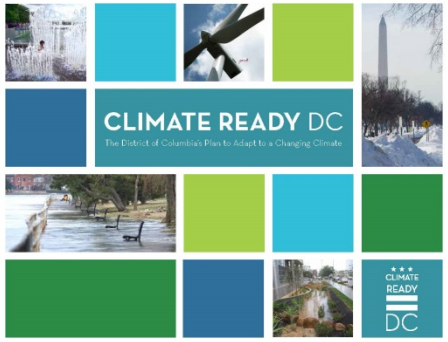
CLIMATE ACTION IN DC

DEPARTMENT OF ENERGY & ENVIRONMENT

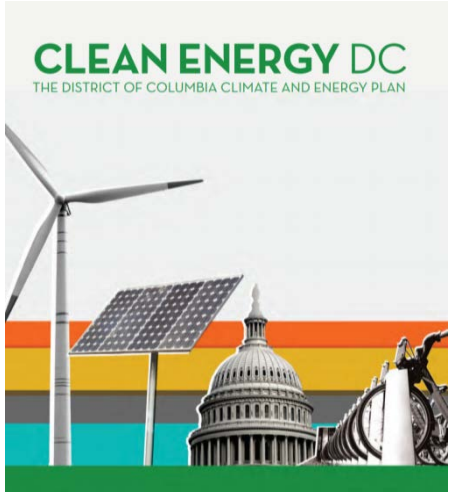
SUSTAINABLE DC GOALS FOR 2032

SUSTAIN ABLE DC

- Adapt to Climate Change
- Climate Ready Buildings



- Cut Energy Use 50%
- 50% Renewable Energy
- Net Zero New Buildings
- Net Zero Retrofits
- Cut GHG Emissions 50%



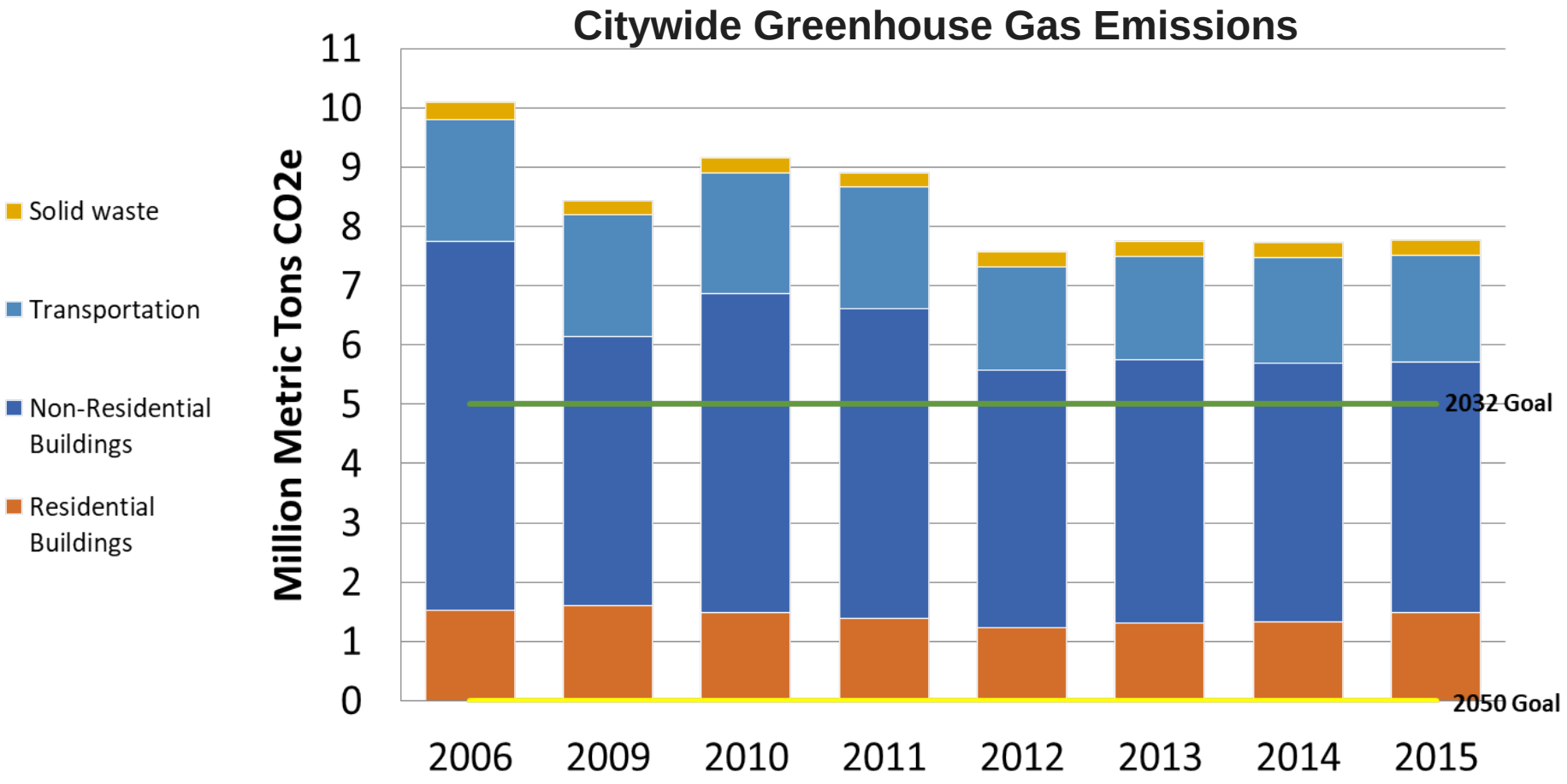
NEW CLIMATE GOAL FOR 2050

"Washington, DC is proud to be one of the many cities across North America – and around the globe – that is making climate change a top priority. Today, by making this pledge, we are backing up our DC values with action."

"That's why I'm proud to commit Washington, DC to becoming a carbon neutral city by 2050."

- Mayor Muriel Bowser, 2017

PROGRESS TOWARDS OUR GOALS

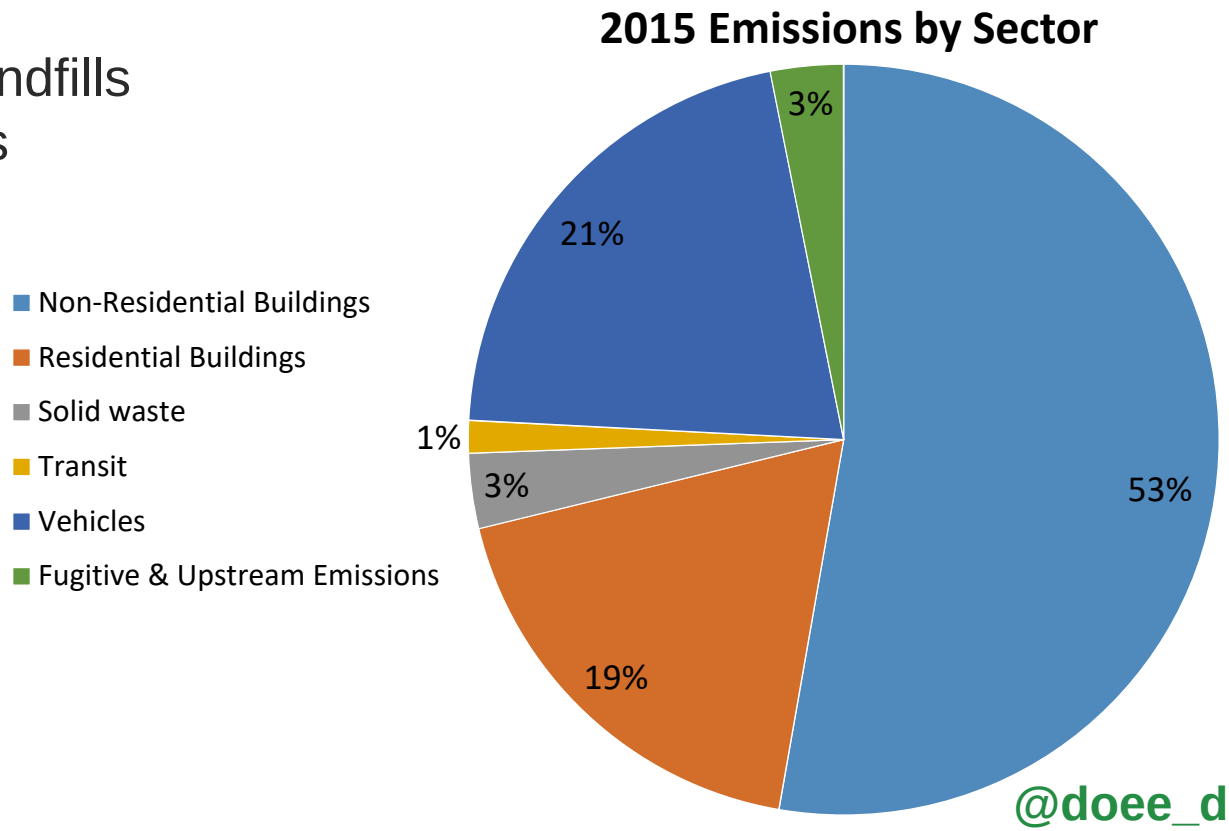


@doee_dc

CONTRIBUTORS TO **CLIMATE CHANGE**

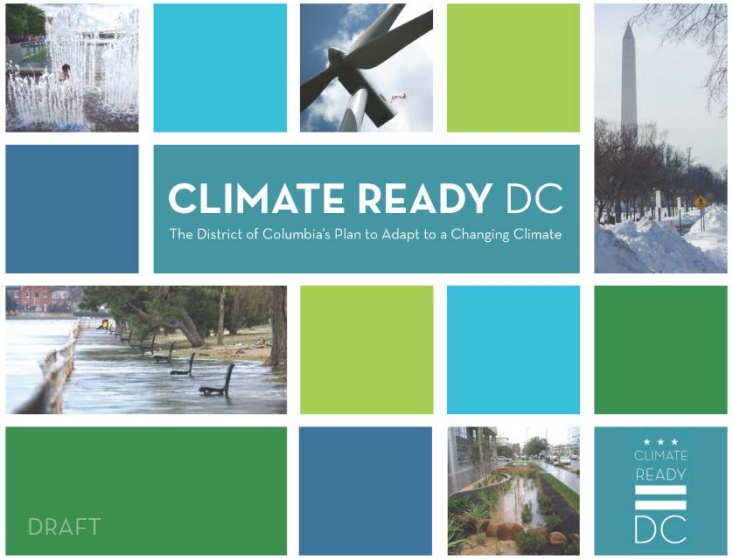
DC'S GREENHOUSE GAS EMISSIONS

- Energy used in buildings
- Cars, trucks, busses, Metro
- Trash sent to landfills and incinerators



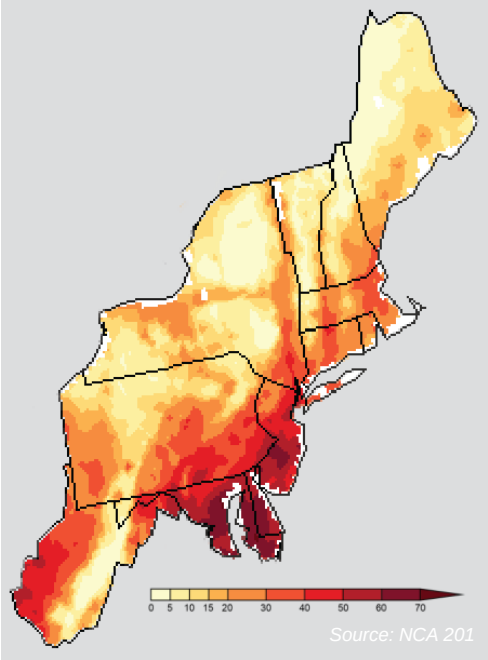
@doee_dc

CLIMATE READY DC DEVELOPMENT



1. Analyze Climate Impacts
2. Assess Risks & Vulnerabilities
3. Identify & Prioritize Solutions

CLIMATE CHANGE IN DC



HEAT

> Number of days above 90°F

PRECIPITATION

SEA LEVEL RISE

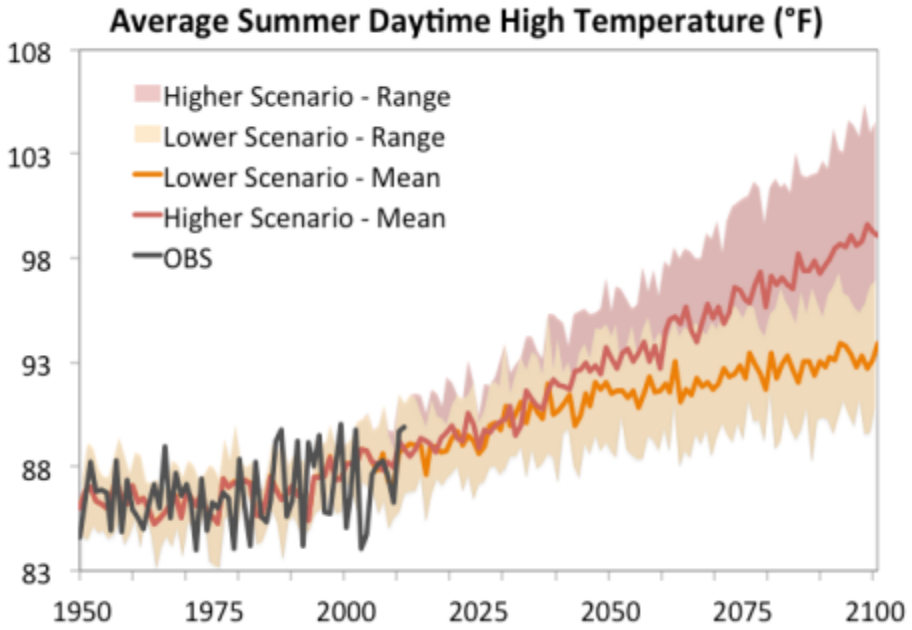
EXTREME WEATHER

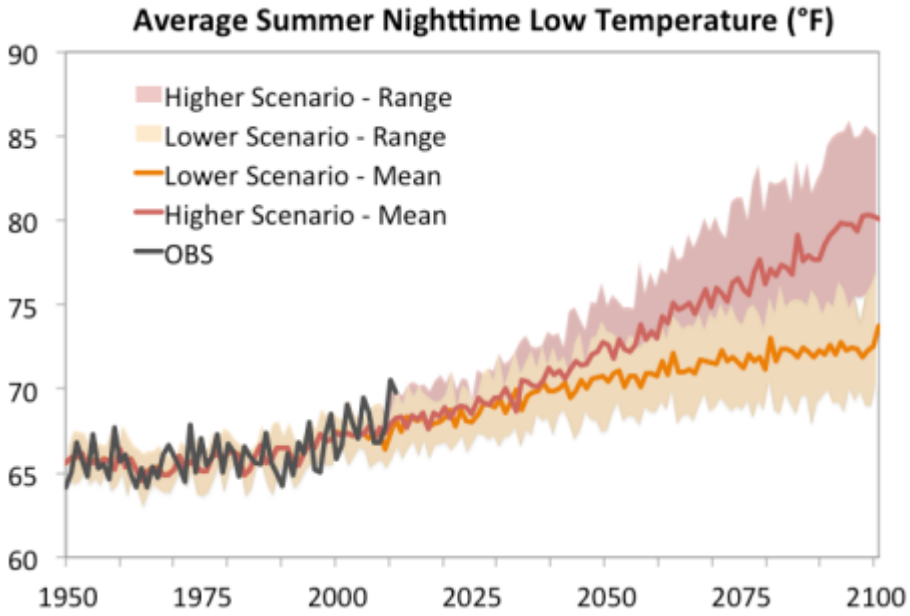
STORM SURGE

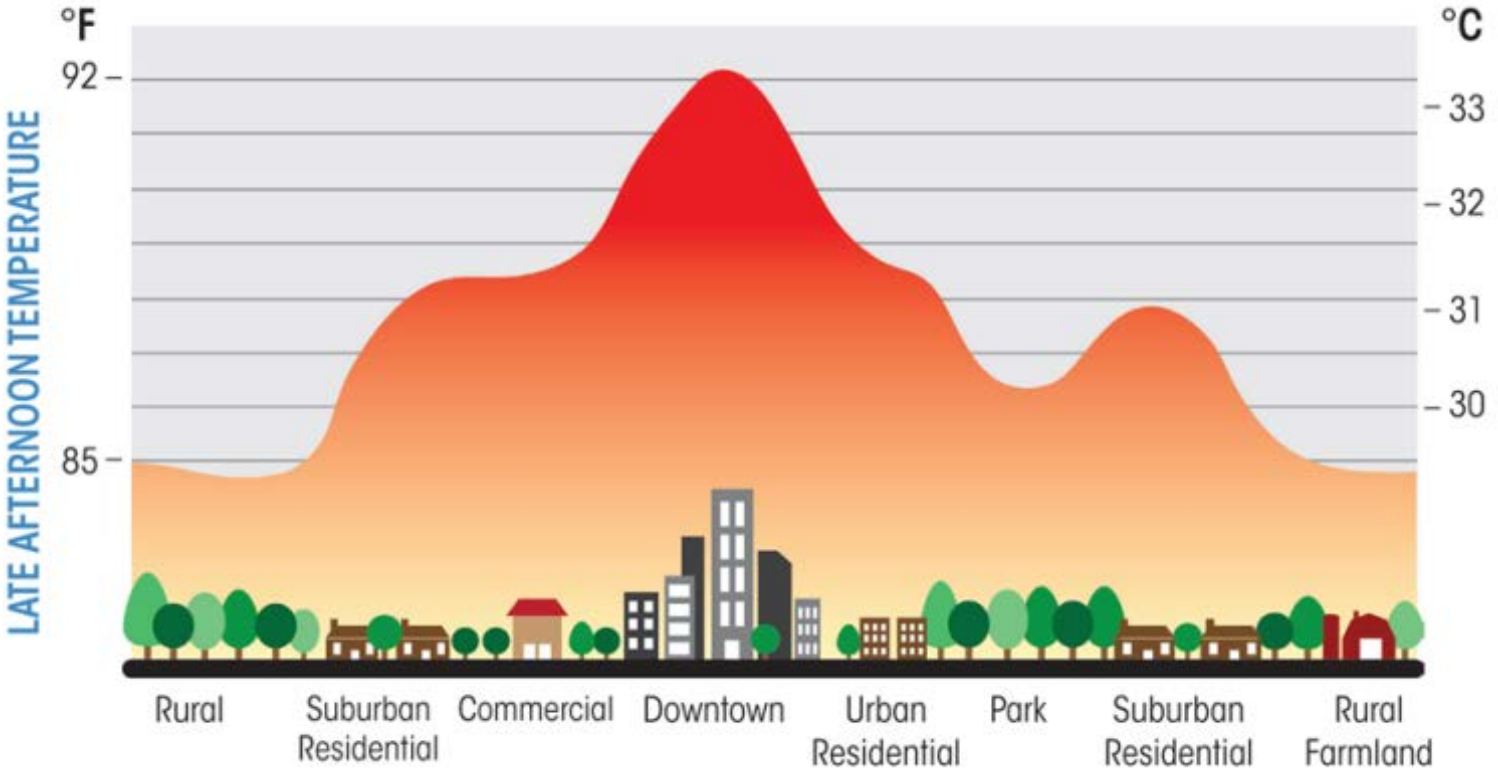
TEMPERATURE

Average and seasonal temperatures in the District are expected to increase.

Under the high scenario (red), average high and low temps are projected to increase by **10°** by the 2080s.







Urban Heat Island

- DC is almost **5°F hotter on average** than surrounding rural areas.
- On the hottest days, DC temperatures can climb **up to 20°F higher**

Heat waves will grow longer, hotter, and more frequent as temperatures rise.

2080

2050

TODAY

Days in an average heat wave

Installing more lighter-colored roofs can keep the city cool.

COOL ROOFS ABSORB **70%** LESS SUNLIGHT & REDUCE SUMMER AIR TEMPERATURES BY **4-5°F**.

Learn more at **doee.dc.gov/climateready**

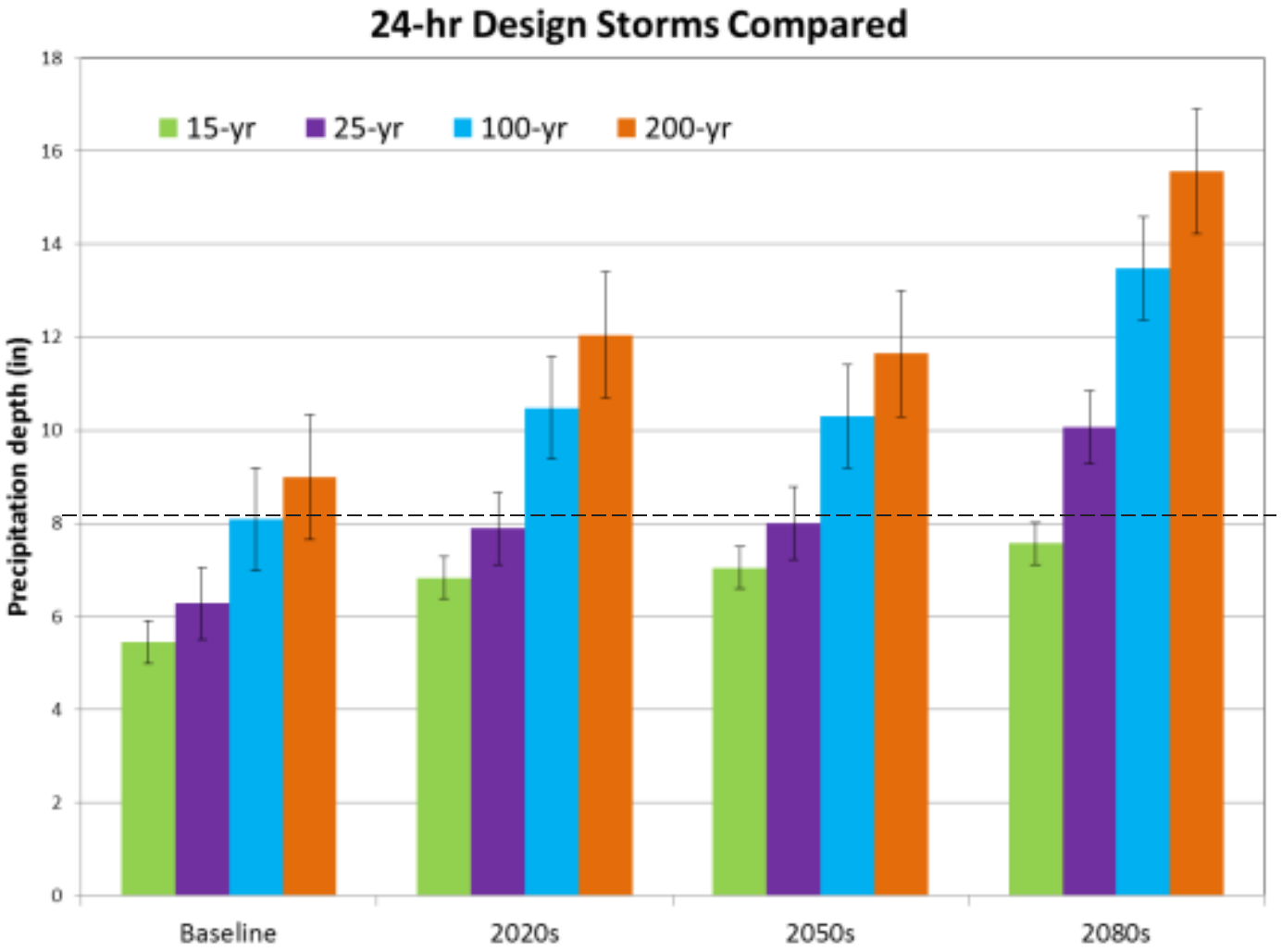
DEPARTMENT OF ENERGY & ENVIRONMENT

CLIMATE READY DC

SUSTAINABLE DC

CUSP Climate & Urban Systems Partnership WASHINGTON, D.C.

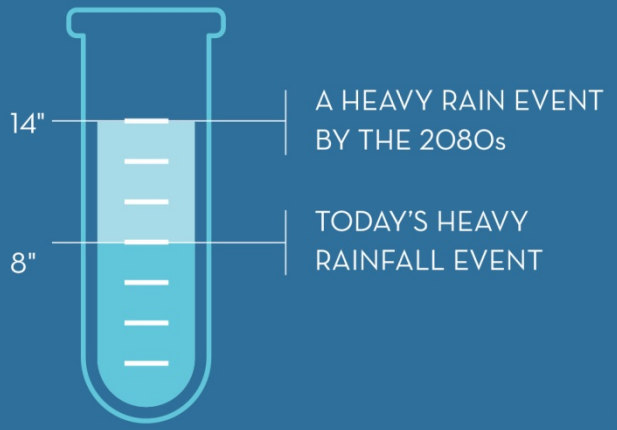
EXTREME PRECIPITATION EVENTS



Today's 100-year rain event (8 inches)

Extreme precipitation events, when a large amount of rain/snow falls in a short period of time are projected to become **more frequent** and **more intense.**

Heavy rain events that cause flooding and run-off pollution will happen more frequently and drop even more rain.



Green solutions like raingardens, green roofs, and trees can help manage water from heavier rains.

Learn more at **doee.dc.gov/climateready**

DEPARTMENT OF ENERGY & ENVIRONMENT
CLIMATE READY DC
SUSTAINABLE DC
CUSP Climate & Urban Systems Partnership WASHINGTON, D.C.

EXTREME PRECIPITATION EVENTS

Example:

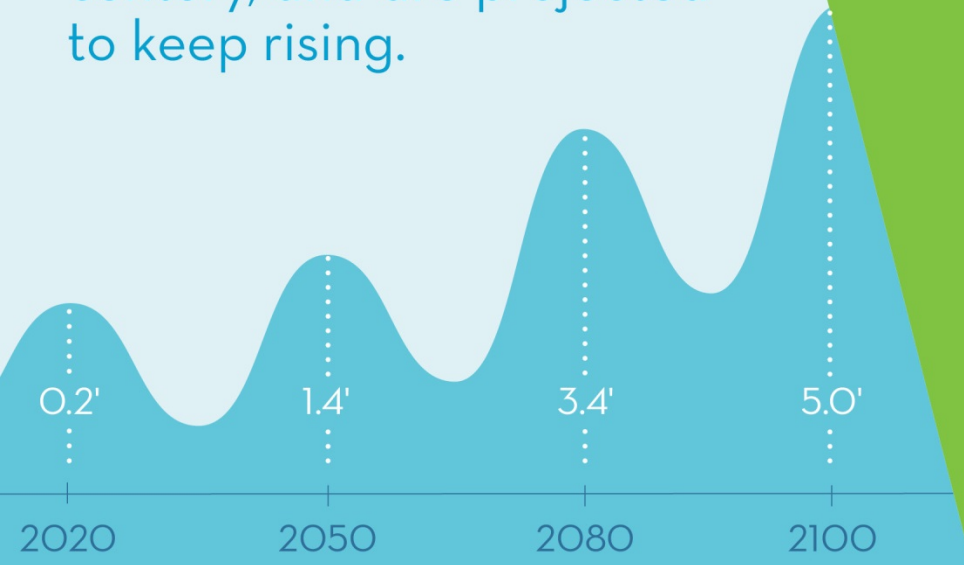
Drainage infrastructure is generally designed to handle rainfall from a 15-year event.

Historically, that meant 5.5” of rain.

In the future, a storm with the same frequency will bring rainfall of:

- 6.8” in the 2020s
- 7.1” inches in the 2050s
- 8” inches in the 2080s

Tides on the Potomac and Anacostia Rivers have risen 11 inches in the past century, and are projected to keep rising.



Restoring wetlands and natural shorelines along our rivers can help us adapt to rising tides and protect against flooding.

AN ACRE OF WETLAND CAN STORE **1-1.5 MILLION GALLONS** OF FLOODWATER.

Learn more at **doee.dc.gov/climateready**

DEPARTMENT OF ENERGY & ENVIRONMENT

CLIMATE READY DC

SUSTAINABLE DC

CUSP Climate & Urban Systems Partnership WASHINGTON, D.C.

SEA LEVEL RISE & STORM SURGE

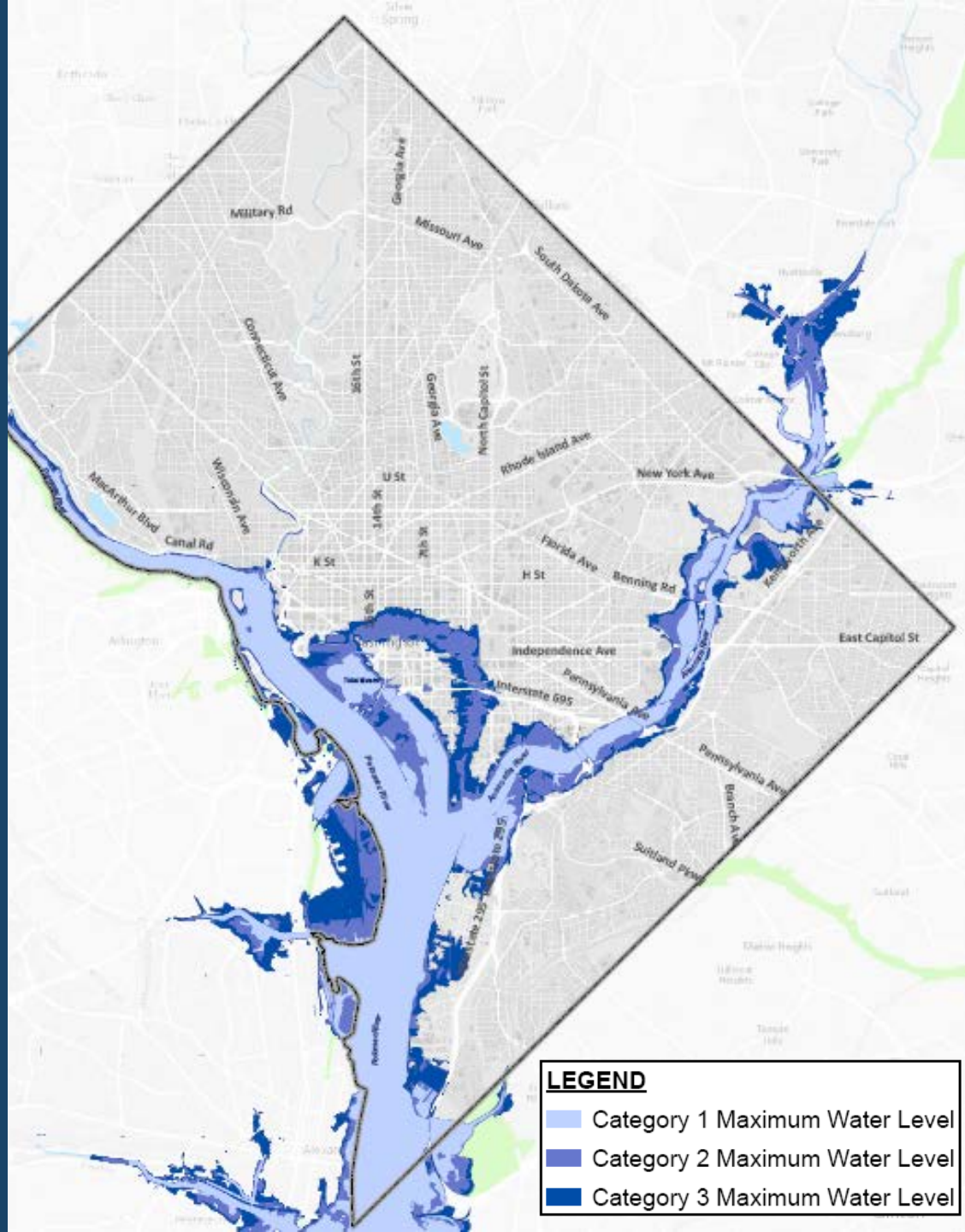
PROJECTED SEA LEVEL RISE

2020s: 2.4 inches

2050s: 1.4 feet

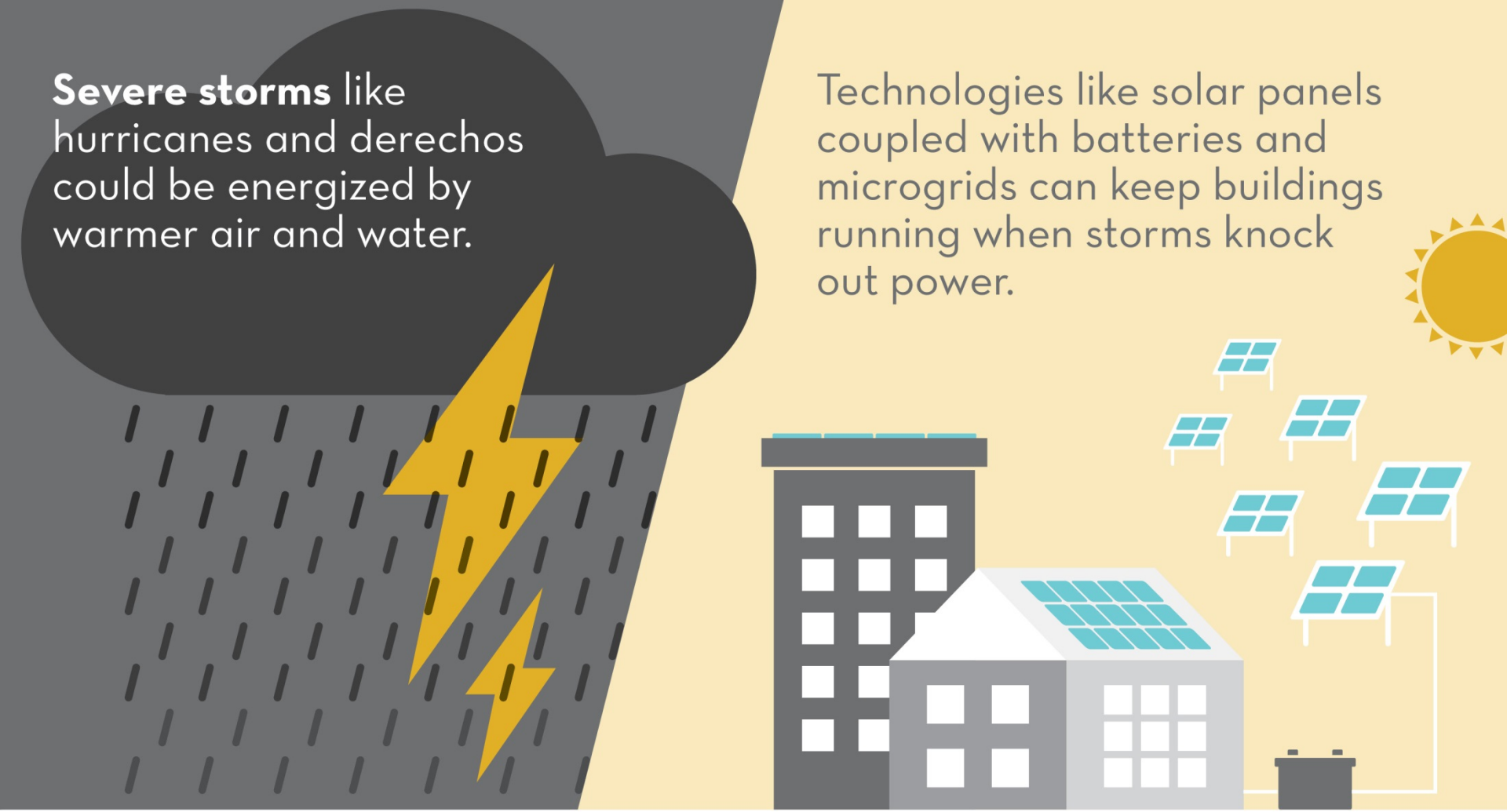
2080s: 3.4 feet

Source: USACE North Atlantic Coast Comprehensive Study map overlaid on GIS map base created by Kleinfelder, 2015.



Severe storms like hurricanes and derechos could be energized by warmer air and water.

Technologies like solar panels coupled with batteries and microgrids can keep buildings running when storms knock out power.



Learn more at **doee.dc.gov/climateready**

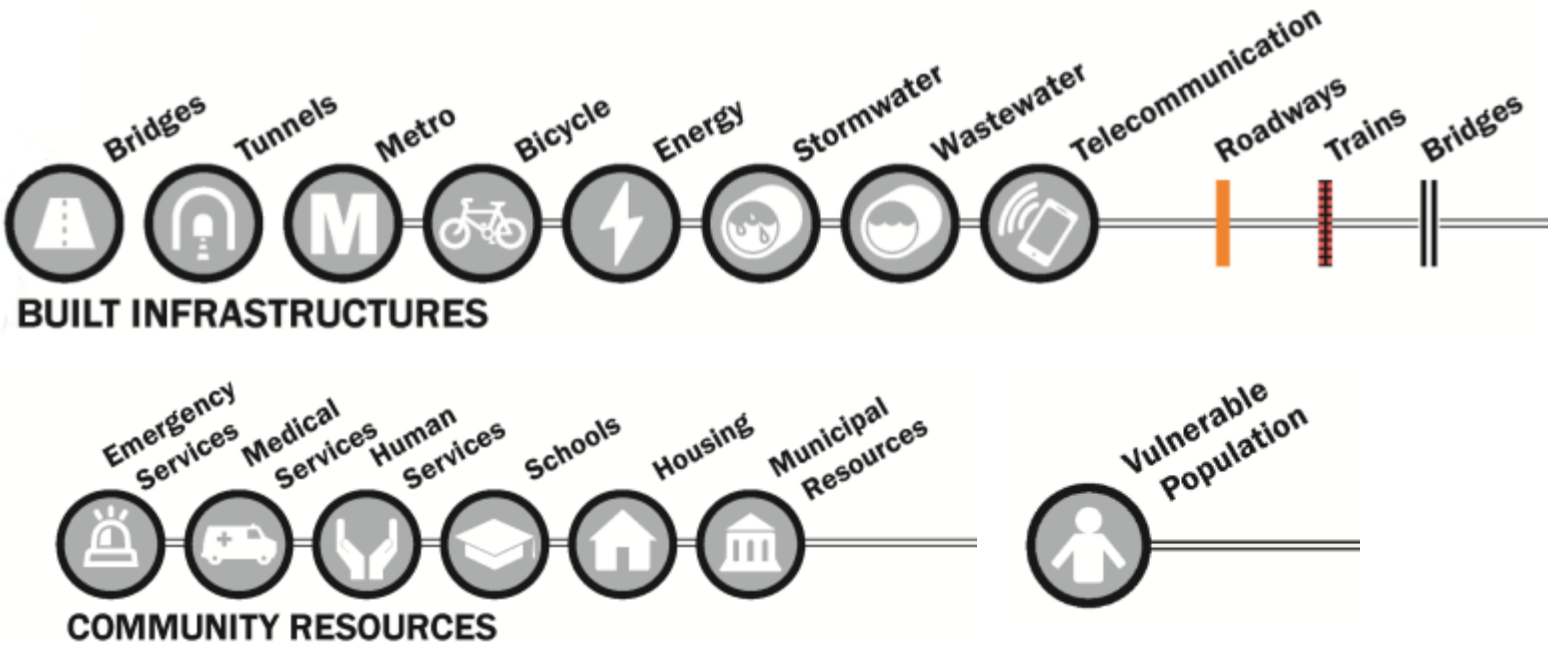
DEPARTMENT OF ENERGY & ENVIRONMENT

CLIMATE READY DC

SUSTAINABLE DC

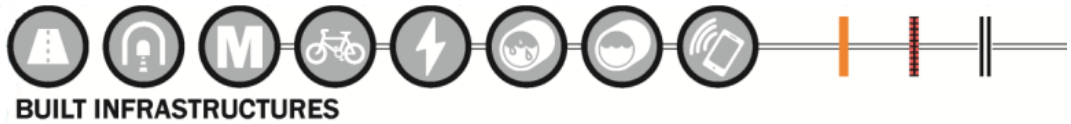
CUSP Climate & Urban Systems Partnership WASHINGTON, D.C.

VULNERABILITY & RISK ASSESSMENT



GOAL: Identify the District's infrastructure, public facilities, and populations at greatest risk to climate change.

VULNERABILITY & RISK ASSESSMENT
KEY FINDINGS



Metrorail is at-risk to increased heat and flooding.

Many **major roadways** are at risk to flooding, including designated evacuation routes.

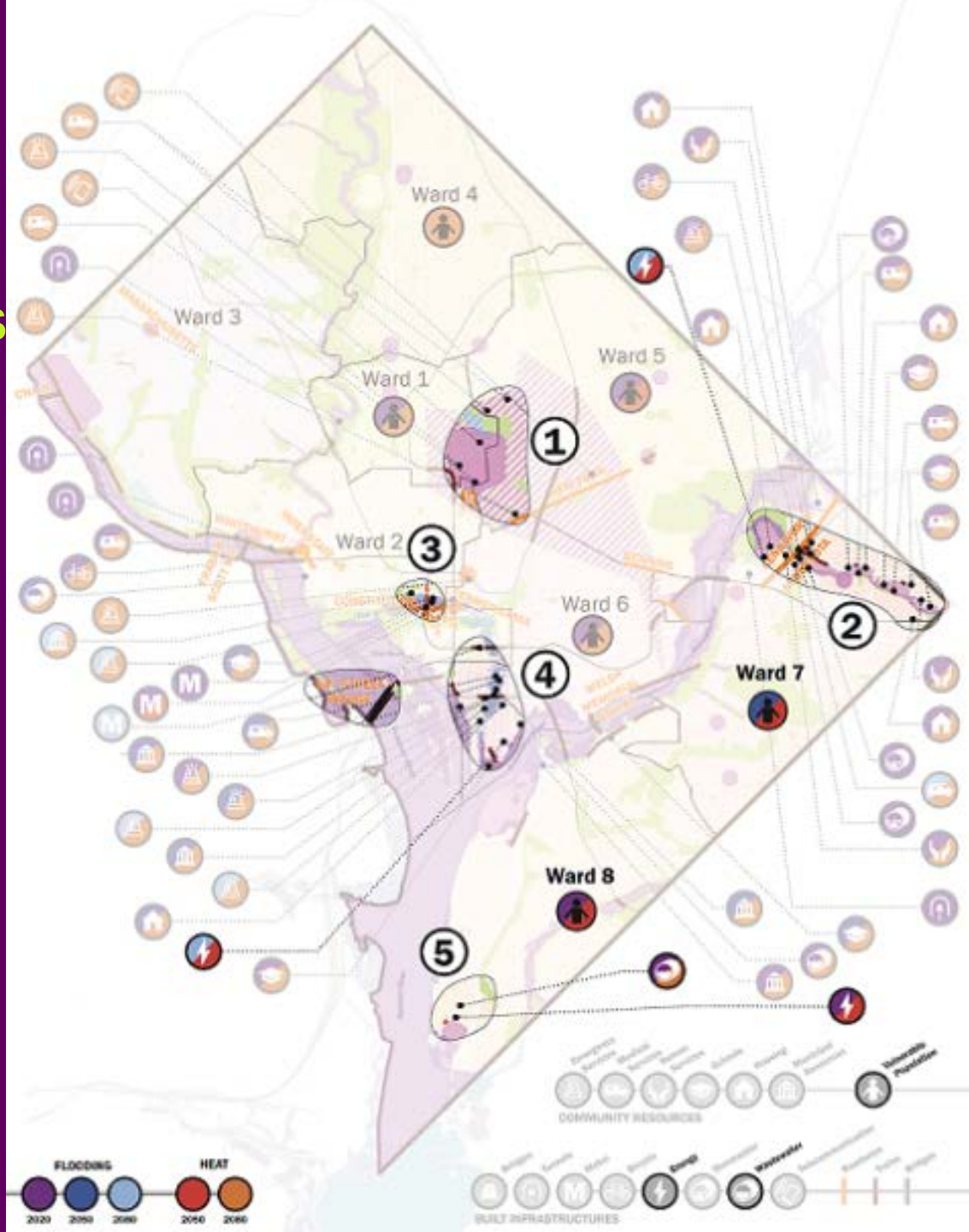
3 **electric substations** are at risk to flooding, including 2 that are within or are abutting the 100 year-floodplain.

VULNERABILITY & RISK ASSESSMENT

PRIORITY PLANNING AREAS

1. Bloomingdale & LeDroit Park
2. Watts Branch
3. Downtown/Federal Triangle
4. Southwest/Buzzard Point
5. Blue Plains

+Vulnerable Populations in Ward 7 & Ward 8



CLIMATE READY DC FRAMEWORK

18 high-level strategies and 77 specific actions

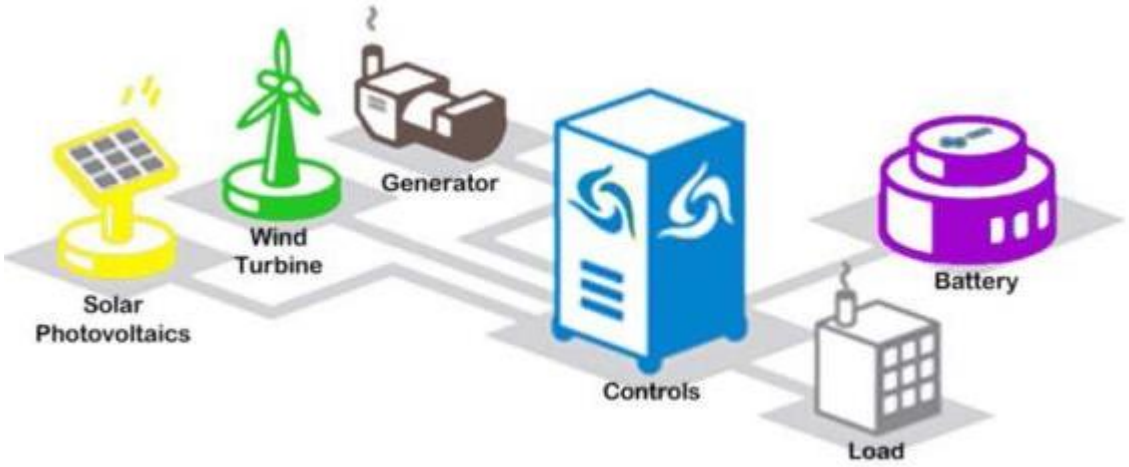
TRANSPORTATION & UTILITIES

BUILDINGS & DEVELOPMENT

NEIGHBORHOODS & COMMUNITIES

GOVERNANCE & IMPLEMENTATION

RESILIENT ENERGY - MICROGRIDS



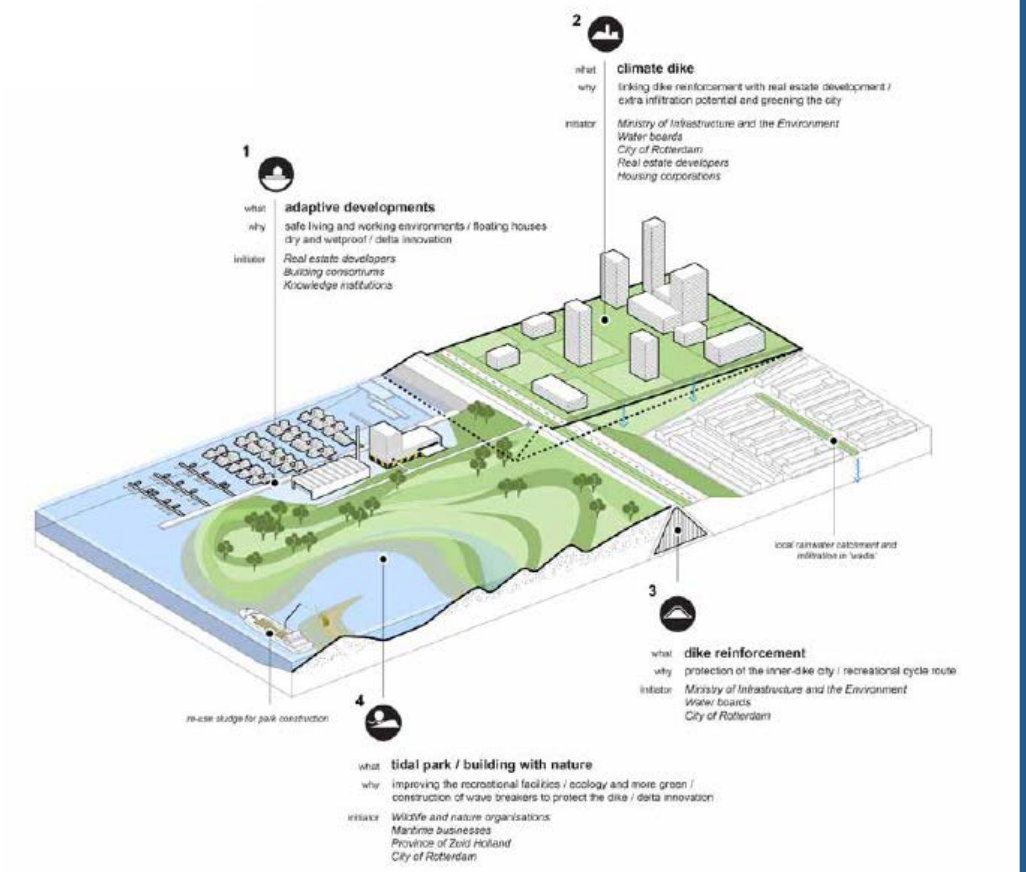
@doee_dc

RESILIENT BUILDINGS

RESILIENT NEIGHBORHOODS

Cool roofs, trees, light colored pavement, and green space can reduce urban heat island impacts and save lives.

NATURE-BASED FLOOD PROTECTION

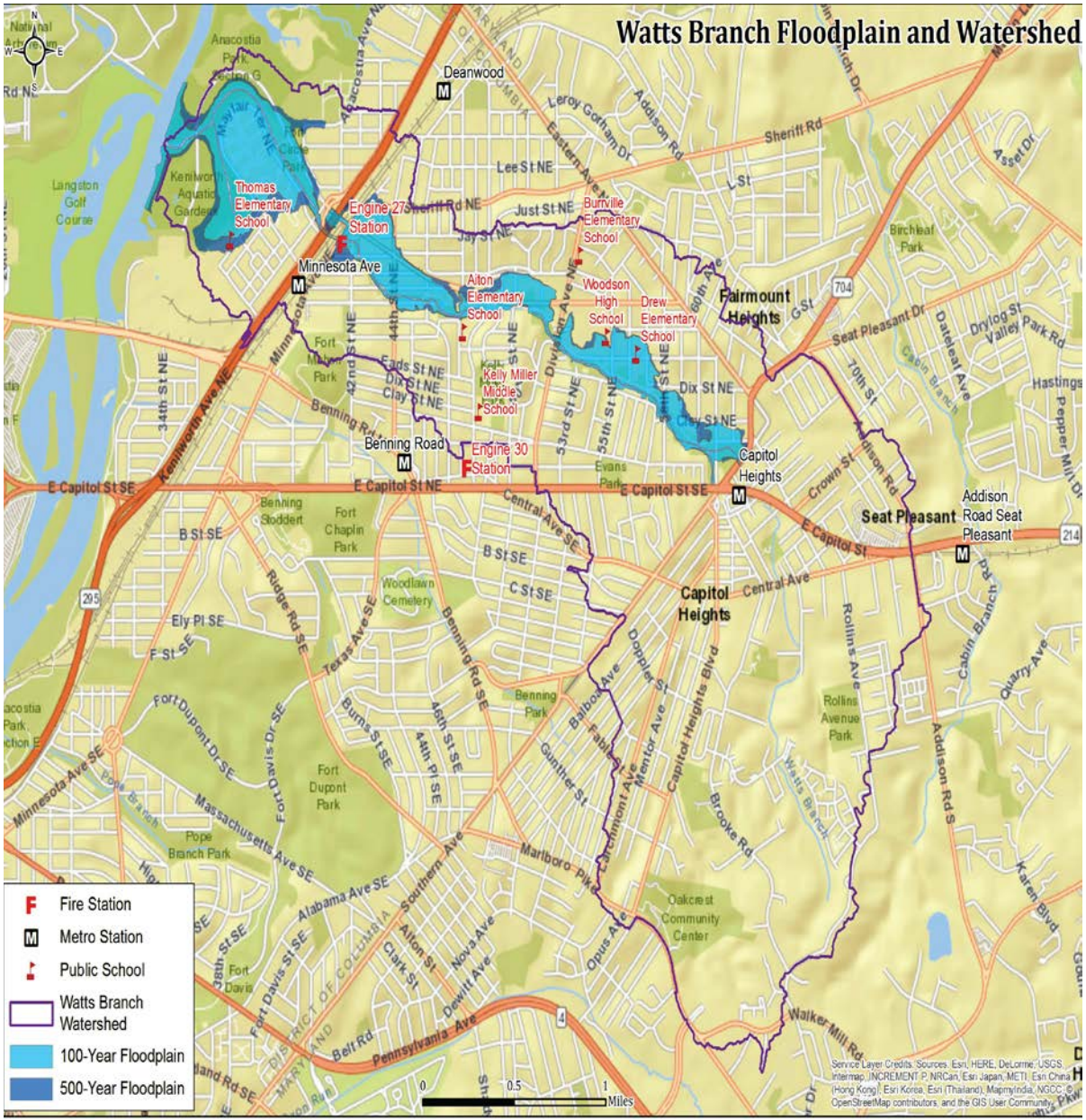


- Restore natural floodplains
- Adjust waterfront setbacks & buffers to allow for future sea-level rise
- Align flood protection, wetland conservation, and habitat restoration efforts

COMMUNITY RESILIENCE – BUILD CAPACITY

The **Evacuteer** organization in New Orleans recruits, trains, and manages evacuation volunteers who assist with emergency response efforts in New Orleans.

WATTS BRANCH – PRIORITY PLANNING AREA



U.S. ARMY CORPS OF ENGINEERS

SILVER JACKETS
MANY PARTNERS, ONE TEAM

DEPARTMENT OF ENERGY & ENVIRONMENT

QUESTIONS?

Kate Johnson

Katherine.johnson@dc.gov

DEPARTMENT OF ENERGY & ENVIRONMENT