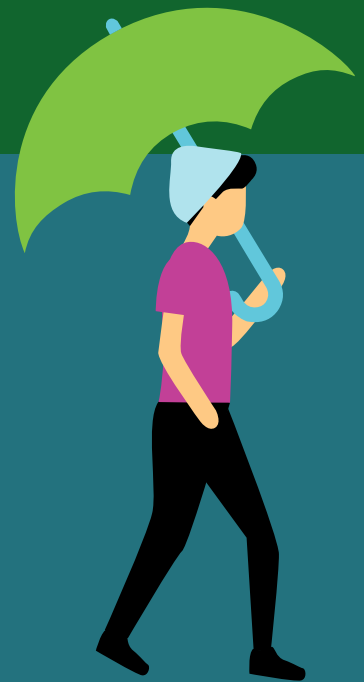


# CLIMATE

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# CLIMATE


The District is already experiencing the impacts of human-made climate change. Climate change refers to long-term changes in global temperature, precipitation, wind patterns, and other aspects of climate. These global changes have serious consequences at the District level. In the past few years, the District has seen:

- Record-breaking extreme weather (heat waves and snowstorms)
- Higher tides caused by rising sea level
- Record precipitation, including heavy rains and flooding
- Warmer average temperatures and two to three times as many dangerously hot days

These climate change impacts can cause property damage and harm critical infrastructure—the infrastructure we depend on daily, including telecommunications, energy, transportation, water, and wastewater. The direct impacts of variable weather threaten both the safety and the quality of life of District residents.

The District Government is approaching climate change from two sides: mitigation and adaptation. Mitigation refers to reducing the following greenhouse gas emissions (GHGs)—carbon dioxide, methane, and nitrous oxide. The District’s Clean Energy DC plan is the roadmap to achieve the Sustainable DC goal of reducing GHGs by 50% by 2032. The District is also committed to becoming carbon neutral by 2050. Progress toward this goal is measured by an annual inventory of the city’s GHGs. Since the District began tracking GHGs in 2006, emissions have fallen by approximately 29 percent.<sup>15</sup> We must build on and accelerate this progress.

Adaptation means adjusting to the impacts of climate change, and the District Government has outlined how the city will adapt in the Climate Ready DC plan. Published in 2016, Climate Ready DC shows how the District can bounce back from the impacts of climate change, even as we work to make the city healthier and more livable. Sustainable DC 2.0 incorporates Climate Ready DC’s adaptation strategy side-by-side with the District’s mitigation strategy.



## **Sustainable DC 2.0's actions on climate have real benefits for Washington, DC at all levels:**

### **INDIVIDUAL**

Climate change will affect all residents, but the impacts for some may be more serious, based on a number of factors: age, income level, geographic location, and other characteristics. The actions in Sustainable DC 2.0 focus on helping all residents adapt to climate change, especially those most at-risk economically and physically, and shows that mitigation efforts shouldn't unfairly burden people with low incomes.

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### **NEIGHBORHOOD**

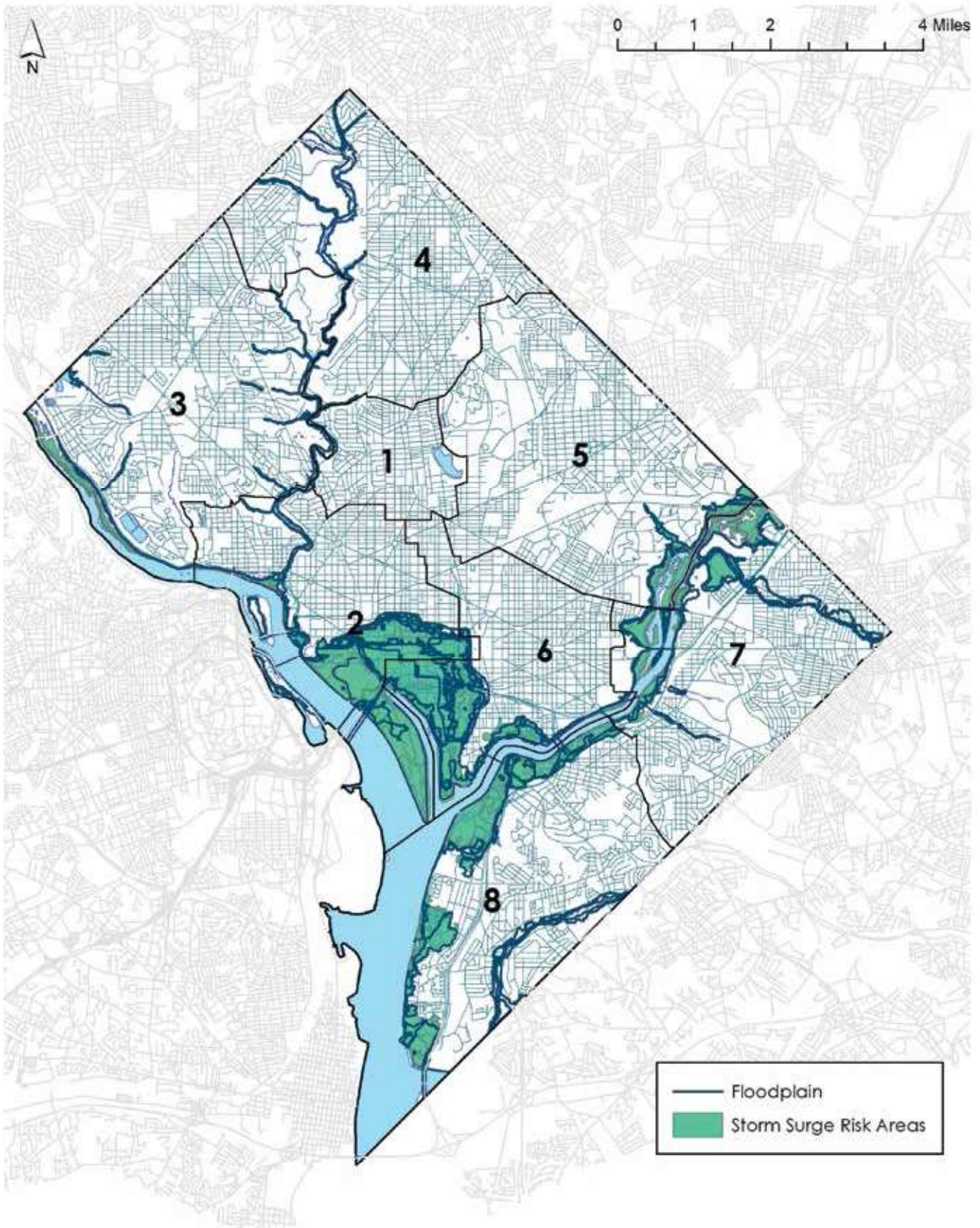
Climate change may affect parts of the District differently. Low-lying neighborhoods near the Potomac and Anacostia Rivers are more likely to be hurt by sea level rise and coastal flooding, while neighborhoods without green vegetation are more likely to suffer from heatwaves. Sustainable DC 2.0 focuses on improving the adaptive capacity of neighborhood building blocks—transit, energy, water, and telecommunications—so communities can bounce back quickly after extreme weather events.

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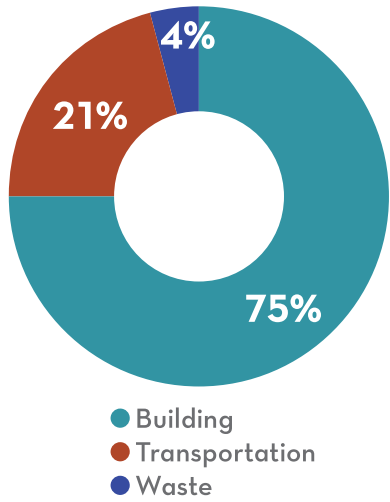
### **DISTRICT**

Sustainable DC 2.0 helps set climate adaptation and mitigation priorities for the entire city. These requirements include specific policies tailored toward the District Government and stakeholders, such as real estate developers, whose work impacts many people.

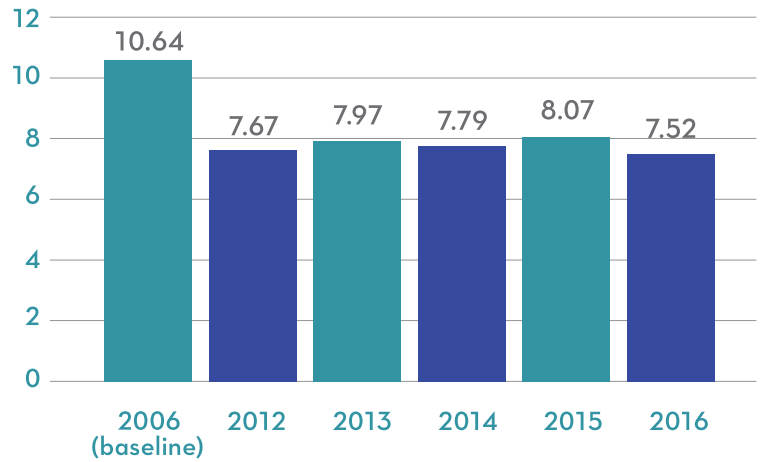
# FLOOD RISK PROJECTED FOR 2080



Data Source: DOEE & DC GIS



Greenhouse Gas Emissions by Sector (2016)<sup>xiv</sup>



Citywide Greenhouse Gas Emissions  
All figures are in MMtCO<sub>2</sub>e  
(million metric tons of carbon dioxide equivalent)<sup>xv</sup>



Projected number of heat emergency days.<sup>xvii</sup>

**75%** of the District's GHG emissions come from buildings.<sup>xix</sup>

**1** metric ton of GHG emissions is equivalent of **2,451** miles driven by an average car.<sup>xviii</sup>



The District's GHG emissions are down

**29%**  
from the 2006 baseline.<sup>xvi</sup>



## GOAL 1

Reduce greenhouse gas emissions from all local sources to put us on track to eliminate emissions by 2050.



## TARGET 1

By 2032, reduce greenhouse gas emissions by 50%.



## TARGET 1 BASELINE

10.64  
metric tons (2006)

### CL1.1

Build awareness and provide resources to empower people and organizations to take actions to reduce their share of greenhouse gas emissions.

Day-to-day energy use in buildings and vehicles, along with waste generation, make up of nearly all of the District's GHGs. In order to reduce the quantity of GHGs, the District Government will provide support and resources to people and organizations so that they are able to cut their energy use and waste generation in their daily routines. An example of building awareness and providing resources include the District Government's informative ad campaigns previously seen throughout the Metro transit system.

#### TIMEFRAME

Ongoing

#### LEAD

DOEE

#### PARTNER

OCTO

### CL1.2

Report District emissions annually to track the reductions that can be attributed to specific initiatives.

Every year, the District Government tracks and reports GHG emissions by sector in an annual Greenhouse Gas Inventory. This inventory covers emissions from sources within the District as well as emissions that are created outside the District boundary as a result of activities taking place inside the District (e.g., the generation of electricity outside of the District for its own use). The inventory can help identify which initiatives are helping to reduce Washington, DC's emissions and where more work is needed. The District will report the results of this inventory each year and follow international protocols to ensure data quality.

#### TIMEFRAME

Ongoing

#### LEAD

DOEE

#### PARTNERS

DCRA, DDOT,  
DGS, DPW, OPC



### CL1.3

## By 2020, develop a plan to achieve carbon neutrality by 2050.

Mayor Bowser has committed the District to achieving citywide carbon neutrality by 2050. This means that the District will eliminate GHG emissions, or offset any remaining emissions by supporting initiatives outside the District that will reduce emissions, like tree planting, renewable energy, and land conservation. In the short term, the District Government will develop a detailed implementation plan with clear milestones in order to achieve carbon neutrality by 2050.

#### TIMEFRAME

Short term

#### LEAD

DOEE

#### PARTNERS

DDOT, DGS, DPW

### CL1.4

## Measure and eliminate methane gas leaks into the atmosphere throughout the District.

Methane is a potent greenhouse gas that can leak from the pipelines that distribute natural gas to buildings. Although methane only lasts in the atmosphere for about a decade, it can cause about 28 times as much global warming as carbon dioxide,<sup>16</sup> making it important for the District Government to take steps to identify and eliminate leaks.

#### TIMEFRAME

Long term

#### LEAD

DOEE

#### PARTNER

OPC



## GOAL 2

Advance physical adaptation and human preparedness to increase the District’s resilience to climate change.



## TARGET 2

By 2032, require 100% of new buildings, major infrastructure, and neighborhood plans to consider climate risks and identify adaptation solutions.



## TARGET 2 BASELINE

0%

### CL2.1

Evaluate and reduce the vulnerability of the District’s transportation, energy, water, and telecommunications infrastructure to the anticipated impacts of climate change.

As detailed in Climate Ready DC, it is essential that critical infrastructure remain in service or be quickly restored in the event of extreme weather, heat, or flooding. These services keep residents safe, healthy, and connected. Any significant climate risks to energy, water, transit, and telecommunications infrastructure should be evaluated and addressed. For example, severe storms can knock out power to entire neighborhoods. District energy systems and microgrids, which can provide backup power even when the grid is down, should be installed in critical facilities like hospitals.

#### TIMEFRAME

Medium term

#### LEAD

DOEE

#### PARTNERS

DC Water, DDOT, DGS, EOM, HSEMA, OCTO, OP, OUC

### CL2.2

Improve emergency and community preparedness to respond to climate change events including extreme heat, storms, and flooding, with a focus on the most at-risk populations.

Some of the areas of the District that are most likely to flood or experience power outages during extreme weather are also home to people who have fewer resources to respond to risks and may be more sensitive to climate impacts. For example, a storm may be particularly dangerous and disruptive for someone dealing with other health issues or facing job or housing insecurity. Paying attention to the Vulnerable Populations Map used in Climate Ready DC, the District Government will work to develop and promote emergency and community preparedness plans to ensure that the all residents and communities are ready for an extreme weather event, including in the event of an evacuation.

#### TIMEFRAME

Medium term

#### LEAD

HSEMA

#### PARTNERS

DCHA, DC Water, DOEE, DPW, FEMS, MPD, OP





### CL2.3

## Require all new development projects to assess climate risks and incorporate climate adaptation solutions.

The District Government will require new development projects to consider climate risks and proactively identify adaptation solutions that would reduce eventual damage caused by climate change impacts. Relevant District Government agencies and stakeholders will create an assessment that balances climate adaptation with other District priorities such as affordable housing. For example, projects could include trees, vegetation, and green infrastructure to help reduce runoff and the risk of flooding streets and buildings. New projects could also counteract the high temperatures found in areas with lots of paved surfaces and buildings (the “urban heat island effect”) by installing a green roof (a roof with vegetation that helps insulate the building against heat gain) or a cool roof (a roof which reflects sunlight and absorbs less heat). Either of these measures would lower the temperature of the building and the surrounding area.

**TIMEFRAME**  
Medium term

**LEAD**  
OP

**PARTNER**  
DOEE

### CL2.4

## Fully implement and regularly update the Climate Ready DC plan, the District’s plan to adapt to the changing climate.

The first Sustainable DC plan established a goal to make the District more resilient to climate change, which took shape as the Climate Ready DC Plan—the District’s plan to prepare for the impacts of climate change. Climate Ready DC’s actions will be implemented by the District Government and partners, and will be updated as needed to ensure that goals remain relevant as the climate continues to change.

**TIMEFRAME**  
Ongoing

**LEAD**  
DOEE