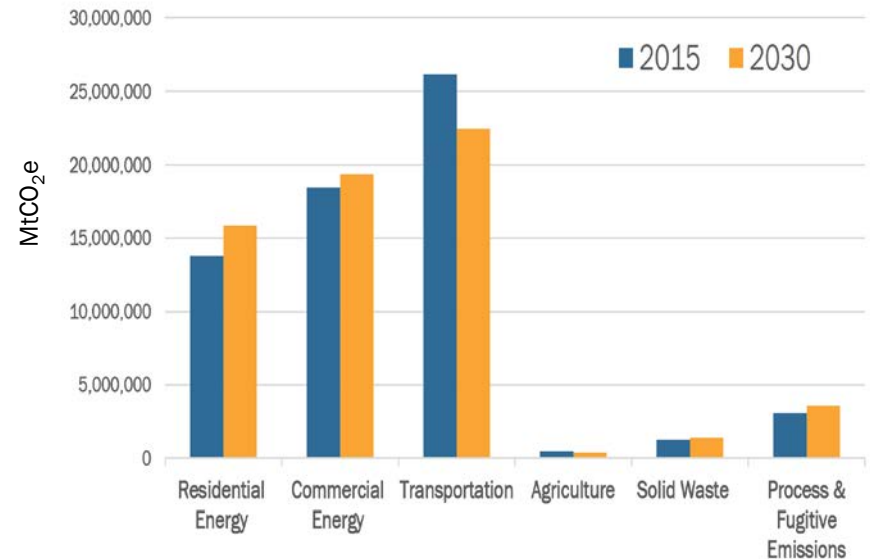
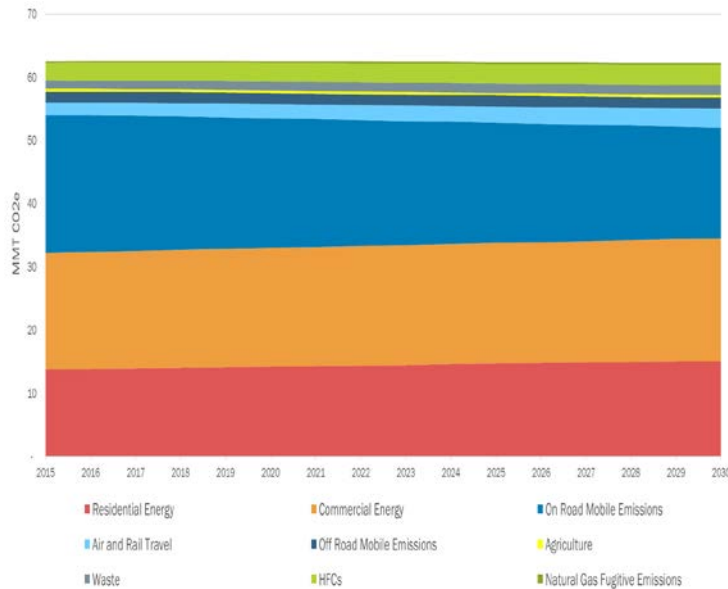
City/County	Long Term Goal	Interim Goal	Date
MWCOG Regional Goal	2050 – 80% below 2005 baseline	2020 – 20% below 2005 2030 – 50% below 2005	2017-2020
Arlington County	2050 - Carbon neutral	No interim year goal	2019
Alexandria	2050 - 80-100% below 2005 baseline	2030 – 50% below 2005	2019
Loudoun County	2040 – Reduce emissions from 3.85 to 3.0 MMT CO ₂ e	No interim year goal	2009
Montgomery County	2035 - Carbon neutral	No interim year goal	2018 New plan under development
Fairfax County	Task Force preliminary targets between 80% & carbon neutral	Task Force recommendation 2030 - 50% below 2005	2020 Projected Adoption
Prince George’s County	2050 - 80% below 2005 baseline	No interim year goal	2014 New plan under development
Washington, DC	2050 - Carbon neutral	2032 - 50% below 2006	2018



2030 - Business As Usual

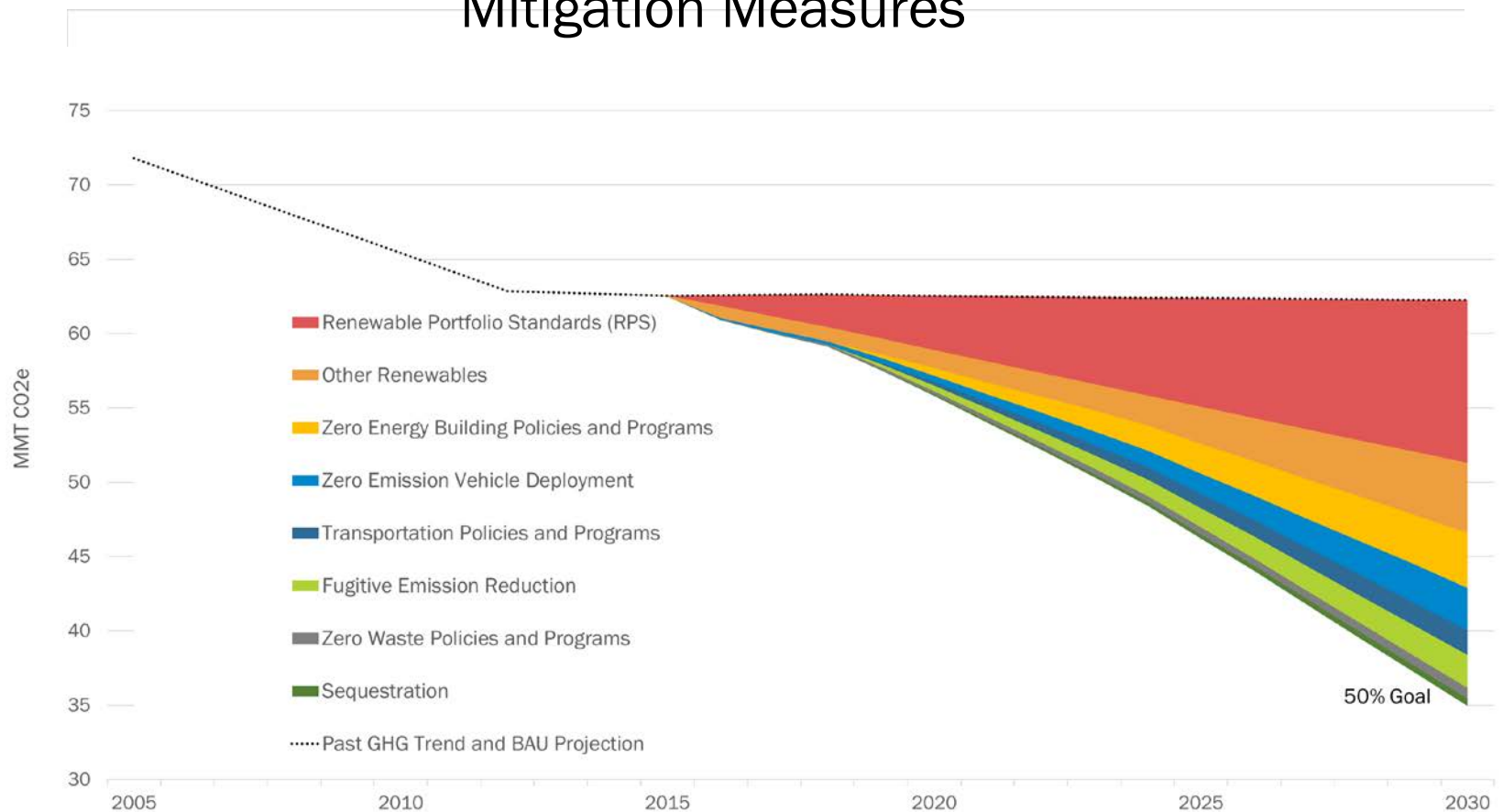
- Total emissions will remain flat with no new future actions
- Varying trends by sector

2015 - 2030 Business As Usual



2030 - 50% Goal Technical Potential

Mitigation Measures



Multi-Sector Strategies

Scenario Assumptions	
Buildings	<ul style="list-style-type: none"> • 75% new housing in Activity Centers with high capacity transit • All new construction net zero by 2030 • 2% existing building deep retrofits annually
Renewable Energy	<ul style="list-style-type: none"> • Renewable Portfolio Standards – Current state standards by 2030 (DC 87%, MD 50%, VA 38%) • + 200,000 additional distributed generation systems (equivalent to 24% of single-family homes with solar) • 10% annual growth in corporate green power purchases
Transportation	<ul style="list-style-type: none"> • Continued fleet improvements – light, medium & heavy-duty vehicles • Electric vehicles – NREL Electrification Study high EV adoption rates • Continued transit and micromobility – reduce per capita VMT
Waste	<ul style="list-style-type: none"> • 80% waste diversion by 2030



Mitigation Actions

Action Area	Action ID	Priority Collaborative Action
Planning	PL - 1	Advance Climate Planning and Track Progress
Equity	EQ - 1	Enable Equitable Planning Practices
	EQ - 2	Prioritize Sustainable Energy Access for All
Clean Electricity	CE - 1	Advocate for Aggressive Renewable Portfolio Standards
	CE - 2	Accelerate Development of On-Site Renewables
	CE - 3	Accelerate Deployment of Battery Storage
	CE - 4	Accelerate Development of Microgrids for Critical Infrastructure
	CE - 5	Accelerate Development of Large-Scale Off-Site Renewables
	CE - 6	Advocate for and Implement Community Choice Aggregation
Zero Energy Buildings	ZEB - 1	Expand Building Benchmarking Requirements
	ZEB - 2	Accelerate Deep Building Retrofits
	ZEB - 3	Enhance Green Building Codes and Policies to Facilitate Net Zero Energy Building Development
	ZEB - 4	Expand Proper Disposal and Leak Detection of Refrigerants



Mitigation Actions (continued)

Action Area	Action ID	Priority Collaborative Action
Zero Emission Vehicles	ZEV - 1	Expand Light-Duty Electric Vehicle Deployment
	ZEV - 2	Accelerate Electrification of Medium- and Heavy-Duty Vehicles
	ZEV - 3	Build Out Regional Electric Vehicle Charging Network
Transportation & Land Use	TRLU - 1	Reduce single-occupancy vehicle trips/VMT reduction
	TRLU - 2	Bring housing and jobs closer together
Zero Waste	ZW - 1	Implement Curbside Organics Recycling Programs
	ZW - 2	Reduce Solid Waste Generation
	ZW - 3	Build Markets for Circularity
Sequestration	SQ - 1	Strategically Plant New Trees on Publicly Owned Land
	SQ - 2	Enhance Regulatory Capacity to Manage Tree Canopy and Forest Protection
	SQ - 3	Enhance Tree Planting and Preservation on Privately Owned Lands



50% Reduction – Transportation Strategies

- Reduce single-occupant vehicle (SOV) trips
 - Expand telework options
 - Move more people on high capacity transit
 - Develop rapid bus systems throughout the region
 - Construct network of express lanes with express bus services
 - Provide transit benefits to employees
 - Implement roadway pricing & context-sensitive pricing for parking
- Reduce per capita vehicle miles traveled (VMT)
 - Bring jobs and housing closer together; + new housing in Activity Centers
 - Improve non-motorized connectivity in Activity Centers
 - Improve/expand pedestrian/bicycle infrastructure & access to transit
 - Ensure equitable and affordable transit fares
- Zero emission vehicle adoption – NREL EV high scenario
 - Expand Light-Duty Electric Vehicle Deployment
 - Accelerate Electrification of Medium- and Heavy-Duty Vehicles
 - Build Out Regional Electric Vehicle Charging Network



Regional Resilience Assessment

- Resilience = Lessen effects of acute events and chronic conditions; recover more quickly after an event

Regional Climate Risk and Vulnerability Assessment

Climate Hazards

Hazard	Probability	Consequence	Risk
Extreme Heat Days	3	3	9
Drought	2	3	6
Flooding (Flash and Riverine)	3	3	9
Lightning/Thunderstorm	3	2	6
Extreme Winter Conditions	2	3	6
Coastal Flooding	3	2	6

Adaptive Capacity

Factor	Degree of Challenge
Access to Basic Services	Moderate
Access to Healthcare	Moderate
Public Health	Moderate
Housing	Moderate
Poverty	Moderate
Economic Health	Low
Environmental Conditions	Moderate
Infrastructure Conditions / Maintenance	High
Community Engagement	Moderate

Resilient Ready Region Goal

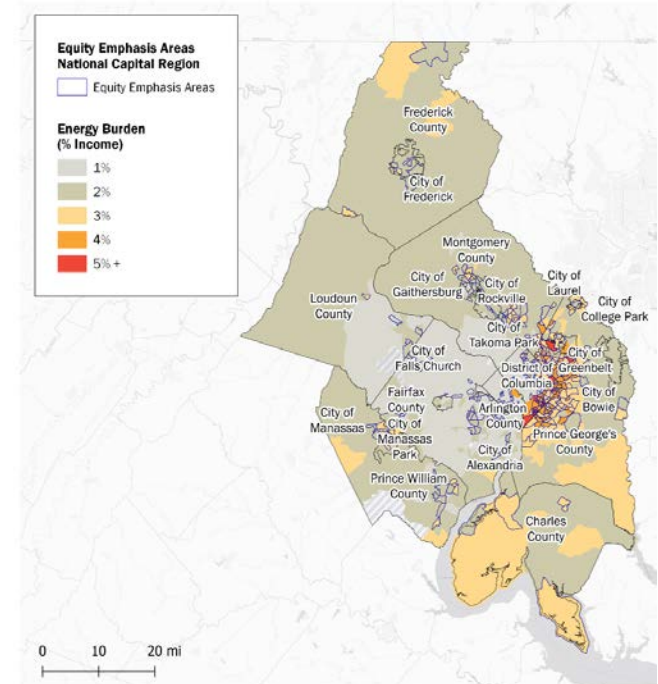
- Network of people, governments, and institutions that have constructed resilient communities
- Climate risks are being communicated across governmental offices and to the public; engaging vulnerable populations
- Local climate risks have been assessed and climate planning is incorporated into all government plans & operations
- Measures have been implemented across the region
 - Critical infrastructure and functions climate resilient
 - Resilient solutions to protect public health and safety deployed
- Monitoring measures to address progress & future climate risks and vulnerabilities

Resilience Actions

Action Area	Action ID	Priority Collaborative Action
Planning	PL - 2	Support Capacity Building for Climate Resilience Planning
	PL - 3	Develop Integrated Approach to Climate Resilience Planning
	PL - 4	Update Local Regional Plans to Address Climate Risks
Equity	EQ - 3	Support Engagement of the Public on Climate Risks, with a Particular Emphasis on Potentially Vulnerable Populations
	EQ - 4	Support Equitable Secure Energy Access
Resilient Infrastructure	RI - 1	Support Establishment of Resilience Hubs
	RI - 2	Improve the Resilience of Critical Infrastructure
	RI - 3	Implement Measures to Equitably Address Urban Heat Island
	RI - 4	Enhance Green Infrastructure Networks
	RI - 5	Implement Measures to Reduce Flood Risk

Equity in Regional Climate Planning

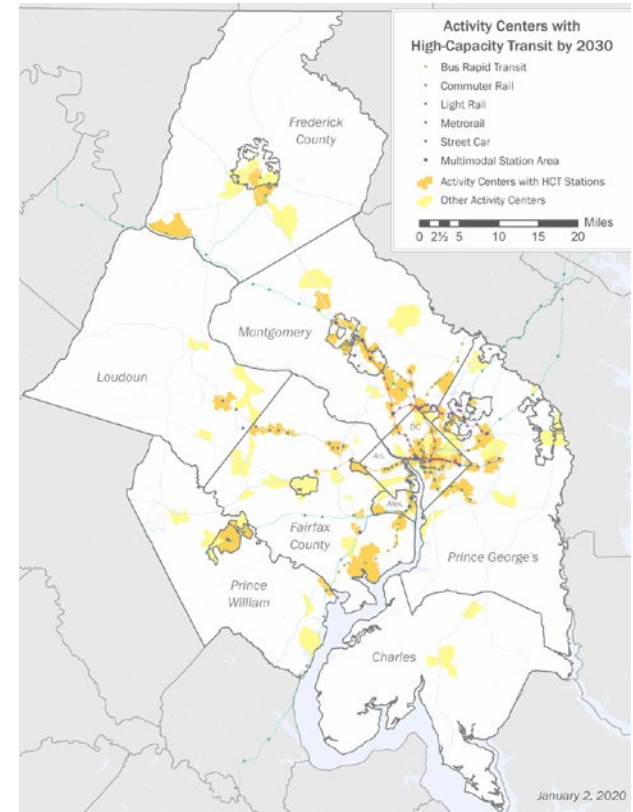
- Sustainable Energy Access
 - Addresses energy poverty & access to affordable renewable energy
- Evaluate community impact
 - Transportation Equity Emphasis Areas
 - Health Equity: How Opportunities for Health are Shaped by Race and Ethnicity



Source: US Department of Energy Low-Income Energy Affordability Data (LEAD) Tool & COG Equity Emphasis Areas

Other Benefits of Climate Planning

- Improved public health
 - Clean water & clean air
 - Reduce flooding & heat impacts
- Improved land use efficiency
- Sustainable food
- Expanded economic development
- Emergency response & recovery



Timeline

Regional Climate Plan Updated Timeline

May 2020	<ul style="list-style-type: none"> • CEEPC consideration of updated climate goals
June 2020	<ul style="list-style-type: none"> • BEEAC and ACPAC weigh in on Plan's goals • BEEAC review of Plan's scenarios
July 2020	<ul style="list-style-type: none"> • BEEAC deadline for comment on technical elements • CEEPC review of 2018 inventory, scenarios, and weigh in on Plan's goals
September 2020	<ul style="list-style-type: none"> • Presentation to COG Board
September 2020	<ul style="list-style-type: none"> • Preview Draft Plan framework & Climate Goals Resolution to ACPAC, BEEAC, CEEPC • CEEPC recommendation to COG Board
October 2020	<ul style="list-style-type: none"> • 2030 Climate Goals Resolution action by COG Board
November 2020	<ul style="list-style-type: none"> • Draft Plan before CEEPC
December 2020	<ul style="list-style-type: none"> • Submit to GCoM; to be the 1st US Region fully meeting GCoM global standards for climate planning



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