# Climate Mitigation and Adaptation: A Review of Actions from Montgomery County and Outside Jurisdictions

**Memorandum Report 2026 – 6**

March 3, 2026

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## Introduction

Climate change adaptation and climate change mitigation are two complementary approaches to addressing the challenges of climate change. Climate change mitigation refers to actions that reduce greenhouse gases to limit future climate change while climate change adaptation refers to actions that reduce vulnerability to current and future impacts of climate change. Many jurisdictions have adopted both climate mitigation and adaptation practices to reduce climate change risk and build resilience at the local level.

This OLO report provides an overview of adaptation and mitigation practices, along with descriptions of actions other local governments with similar climate risks to Montgomery County have taken to mitigate and adapt to climate change. The report will also summarize mitigation and adaptation actions the County has already taken.

### Major Findings

1. Experts have asserted it is necessary to pursue both mitigation and adaptation actions.
2. There are four broad types of adaptation and mitigation responses: (1) infrastructural/technological; (2) institutional; (3) behavioral/cultural; and (4) nature based. Jurisdictions across the country are pursuing mitigation and adaptation strategies which encompass more than one type of response.
3. As Black, Indigenous, and other People of Color (BIPOC) are disproportionately impacted by climate change, it is important to co-create with and center BIPOC in adaptation and mitigation solutions.
4. The County has made significant progress on the actions proposed in the Climate Action Plan, including mitigation and adaptation actions.

### Glossary

- **Adaptation –** Refers to actions which adjust to current and future impacts of climate change.
- **Mitigation -** Refers to actions which limit emissions of greenhouse gases (GHGs) from entering the atmosphere and/or reduce levels of GHGs already in the atmosphere.
- **Climate Resilience -** The ability of both communities and individuals to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate.

- **Climate Justice -** Recognizes the disproportionate harmful social, economic, and public health impacts of climate change on low-income communities and communities of color.

**Methodology.** OLO, with the help of Lucy Thomas, OLO Summer Intern, conducted a literature review of adaptation and mitigation actions other jurisdictions have taken. OLO focused on jurisdictions that face similar climate risks to the County. Further, actions taken by the County were reviewed and sorted by the type of response and what climate risk it addresses. OLO notes it did not highlight every action the County has undertaken and instead focuses on actions that address a specific climate risk.

Applying a Racial Equity and Social Justice Lens to OLO Memorandum Report 2026 - 06

In 2019, the County Council established the Racial Equity and Social Justice Act. This law directs County departments and offices to apply a racial equity and social justice (RESJ) lens to their work. RESJ is a process that focuses on centering the needs, leadership, and power of BIPOC and eliminating racial and social inequities. We recognize this is necessary to fulfill our mission and advance RESJ in Montgomery County. In this report, OLO applies a RESJ lens in the following ways:

- Explaining how climate change impacts BIPOC residents and presenting national and local data on these impacts; and
- Presenting adaptation and mitigation solutions that are rooted in environmental justice and include BIPOC voices in the planning and implementation stages.

**Scope of Memorandum.** This memorandum report focuses on providing descriptions of actions other local governments do to mitigate and adapt to climate change. The report includes:

- **Section A.** Climate Change Mitigation and Adaptation
- **Section B.** Montgomery County Climate Risks
- **Section C.** Climate Mitigation and Adaptation Strategies – Best Practices and Examples from Outside Jurisdictions
- **Section D.** Montgomery County Climate Actions
- **Section E.** Climate Change and Climate Justice
- **Section F.** Findings and Discussion Item

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## A. Climate Change Mitigation and Adaptation

As defined by the Intergovernmental Panel on Climate Change (IPCC)[1], climate change mitigation refers to actions which limit emissions of GHGs from entering the atmosphere and/or reducing levels of GHGs already in the atmosphere.[2] Examples of mitigation actions include those that reduce greenhouse gas emissions, like switching to clean energy and measures that cut greenhouse gas emissions from large sources like power plants and factories. On the other hand, climate change adaptation is adjusting to current impacts and preparing for future impacts of climate change (such as extreme weather events and temperature extremes). Adaptation focuses on actions that reduce the vulnerabilities of a community to climate hazards, such as updating infrastructure to withstand extreme weather events.[3]

Experts have asserted it is necessary to pursue both mitigation and adaptation actions.[4] The levels of GHGs already in the atmosphere have accelerated climate change and impacted the Earth's ecosystems, leading to rising sea levels and unpredictable and extreme weather patterns; therefore, adaptation actions are necessary.[5] Further, it is necessary to pursue mitigation actions to reduce future GHG emissions and slow down the acceleration of climate change.[6]

There are many governmental and non-governmental agencies which have established best practices on pursuing mitigation and adaptation. Specifically, the Environmental Protection Agency (EPA) co-founded the Smart Growth Network (SGN) in 1996. The SGN is a national alliance of advocates, practitioners, policy makers, and local leaders that prioritize land use and infrastructure polices and actions that promote climate resilience and adaptation.[7] The SGN has a set of basic principles to guide smart growth strategies including providing a variety of transportation choices, preservation of open space, and designing more walkable neighborhoods.[8]

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[1] The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for assessment of climate change. It was created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

[2] Intergovernmental Panel on Climate Change, "What is Climate Change Mitigation", Accessed 1/05/2026.

[3] United States Environmental Protection Agency, "Adaptation Overview", Archived January 19, 2017.

[4] Sharifi, A., "Co-benefits and synergies between urban climate change mitigation and adaptation measures: A literature review", Science of the Total Environment, January 1, 2021., United States Environmental Protection Agency, "About Smart Growth", Accessed 1/05/2026.; Intergovernmental Panel on Climate Change, "Inter-relationships between adaptation and mitigation", February 2018.

[5] VijayaVenkataRaman, S., Iniyan, S., and Goic, R., "A review of climate change, mitigation and adaptation", Renewable and Sustainable Energy Reviews, January 2012.

[6] National Aeronautics and Space Administration, "Responding to Climate Change", Accessed 1/05/2026.

[7] United States Environmental Protection Agency, "About Smart Growth", Accessed 1/05/2026.

[8] Ibid.

## Climate Mitigation and Adaptation Actions

Throughout the years, SGN has collected and published best practices for local jurisdictions to better mitigate and adapt to climate change. The following examples of mitigation and adaptation practices are from the EPA's "Smart Growth Fixes for Climate Adaptation and Resilience"[9]:

- Build compactly and use energy-efficient, green building techniques, which reduce emissions from both electricity generation and transportation;
- Reuse existing infrastructure and buildings;
- Put homes, jobs, stores, parks, schools, and other destinations close to each other so that people can easily walk, bike, use public transit or drive shorter distances;
- Preserve green space, which can sequester CO2, by conserving ecologically valuable land;
- Promote development in previously developed areas;
- Upgrade stormwater systems and use green infrastructure to manage stormwater runoff;
- Avoid development in high climate risk areas (at risk of flood, wildfire, storm surge, etc.);
- Preserve waterfront areas and areas of contiguous open space;
- Add greenery along streets to encourage walking and biking;
- Encourage green roofs, parks, street trees and other elements that can reduce ambient air temperatures and filter pollutants from stormwater runoff and the air;
- Design buildings for passive survivability – meaning they remain habitable if they lose external power for an extended period – which can help ensure that even if the power goes out, the building will stay at a safe temperature; and
- Encourage water- and energy-efficient buildings and land use patterns so that communities can continue to thrive with rising energy prices.[10]

[9] United States Environmental Protection Agency, "Smart Growth Fixes for Climate Adaptation and Resilience", 2017.
[10] Ibid.

## B. Montgomery County Climate Risks

The Montgomery County Climate Action Plan (CAP), published in 2021, identified the biggest climate hazards faced by the County.[11] Hazards were identified by analyzing data from the County's historical climate baseline (1950-2005) and projected future risks through 2035, 2050, and 2100 through a model built from greenhouse gas emissions standardized by IPCC.[12]

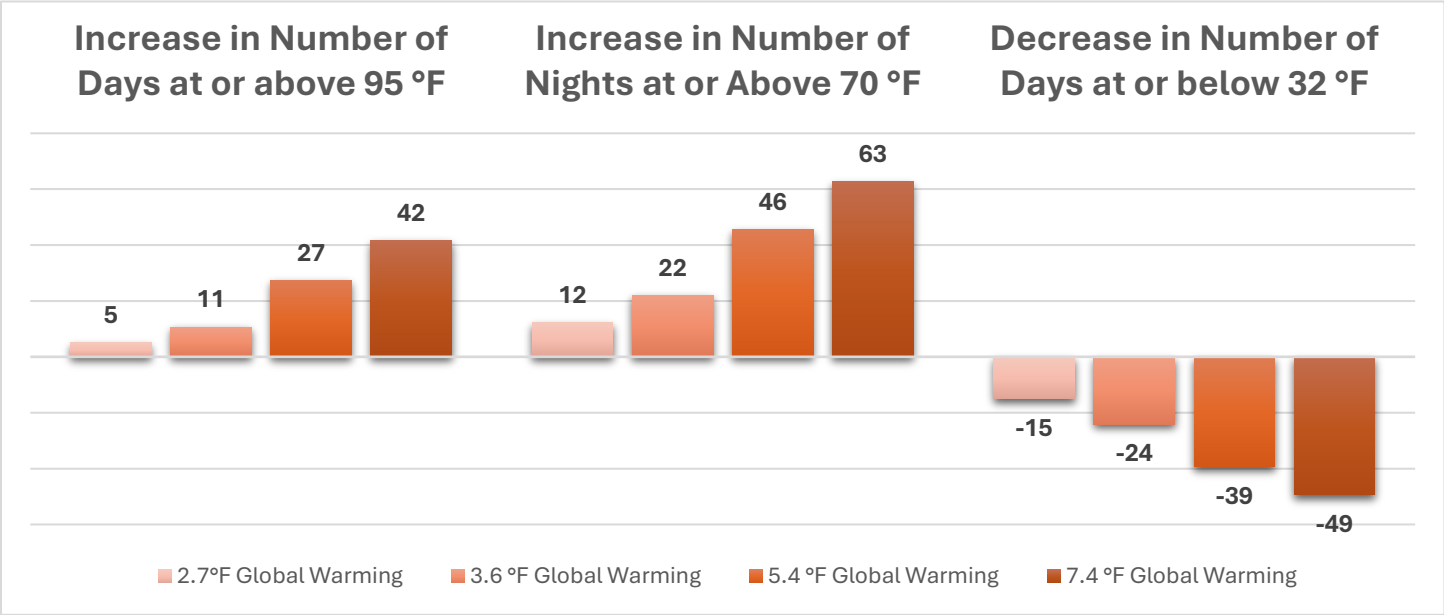
The four major climate hazards facing the County that are the focus of this report are:

- Extreme Temperatures;
- Extreme Precipitation;
- Drought; and
- High Winds.

**Extreme Temperatures.** According to CAP, extreme heat is one of the biggest threats to the County. The report projects residents in the future will experience significantly more days at or above 95 °F. The County's average annual temperatures are also projected to increase significantly, with the greatest changes likely to occur in the summer and fall months. The data show that 2024 was the County's hottest year on record with an average temperature of 57.6 °F[13] compared to the 20th century's average of 53.4 °F.[14]

Data from the U.S. Global Change Research Program[15] shows how Montgomery County's climate will be impacted by further global warming (shown in the chart below). Using data from the Fifth National Climate Assessment (NCA5) data atlas[16], the model shows how many more extreme heat days will be experienced in the County if the world's average temperature increases by 2.7, 3.6, 5.4, and 7.4 °F. As shown in the data, if the world's average temperature continues to increase, the County is expected to face more extreme heat days while the number of extreme cold days is expected to decrease. However, as climate change causes unpredictable weather patterns, the County should be prepared for extreme cold days as well.

[11] Montgomery County Government, "Montgomery County Climate Action Plan", June 2021.
[12] Ibid.
[13] The average annual temperature for 2000-2024 was 55.6 degrees Fahrenheit.
[14] National Centers for Environmental Information, "Climate at a Glance County Time Series for Montgomery County, Maryland", Accessed 12/20/2025.
[15] Data from this program were removed from federal websites by the Trump Administration in July 2025. The Local News Network at the University of Maryland's Philip Merrill College of Journalism archived the data prior to deletion. This data is also available in non-government sources and archives, such as through Esri.
[16] The NCA5 data was publicly released on November 14, 2023 and is the U.S. Government's preeminent report on climate change impacts, risks, and responses.




Source: NCA5 Atlas Data Presented by Capital News Service

**Extreme Precipitation**. Montgomery County's biggest threat for flooding is due to extreme precipitation caused by climate change. Specifically, flash floods, which are caused by intense rainfall in a short period of time, are of concern in Montgomery County. Urban areas are especially at risk as impervious surfaces such as concrete does not allow water to infiltrate the ground and water runs off instead, which can lead to flooding.[17] In 2025, the County had 51 flash flood warnings - the most warnings in a year since 2020. This is partly due to abnormal heat and humidity for the area, as these two factors make it more likely that extreme precipitation events will occur.[18]

The County Climate Action Plan predicts there will be an increase in total rainfall, more intense rainfall, and more extreme rainfall events that cause flooding.

[17] National Oceanic and Atmospheric Administration National Weather Service, "Flash Flooding Definition", Accessed 12/19/2025.
[18] Bethesda Today, "Why Maryland records most flash flood warnings since 2020", August 1, 2025.

| Climate Scenario | % Increase in Rainfall Amount by 2050 (Compared to Current) | % Increase in Rainfall Amount by 2100 (Compared to Current) |
|---|---|---|
| **Stabilization** (Enough climate interventions employed to level off GHG emissions increase by 2050) | 2% | 5% |
| **Business as Usual** (Little to no climate interventions and GHG emissions increase through 2100) | 4% | 7% |

Source: Climate Action Plan

It should be noted that while climate models are not as skillful at projecting future precipitation levels compared to predicting future temperature, extreme precipitation events are likely to increase in frequency and severity.[19]

**Drought.** Droughts not only threaten crops and limit access to water for household use but can also impact critical infrastructure functions such as energy, as water is needed to cool plants and other facilities.[20] In 2024, the County, District of Columbia, Maryland, and Virginia (DMV) region experienced a serious drought, driven by record-breaking high temperatures in the early summer. It was the seventh driest summer on record in the DMV region in 130 years resulting in the Potomac River Basin dropping about three inches below normal during the drought.[21]

It is projected the annual risk of moderate, severe, and extreme droughts will increase significantly by the year 2100. Parts of the Agricultural Reserve will be especially at risk, as projections in this part of the County range from an annual current average of 0.6 to 0.9 months of severe drought by 2100 (stabilization) and from 1.2 to 1.5 months of severe drought on average by 2100 (business as usual).[22]

**High Winds.** High winds are sustained, strong winds that often occur with thunderstorms. There are several climate events that can occur simultaneously with high wind events and pose additional risk:

- Tornadoes are violently rotating columns of air touching the ground, usually attached to a thunderstorm and causing extensive damage to infrastructure;

[19] National Oceanic and Atmospheric Administration: Climate Program Office, "Improving extreme rainfall predictions: the limits of high-resolution climate models", July 18, 2024., Montgomery County Government, "Montgomery County Climate Action Plan", June 2021.
[20] Cybersecurity and Infrastructure Security Agency, "Prolonged Drought", Accessed 12/19/2025.
[21] Bethesda Magazine, "Most of county under extreme drought conditions, according to new data", August 7, 2024.
[22] Climate Action Plan

- Downbursts are strong downdrafts that result from a thunderstorm and create straight-line winds on or near the ground, up to 150 mph; and
- Derechos are a series of intense, widespread, and fast-moving windstorms and thunderstorms that move across a great distance.

The likelihood of high winds and windstorms is increasing due to climate change as the atmosphere and oceans warm. A warmer atmosphere and ocean create more fuel for storms and higher-intensity winds. As weather pattens change due to climate change, it gets increasingly difficult to predict storms as well.[23]

**How Climate Risks Differ Across the County Geographically.** The way the County will experience climate change differs – Upcounty and Downcounty areas are projected to experience different amounts of extreme weather days and differences in extreme precipitation.

In the Climate Action Report, analysts considered several climate scenarios called Representative Concentration Pathways (RCPs) to analyze the climate impacts:

- **Stabilization Scenario (RCP 4.5).** This scenario assumes that there will be climate adaptation strategies and interventions that will lead to a moderate increase in greenhouse gas emissions until 2050. Emissions will then stop increasing and level off.
- **Worst-Case/Business-As-Usual Scenario (RCP 8.5).** This scenario assumes there will not be a significant amount of climate change interventions and that greenhouse gas emissions will continue to increase through the end of 2100, resulting in the worst-case scenario.

The following charts show the predicted impact in both scenarios for the number of extreme heat days experienced across different parts of the County. In both scenarios, it is expected the downcounty area will experience more days with maximum temperatures above 95 °F.

[23] Bethesda Magazine, "How climate change may impact Montgomery County", June 6, 2022.

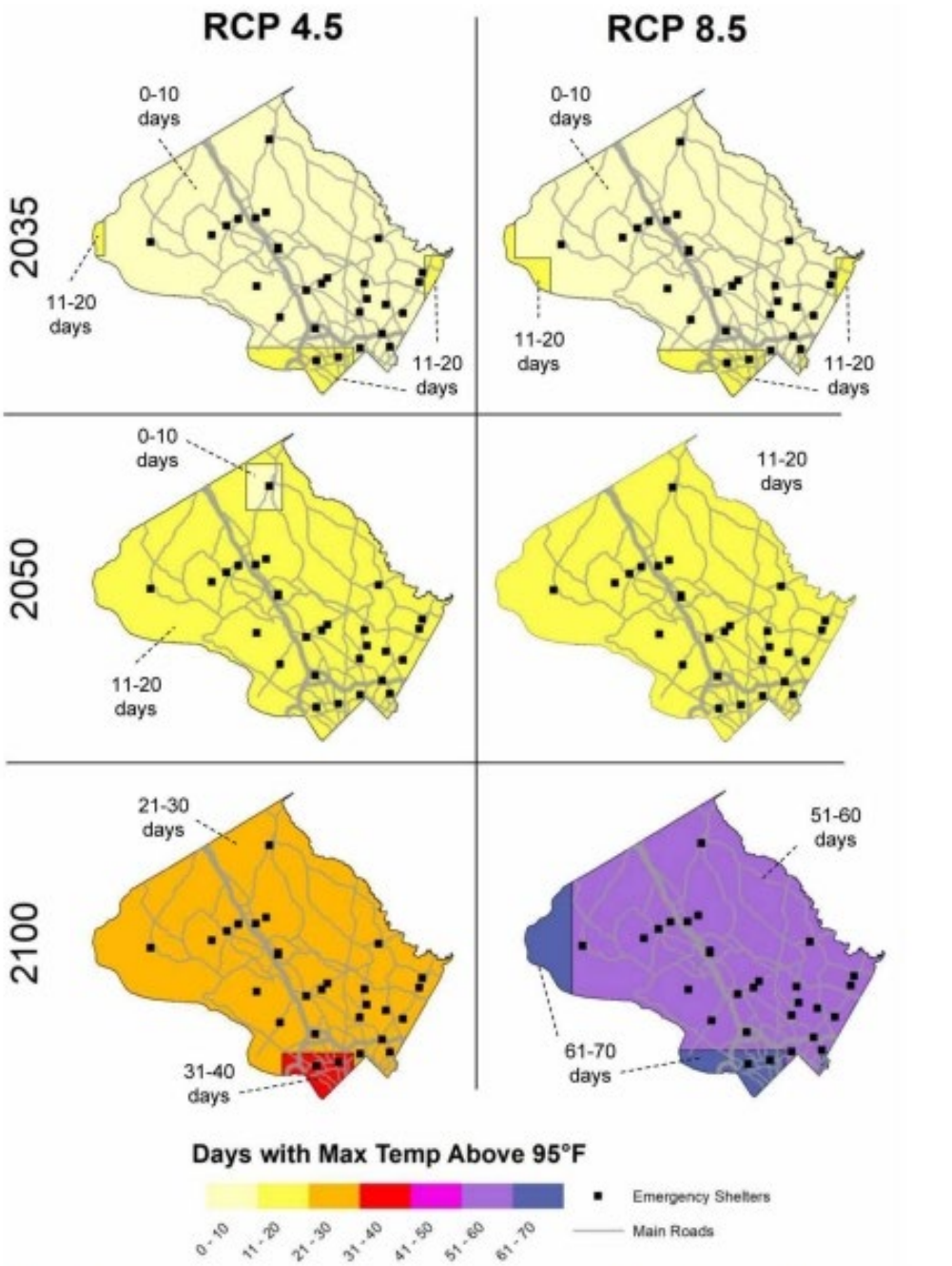



*Figure 18: Projected increase in days per year >95°F for 2035, 2050, and 2100 and climate scenarios RCP 4.5 and RCP 8.5 in Montgomery County, with emergency shelters*

Source: Climate Action Plan

## Climate Mitigation and Adaptation Actions

The chart below specifically illustrates the differences in scenarios and predicted days above 95°F.

| Climate Scenario | Increase in Number of days above 95 °F by 2035 (Compared to Current) | Increase in Number of days above 95 °F by 2050 (Compared to Current) | Increase in Number of days above 95 °F by 2100 (Compared to Current) |
|---|---|---|---|
| **Stabilization** | *Downcounty*<br>11 – 20 days<br><br>*Parts of Eastern Montgomery and Dickerson Area*<br>11–20 days<br><br>*Rest of the County*<br>0–10 days | *Damascus Area*<br>0-10 days<br><br>*Rest of the County*<br>11-20 days | *Downcounty*<br>21-30 days<br><br>*Rest of the County*<br>31-40 days |
| **Business as Usual** | *Downcounty*<br>11–20 days<br><br>*Parts of Eastern Montgomery and Dickerson Area*<br>11–20 days<br><br>*Rest of the County*<br>0–10 days | *Entire County*<br>11–20 days | *Western Area of Upcounty*<br>61-70 days<br><br>*Downcounty*<br>61-70 days<br><br>*Rest of the County*<br>51-60 days |

Source: Climate Action Plan

Similarly, different parts of the County will experience drought conditions and extreme precipitation at lower and higher rates (shown in the following two charts). Downcounty areas, including Wheaton, Silver Spring, and Takoma Park and parts of Olney, Montgomery Village and Clarksburg are more likely to experience more extreme precipitation compared to the rest of the County.

The risk of moderate to severe drought conditions in the County is expected to increase significantly by the year 2100 under both the stabilization and business as usual model. However, some areas in the downcounty and upcounty are projected to have a higher risk of drought compared to other areas of the County.

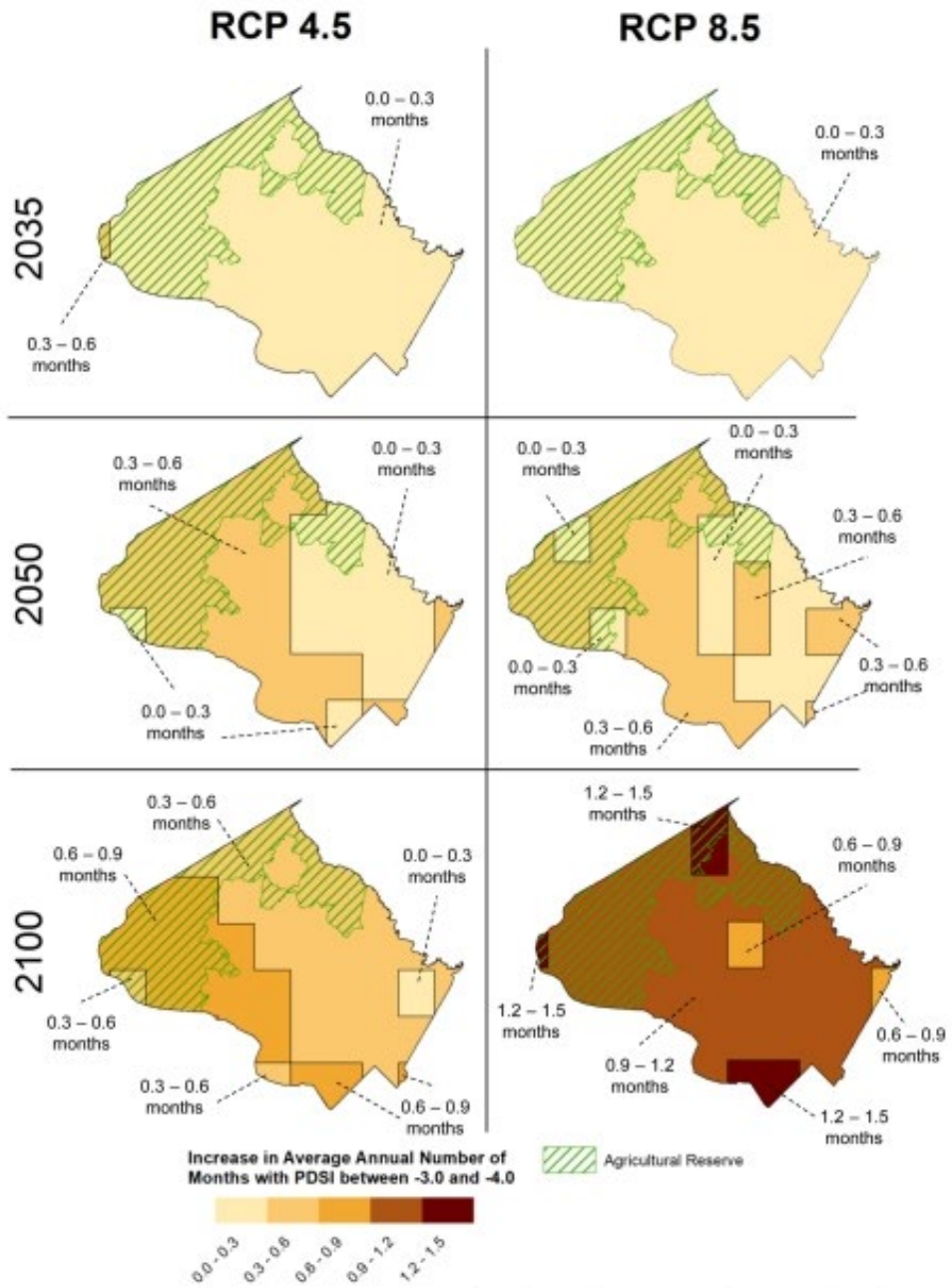



*Figure 17: Projected increase in average number of months per year of severe drought (Palmer Drought Severity Index between -3.0 and -4.0) for 2035, 2050, and 2100, and climate scenarios RCP 4.5 and RCP 8.5 in Montgomery County*

Source: Climate Action Plan

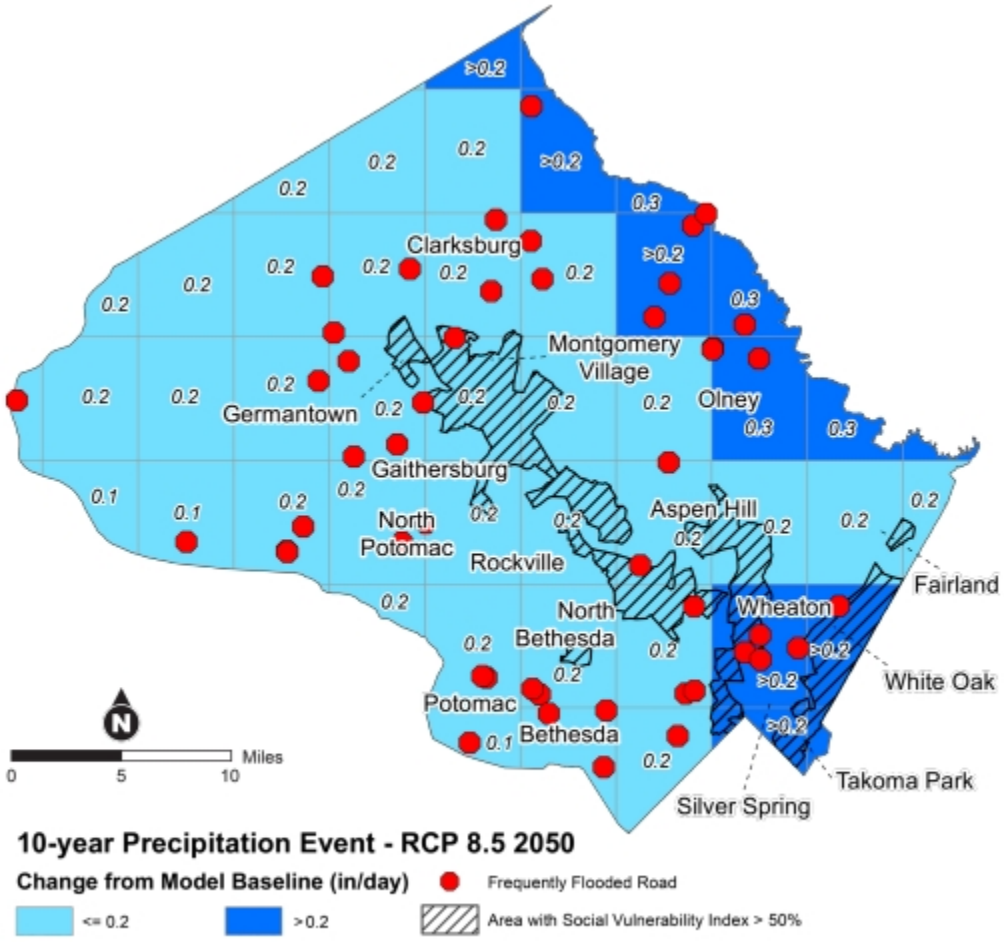



*Figure 19: Projected increase in the 10-year precipitation event for 2050 and climate scenario RCP 8.5 outlining areas ranked in the top 50% most vulnerable by the CDC Social Vulnerability Index*

Source: Climate Action Plan

## C. Climate Mitigation and Adaptation Strategies – Best Practices and Examples from Outside Jurisdictions

There are multiple ways jurisdictions can implement mitigation and adaptation strategies at the local level. These strategies can be classified into four types of responses:

- Infrastructural/technological;
- Institutional;
- Behavioral/cultural; and
- Nature-Based.

The next chart, which was adapted from a research article in the Communications Earth and Environment journal, illustrates each of these responses with examples.[24]

| | |
|---|---|
| **Infrastructural/Technological**<br>Physical structures or technologies | • Dam construction and rehabilitation<br>• Construction of resiliency hubs<br>• Drainage and pump systems |
| **Institutional**<br>Governance, policies, and organizational structures | • Flood monitoring and warning systems<br>• Adaptation and resiliency strategic planning<br>• Grant programs for resiliency actions |
| **Behavioral/Cultural**<br>Individual/ community behaviors, practices, and cultural norms | • Community education and awareness programs<br>• Incentives for using public transportation/bikes<br>• Deep community engagement for resiliency |
| **Nature-Based**<br>Use of natural systems and processes | • Green roofs and walls<br>• Planting shade trees in urban heat islands<br>• Vegetation on dam and levee slopes |

This section summarizes the climate mitigation and adaptation actions of other jurisdictions to address climate change. Each summary includes a description of the programs/actions followed by a discussion of OLO's takeaways about each project.

[24] Azhar, M., Kane, B., Vahedifard, F., and AghaKouchak, A., "Comprehensive portfolio of adaptation measures to safeguard against evolving flood risks in a changing climate", Communications Earth & Environment, October 17, 2025.

## Climate Mitigation and Adaptation Actions

It is organized by which climate risk a strategy is targeting and how an adaptation is classified: infrastructural/technological, institutional, behavioral/cultural, and/or nature based. The actions and strategies described may be classified as more than one type of response. This section focuses on three of the four climate risks highlighted by the Climate Action Plan (CAP), which is extreme precipitation and flooding, drought, and extreme temperatures. Strategies regarding high winds were excluded as there is only one recommended climate action in the CAP that targets high winds. See the following table for actions and strategies summarized in the remainder of this section.

| Risk | Action | Type of Response | Page # |
|---|---|---|---|
| Extreme Precipitation and Flood Risk | Flood Resilience Strategy (SW Washington D.C.) | Infrastructural/Technological, Institutional, Nature-Based | 15 |
| Extreme Precipitation and Flood Risk | Regional Blue-Green Infrastructure Community and Planning Study (MWCOG) | Infrastructural/Technological, Institutional, Nature-Based, Behavioral/Cultural | 17 |
| Extreme Precipitation and Flood Risk | Flood Mitigation Assistance Grant Program (Howard County, MD) | Institutional | 20 |
| Drought | Onsite Water Reuse (San Francisco, CA) | Infrastructural/Technological, Nature-Based | 21 |
| Extreme Temperatures | Chief Heat Officer (Miami-Dade County, FL) | Institutional, Behavioral/Cultural | 22 |
| Extreme Temperatures | Heat and Air Quality Resilience (San Francisco, CA) | Institutional, Behavioral/Cultural | 24 |
| Mitigation and Carbon Sequestration | E-Bike Incentive Program (Denver, CO) | Behavioral/Cultural | 26 |
| Mitigation and Carbon Sequestration | Zero Emission Delivery Zones (Santa Monica, CA) | Institutional, Behavioral/Cultural | 27 |
| Mitigation and Carbon Sequestration | Curbside Composting Program (Prince George's County, MD) | Infrastructural/Technological, Institutional, Nature-Based | 28 |

## Strategies for Extreme Precipitation and Flood Risks

### Flood Resilience Strategy (SW Washington D.C.)

**Infrastructural/Technological, Institutional, Nature-Based**

The District of Columbia (D.C.) experiences a similar flood risk to the County, including:[25]

- Flash floods, which are sometimes referred to as interior floods, occur when sewer systems are overwhelmed by periods of heavy rainfall. Flash floods are extremely difficult to predict and can occur almost anywhere, even in areas where there are no bodies of water nearby;[26]
- Riverine floods, which occur when rivers overflow from periods of heavy rainfall and flood the surrounding area;[27] and
- Tidal flooding, which occurs from coastal storm surges affecting the Chesapeake Bay and causes the Potomac and Anacostia Rivers to rise and flood the surrounding area.[28]

To address this flooding, DC's Department of Energy and Environment is implementing a flood resilience strategy in Southwest DC and the Buzzard Point communities to increase resilience to flooding, especially interior flooding, due to extreme rain events. The pilot program is run by an interdisciplinary team of both local and international experts and aims to develop a plan for stormwater and BGI in Southwest DC.[29]

**Takeaways.** BGI combines urban hydrological functions, such as streets designed to better withstand stormwater runoff, with vegetation systems designed to better absorb water in urban landscape designs.[30] The proposed projects are meant to be interconnected and will be able to convey up to five times the projected amount of rainwater from current storms. These interconnected projects will be able to redirect water away from homes, businesses, and streets, preventing dangerous flooding.[31] The end result of the pilot program were proposed projects identified as best suited for DC's built and natural environment. The proposed projects are not yet implemented and include:

[25] WAMU American University Radio, "D.C. Is Vulnerable To Three Types Of Flooding. Climate Change Is Making Them All Worse", July 9, 2019.
[26] Department of Energy and Environment, "SW-Buzzard Point Flood Resilience Strategy", Accessed 12/15/2025.
[27] Federal Emergency Management Agency, "Riverine Flooding", Accessed 12/15/2025.
[28] WAMU American University Radio, "D.C. Is Vulnerable To Three Types Of Flooding. Climate Change Is Making Them All Worse", July 9, 2019.
[29] World Landscape Architecture, "Re-Imagining Urban Infrastructure for Climate Change", October 25, 2023.
[30] Cloudburst Management Strategies for the District of Columbia, "Blue Green Infrastructure", 2019.
[31] World Landscape Architecture, "Re-Imagining Urban Infrastructure for Climate Change", October 25, 2023.

## Climate Mitigation and Adaptation Actions

- Cloudburst roads which are used to channel and direct water from heavy rainfall through their V-shaped profile and raised curbs, which allows water to flow in the middle of roads away from buildings;
- Green streets which have a combination of permeable paving and stormwater planters to increase the street's capacity for dealing with stormwater runoff; and
- Floodable parks which are designed in a way that provides dual functionality for resident use and flood control. One proposed idea was a floodable amphitheater which provides both an event space and a basin to safely hold excess floodwater.[32]

[32] World Landscape Architecture, "Re-Imagining Urban Infrastructure for Climate Change", October 25, 2023.

## Strategies for Extreme Precipitation and Flood Risks

### Regional Blue-Green Infrastructure[33] Community and Planning Study (Metropolitan Washington Council of Governments/MWCOG)

**Infrastructural/Technological, Institutional, Nature-Based, Behavioral/Cultural**

The Regional Blue-Green Infrastructure (BGI) Community and Planning Study was published in June 2025 with the goal of increasing resilience in three sub-watersheds located in DC and Prince George's County. The watersheds targeted were Watts Branch, Arundel Canal, and Oxon Run and involved neighborhoods in Oxon Hill, MD, Capitol Heights, MD, Mt Rainier, MD, Seat Pleasant, MD, North Brentwood, MD, and Ward 7 in NE DC. [34] The areas were selected because of their flooding risk and to increase resilience in neighborhoods that were traditionally underinvested.[35] The neighborhoods in the study have a large Black and Latino population and engagement was designed based on equitable community engagement practices.[36]

Community-based organizations were included early and throughout the process – collaborating with planning team on methods of community engagement[37] including:

- Offering virtual and in-person workshops, open houses, and tabling events;
- Developing materials in Spanish and English;
- Creating resources for children like flood-related coloring books to encourage multigenerational participation;
- Connecting proposed BGI projects to improving day-to-day experiences, demonstrating how a project could remedy frequently flooded sidewalks and roads to help residents on their daily commutes;
- Creating mural boards and interactive watershed maps used to gather feedback from residents, including insights from residents on frequently flooded areas; and

[33] Blue-Green Infrastructure (BGI) is a strategic, nature-based approach to urban planning that integrates natural water management ("blue") with vegetation ("green") to manage stormwater, reduce flood risks, and mitigate urban heat.

[34] Metropolitan Washington Council of Governments, "Regional Blue-Green Infrastructure (BGI) Flood Project", June 2025.

[35] Metropolitan Washington Council of Governments, "Regional Blue-Green Infrastructure Community Engagement and Planning Study", June 2025

[36] U.S. Census Bureau, "Demographic Characteristics of Wards 2019-2023 5-Year ACS", Accessed 12/17/2025., U.S. Census Bureau, "QuickFacts: Prince George's County, Maryland, Oxon Hill CDP and Mount Ranier City", Accessed 12/17/2025.

[37] Metropolitan Washington Council of Governments, "Regional Blue-Green Infrastructure Community Engagement and Planning Study", June 2025

- Receiving feedback from attendees after every engagement event on how it went and how it could be improved and using the feedback for upcoming events in the engagement process.

**Takeaways.** Insights can be gleaned from the community engagement throughout the process. The project prioritized engagement; however, various potential improvements were identified. For example, engagement with community-based organizations was deeper and more consistent compared to engagement with individual residents who attended meetings. Further, the engagement did not reach the ideal level of equitable engagement of co-creation.

Some recommendations for deeper and more equitable community engagement collected from involved agencies, community-based organizations, and residents were reported as follows:

- **Meet people where they are**. Use formats that reflect how people already gather including in-person, virtually, through churches, community centers, or schools. This builds trust and makes participation more accessible.
- **Center CBOs as co-creators—not just outreach partners**. Empower local organizations to shape project design, delivery, and monitoring. Their insights lead to more grounded, community responsive BGI outcomes.
- **Design against displacement**. Ensure BGI reflects community identity and does not contribute to green gentrification. This includes involving residents in the design process and clearly communicating anti-displacement intentions.
- **Invest in long-term relationships**. Effective implementation is rooted in trust and continuity. Panelists emphasized consistency over time.
- **Leverage trusted institutions**. Churches, civic associations, and longstanding local organizations hold deep social capital and intergenerational reach—making them ideal partners in outreach and education.
- **Reduce barriers to participation**. Provide food, childcare, stipends, and materials in multiple languages and formats to ensure equitable access and reduce burden.
- **Create physical and social infrastructure for engagement.** Community-serving facilities like Resilience Hubs can anchor BGI work in familiar, multifunctional spaces while also offering workforce training and resource access.
- **Use accessible and culturally relevant language.** Avoid jargon and translate materials into formats that are legible to residents of different ages, languages, and literacy levels.
- **Support youth leadership.** Panelists encouraged creating entry points for youth and emphasized their eagerness to contribute when engaged meaningfully.
- **Observe who's missing.** Practitioners were urged to be attentive to who is not showing up and actively find ways to include underrepresented voices.

- **Be consistent and respectful of time.** Start and end meetings on time, follow through, and show up regularly. This builds credibility and helps sustain engagement.[38]

This feedback can be used to guide future equitable community engagement on projects, including projects on adaptation, mitigation, and resiliency.

[38] Metropolitan Washington Council of Governments, "Regional Blue-Green Infrastructure Community Engagement and Planning Study", June 2025

## Strategies for Extreme Precipitation and Flood Risks

### Flood Mitigation Assistance Grant Program (Howard County, MD)

**Institutional**

Ellicott City experienced substantial flooding in 2011, 2016, and 2018, which spurred the development of the Flood Mitigation Assistance Grant Program (originally launched in 2019). It was relaunched in 2024 and is available to property owners and businesses located in high-risk flood zones across Howard County. The purpose of the grant program is to increase the resilience of Ellicott City residents and increase access to resources for infrastructure improvements meant to better withstand flooding.[39] Grants can assist with funding flood proofing projects, such as custom flood resistant doors.[40]

For awardees of the grant, Howard County will match 50% of flood proofing costs up to a maximum of $6,000 for property owners and $3,000 for businesses.[41] Since 2019, the program has awarded over $150,000 in grants.[42]

The program is funded through a mix of local, state, and federal funding, including a $75 million Water Infrastructure Finance and Innovation Act (WIFIA) loan from the Environmental Protection Agency (EPA) and $20 million from the Federal Emergency Management Agency (FEMA).[43] The program is part of the larger Ellicott City Safe and Sound Plan, which addresses flooding issues in the County.[44]

**Takeaways.** Grant programs specifically targeted at adaptation, mitigation, and resiliency actions can help communities fund large projects that will build resiliency or help adapt to current and future weather conditions.[45]

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[39] Maryland Association of Counties, "Howard Relaunches Expanded Flood Mitigation Assistance Grant Program", March 6, 2024.
[40] Howard County Government, "Howard County Relaunches and Expands Impactful Flood Mitigation Assistance Grant Program", 3/4/2024.
[41] Maryland Association of Counties, "Howard Relaunches Expanded Flood Mitigation Assistance Grant Program", March 6, 2024.
[42] Ibid.
[43] United States EPA, "EPA Announces $75 Million WIFIA Loan to Mitigate Flood Risk in Howard County, Maryland", May 24, 2022.
[44] CBS News Baltimore, "Howard County removes 100,000 pounds of debris from Ellicott City watershed over 6 years", March 17, 2025.
[45] U.S. Climate Resilience Toolkit, "Funding and Building Capacity", Accessed 12/17/2025.

## Strategy for Drought

### Onsite Water Reuse (San Francisco, CA)

**Infrastructural/Technological, Nature-Based**

Water reuse systems are systems that collect, treat, and re-use water, specifically water for non-potable uses, such as washing clothes. Water that is used for showers, baths, washing machines, and bathroom sinks, referred to as graywater, is treated and reused for many of these same actions in water reuse systems. Some water reuse systems also have capacity to collect, treat, and re-use rainwater and stormwater.[46] However, it is important to note that the onsite recycling systems do not treat water to meet drinking standards and is not meant for human consumption.[47]

In 2012, the City and County of San Francisco adopted the Onsite Water Reuse for Commercial, Multi-Family, and Mixed-Use Development Ordinance which allowed for the collection, treatment and use of alternate water sources for non-potable uses in buildings.[48] In 2015, it became a requirement for new development projects of 250,000 square feet, including commercial, mixed-use, and residential projects, to install and operate an onsite water reuse system. This expanded to now include any development projects of 100,000 gross square feet or more who submitted a site permit application after January 1, 2022.[49]

**Takeaways.** Large buildings consume a significant amount of water, especially water that could otherwise be used as drinking water. In Montgomery County, most residents get their water from WSSC, who primarily gets their water supply from the Potomac and Patuxent River.[50] Local research has predicted that rising temperatures increase the likelihood of hydrological droughts by decreasing the flow of water and could lead to water shortages.[51]

In addition, increased rainfall and flooding, which climate models for the area predict will continue, can impact water treatment plants by flooding drinking water supplies with sewage and causing contamination.[52] By treating water onsite and reusing it for purposes besides human consumption, it can reduce the demand on local drinking water resources and increase resiliency for water infrastructure.[53]

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[46] WateReuse Association, Increasing Safe and Reliable Water Supplies, Accessed 12/18/2025.
[47] Kehoe, P., "Scaling up onsite water recycling systems in the US", Water Security, 12/2023.
[48] San Francisco Water Power Sewer, "Onsite Water Reuse Program Guidebook", April 2025.
[49] Ibid.
[50] WSSC Water, Water Quality Report, 2024., Department of Environmental Protection, "Public Water and Sewer Service", Accessed 12/18/2025.
[51] Interstate Commission on the Potomac River Basin, "New report exposes the vulnerabilities of the Washington metropolitan area's water supply", 12/5/2025.; ICPRB, "Water Supply Outlook and Status, Accessed 12/18/2025.
[52] WSSC Water, "Climate Change Vulnerability Assessment, Adaptation, and Mitigation Plan Summary Report", June 2020.
[53] Luthy, R. G., et. al., "Urban Water Revolution: Sustainable Water Futures for California Cities", May 7, 2020.

## Strategies for Extreme Temperatures

### Chief Heat Officer (Miami-Dade County, FL)

**Institutional, Behavioral/Cultural**

Extreme heat poses a great risk to many areas but can especially be a great risk to cities. Due to the "heat island effect," cities often have temperatures several degrees hotter compared to rural areas nearby. Cities typically have more concrete and metal (which absorbs and radiates heat) and less green spaces and trees (which help cool temperatures).[54]

In 2021, Miami-Dade County established the world's first "Chief Heat Officer (CHO)."[55] A CHO's role is to unify their government's responses to extreme heat by improving coordination across all departments and agencies as well as initiating new work that reduces the risks and impacts of extreme heat on residents and communities.[56] This position was created under a grant awarded to develop a new extreme heat initiative from the Adrienne Arsht-Rockefeller Foundation Resilience Center.[57]

Since the inception of Miami's CHO, other CHOs have been established in governments across the world including:

- Capetown, South Africa
- Freetown, Sierra Leone
- Athens, Greece
- Los Angeles, California
- Kisumu County, Kenya
- Melbourne, Australia
- Santiago, Chile
- State of Arizona[58]

**Takeaways.** Since more jurisdictions and countries have established a CHO position, it has allowed for stronger coordination and resource sharing regarding actions and policies to consider.[59] CHOs note they help to break down siloes in their governments and establish resilience strategies and actions that cut across departments and integrate resilience actions into everyday work.[60]

Developing relationships with organizations outside of local government is also a role of the position. In Miami, the CHO has made efforts to build a relationship with the Occupational Safety

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[54] Atlantic Council: Climate Resilience Center, "Hot Cities, Chilled Economies: Economic Impacts of Heat on Cities", 2021.
[55] Atlantic Council: Climate Resilience Center, "Chief Heat Officers", Accessed 1/4/2026.
[56] Ibid.
[57] Miami Dade County Government, "Chief Heat Officer", Accessed 1/4/2026.
[58] Atlantic Council: Climate Resilience Center, "Chief Heat Officers", Accessed 1/4/2026.; Deutsche Welle, "Cities are appointing 'heat officers' to protect residents", 6/4/2025.
[59] NBC News, "In Miami with the world's first chief heat officer", 3/17/2024.
[60] World Economic Forum, "The rise of the Chief Heat Officer and why it matters", 5/1/2023.

and Health Administration to develop a heat safety plan and legislation that would limit when construction workers are required to work during the hottest parts of the day. This is a major concern as construction workers are up to 11 times more likely to experience heat-related illnesses during extreme heat compared to those who are not construction workers.[61]

The Miami CHO also emphasized the importance of community education and outreach about extreme heat, in addition to building infrastructure that is more resilient. Through the CHO's office, Miami developed an annual heat season campaign that runs through the hottest part of the year, targeting zip codes with the highest heat-related illnesses.[62]

[61] NBC News, "In Miami with the world's first chief heat officer", 3/17/2024.
[62] World Economic Forum, "The rise of the Chief Heat Officer and why it matters", 5/1/2023.

## Strategies for Extreme Temperatures

### Heat and Air Quality Resilience (San Francisco, CA)

**Institutional, Behavioral/Cultural**

San Francisco, CA's local government identified heat and air quality as two of the largest hazards affecting the public health and resilience of their community. In response to this, they created the Heat and Air Quality Resilience Project (HAQR), which is a cross-sectoral initiative that includes public, private, community, and academic stakeholders. Together, they meet quarterly to identify, plan, and implement medium-to-long term resilience strategies that target extreme heat and wildfire smoke, in addition to planning short-term emergency response actions. The participants include organizations which:

- Represent, engage, or work closely with communities most vulnerable to the impacts of heat and air quality;
- Plan or execute emergency preparedness and response activities;
- Provide health care or other community services;
- Build, regulate, or maintain housing and other facilities;
- Plan or manage open space, green infrastructure or other public works that can reduce urban heat islands; and
- Deliver and maintain services which sustain San Francisco's workforce and economy.[63]

In 2023, HAQR published a Heat and Air Quality Implementation Plan. The plan laid out long term goals and objectives for making San Francisco more resilient to extreme heat and poor air quality. The plan also includes four "Resilience Pathways" which are proposed adaptation strategies that specifically target increased community resilience to extreme heat and/or wildfire smoke:

1. Buildings are adapted to reduce exposure to extreme heat and poor air quality.
2. Exterior built and natural environments are adapted to reduce exposure to extreme heat and poor air quality.
3. More resiliency to extreme heat and wildfire through equitable emergency preparedness, response, and resilience actions.
4. More resiliency to both current and future extreme heat and wildfire smoke events through city services that can predict and adapt to climate-related stressors.

Each pathway has objectives and strategies to meet these objectives.[64]

[63] San Francisco Government, "Heat and Air Quality Resilience", Accessed 1/4/2026.
[64] San Francisco Department of Public Health, "The Heat and Air Quality Resilience Plan", May 2023.

**Takeaways.** Resilience has a broad scope in how to better equip communities with the ability to adapt and recover from disasters, shocks, and stresses due to extreme weather events and climate change. Breaking resilience down into different categories, like heat and air, can help local governments focus on climate risks that impact their locality the most.

HAQR functions similarly to emergency preparedness planning and has informed planning exercises conducted by the San Francisco Department of Emergency Management.[65]

[65] FEMA, "City and County of San Francisco Heat and Air Quality Tabletop Exercise", 2024.

## Strategies for Mitigation and Carbon Sequestration

### E-Bike Incentive Program (Denver, CO)

**Behavioral/Cultural**

In 2022, the City and County of Denver began an incentive program for purchasing e-bikes as both a low-cost, efficient means of personal transportation and a method to reduce GHG emissions. Another goal of the program was to increase economic equity by only allowing households making less than the area median income to apply for a rebate.

The city's program rewards a $450 rebate for qualified e-bike purchases, which can be combined with a $450 tax credit from the State of Colorado for purchasing an e-bike, which allows for up to $900 in cost savings for e-bike purchases.[66]

**Takeaways.** GHG emissions from transportation are a large source of emissions at the local level. In Montgomery County, 42% of carbon dioxide emissions come from the transportation sector, mostly from single occupancy vehicles.[67] Encouraging different modalities of travel that produce less or zero emissions, is essential to reducing GHG emissions locally.

By incentivizing the purchase of e-bikes, which can allow riders to travel further and faster than traditional bikes, it can shift reliance from single-occupancy vehicles, especially when combined with e-bike-friendly and safe infrastructure.[68]

The e-bike rebate program in Denver surveyed residents who received the rebate in 2022 and purchased an e-bike. The findings show that respondents did decrease their reliance on gas vehicles:

- Respondents traveled 26 miles per week on average on their e-bikes;
- 71% of respondents reported using their gas vehicles less often; and
- 29% of respondents were new bike users.[69]

The rebate program is still active and the application window for 2026 rebates will be announced later this year.[70]

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[66] City and County of Denver, "E-Bike Rebates", Accessed 1/5/2026.
[67] MCDOT, "Zero Emission Bus Transition Plan", April 2024.
[68] Olayode, I. O., Jamei, E. and Alex, F. J., "Integration of e-bikes in public transportation based on their impact, importance, and challenges: A systematic review", March 2025.; Yin, A., et. al., "How electric bikes reduce car use: A dual-mode ownership perspective", August 2024.
[69] City and County of Denver, "Denver's 2022 Ebike Incentive Program Results and Recommendations", 2022.
[70] City and County of Denver, "E-Bike Rebates", Accessed 1/5/2026.

## Strategies for Mitigation and Carbon Sequestration

### Zero Emission Delivery Zones (Santa Monica, CA)

**Institutional, Behavioral/Cultural**

In 2021, the city of Santa Monica launched a pilot program that provided priority curb access for zero emission delivery vehicles, which was the first program of its kind in the United States. The program incentivizes investment in zero emission delivery vehicles through priority curbside loading areas and dedicated curb spaces were created for electric cargo bikes and light electric trucks. The pilot program was located in a one-square mile area in a commercial activity core in Santa Monica and data was collected to study the impact the select loading areas had on delivery efficiency, safety, congestion, and emissions.[71]

**Takeaways.** After the conclusion of the pilot program, work has continued to develop zero emissions delivery strategies in the United States. The LA Cleantech Incubator is partnering with eight cities and one county, including Washington, D.C., to create pilots for zero-emission deliveries.[72]

Encouraging public and private companies that deliver food, packages, and other goods switch to electric vehicles which could decrease emissions associated with transportation locally.

[71] Los Angeles Cleantech Incubator, "Zero Emissions Delivery", Accessed 1/10/2026., OLO could not find publicly available data on emissions from the pilot program.
[72] The Rockefeller Foundation, "LACI Advances City Climate Innovation Challenge for Zero Emissions Delivery with Rockefeller Foundation Grant", February 20, 2025.

## Strategies for Mitigation and Carbon Sequestration

### Curbside Composting Program (Prince George's County, MD)

**Infrastructural/Technological**, **Institutional**, **Nature-Based**

Every resident in Prince George's County who receives County trash and recycling services can participate in the curbside composting program. Food scraps and items that are soiled by food, such as paper towels, plates, napkins, and pizza boxes can be composted. Residents can set non-food items to be composted on the curb in either a cart provided by the County, yard trim/waste bag, or another container with a tight-fitting lid marked as "Yard Trim" or "Yard Waste." However, it is required that food and food-soiled items be placed in the cart provided by the County.[73]

**Takeaways.** While Montgomery County has a pilot curbside composting program, it does not yet offer curbside composting Countywide. According to a County waste composition study conducted in 2023, out of all solid waste in the County generated by residential, commercial, industrial and other activities, food scraps and other compostable organics make up 23% of all solid waste received at the transfer station.[74] Within the residential sector, it was estimated that single-family and multi-family residences disposed 61,000 tons of food scraps annually. According to DEP staff, food waste represents the "single biggest opportunity for the County to substantially increase its waste diversion.[75]

[73] Prince George's County, "PGC Composts", Accessed 1/12/2026.
[74] Department of Environmental Protection, "2022/23 Montgomery County Waste Composition Study", April 18, 2023.
[75] Montgomery County Government "FY 25-30 Capital Improvements Program: Recycling and Resource Management: New Organics Processing Facility", 5/8/2024.

## D. Climate Change and Climate Justice

Climate justice is a movement which recognizes climate change causing disproportionate harmful social, economic, and public health impacts on BIPOC individuals and communities as well as low-income communities.[76] Climate justice is intertwined with environmental justice, which states "that everyone—regardless of race, color, national origin, or income—has the right to the same environmental protections and benefits, as well as meaningful involvement in the policies that shape their communities."77 Climate justice differs from environmental justice as it focuses on individuals and communities who currently are and will be disproportionately impacted by climate change. However, many BIPOC communities working towards environmental justice are also disproportionately impacted by climate change.[78]

The environmental justice movement is primarily led by BIPOC communities and focuses on BIPOC communities that experience environmental racism, where polluting infrastructure such as factories are more likely to be placed and environmental amenities like parks and green space are less likely to be placed.[79] This is due to deliberate siting of polluting facilities in BIPOC neighborhoods by corporations, regulatory agencies, and local planning and zoning boards, resulting in lower property values and negative health impacts for residents from pollution.[80] Specific impacts include:

- BIPOC neighborhoods, especially the majority of households with lower incomes, have less greenspaces and shade trees compared to predominantly White and wealthy neighborhoods. This is directly correlated to more heat exposure and increases in surface temperatures in these communities.[81]

- Communities of color at every income level in the United States are exposed to higher levels of air pollution.[82] Racial inequities in exposure to air pollution have led to increased health disparities by race and ethnicity, such as increased rates of asthma among Black people compared to White people. Pre-existing health conditions, including asthma, are exacerbated by climate change as warmer temperatures can increase the amount of

[76] Yale Climate Connections, "What is 'climate justice?", July 29, 2020.
[77] National Resource Defense Council, "The Environmental Justice Movement", August 14, 2025.
[78] Washington State Department of Health, "Climate Justice", Accessed 1/15/2026.
[79] Washington State Department of Health, "Environmental Justice", Accessed 1/15/2026.; Mohai, P., Pellow, D., and Roberts, J. T., "Environmental Justice", 7/28/2009.; NRDC, "The Environmental Justice Movement", August 14, 2025.
[80] NRDC, "The Environmental Justice Movement", August 14, 2025.
[81] CNN, "Black people are more likely to die from heat stress than White people in NYC, report says", 6/17/2022.
[82] U.S. EPA, "Study Finds Exposure to Air Pollution Higher for People of Color Regardless of Region or Income", 9/20/2021.; Josey, K. P., et. al., "Air Pollution and Mortality at the Intersection of Race and Social Class", 3/24/2023.; Liu, J., et. al., "Disparities in Air Pollution Exposure in the United States by Race/Ethnicity and Income, 1990-2010", 12/15/2021.

ground-level ozone (smog) which can irritate the lungs and trigger asthma symptoms and attacks.[83]

Disproportionate harmful impacts from climate change are connected to how many resources an individual or community has. People with lower incomes are disproportionately impacted by having fewer resources available for responding (i.e. not being able to afford increasing energy costs or not having money to evacuate from a storm).[84]

Due to the United States' history of systemic and institutional racism, BIPOC, especially Black people, experience social, economic, environmental, and public health inequities as a direct result of racially discriminatory policies and practices.[85] These inequities are often interconnected, and individuals can experience multiple inequities at the same time, depending on their identities such as gender, race, age, and income.[86] [87]

An example of interconnected inequities that are exacerbated by climate change is that Black people, especially older, single Black men with low incomes, are more likely to die from heat waves compared to their White counterparts.[88] Data on heat-related deaths from 2011-2021 in New York City showed Black New Yorkers were twice as likely to die from heat-related illnesses compared to White New Yorkers.[89] This is due to multiple systemic factors including:

- The racial wealth divide, which refers to wealth inequities across racial and ethnic groups in the United States and is especially large between Black and White families – the average White family holds nearly thirteen times the wealth of the average Black family. The divide was created and reinforced by historical policies that were racially discriminatory and blocked generations of Black families from building wealth, including racial segregation

[83] American Lung Association, "Asthma and Climate Change: What You Need to Know", 5/28/2019.
[84] Georgetown Climate Center, "Equitable Adaptation Legal & Policy Toolkit", Accessed 1/15/2026.; Patel, S. S., et. al., "What Do We Mean by 'Community Resilience'? A Systematic Literature Review of How It Is Defined in the Literature", 2/1/2017.
[85] LaVeist, T. A., et. al., "The Economic Burden of Racial, Ethnic, and Educational Health Inequities in the US", 5/16/2023.; Bread for the World Institute, Gamblin, M. D., "Racial Wealth Gap Learning Simulation", Accessed 1/15/2026.
[86] Crenshaw, K., "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics", 1989.; Crenshaw, K., "The Urgency of Intersectionality - TED Talk", 10/2016.; Collins, P. H., "Black Feminist Thought in the Matrix of Domination", 08/2021.
[87] Both Kimberlé Crenshaw and Patricia Hill Collins describe how multiple systems of oppression, like racism, sexism, classism, and homophobia interact with each other and how one person can experience multiple forms of discrimination. Both Professor Crenshaw's and Dr. Collin's frameworks – Intersectionality and Matrix of Domination respectively – places a particular focus on Black women and how they are impacted by multiple forms of discrimination.
[88] PBS News, "How discriminatory housing policies of the past are shaping heat waves today in minority and low-income neighborhoods", 7/8/2024.; Semenza, J. C., et. al., "Heat-Related Deaths during the July 1995 Heat Wave in Chicago", 7/11/1996.
[89] New York City Government, "2025 Heat Mortality Report", 2025.

laws and redlining.[90] On the individual level, cash on hand and other financial resources allows individuals to withstand shocks from extreme weather events and retrofit their housing to better withstand extreme weather events.

- Historical policies that created racial segregation in neighborhoods and disinvestment in Black and Brown neighborhoods have led to less shade trees and green spaces in historically redlined and segregated neighborhoods. In urban areas, this creates an urban heat island effect where surface temperatures are higher in urban areas with less greenspace and more concrete surfaces. BIPOC with low incomes are more likely to live in historically redlined and segregated neighborhoods and as a result, are more likely to be disproportionately exposed to heat.[91]

- Due to a legacy of racist and discriminatory policies in land use planning, the current spatial distribution of pollution sources, such as factories, landfills, and highways, is inequitable and are overwhelmingly located in more BIPOC neighborhoods compared to White neighborhoods.[92] This has contributed to higher levels of air pollution in BIPOC neighborhoods. Higher levels of air pollution can cause respiratory and health issues, and people with these underlying conditions are more susceptible to heat-related illnesses and premature death from heat.[93]

- Renting exacerbates the likelihood of dying from a heat wave as people who rent and have lower incomes do not always have control over room temperatures and are more likely to be housing cost-burdened, leading to either not having air conditioning or not being able to afford to run an air conditioner.[94]

- Younger and older people are more susceptible to heat-related illnesses and more affected by heat waves. Heat waves are especially deadly to older people with underlying illnesses, such as respiratory issues.[95] Due to environmental racism, Black people are more likely to have asthma or other respiratory illnesses due to land use siting of polluting facilities like landfills and factories being put in mostly Black neighborhoods.[96]

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[90] Bread for the World Institute, Gamblin, M. D., "Racial Wealth Gap Learning Simulation", Accessed 1/15/2026.
[91] Kaiser Family Foundation, "Continued Rises in Extreme Heat and Implications for Health Disparities", 8/24/2023.
[92] Pacific Standard, "How to Use Zoning Laws to Reduce Pollution in Low-Income Communities", 5/20/2019.; Economic Policy Institute, "The Color of Law", 2017.
[93] Lane, H. M., et. al., "Historical Redlining is Associated with Present Day Air Pollution Disparities in U.S. Cities", 3/9/2022.; American Lung Association, "Air Pollution and Health Equity", 6/14/2022.
[94] NRDC, "Toward a Renter's Right to Heat-Safe Housing", 6/9/2022.; Reuters, "As U.S. heat deaths rise, some landlords oppose right to air conditioning", 8/5/2024.
[95] Kenney, W. L., Craighead, D. H., and Alexander L. M., "Heat Waves, Aging, and Human Cardiovascular Health", 10/1/2025.
[96] Lane, H. M., et. al., "Historical Redlining is Associated with Present Day Air Pollution Disparities in U.S. Cities", 3/9/2022.; Columbia School of Public Health, "Racial Disparities in Air Pollution Where Most Americans Live Worse Than Previously Understood", 7/7/2022.

Extreme heat is just one example, as all climate risks will affect BIPOC, especially BIPOC with low incomes, disproportionately due to decades of systemic racism causing a divestment in BIPOC communities. Due to this divestment, buildings and other infrastructure are older and weaker and not as resilient to climate hazards compared to newer infrastructure.[97]

In Montgomery County, data shows disparities in tree canopy coverage and impervious surfaces across the County via the Social Vulnerability Index (SVI). The SVI accounts for different factors that could amplify the detrimental impacts of climate change for individuals and communities, such as race and ethnicity, low income, age, chronic illnesses, and other factors. While the tool combines all factors and does not disaggregate how each factor/identity is impacted differently by climate change, it can give a snapshot of inequities that exist in the County.[98]

As shown in the maps below, areas with an SVI above 50%, which includes predominantly BIPOC and low-income neighborhoods, tend to have less tree coverage compared to neighboring areas and more impervious surfaces. Both factors can increase the urban heat island effect and contribute to higher surface temperatures.

Climate solutions should be tailored to reduce racial inequities and increase every resident and communities' adaptive capacity.[99] Solutions include prioritizing projects in BIPOC and low-income neighborhoods that would replace aging infrastructure and increase resilience, like installing more shade trees, adding green spaces, and improving infrastructure like buildings and stormwater management systems.

[97] Center for International Environmental Law, "Is Bluelining the 'New' Redlining? How Insurance Discrimination Deepens Climate Disparities", 8/9/2024.
[98] Montgomery County Government, "Montgomery County Climate Action Plan", June 2021.
[99] Chu, E., et. al., "An evaluation of U.S. cities' efforts to further distributive justice in climate adaptation planning", 6/17/2025.

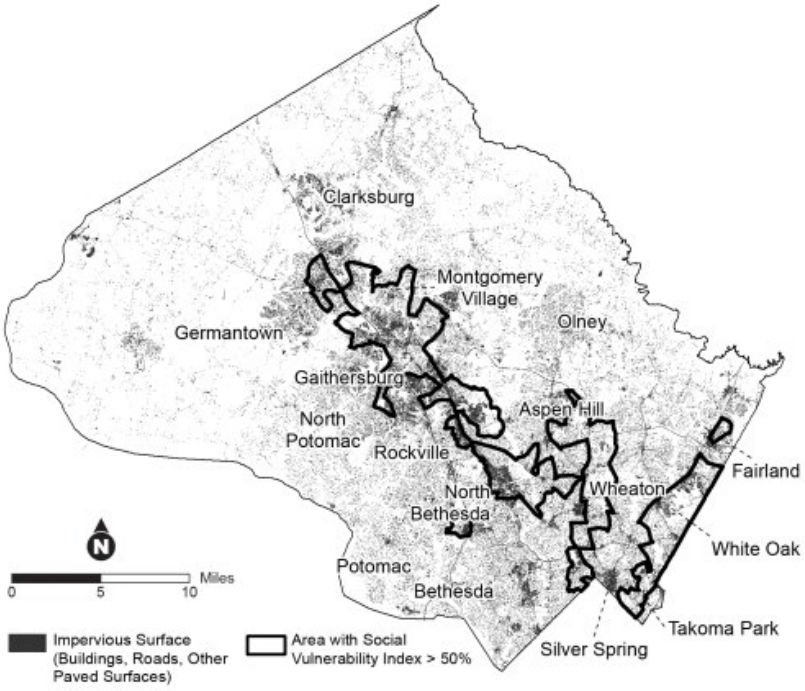


*Figure 16: Impervious surface in Montgomery County, outlining areas ranked in the top 50% most vulnerable by the CDC Social Vulnerability Index*

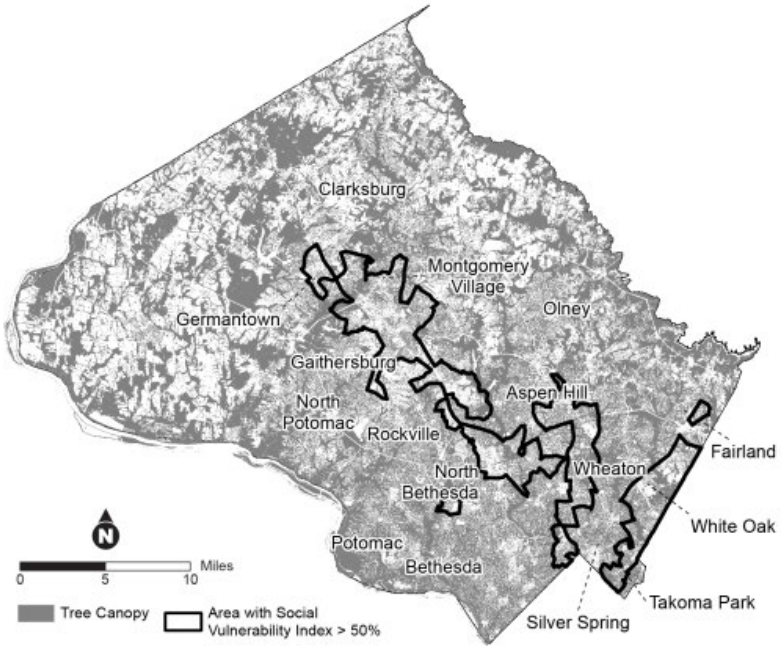


*Figure 15: Tree canopy in Montgomery County, outlining areas ranked in the top 50% most vulnerable by the CDC Social Vulnerability Index*

## E. Montgomery County Actions

This section presents information on the County's actions taken thus far for mitigation and adaptation:

- Mitigation actions are any actions that reduce or offset carbon dioxide emissions, or other greenhouse gas emissions. Examples include increasing the amount of clean energy used to power a jurisdiction or retrofitting buildings to become more energy efficient, therefore releasing less carbon emissions associated with buildings.

- Adaptation actions include actions that help ecosystems and communities resist the effects of climate change and become more resilient to extreme weather events due to climate change. Examples of adaptation actions include installing infrastructure that withstands climate change-related weather events, such as flood walls.

The Climate Action Plan and updates on the plan for each fiscal year were reviewed for this table. OLO used the FY25 update to the Climate Action Plan to report on the progress for each action listed in this section.[100] For the full list of updated progress on County actions recommended by the County Climate Action Plan as of Fiscal Year 2025, please see the appendix. Some notes about the following tables:

- The section does not include every adaptation action taken in the County and instead focuses on actions taken that address the four largest climate risks to the County: extreme temperatures, extreme precipitation, drought, and high winds.
- The County has undertaken many climate actions, however unless adaptation actions are directly related to one of the four climate risks, they are not included.
- Mitigation efforts focused on decreasing the County's greenhouse gas emissions are also included and are not coded by climate risk.

[100] Montgomery County Government, "Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan", 2026.

Mitigation

The following tables present mitigation actions recommended by the CAP and are sorted into the following categories: Clean Energy, Buildings, Transportation, and Carbon Sequestration.

**Mitigation - Clean Energy**

| Action | Description/Progress | Status |
|---|---|---|
| **Community Choice Energy Program** | Legislation that establishes a County Community Choice Energy Program was passed in 2025. | Initial Steps Taken |
| **Promote Private Solar Photovoltaic Systems** | In FY25, over 1,000 Montgomery County households registered to be part of the Switch Together program, which aids homeowners in switching to solar. 315 of the 1,000 participating households have completed installations of solar panels.<br><br>DPS now offers eSolar to expedite issuance and installation of residential rooftop solar systems by approved installers. | Significant Progress Made |
| **Public Facility Solar Photovoltaic Installations** | Parks recently installed solar at Laytonia Recreation Park and SEED Classroom.<br><br>In FY25, MCPS now has 24 schools hosting rooftop solar.<br><br>DGS completed construction of the County's first police station microgrid which once operational, will ensure uninterrupted 911 operations during grid disruptions.<br><br>DPS has created a dashboard for reporting solar photovoltaic installations in the County. | Significant Progress Made |
| **Advocate for a 100% Renewable Portfolio Standard by 2030** | The County continues to work with the Maryland General Assembly, Public Service Commission, state agencies, and Commission on Climate Change to advocate for Maryland to transition to 100% clean energy sources. | Initial Steps Taken |

Source: Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan

**Mitigation - Buildings**

| Action | Description/Progress | Status |
|---|---|---|
| **Electrification Requirements and Incentives for Buildings** | The Green Bank provided technical assistance to commercial entities for Building Energy Performance Standards (BEPS) compliance, as well as electrification incentives and loans to multifamily properties. | Significant Progress Made |
| **All – Electric Building Code for New Construction** | BEPS progress includes:<br>• Passing state bill which enhances the County's enforcement authority of BEPS; and<br>• Passing local bill which sets BEPS standards and requirements for each covered building type. | Significant Progress Made |
| **Disincentivize and/or Eliminate Natural Gas in New Construction**<br><br>**Net Zero Energy Building Code for New Construction*** | Enforcement of building codes established in 2021 began in 2025 and requires electrical infrastructure must be installed at time of construction to aid in the switch from a gas fixture to electric. | Significant Progress Made |

Source: Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan

*Included Disincentivize and/or Eliminate Natural Gas in New Construction and Net Zero Energy Building Code for New Construction in one category as the enforcement of new codes characterizes progress for both goals

**Mitigation - Transportation**

| Action | Description/Progress | Status |
|---|---|---|
| **Expand Public Transit** | In 2025, the County implemented a zero-fare policy for all Ride On buses.<br><br>The Veirs Mill Road Bus Rapid Transit project reached the 95% design milestone. | Initial Steps Taken |
| **Expand Active Transportation and Shared Micromobility Network** | In FY25, the County installed three new pedestrian hybrid beacons to enhance pedestrian safety.<br><br>Curbless and Shared Streets Design Guide was approved in FY25. | Significant Progress Made |
| **Private Vehicle Electrification Incentives and Disincentives** | EV Purchasing Co-op promotes incentives and special offers from participating Electrified Dealer partners each month.<br><br>In FY25, DEP piloted a Food Truck Electrification pilot program, which incentivizes food trucks to replace fuel generators with battery power systems. | Significant Progress Made |
| **Constrain Cars in Urban Areas, Limit New Road Construction** | Master plans across the County are rethinking the role of large roads and developing opportunities to repurpose space for non-auto uses. | Significant Progress Made |
| **Zero Emission Public Buses and School Buses** | MCPS added 285 electric school buses in FY25.<br><br>In FY25, the County added 38 electric buses to Ride On Fleet, for a total of 52 total electric buses. | Significant Progress Made |
| **Electrify County and Public Agencies Fleet** | MCPS and County government added to their fleet: one hybrid pick-up truck, seven electric cargo vans, four plug-in hybrid vehicles, 75 new electric cars, 44 used electric cars, and one battery electric loader. | Significant Progress Made |
| **Expand the Electric Vehicle Charging Network** | Currently, there are over 500 charging ports open to the public in the County.<br><br>The County is developing a Countywide EV Charger Plan which establishes a framework for installing charging infrastructure at County facilities. | Significant Progress Made |

**Mitigation – Transportation (Continued)**

| Action | Description/Progress | Status |
|---|---|---|
| **Transportation Demand Management and Telework Strategies** | The County continues to allow employees to telework a few days a week and work from home. | Significant Progress Made |
| **Traffic Management Systems** | The County is upgrading the Advanced Transportation Management System to reduce traffic congestion, travel time, and accidents while emphasizing safety and efficiency of multiple modes of mobility. | Initial Steps Taken |
| **Electric Vehicle Car Share Program for Low-Income Communities** | DEP is exploring models for EV car sharing programs, particularly aimed at expanding access for low-income communities. | Initial Steps Taken |
| **Off-Road Vehicle and Equipment Electrification** | In FY25, Parks continued to replace maintenance and off-road vehicles with electric alternatives, including mowers, carts, leaf blowers, weed whackers, and chainsaws. | Initial Steps Taken |
| **Advocate for a Vehicle Carbon Gas Tax or VMT Tax** | Vehicle carbon gas taxes and Vehicle Miles Traveled (VMT) taxes are ways to capture funds for cleaner transit and electrification projects through levying taxes on sellers and users of gasoline. The County would need to work with the state to implement taxes. Steps have not been taken yet on this action. | Not started |
| **Advocate for Rail Alternative Fuels** | The MARC rail currently runs on diesel and by partnering with MDOT, the County could explore options for electrification or alternative fuels for the MARC train. Steps have not yet been taken on this action. | Not started |

Source: Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan

**Mitigation - Carbon Sequestration**

| Action | Description/Progress | Status |
|---|---|---|
| **Retain and Increase Forests & Tree Canopies** | As of FY25, Tree Montgomery has planted over 18,400 trees with a 93% survival rate since their program started 10 years ago.<br><br>In FY25, the Reforest Montgomery program funded projects which provided 8.8 acres of reforestation (1,439 trees). | Significant Progress Made |
| **Restore and Enhance Meadows and Wetlands** | Parks staff planted 1,225 herbaceous plants and converted 30 acres of cropped agricultural field to a wildflower meadow.<br><br>86 shrubs and 4,600 herbaceous plants were planted across the County to improve stream buffers. | Completed /Institutionalized |
| **Regenerative Agriculture** | The Office of Agriculture (OAG) partners with agencies to help County farmers employ best management practices (BMPs) to help sequester carbon in the soil. In FY25, farmers reduced their GHG emissions by 12,430 metric tons of CO2 equivalent using BMPs.<br><br>The OAG provides free LeafGro compost deliveries to County farmers to use as fertilizer. | Completed /Institutionalized |
| **Restore Soil Fertility, Microbial Activity, and Moisture Holding Capacity** | DEP and its Watershed Restoration Division have enhanced efforts to educate constituents about organic lawn care practices, tree planting, conservation gardening, and other practices to improve soil carbon sequestration, soil fertility, and soil moisture capacity. | Completed /Institutionalized |
| **Whole-System Carbon Management and Planning** | GIS layers updated and created to identify areas in the County for prioritizing forest retention and forest increase projects. | Initial Steps Taken |

Source: Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan

## Climate Mitigation and Adaptation Actions

Adaptation

This section describes adaptation actions taken by the County that directly address the four largest climate risks to the County: extreme temperatures, extreme precipitation, drought, and high winds. Adaptation actions that focus on institutionalizing climate change governance are not included.

A description of the climate risk(s) an action targets, the description of progress on the action, and its status is also included.

| Action | Climate Risk(s) | Description of Progress | Status |
|---|---|---|---|
| **Harden Emergency Shelters and Install Resilience Hubs** | Extreme Temperatures, Extreme Precipitation/Drought, High Winds | First resiliency hub in the County set up at Better Carol Thompson Scotland Neighborhood Recreation Center. | Significant Progress Made |
| **Temperature Monitoring and Alerts** | Extreme Temperatures | The Office of Emergency Management and Homeland Security (OEMHS) changed Hyperthermia and Hypothermia alert terms to Extreme Heat and Cold Alerts to increase public understanding. | Completed /Institutionalized |
| **Extreme Temperature Plan** | Extreme Temperatures | OEMHS updated the Extreme Temperature Plan, which incorporates new wording and graphics that are "clear and actionable to the public" in both English and Spanish. | Completed /Institutionalized |
| **Extreme Weather Energy Efficiency Building Code** | Extreme Temperatures, Extreme Precipitation/Drought, High Winds | This action recommends building codes require non-critical facilities to install measures for decreasing residential building energy consumption by a certain percentage during extreme weather events.<br><br>BEPS sets standards for energy efficiency for buildings in the County but there is not a standard targeting energy consumption during extreme weather events. | Significant Progress Made |

| Action | Climate Risk(s) | Description of Progress | Status |
|---|---|---|---|
| **Climate – Adapted Housing Incentives/Subsidies** | Extreme Temperatures, Extreme Precipitation/Drought, High Winds | Continued support for programs funding greenhouse gas reduction and adaptation measures in low-income housing, such as the Green Bank's programs. | Significant Progress Made |
| **Green/Cool/PV Roof and Pavement Code** | Extreme Temperatures, Extreme Precipitation | In FY25, DPS began enforcing building codes that require new construction and additions over 5,000 square feet to install green/cool roofs. | Significant Progress Made |
| **Green Public Spaces** | Extreme Temperatures, Extreme Precipitation | In FY25, Planning included recommendations in the Great Seneca Plan and University Boulevard Corridor Plan to achieve 35% green cover on developing and redeveloping sites.<br><br>Recommendations include minimizing impervious cover, protecting existing forests, increasing tree canopy coverage, and expanding rain and community gardens. | Significant Progress Made |
| **Mold Protection and Remediation** | Extreme Precipitation | Healthy, Efficient, Electrified, Climate-Adapted Pilot launched by DEP provides gap funding for health and safety repairs. Twenty eight percent of homes participating in the program are currently receiving mold remediation services. | Initial Steps Taken |
| **Green Infrastructure** | Extreme Temperatures, Extreme Precipitation | In FY25, the County sought financial and technical support for green infrastructure projects.<br><br>Parks and MCPS partnering on implementation of MCPS's Green Infrastructure projects. | Significant Progress Made |

## Climate Mitigation and Adaptation Actions

| Action | Climate Risk(s) | Description of Progress | Status |
|---|---|---|---|
| **Climate Adapted Development Standards** | Extreme Temperatures, Extreme Precipitation/Drought, High Winds | The Comprehensive Flood Management Plan will perform an analysis of existing stormwater management requirements, building codes, and other policies to determine if changes should be recommended. | Initial Steps Taken |
| **Storm Water Retention Credit Trading** | Extreme Precipitation | CAP recommended the establishment of a Stormwater Retention Credit Trading program that would allow third-party project developers to earn revenue for reducing stormwater runoff through specific actions, like installing green infrastructure. This action has not been undertaken yet. | Not Started |
| **Ban Stormwater Management Requirement Waivers** | Extreme Precipitation | DEP is currently performing a watershed assessment which may identify areas where it would be beneficial to limit stormwater management waivers. | Initial Steps Taken |
| **Update Floodplain Maps** | Extreme Precipitation | Conducting flood modeling, which includes using data from 3 Mesonet stations installed in 2025.<br><br>As part of the Comprehensive Flood Management Plan, flood modeling will be conducted for approximately 101,000 acres in eleven watersheds to determine risk of flooding during significant rainfall, with both present and future rainfall predictions. | Significant Progress Made |
| **Water Supply Protection** | Drought | Twenty one pet stations were installed in FY25 to decrease the impact of bacteria in County water. | Initial Steps Taken |

## Climate Mitigation and Adaptation Actions

| Action | Climate Risk(s) | Description of Progress | Status |
|---|---|---|---|
| **Flood Rescue Resources** | Extreme Precipitation | In July 2025, due to flood sensor installation, OEMHS was able to provide real-time data to first responders to help with responses, including early road closures. | Significant Progress Made |
| **Flood Sensor Installation** | Extreme Precipitation | DEP and OEMHS installed a total of 40 flood sensors at frequently flooded sites in the County. | Completed /Institutionalized |
| **Repair and Enhancement of Stormwater Conveyance Systems** | Extreme Precipitation | The County has repaired or replaced failing stormwater systems at 49 locations and installed 2,259 linear feet of pipe.<br><br>The County has rehabilitated storm drains in Vandever St. Outfall and Georgian Forest Local Park. | Completed /Institutionalized |
| **On-Site Water Reuse** | Drought | On-site water reuse allows "relatively clean used water" from household uses like showers, washing clothes, and washing dishes to be treated and re-used in the building. The County has not yet acted on changing the building code to allow for on-site water reuse. | Not Started |
| **Expanded Community Gardens** | Extreme Precipitation, Extreme Temperatures | $300,000 in grants were awarded to Parks to open a community garden at Wheaton Regional Park, serving 40-50 families when it opens in 2028. | Significant Progress Made |
| **Advocacy for Off-River Water Storage** | Drought, Extreme Precipitation | In FY26, WSSC is planning on completing an "of river water storage" study to further decrease County water loss and increase water storage capabilities. | Initial Steps Taken |
| **Study Potential for Buildings in the County to Flood and Possible Remedies** | Extreme Precipitation | The Comprehensive Flood Management Plan will perform an analysis of existing stormwater management requirements, building codes, and other policies. | Initial Steps Taken |

Source: Fiscal Year 2025 Annual Report on Montgomery County's Climate Action Plan

## F. Findings and Discussion Item

This OLO report provided an overview of adaptation and mitigation actions other local governments with similar climate risks to Montgomery County have taken to mitigate and adapt to climate change along with actions the County has already taken. This section presents the findings from the memorandum report and one discussion item for Council consideration.

**Finding #1. Experts have asserted it is necessary to pursue both mitigation and adaptation actions.**

Climate change adaptation and climate change mitigation are two complementary approaches to addressing the challenges of climate change:

- Climate change mitigation refers to actions which limit emissions of GHGs from entering the atmosphere and/or reduce levels of GHGs already in the atmosphere. Examples of mitigation actions include those that reduce GHG emissions, like switching to clean energy and measures that cut GHG emissions from large sources like power plants and factories.
- Climate change adaptation is adjusting to current impacts and preparing for future impacts of climate change, such as extreme weather events and temperature extremes. Adaptation focuses on actions that reduce the vulnerabilities of a community to climate hazards, such as updating infrastructure to withstand extreme weather events.

It is important to pursue both mitigation and adaptation actions because the levels of GHGs that have been released into the atmosphere have accelerated climate change and are impacting the Earth's ecosystems. This has led to rising sea levels and unpredictable/extreme weather patterns, which adaptation actions prepare communities for. It is also necessary to pursue mitigation impacts to reduce future GHG emissions and slow down the acceleration of climate change.

**Finding #2. There are four broad types of adaptation and mitigation responses. Jurisdictions across the country are pursuing mitigation and adaptation strategies which encompass more than one type of response.**

There are multiple ways jurisdictions implement mitigation and adaptation strategies at the local level. Adaptation and mitigation strategies can be classified into four broad types of responses:

- **Infrastructural/technological** – physical structures or technologies like dams, stormwater systems, and water re-use systems;
- **Institutional** – governance, policies, and organizational structures like strategic planning that includes adaptation and resiliency considerations;

- **Behavioral/cultural** – individual/community behaviors, practices, and cultural norms including community engagement and programs that incentivize environmentally friendly behaviors; and
- **Nature-Based** – use of natural systems and processes like planting of shade trees in neighborhoods and public areas.

Jurisdictions presented in this report pursued mitigation and adaptation actions which target the unique climate risks their area faces and actions which encompass more than one type of response.

Broad takeaways from some of the actions explored in this memorandum report include:

- As jurisdictions face multiple climate risks, creating an office or officer devoted to each specific climate risk and encouraging collaboration and cross-cutting initiatives in developing adaptation and mitigation actions can help local governments develop personalized climate actions and institutionalize a culture of considering climate adaptation and mitigation goals in all governmental operations.
- Encouraging public and private companies that operate in the jurisdiction to adopt more environmentally friendly practices by offering incentives is a tool local government can use to decrease emissions associated with operations, such as transportation and production of goods.
- Equitable, two-way community engagement that centers BIPOC communities and stakeholders and allows for co-creation of policies results in deeper and more equitable adaptation and mitigation projects. Not only can hyper-local issues like seasonal flooding on a specific block be illuminated, policies can also be designed through co-creation to avoid negative unintended consequences like displacement and gentrification and reflect the wants and needs of residents.
- Adaptation actions can use both nature-based and infrastructural/technological solutions. One prime example is BGI which combines infrastructure, such as streets designed to better withstand stormwater runoff, with nature-based solutions, like vegetation designed to better absorb water in urban landscape designs. Further, BGI can provide dual functionality for resident use and flood control, like a floodable amphitheater which provides both an event space and a basin to safely hold excess floodwater during periods of extreme precipitation.

**Finding #3. As BIPOC are disproportionately impacted by climate change, it is important to co-create with and center BIPOC communities in adaptation and mitigation solutions.**

Disproportionate harmful impacts from climate change are connected to how many resources an individual or community has. Due to the United States' history of systemic and institutional racism, BIPOC, especially Black people, experience social, economic, environmental, and public health inequities as a direct result of racially discriminatory policies and practices.

Due to deliberate siting of polluting facilities in BIPOC neighborhoods by corporations, regulatory agencies, and local planning/zoning boards and less siting of environmental goods like green spaces, there are multiple resiliency issues in BIPOC communities including:

- Less green space and shade trees combined with heat-absorbing surfaces such as concrete and asphalt creates more heat exposure and increases surface temperatures compared to neighborhoods with more green space and shade trees; and
- Pre-existing health conditions, including asthma, are exacerbated by climate change as warmer temperatures can increase the amount of ground-level ozone (smog). This can irritate the lungs and trigger asthma symptoms and attacks. Living in a neighborhood near a polluting facility greatly increases an individual's chance of developing a chronic lung disease like asthma.

In Montgomery County, there is data which shows disparities in tree canopy coverage and impervious surfaces across the County via the Social Vulnerability Index (SVI). The SVI accounts for different identities that could amplify the detrimental impacts of climate change for individuals and communities, such as race and ethnicity, income, age, and chronic illnesses. While the tool does not present disaggregated data, it can give a snapshot of racial inequities that exist in the County. Data show that in areas with an SVI above 50%, which includes predominantly BIPOC and low-income neighborhoods, tends to have less tree coverage and more impervious surfaces compared to neighboring areas. Both factors can increase the urban heat island effect and contribute to higher surface temperatures.

Climate solutions should be developed to reduce racial inequities and increase every resident and communities' adaptive capacity. Solutions include prioritizing projects in BIPOC and low-income neighborhoods that would replace aging infrastructure and increase resilience. This could include installing more shade trees, adding green spaces, and improving infrastructure such as buildings and stormwater management systems. It is also important to engage in equitable, two-way community engagement with BIPOC communities in which these projects are sited in, to avoid negative unintended consequences like displacement and gentrification.

## Climate Mitigation and Adaptation Actions

**Finding #4. The County has made significant progress on the actions proposed in the Climate Action Plan, including mitigation and adaptation actions.**

The Montgomery County Climate Action Plan, published in 2021, identified the biggest climate hazards faced by the County. Hazards were identified by analyzing data from the County's historical climate baseline (1950-2005) and projected future risks through 2035, 2050, and 2100. The CAP also presents proposed actions which address both mitigation and adaptation actions developed through climate technical workgroups, GHG inventory projects, use of various climate models, and analysis of co-benefits and feasibility of actions.

Only five out of 85 proposed actions from the CAP have not yet started as of the FY25 update (published in January 2026). Eighteen out of 85 proposed actions have had initial steps taken, 48 out of 85 proposed actions have had significant progress reported, and 14 out of 85 proposed actions have been completed or institutionalized.

**Discussion Item #1 Consider using two-way community engagement between the County and BIPOC community members for developing new mitigation and adaptation actions.**

Due to the United States' history of systemic and institutional racism, BIPOC, especially Black people, experience social, economic, environmental, and public health inequities as a direct result of racially discriminatory policies and practices. These inequities are directly connected to disproportionate harms BIPOC experience from climate change. Further, there is a deep history of BIPOC being excluded from community engagement in the United States and policies, programs, and practices often ignore the needs and priorities of BIPOC community members.

Equitable, two-way engagement that centers BIPOC communities and stakeholders in co-creating policies can lead to deeper and more equitable adaptation and mitigation projects. Co-creation can uncover hyper-local issues like seasonal flooding on a specific block and create policies that reflect the wants and needs of residents while avoiding negative unintended consequences like displacement and gentrification. Two-way community engagement can include boards, committees, and commissions, which create meaningful opportunities for community members to shape policies, programs, and practices.

The CAP development process included a two-part workshop focused solely on sharing insights on racial equity and social justice as it relates to climate change. This is a good example of how local government can involve the communities' needs and knowledge into the development of plans and strategies. However, the Council could consider creating opportunities for deeper engagement where BIPOC community members have a leadership role in the implementation of decisions.

## Appendix: Excerpt from Montgomery County Climate Action Plan Update

# FY25 Progress At a Glance

### Progress Legend

Not Started ○○○ Initial Steps Taken ●○○ Significant Progress ●●○ Completed or Institutionalized ●●●

During FY25, the County made a few minor changes to the original 2021 Climate Action Plan, primarily to accurately reflect actual County Department workplans. A section called "Zero Waste Activities" was added to share the County's ongoing and significant efforts in waste management and reduction. *Action A-1 "Water Infrastructure Resilience" and Action A-15 "Water Supply Protection" were consolidated due to redundancy. Lastly, after meeting with each County Department, several minor shifts to Leads vs Contributors for each CAP Action were approved.

### Clean Energy

| | |
|---|---|
| E-1: Community Choice Energy Program | ●○○ |
| E-2: Private Building Solar Photovoltaic Code Requirements | ●●○ |
| E-3: Promote Private Solar Photovoltaic Systems | ●●○ |
| E-4: Public Facility Solar Photovoltaic Installations and Groundwor | ●●○ |
| E-5: Advocate for a 100% Renewable Portfolio Standard by 2030 | ●○○ |

### Buildings

| | |
|---|---|
| B-1: Electrification Requirements for Existing Commercial and Public Buildings | ●○○ |
| B-2: Electrification Requirements for Existing Residential | ●○○ |
| B-3: Energy Performance Standard for Existing Commercial and Multifamily Buildings | ●●○ |
| B-4: Electrification Incentives for Existing Buildings | ●●○ |
| B-5: All-Electric Building Code for New Construction | ●●○ |
| B-6: Disincentivize and/or Eliminate Natural Gas in New Construction | ●●○ |
| B-7: Net Zero Energy Building Code for New Construction | ●●○ |

### Transportation

| | |
|---|---|
| T-1: Expand Public Transit | ●○○ |
| T-2: Expand Active Transportation and Shared Micromobility Network | ●●○ |
| T-3: Private Vehicle Electrification Incentives and Disincentives | ●●○ |
| T-4: Constrain Cars in Urban Areas, Limit New Road Construction | ●●○ |
| T-5: Zero Emission Public Buses and School Buses | ●●○ |
| T-6: Electrify County and Public Agencies Fleet | ●●○ |
| T-7: Expand the Electric Vehicle Charging Network | ●●○ |
| T-8: Transportation Demand Management and Telework Strategies | ●●○ |
| T-9: Traffic Management Systems | ●○○ |
| T-10: Electric Vehicle Car Share Program for Low-Income Communities | ●○○ |
| T-11: Off-Road Vehicle and Equipment Electrification | ●○○ |
| T-12: Advocate for a Vehicle Carbon Gas Tax or VMT Tax | ○○○ |
| T-13: Advocate for Rail Alternative Fuels | ○○○ |

### Carbon Sequestration

| | |
|---|---|
| S-1: Retain and Increase Forests | ●●○ |
| S-2: Retain and Increase Tree Canopy | ●●○ |
| S-3: Restore and Enhance Meadows and Wetlands | ●●● |
| S-4: Regenerative Agriculture | ●●● |
| S-5: Restore Soil Fertility, Microbial Activity, and Moisture Holding Capacity | ●●● |
| S-6: Whole-System Carbon Management and Planning | ●○○ |

## Climate Adaption

| | |
|---|---|
| A-2: Repair and Enhancement of Stormwater Conveyance Systems | ●●● |
| A-3: Temperature Monitoring and Alerts | ●●● |
| A-4: Extreme Weather Energy Efficiency Building Code | ●●○ |
| A-5: Climate-Adapted Housing Incentives/Subsidies | ●●○ |
| A-6: Green/Cool/PV Roof and Pavement Code | ●●○ |
| A-7: Green Public Spaces | ●●○ |
| A-8: Harden Emergency Shelters and Install Resilience Hubs | ●●○ |
| A-9: Mold Protection and Remediation | ●○○ |
| A-10: Green Infrastructure | ●●○ |
| A-11: Climate Adapted Development Standards | ●○○ |
| A-12: Storm Water Retention Credit Training | ○○○ |
| A-13: Ban Stormwater Management Requirement Waivers | ●○○ |
| A-14: Update Floodplain Maps | ●●○ |
| A-15: Water Supply Protection | ●●○ |
| A-16 Flood Rescue Resources | ●●○ |
| A-17: On-Site Water Reuse | ○○○ |
| A-18: Expanded Community Gardens | ●●○ |
| A-19: Advocacy for Off-River Water Storage | ●○○ |
| A-20: Study Potential for Buildings in the County to Flood and Possible Remedies | ●○○ |

## Climate Adaption

| | |
|---|---|
| G-1: Build Awareness Among All Montgomery County Government Staff About Climate Change | ●●○ |
| G-2: Establish a Climate Change Academy to Integrate Climate Change Training into the Professional Development of MCG Staff | ●●○ |
| G-3: Incorporate Climate Competencies into Montgomery County Government Job Descriptions and Performance Plans | ●●● |
| G-4: Identify and Create New Positions that are Needed for the County Government to Prepare for and Respond to Climate Hazards, Implement Climate Adaptation Measures, and Reduce Greenhouse Gas Emissions | ●●○ |
| G-5: Establish a Cross Departmental Climate Innovation Lab to Develop, Fund and Implement Climate and Resiliency Initiatives | ●●● |
| G-6: Designate Climate Ambassadors within Each County Department | ●●● |
| G-7: Evaluate and Update County Planning, Policy, and Operations Activities to Account for the Risks of Climate Change Impacts and Prioritize the Needs of Vulnerable Residents | ●●○ |
| G-8: Evaluate and Update County Planning, Policy, and Operations Activities to Reduce Greenhouse Gas | ●●○ |
| G-9: Incorporate Climate Considerations into the County's Budgeting Processes | ●●○ |
| G-10: Develop Financing Strategies for Implementing Climate Actions and Incorporate Climate Considerations into County Finance Practices | ●●○ |
| G-11: Develop Climate, Energy, Health and Racial Equity Metrics and a Data Driven Assessment and Reporting Process | ●○○ |
| G-12: Formalize the Climate Leadership Team to Guide the Implementation of Climate Plan Actions | ●●● |
| G-13: Update the County's Teleworking and Transit Benefit Policies to Encourage MCG Staff to Reduce Vehicle Miles Traveled | ●●● |
| G-14: Establish Montgomery County Government Carbon Fund for Air Travel | ○○○ |
| G-15: Consolidate County Climate Data | ●●● |
| G-16: Conduct Climate Vulnerability Detailed Assessments | ●●○ |

## Public Engagement, Partnerships, and Education

| | |
|---|---|
| P-1: Undertake Vigorous Public Outreach Campaign Aimed at Empowering the Public with Information on How to Reduce Emissions and Adapt to the Impacts from Climate Change | ●●○ |
| P-2: Conduct an Outreach Campaign that Uses Evidence-Based Communications Strategies | ●○○ |
| P-3: Form a Climate Change Communication Coalition | ●●● |
| P-4: Enhance County Websites to Focus More Sharply on Climate Change | ●●○ |
| P-5: Establish a Community Justice Academy in which Graduating Community Ambassadors Representing their Neighbors Conceive and Co-create Integrated Health, Equity and Quality of Life Solutions Directly Applicable to their Communities. | ●●○ |
| P-6: Use Climate Energy and Air Quality Advisory Committee as a Resource to Advise the County | ●●● |
| P-7: Facilitate Ongoing Input from Community Members on the CAP's Implementation | ●●○ |
| P-8: Engage County Artists through Public Art Installations to Raise Awareness, Discussion, and Action on Climate Change | ●●○ |
| P-9: Support the Efforts of Community Organizations, Businesses, and Associations that Promote and Operationalize Equitable Climate Action | ●○○ |
| P-10: Establish a Statewide Coalition of Local Governments and Youth Groups Focused on Advancing Ambitious State Climate Policy by Collectively Advocating their Positions before the State Legislature, Public Services Commission, and the Utility Companies | ●●○ |
| P-11: Establish Partnerships with Federal Agencies Located within the County's Boundaries on GHG Mitigation and Climate Resiliency Efforts | ●○○ |
| P-12: Advocate for the Continued Integration of Climate Change Education into the Existing School Curriculum | ●●○ |
| P-13: Develop a Standardized Climate Change Curriculum Across Public Schools and Recommend the Same for Private Schools and Home Schools | ●●○ |
| P-14: Provide Professional Development for Educators on Climate Change Topics | ●●○ |
| P-15: Use School Gardens or Other Outdoor Learning Facilities as a Jumping Off Point to Address a Multitude of Climate Related Topics | ●●○ |
| P-16: Develop Increased Opportunities for Students to Participate in Climate Change Learning Experiences Outside of the Classroom | ●●○ |
| P-17: Develop Sustainability Goals for Schools and Offer Incentives to Those that Achieve Them | ●●● |
| P-18: Encourage Climate Change Action at Home | ●●○ |
| P-19: Establish Cross Departmental Partnership to Facilitate Implementation of Climate Goals at County Schools | ●●○ |