

METROPOLITAN WASHINGTON 2030 CLIMATE AND ENERGY ACTION PLAN

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Department of Environmental Programs

Region Forward Coalition

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Metropolitan Washington
Council of Governments



AGENDA

- Metropolitan Washington 2030 Climate and Energy Action Plan Briefing
- Assessment of Climate Risks and Vulnerabilities
- Strategies to be a Resilient Region
- Breakouts and Facilitated Discussions
- Report Out from Chair and Next Steps
- Other Business
- Adjourn



METROPOLITAN WASHINGTON 2030 CLIMATE AND ENERGY ACTION PLAN BRIEFING



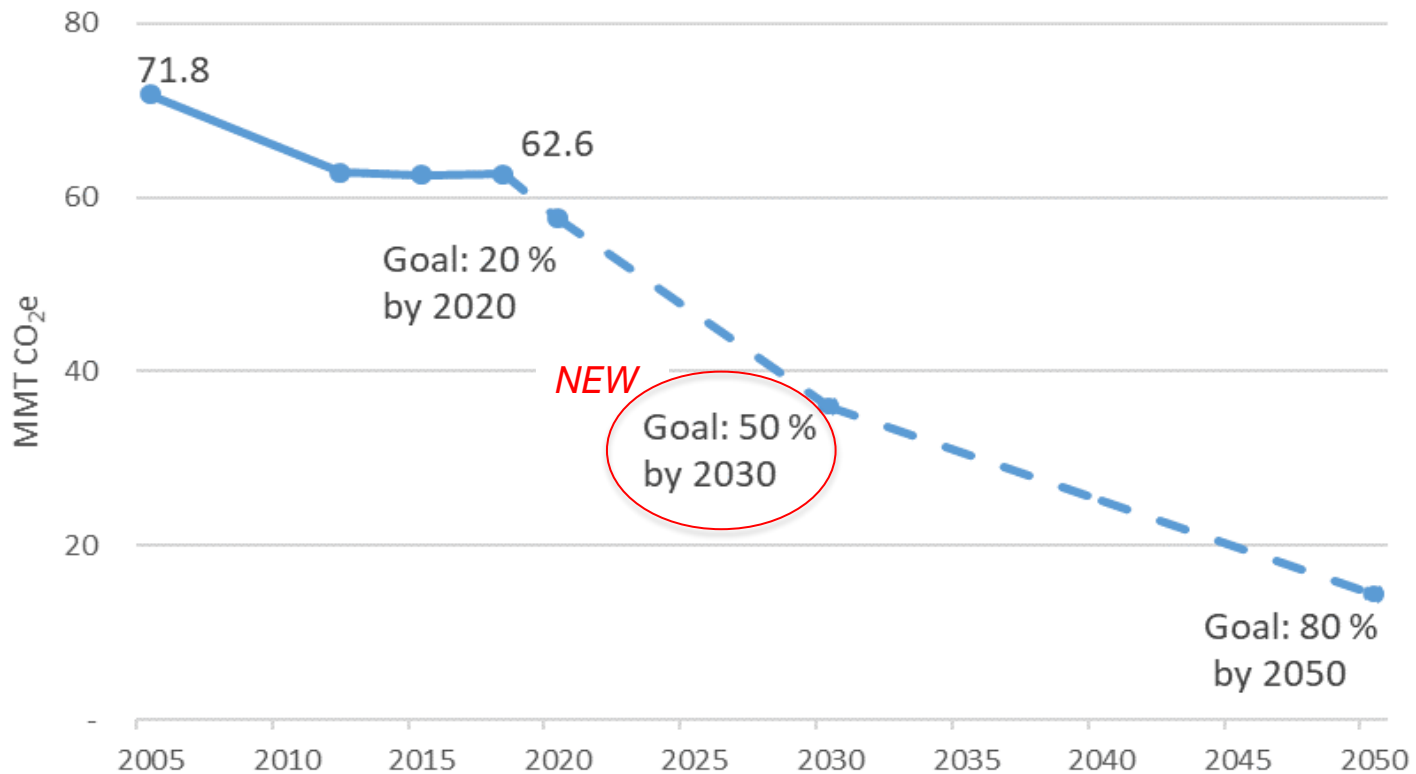
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COG's Climate Action History

- **2007:** R31-07 created the COG Climate Change Initiative
- **2008:** Resolution R60-08 adopted the National Capital Region Climate Change Report
- **2009:** Resolution 18-09 established the Climate, Energy and Environment Policy Committee (CEEPC)
- **2010:** Greenhouse gas (GHG) emission reduction targets incorporated into Region Forward
- **2010:** CEEPC adopted the first regional Climate and Energy Action Plan for 2010-2012.
- **2013-2016 and 2017-2020:** Updated Action Plans adopted
- **2020-2030:** Action Plan Adopted

Updated Regional GHG Mitigation Goals

In October 2020, per CEEPC's recommendation, the COG Board adopted (and TPB affirmed) the climate mitigation goal of 50 percent greenhouse gas emission reductions below 2005 levels by 2030.



Four Main Plan Elements

Element	Description
1. Greenhouse Gases	Summary of regional GHG inventory trends from 2005 – 2018, business-as-usual (BAU) GHG emission projections through 2030, and technical scenario showing what it will take for the region to reach GHG reductions of 50% below 2005 levels by 2030.
2. Climate Mitigation Strategy	CEEPC’s priority collaborative mitigation actions to move the region toward achieving the GHG emission reduction goal of 50% by 2030, below 2005 levels. Climate action areas include Planning, Equity, Clean Electricity, Zero Energy Buildings, Zero Emission Vehicles, Mode Shift and Travel Behavior, Zero Waste, and Sequestration.
3. Climate Risks and Vulnerabilities	Summary of the Regional Climate, Risk and Vulnerability Assessment (CRVA). Evaluates climate hazards: extreme heat, drought, lightning and thunderstorms, flash and riverine flooding, coastal flooding and extreme winter conditions.
4. Climate Resilience Strategy	CEEPC’s priority collaborative climate resilience actions to move the region toward achieving the goal of becoming a Climate-Ready Region and making significant progress to be a Climate Resilient Region by 2030. The action areas include Planning, Equity, and Resilient Infrastructure.

Mitigation Actions

Climate 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

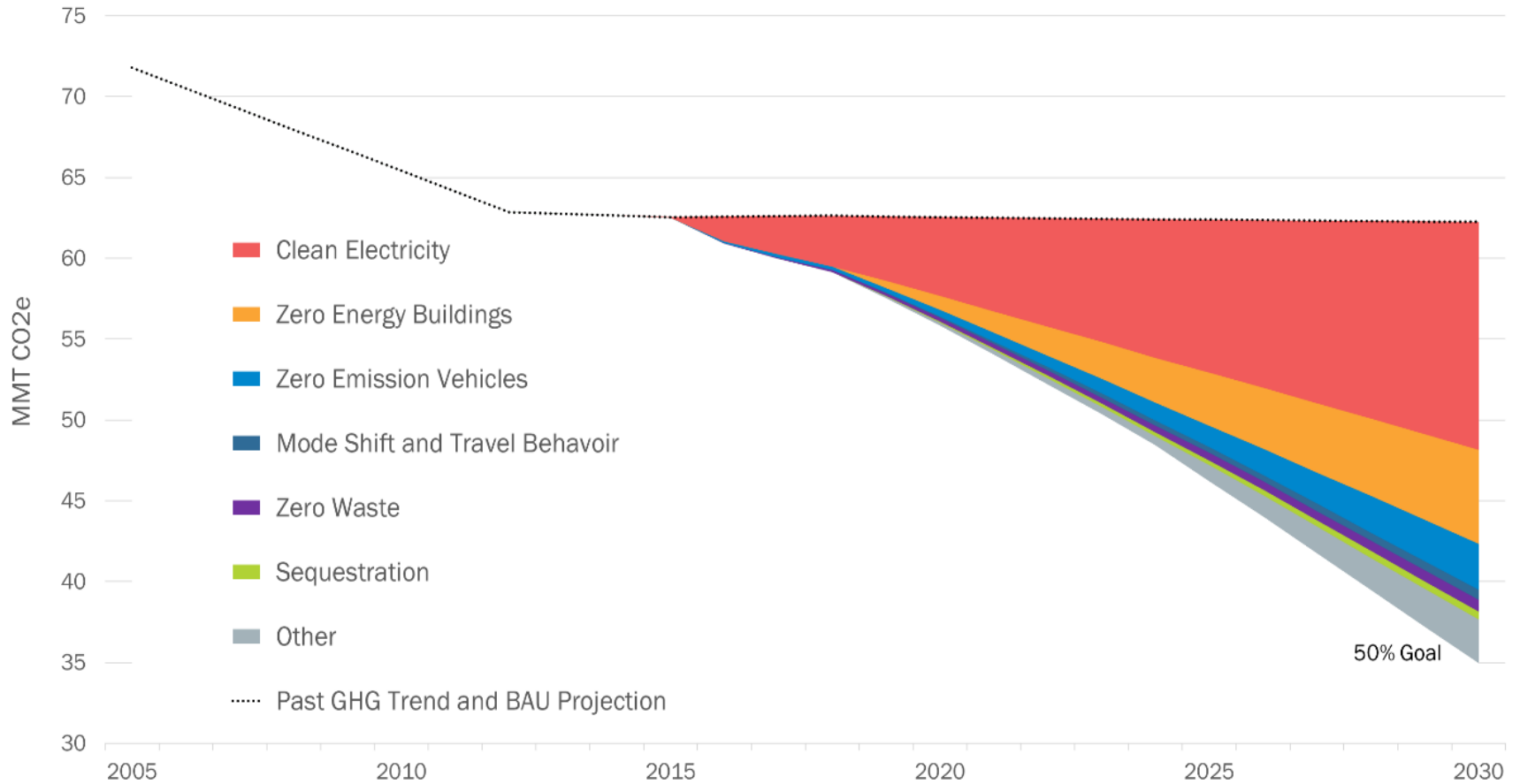


Mitigation Actions (continued)

Climate 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
Mode Shift and Travel Behavior	MSTB - 1	Invest in Infrastructure that Increases Transit, Carpooling, and Non-Motorized Travel
	MSTB - 2	Bring Jobs and Housing Closer Together
	MSTB - 3	Enhance Options for Commuters
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 Incentives and Financing Mechanisms for Tree Planting and Preservation on Privately Owned Lands



2030 Scenario

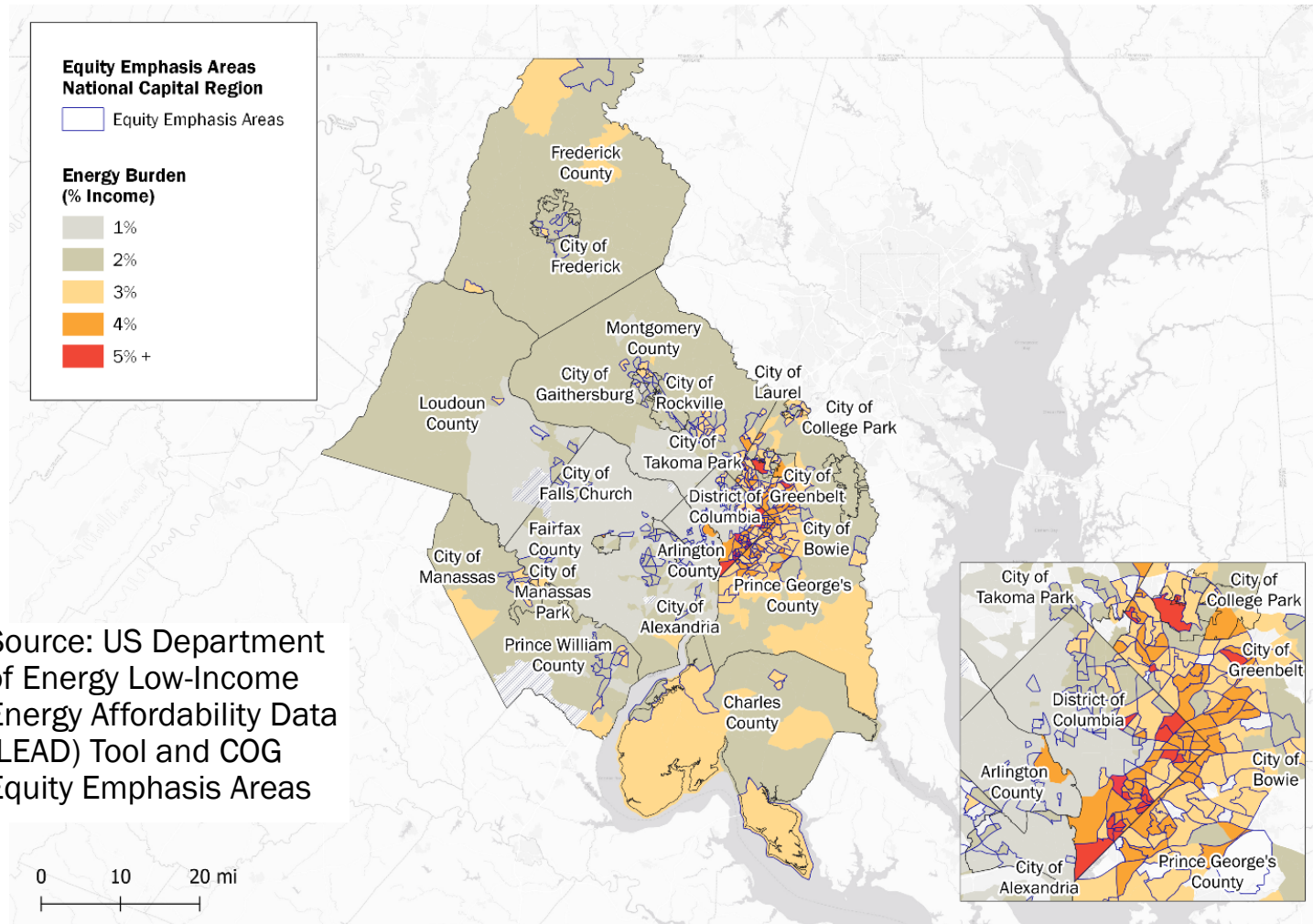


ASSESSMENT OF CLIMATE CHANGE RISKS AND VULNERABILITIES



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Equity Emphasis Areas and Energy Burden



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



Climate Resilience Goals

In October 2020, per CEEPC's recommendation, the COG Board adopted (and TPB affirmed) the climate resilience goal of becoming a Climate Ready Region and making significant progress towards becoming a Climate Resilient Region by 2030.

Climate Ready Region:

To be Climate Ready by 2030, all local governments must assess current and future climate risks, and be actively integrating climate planning across government plans, operations, and communications.

Climate Resilient Region:

To fully be a Climate Resilient Region, the region must have the ability to adapt and absorb against disturbances caused by current and future, acute and chronic climate impacts and successfully maintain essential functions.



Climate Risk and Vulnerability Assessment Overview

Climate Risk Matrix

	Probability			
Consequence		Low (1)	Moderate (2)	High (3)
	High (3)	3	6	9
	Moderate (2)	2	4	6
	Low (1)	1	2	3



Risk Levels and Adaptive Capacity

Degree of Challenge

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

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





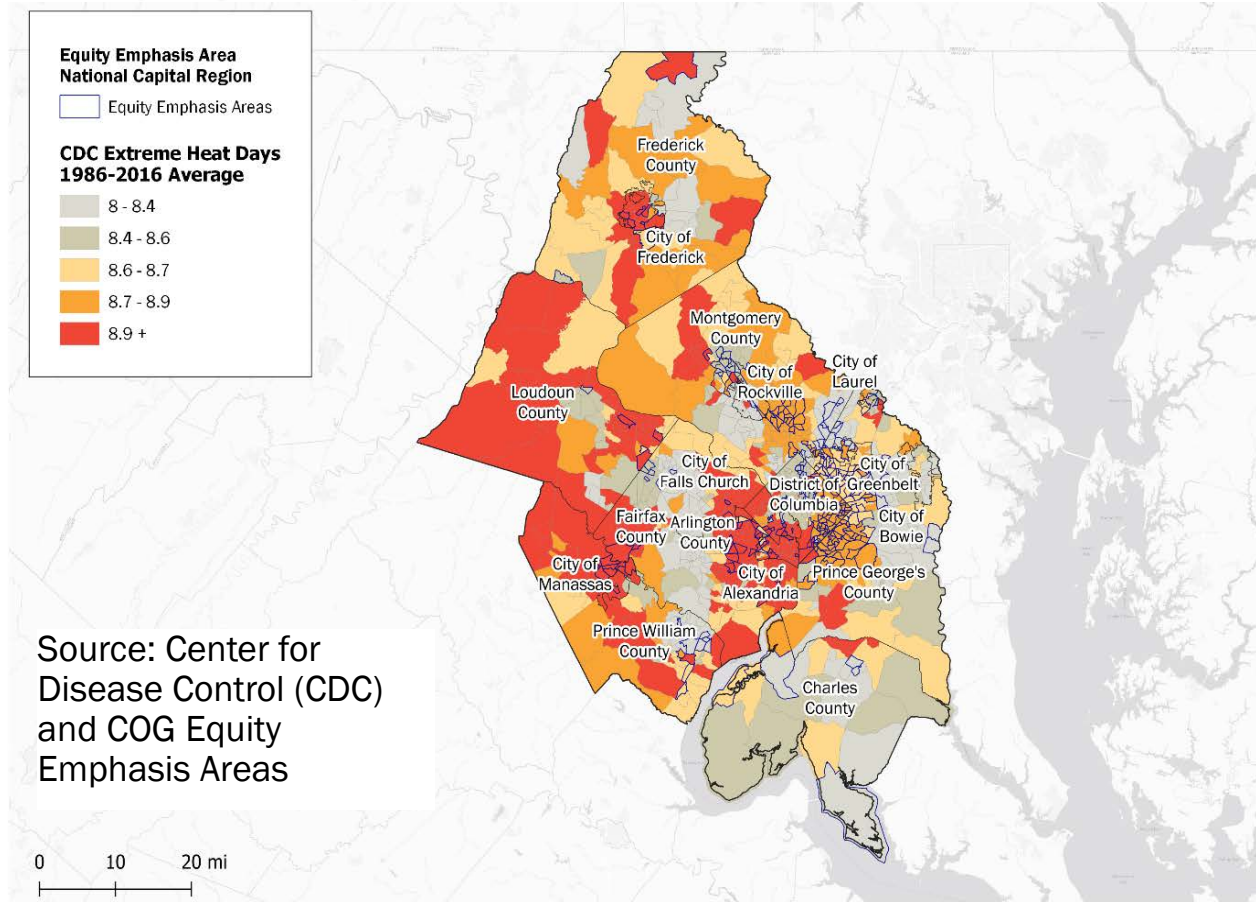
Potentially Vulnerable Populations

Potentially vulnerable populations may include:

- Low-income
- Minority
- Marginalized groups
- Women and girls
- Persons in sub-standard housing
- People with limited English proficiency
- The elderly
- Children
- People with chronic health problems
- Disabled persons

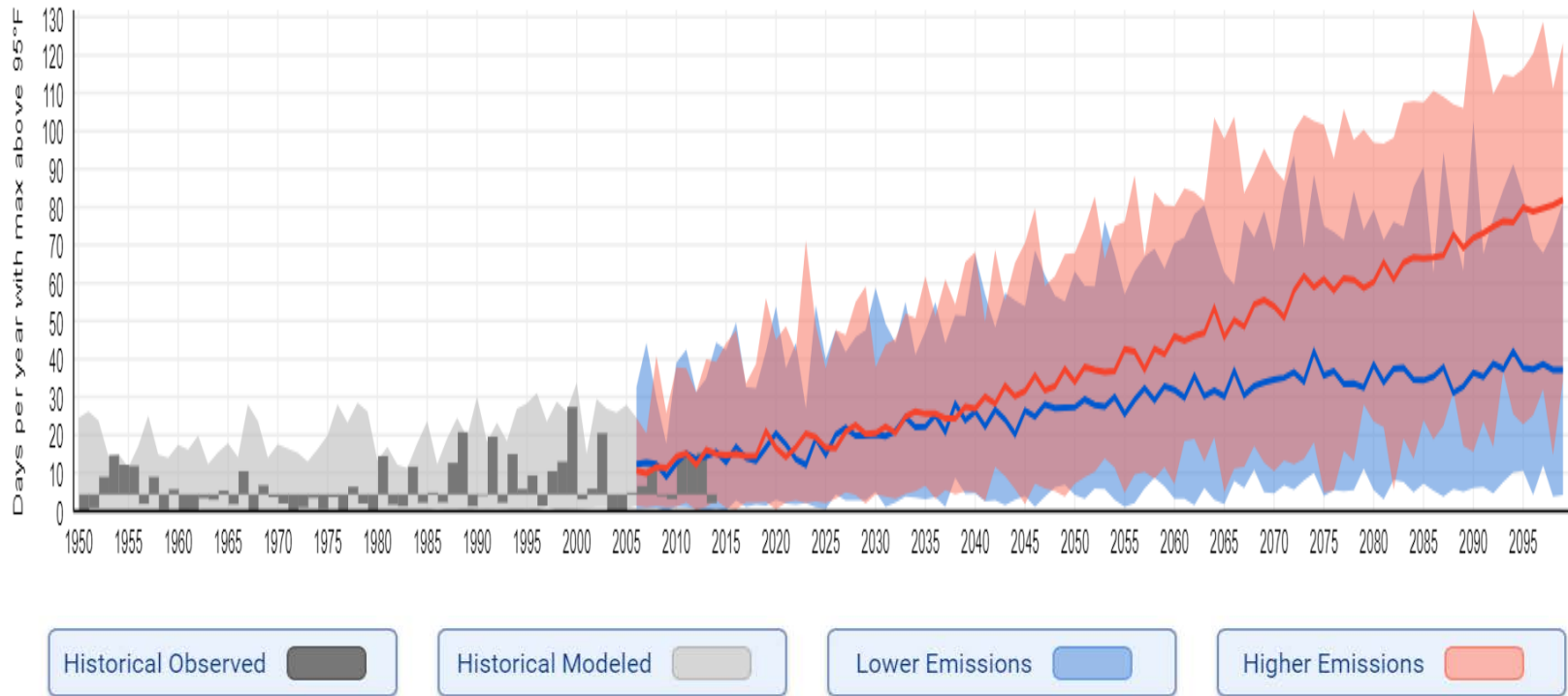
Extreme Heat

Equity Emphasis Areas and Extreme Heat



Extreme Heat (continued)

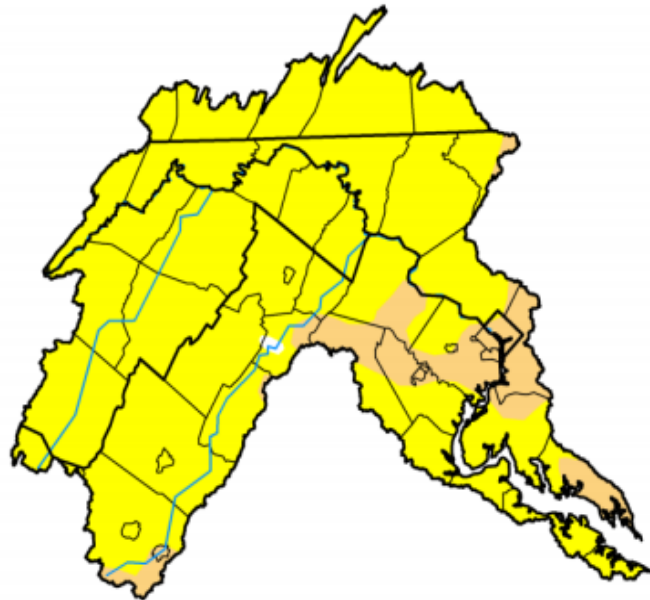
Days Over 95° F from 1950 until 2095



Source: NOAA Climate Explorer

Drought

U.S. Drought Monitor Potomac Watershed



October 1, 2019
(Released Thursday, Oct. 3, 2019)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	0.17	88.73	11.09	0.00	0.00	0.00
Last Week 09-24-2019	1.68	87.21	11.12	0.00	0.00	0.00
3 Months Ago 07-02-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year	-	-	-	-	-	-
One Year Ago 10-02-2018	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

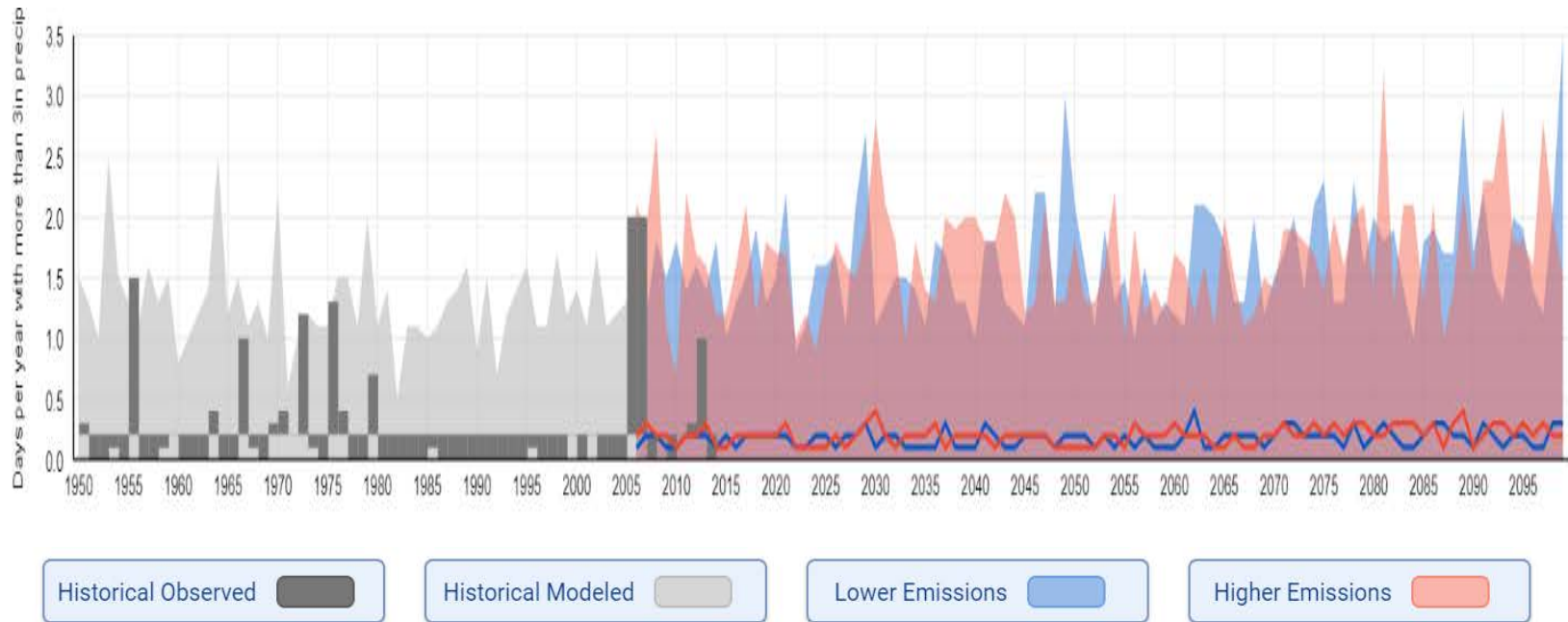
Brian Fuchs
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

Flash and Riverine Flooding

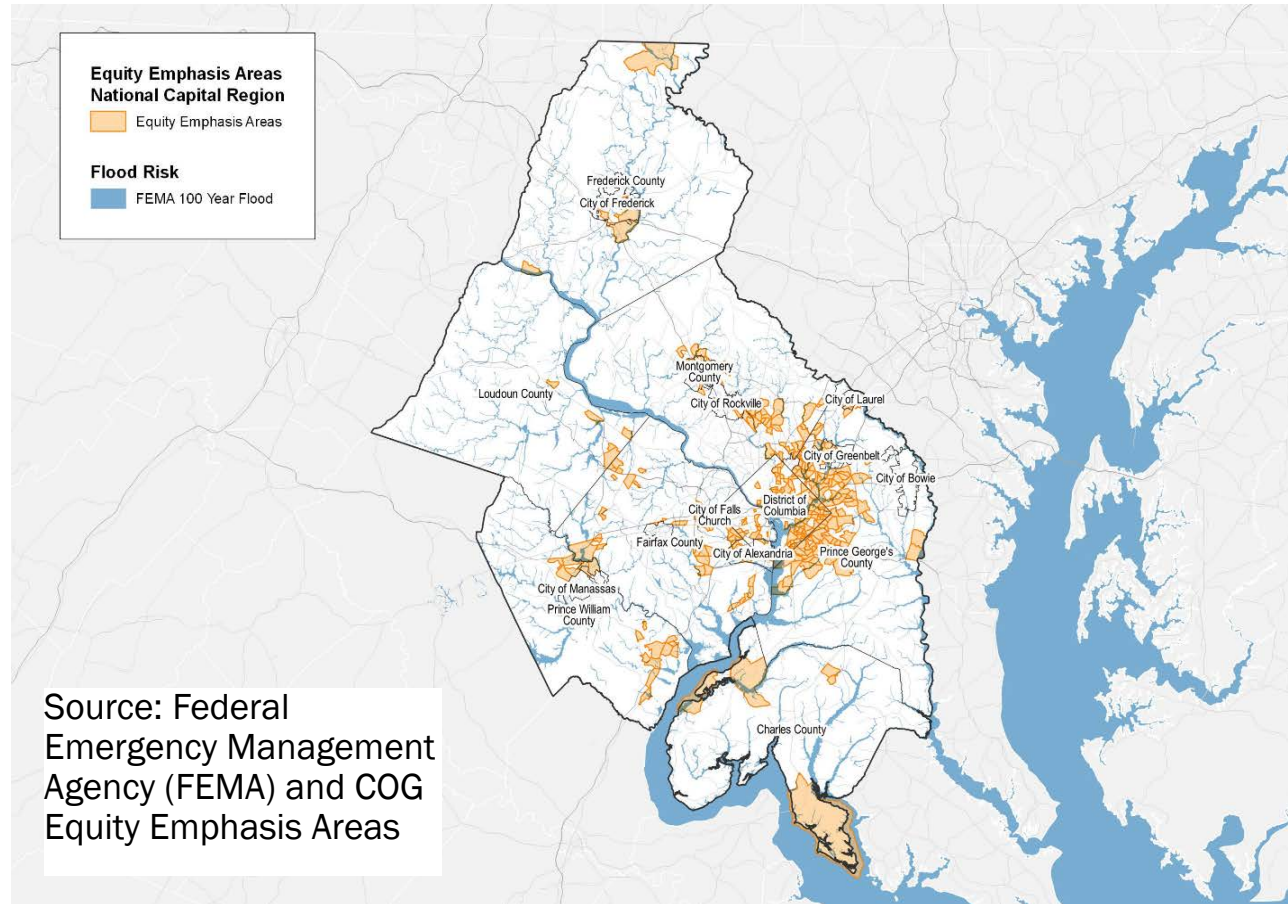
Days Per Year with >3 Inches Precipitation



Source: NOAA Climate Explorer

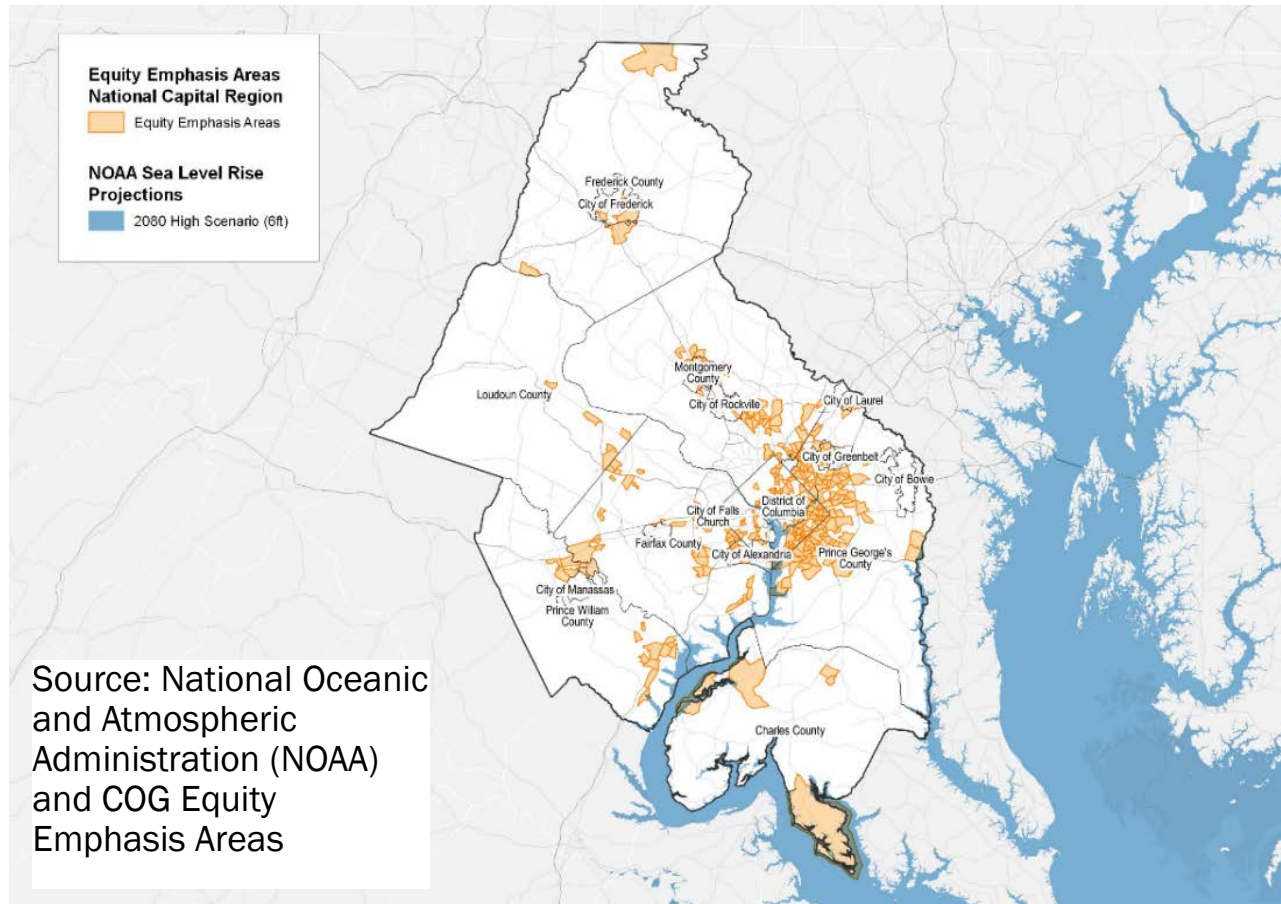
Flash and Riverine Flooding (continued)

Equity Emphasis Areas and 100 Year Floodplains



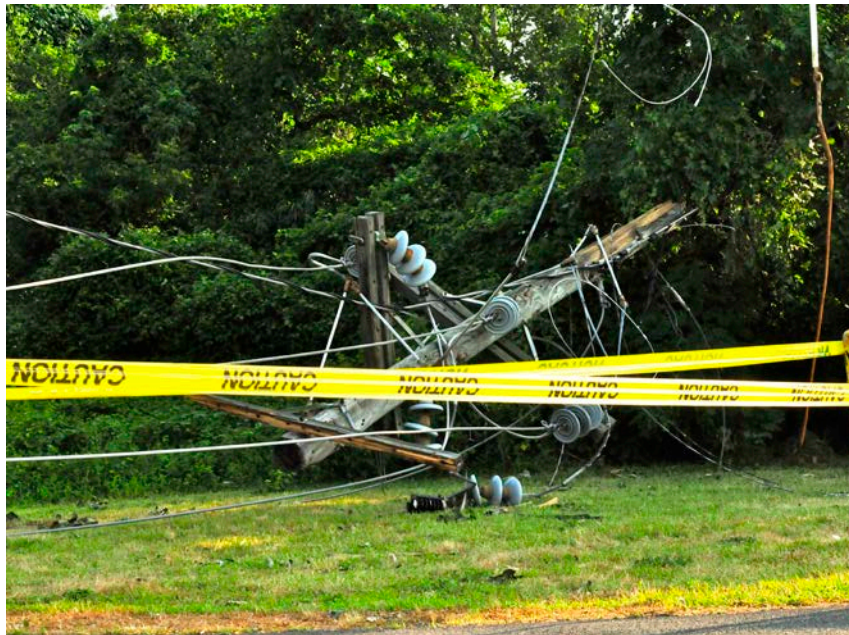
Coastal Flooding

Equity Emphasis Areas and Sea Level Rise



Lightning / Thunderstorms

2012 Derecho Damage in Arlington (left) and Falls Church (right)



Source: Arlington County/Flickr

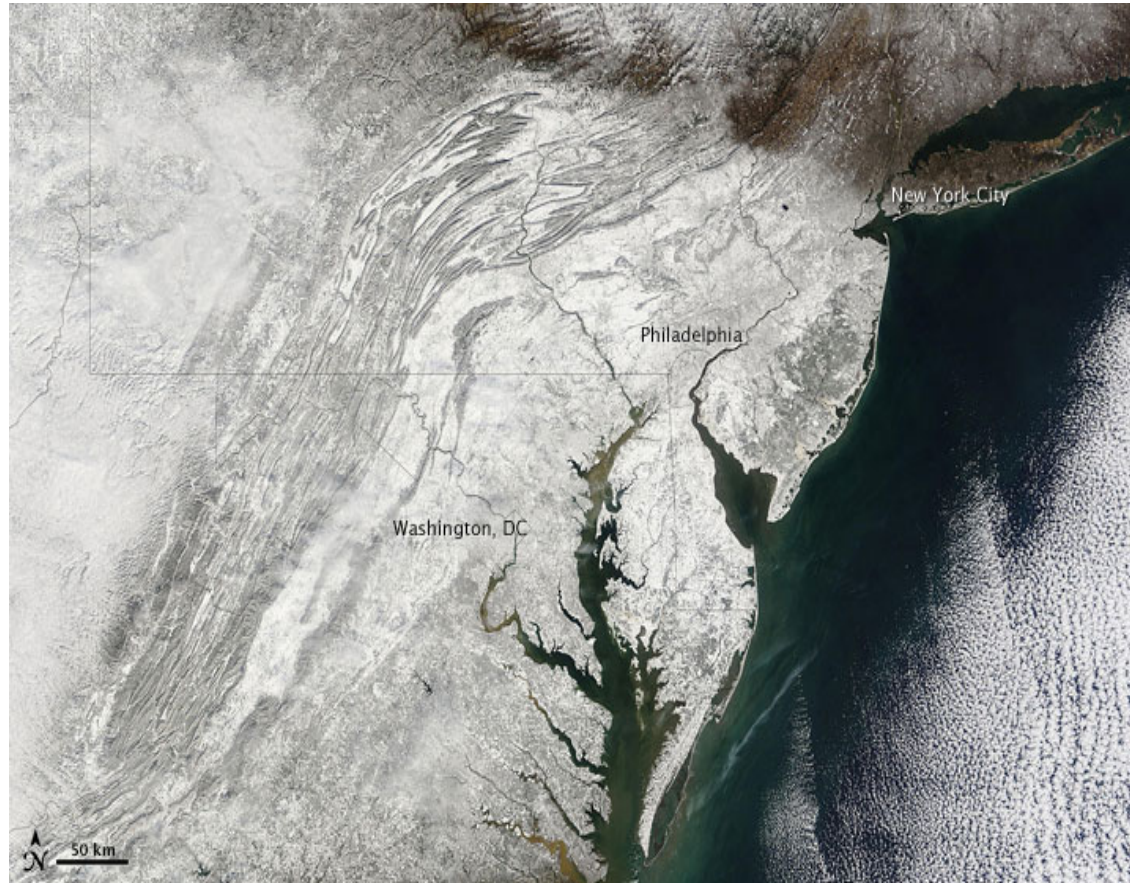


Source: Claire CJS/Flickr



Extreme Winter Conditions

Satellite Image of Snowmageddon (2010)



Source: National Aeronautics and Space Administration (NASA) Terra Satellite





STRATEGIES TO BE A RESILIENT READY REGION



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Resilience Actions

Climate 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

COG Region Forward Goal Areas



Climate and Energy



Economy



Environment



Health and Human Services



Transportation



Education



Land Use



Public Safety



Housing



Equity



Capacity Building for Climate Resilience

What Can Local Jurisdictions Do?

- Encourage active participation in climate planning training initiatives.
- Provide training and capacity-building across governmental departments and sectors to address climate risks and resiliency planning.

Region Forward Co-Benefits:



Equity



Education



Integrated Climate Resilience Planning

What Can Local Jurisdictions Do?

- Provide expertise and sharing of best practices of resiliency planning.
- Integrate common climate projections, metrics and resilient design standards across all departments.
- Design new and rehabilitated infrastructure to meet future-looking climate conditions.

Region Forward Co-Benefits:



Equity



Education



Local Plans Address Climate Risks

What Can Local Jurisdictions Do?

- Incorporate climate projections and climate risks into emergency and other government plans.
- Actively reach out to ensure participation by vulnerable groups in disaster preparedness, response, and recovery programs.
- Assess long-term energy resilience planning into energy and other plans and guidelines.
- Update zoning, building codes, ordinances, and the development review process to ensure new development is more resilient to forward-looking local climate impacts.

Region Forward Co-Benefits:



Equity



Public Safety



Economy



Engage Potentially Vulnerable Populations

What Can Local Jurisdictions Do?

- Integrate climate projections, risks, and strategies into existing community outreach programs.
- Further build partnerships with community groups and leaders to improve communication and engagement strategies.
- Engage potentially vulnerable communities in assessing their vulnerabilities to climate impacts.
- Provide direct assistance to potentially vulnerable populations.
- Develop metrics to measure the effectiveness of outreach efforts with diverse communities.

Region Forward Co-Benefits:



Equity



Education



Equitable, Secure Energy Access

What Can Local Jurisdictions Do?

- Implement local govt energy assurance initiatives in vulnerable communities.
- Direct incentives and technical assistance to vulnerable communities.
- Promote electric grid and natural gas pipeline hardening, resilient supply chains, and prioritize infrastructure improvements in vulnerable communities.
- Prioritize microgrid deployment in potentially vulnerable communities.
- Ensure vulnerable communities will have access to basic services during power outages.

Region Forward Co-Benefits:



Equity



Public Safety



Resilience Hubs

What Can Local Jurisdictions Do?

- Identify most climate vulnerable communities and assess the potential to establish resilience hubs in those communities.
- Leverage relationships with community organizations and leaders to identify needs of the community and implement resilience hubs and other neighborhood-scale resilience solutions.
- Partner with energy providers to develop resilience hubs with an uninterruptable energy supply.

Region Forward Co-Benefits:



Equity



Public Safety



Economy

Critical Infrastructure Resilience

What Can Local Jurisdictions Do?

- Assess vulnerability of existing and planned critical infrastructure for transportation, communication, energy, and water system assets.
- Flood proof critical water, stormwater, and wastewater systems to reflect climate projections.
- Revise infrastructure design standards to be more resilient to heat, flooding, and other climate impacts.
- Incorporate resilient critical infrastructure investments into long-range plans.

Region Forward Co-Benefits:



Public Safety



Equitably Address Urban Heat Islands

What Can Local Jurisdictions Do?

- Develop thermal mapping to identify urban heat island hot spots, vulnerable populations, and potential areas for mitigation strategies.
- Assess existing and future cooling centers based on extreme heat projections and needs of vulnerable populations.
- Support urban forestry programs and incentives to maximize canopy in vulnerable communities.
- Implement cool and green roofs, and green walls.

Region Forward Co-Benefits:



Equity



Health and Human
Services



Land Use



Environment



Green Infrastructure Networks

What Can Local Jurisdictions Do?

- Design and plan for resilient green infrastructure before development occurs.
- Implement a plan to preserve and enhance ecologically valuable green spaces in urban, suburban and rural areas, such as a green infrastructure plan, natural resource management plan, or green space plan.
- Invest in nature-based, resilient green infrastructure network solutions to reduce risk from flooding and extreme heat.

Region Forward Co-Benefits:



Equity



Health and Human
Services



Land Use



Environment



Reduce Flood Risk

What Can Local Jurisdictions Do?

- Identify at-risk facilities for flooding and sea level rise. Prioritize resilience strategies based on age of facilities and critical need.
- Use nature-based solutions, non-structural, and structural measures to reduce flood risks.
- Increase the resilience of water, stormwater, and wastewater system. Secure investments for green and grey infrastructure.
- Prioritize existing properties vulnerable to flooding for buyouts, incentives and easements.
- Adopt and implement green street policies and programs.

Region Forward Co-Benefits:



Economy



Equity



Health and Human Services





BREAKOUT AND FACILITATED DISCUSSION

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