Green Building Advisory Council
Meeting Date: 04/06/2016
Meeting Location: DOEE, 1200 1st Street NE

Attendees: Bill Updike (DOEE), Jay Wilson (DOEE), Molly Simpson (DOEE), Kate Johnson (DOEE), Maribeth Delorenzo (DOEE), Scott Pomeroy (Downtown BID), Carl B. Reeverts (EPA-retired), Marshall Duer-Balkind (DOEE), Katie Bergfeld (DOEE), Jess Zimbabwe (Rose Center for Public Leadership, Urban Land Institute/National League of Cities), Cliff Majersik (Institute for Market Transformation)
Attendees (Via Phone): Anica Landrenau (HOK), Karanja Slaughter (DHCD), Anna Shapiro (DMPED), Eugenia Gregorio (Tower Companies)

Main Points/Discussion:

Introductions (All)

Birney Elementary School Project Discussion – (Sean O'Donnell, Perkins Eastman; Joseph Khourn, MCN Build)

- The project team shared details of 2010-11 a renovation of building occupied by Excel Academy, a charter school. The project team is seeking clarification and possible exception from Green Building Act (2006). The building has been issued a temporary Certificate of Occupancy.
    - Project team to send written letter requesting exemption from Green Building Act from the Green Building Advisory Council.

Draft Climate Adaptation Plan Discussion – Kate Johnson

- Refer to Powerpoint (attached).

Green Building Fund Grant Update – Jay Wilson

- Refer to Powerpoint (attached).
- Discussion of grant opportunities for FY17
    - Public health (could use small grants) – Carl B. Reeverts
    - Submetering – DC is lagging way behind. –Cliff Majersik
        - Legal in commercial but residential needs legislation.
    - Build off of the other programs that we've initiated
        - Reward for residential challenge participants – how to get them to go deeper?
    - Leverage other resources – DC is high profile, this could be used as a match. – Jess Zimbabwe
    - Utility bill data onto MLS – Would be great to continue the work. –Cliff Majersik
    - Cost analysis of green building. Build on deep green value study. Was there a cost premium on LEED buildings? Case studies.
        - Jay will distribute list for feedback.

POWER DOWN DC: A Multifamily Energy & Water Challenge – Molly Simpson

- Refer to Powerpoint (attached).
- The Downtown DC BID is looking to offer something to the residential buildings that are going to join the BID. A total of 40 buildings are available and could participate. – Scott Pomeroy
- The Better Buildings Challenge Technical Assistance for the DC Housing Authority has had a great impact. O&M Manual improvements, green cleaning, pest management. DC Housing Authority staff has been a great partner in moving this forward the Green O&M with technical assistance providers Enterprise Green Communities and Group 14 Engineering.

Group Updates

- Molly Simpson (DOEE) – DHCD has prioritization points above the threshold requirement on the new spring 2016 Notice of Funding Availability (NOFA)

- Scott Pomeroy (Downtown BID) – The State of Downtown will be on April 27.

- Carl B. Reeverts (EPA-retired) – Highlighted the importance of collaboration with ANC 6B Director Wells will be asking all the ANC chairs to send one Ambassador for district wide engagement. Want them to leave with 2 or 3 action items.

- Katie Bergfeld (DOEE) – "Benchmarking so exciting." Deadline was Friday with an initial (Day 1) compliance rate of 60%. Focusing this year on improving quality of multifamily sector reports. Warning notices will go out April 30. Public disclosure for 2014 on website. Shooting for beginning of May for 2015 public disclosure with regular updates.

- Eugenia Gregorio (Tower Companies) (ph) –

    - Submitted their benchmarking. They had some trouble getting the info they needed from Washington Gas and needed utility release forms. Other owners may have similar issues.
    - Solar-green roof project! Sunroot is a company from Baltimore that has created this project. Working with Prospect Waterproofing (Sterling VA) where they installed this project.

Date for next meeting: June 1, 2016
Location for next meeting: DOEE, 1200 1st Street NE, 5th Floor

Contact: william.updike@dc.gov

CLIMATE READY DC

The District's Climate Adaptation & Preparedness Plan

DEPARTMENT OF ENERGY & ENVIRONMENT

Agenda

6:15 pm	Welcome & Introductions
6:30 pm	Presentation and Q&A
7:00 pm	Small Group Discussions
7:45 pm	Wrap up & Next Steps

Part One

CLIMATE READY DC BACKGROUND

Sustainable DC Climate Adaptation

2032 Goal:
Advance physical adaptation and human preparedness to increase the District's resilience to future climate change.

2032 TARGET:
Require that all new buildings and infrastructure projects undergo climate impact analysis

Climate Ready DC Plan

DEPARTMENT OF ENERGY & ENVIRONMENT

Three-part Analysis to:

1. **Analyze Climate Impacts** ✓
2. **Assess Risks & Vulnerabilities** ✓
3. **Identify & Prioritize Solutions** (underway)

Project Team

In 2014, DDOE awarded a grant to develop the plan and provide technical expertise to:

AREA Research

Perkins+Will

Kleinfelder

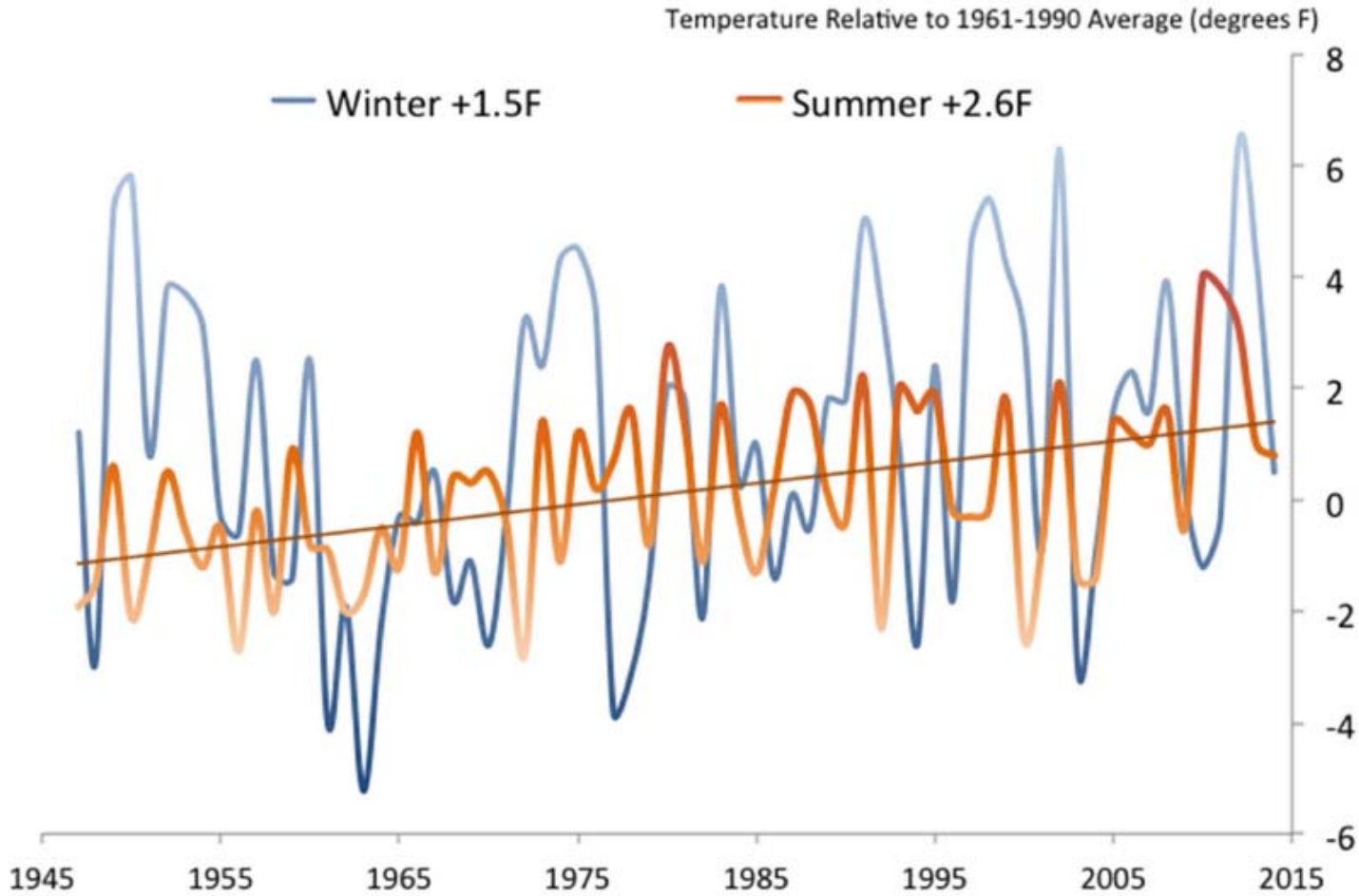
ATMOS Research

ATMOS Research & Consulting

Part Two

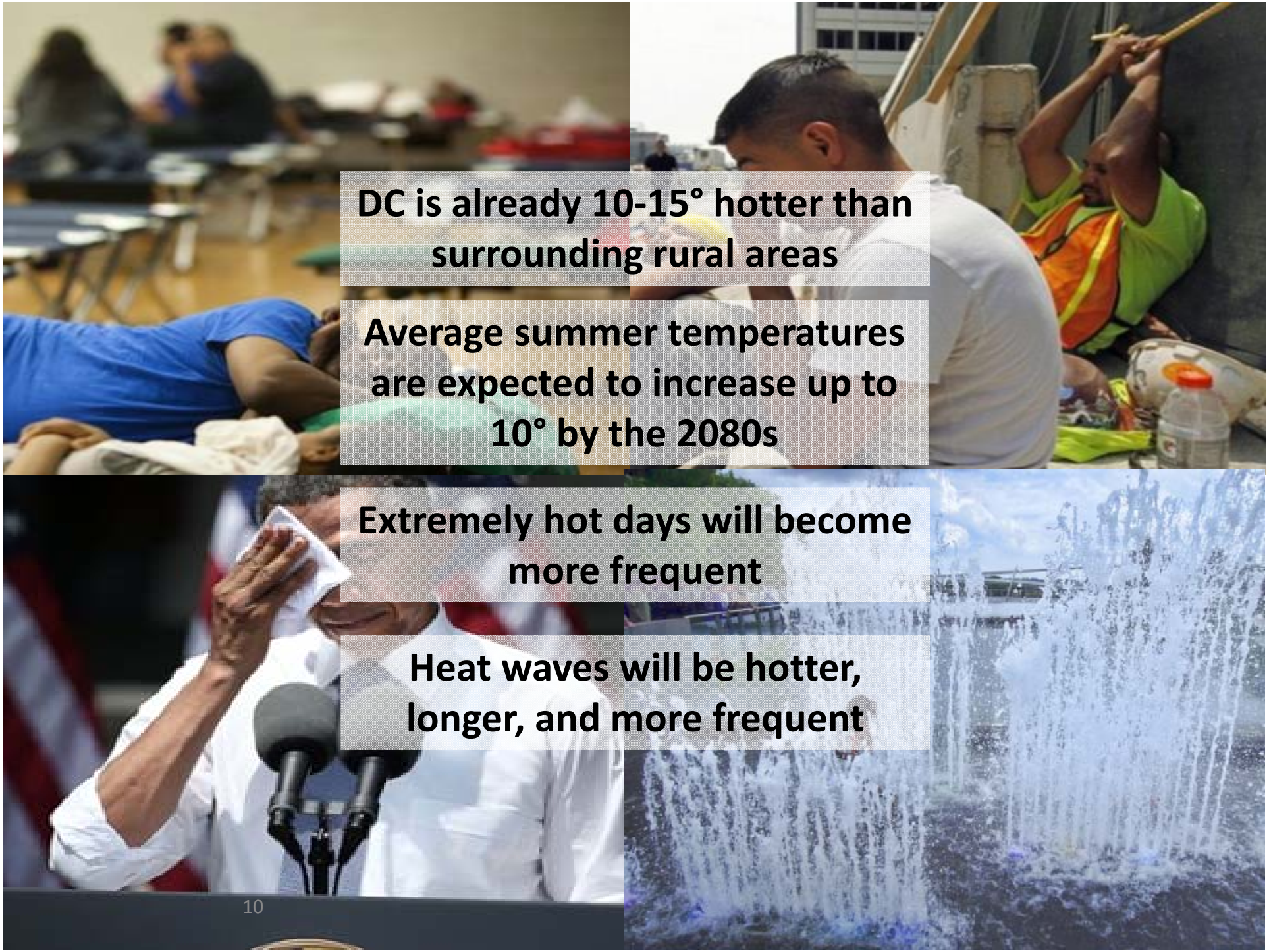
HOW WILL CLIMATE CHANGE AFFECT DC?

DC is Warming



National Airport

Both DC winters and summers are getting warmer



DC is already 10-15° hotter than surrounding rural areas

Average summer temperatures are expected to increase up to 10° by the 2080s

Extremely hot days will become more frequent

Heat waves will be hotter, longer, and more frequent

Extreme Heat Events
Days Over 95°F Heat Index

DEPARTMENT OF ENERGY & ENVIRONMENT

Baseline

June	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30	1	2	3	4	5
July	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31	1	2
August	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31						

2020s

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

2050s

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

2080s

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
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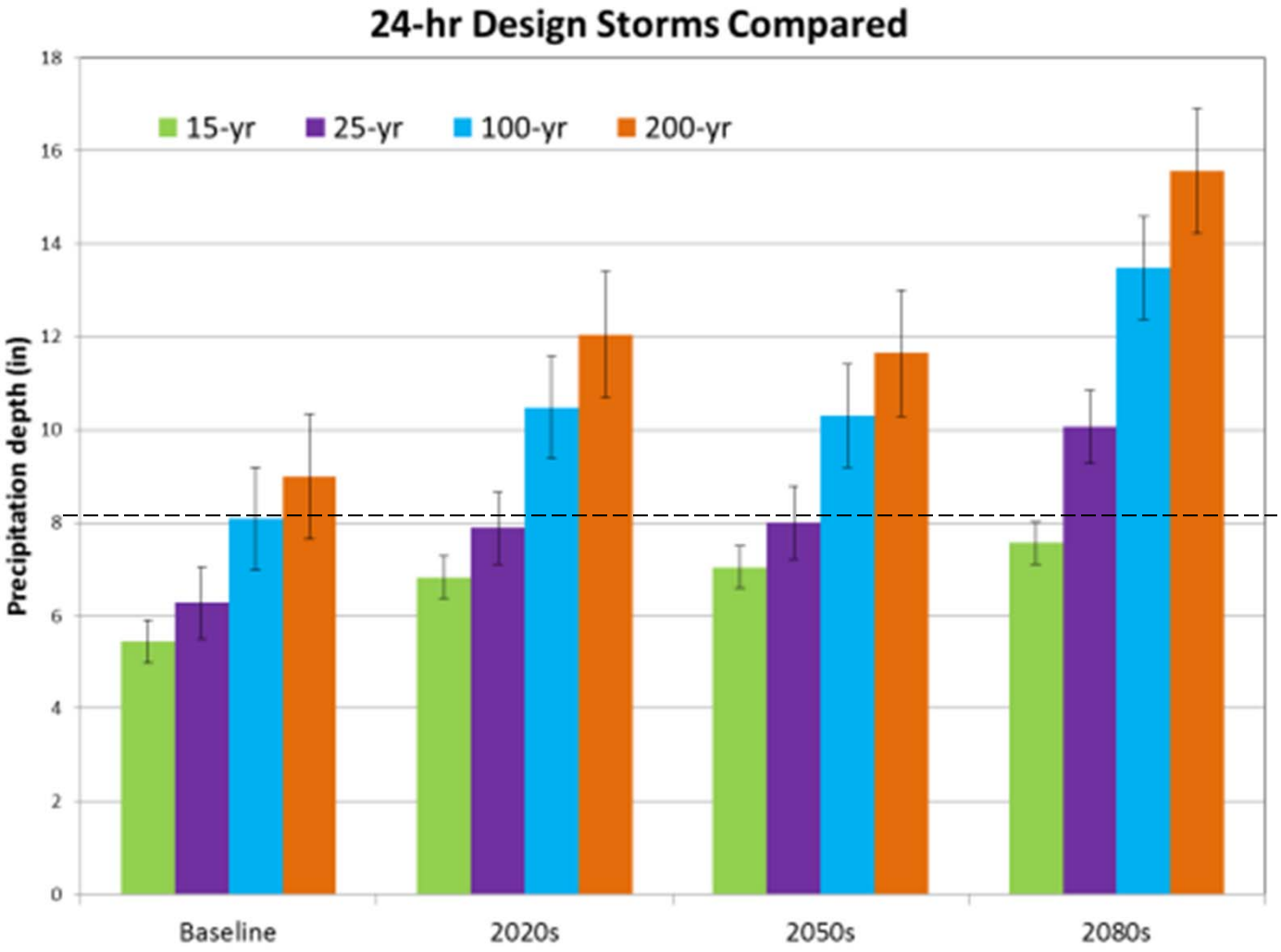
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6
7	8	9	10	11	12	13

Baseline	2020s	2050s	2080s
30 days	50 days	70-80 days	75-105 days

Days above 95°F Heat Index (low emission scenario)

Days above 95°F Heat Index (high emission scenario)

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.**

Implications of More Severe Rain Events

Example:

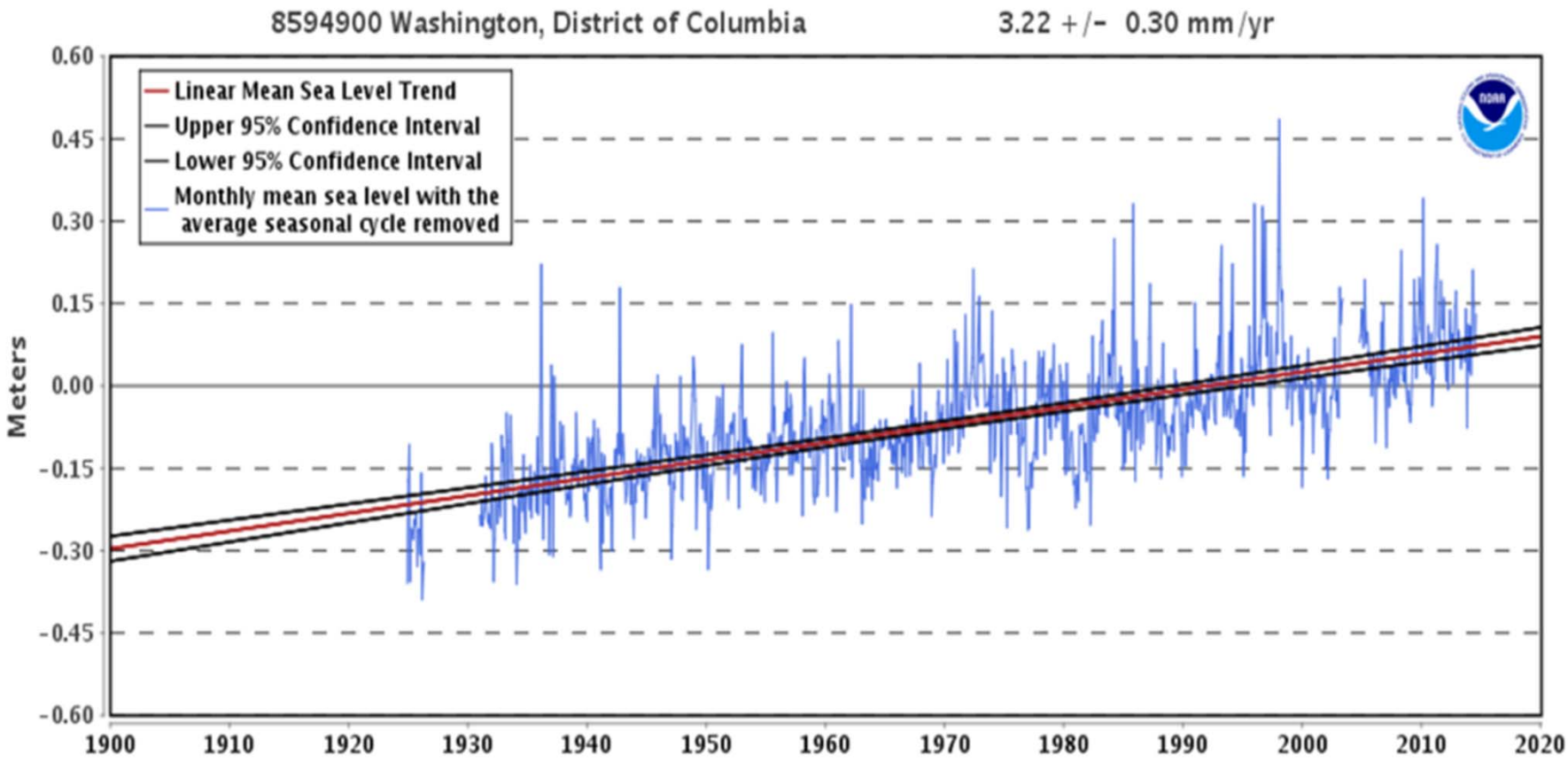
Drainage infrastructure is generally designed to handle rainfall from a 15-year event.

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

Local Sea Level is Rising



Source: NOAA gauge 8594900 in Washington Channel

Local sea level has risen 11" since 1924.

Flooding is More Frequent

As a result of sea level rise, **"nuisance flooding"** days have increased by **373%** since the 1950s.

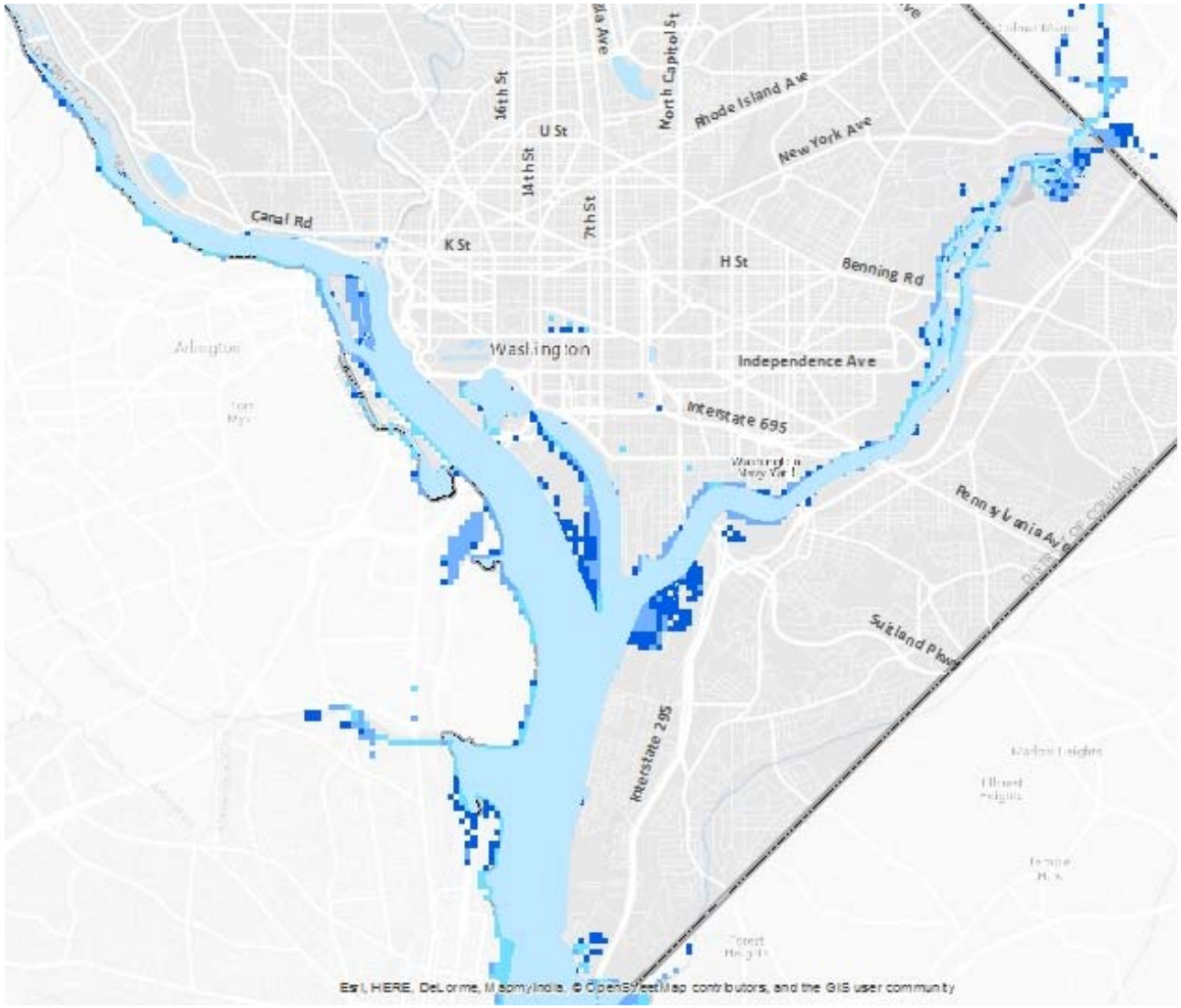
Source: NOAA

Future 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.

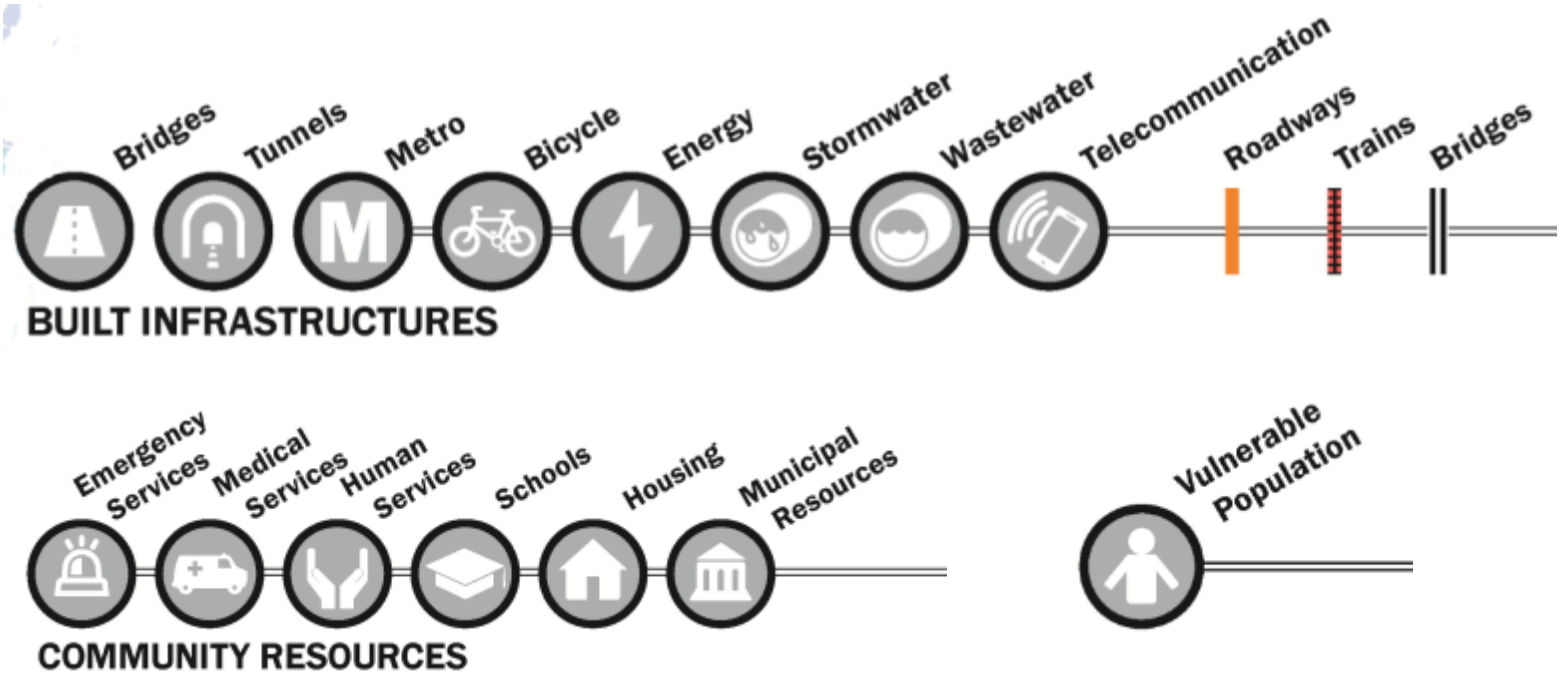
Part Three

WHAT ARE THE RISKS FACING DC AS A RESULT OF CLIMATE CHANGE?

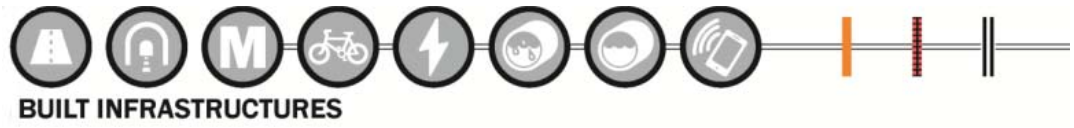
Vulnerability & Risk Assessment

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

Scope of Assessment



Vulnerability & Risk Assessment
Key Findings



Metrorail is at-risk to increased heat and flooding.

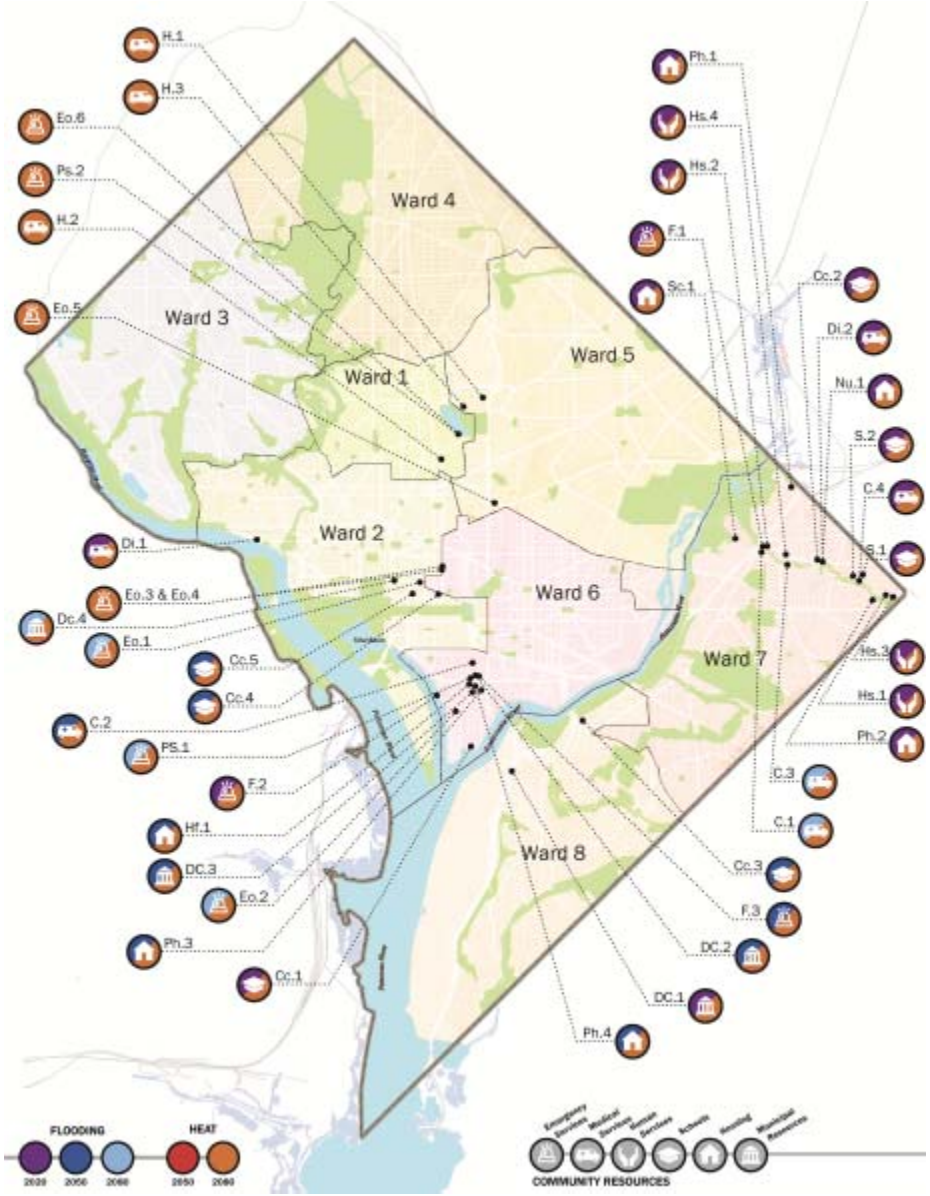
Many **major roadways** are at risk to flooding, including designated evacuation routes.

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

Vulnerability & Risk Assessment

Ward 7 is home to the largest number of vulnerable community resources such as schools, medical services and human services.

Public safety resources at risk of flooding, including police, fire, and local and federal emergency operations centers, are concentrated in **Downtown** and **Southwest**.



Vulnerability & Risk Assessment
Key Findings

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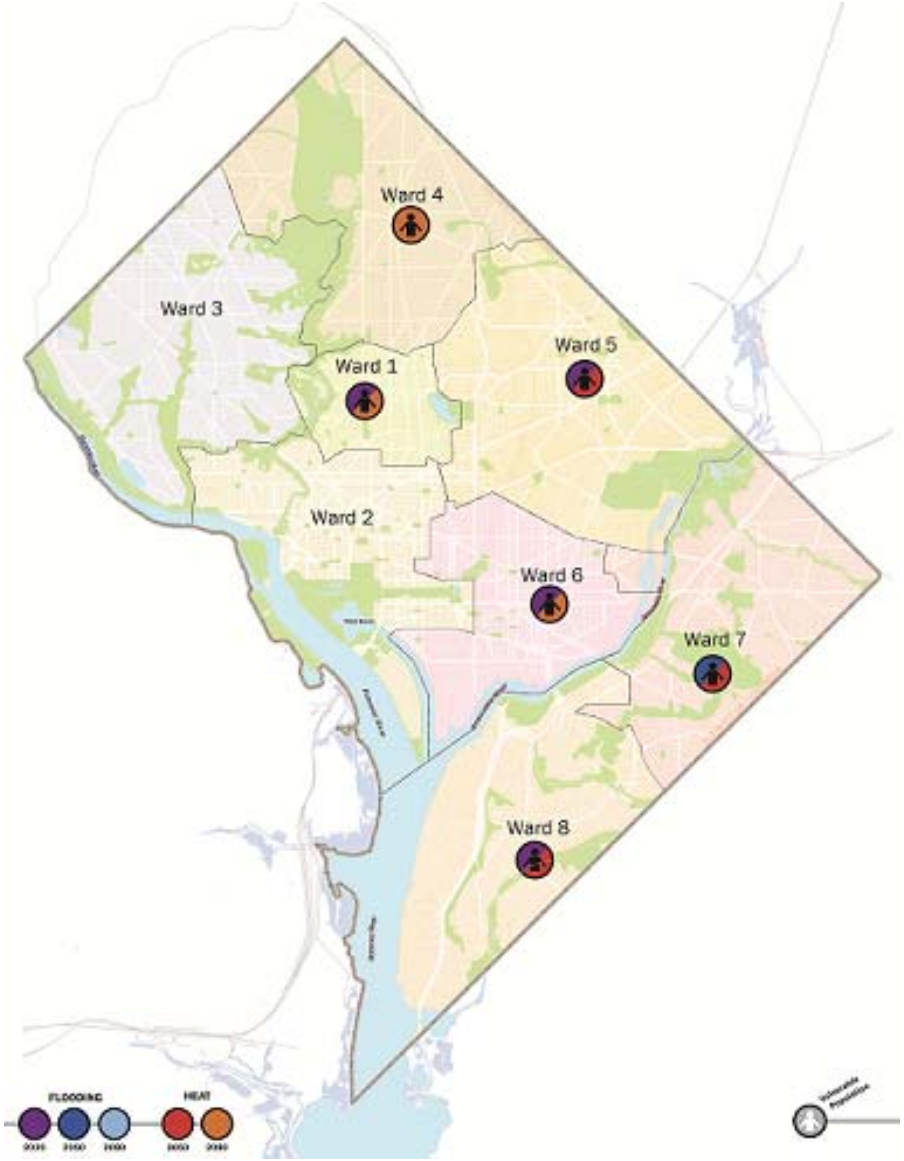
Vulnerable Populations

Wards 7 and 8 are home to the largest number of residents with a higher vulnerability to climate change impacts – especially an increase in extreme heat – due to economic and demographic factors (e.g. income, age, obesity, asthma, etc.)



Vulnerability & Risk Assessment
Key Findings

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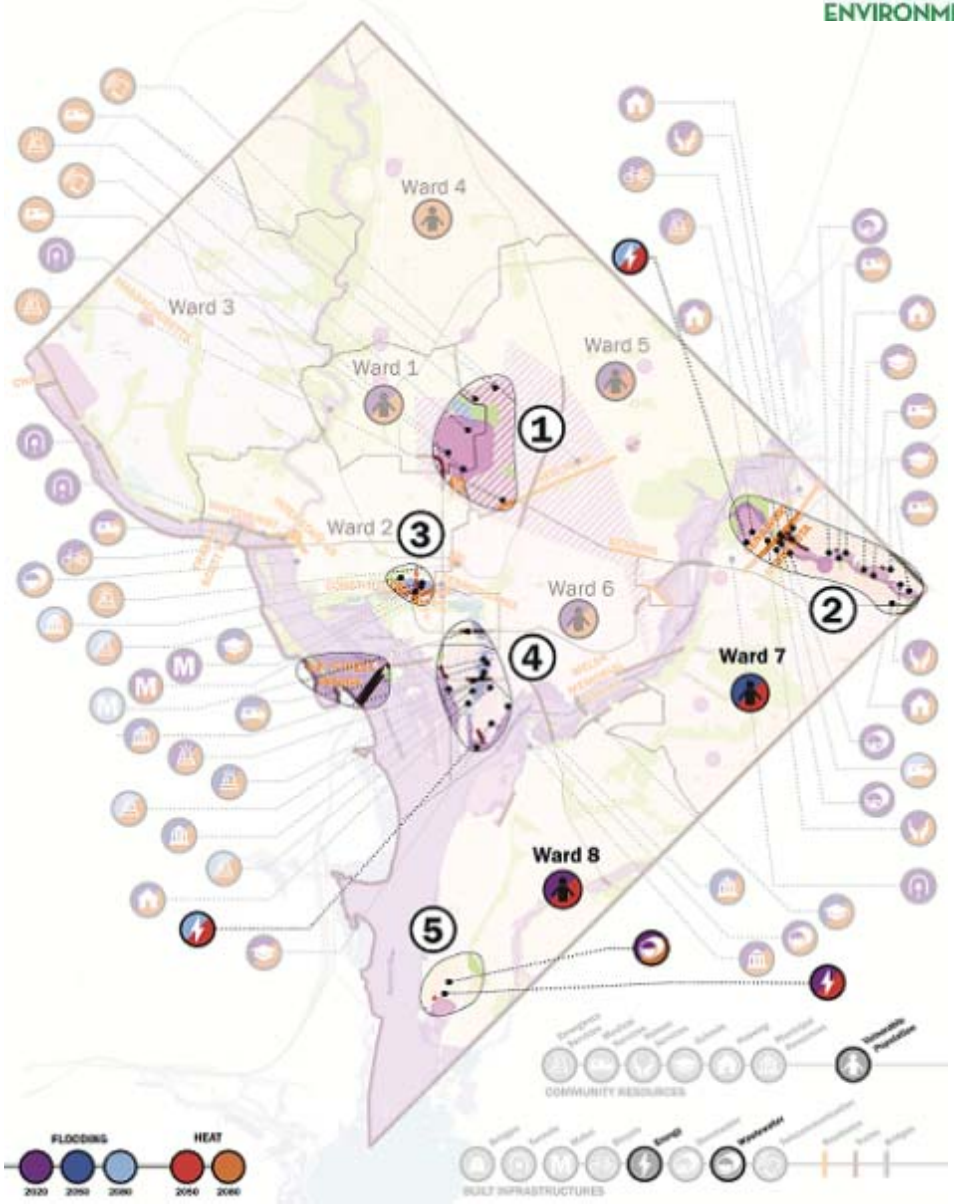
Priority Planning Areas

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



Part Three

HOW CAN DC PREPARE FOR AND ADAPT TO A CHANGING CLIMATE?

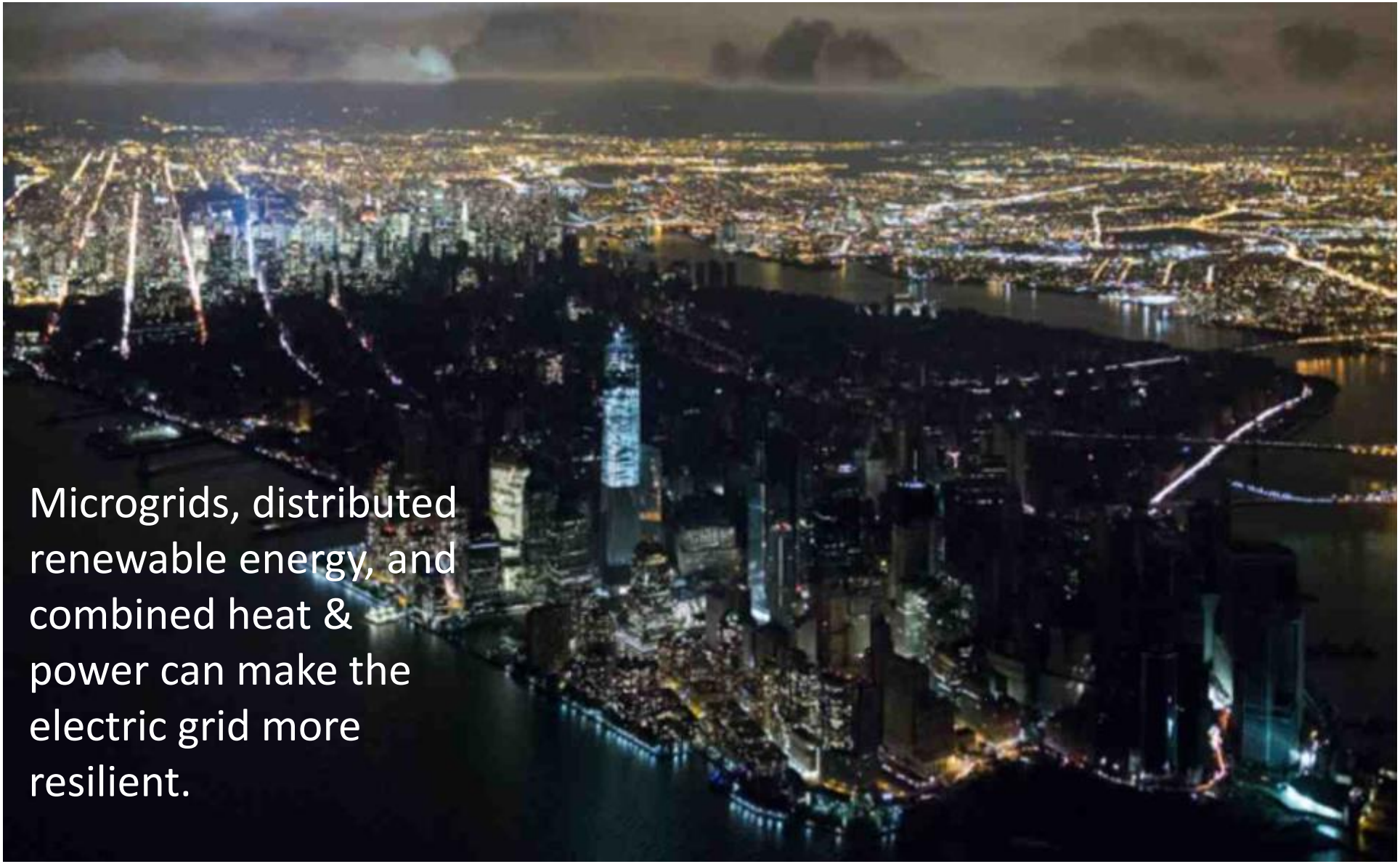
Adaptation Solutions

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

Adaptation Solutions

Green infrastructure can capture stormwater and reduce flood risks while also helping keep neighborhoods cool.

Adaptation Solutions

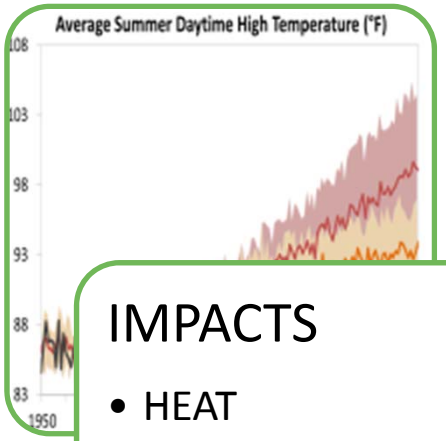


Microgrids, distributed renewable energy, and combined heat & power can make the electric grid more resilient.

Adaptation Solutions

Flood proofing critical facilities like power substations and water pumping stations can prevent outages.

Climate Ready DC Framework



IMPACTS

- HEAT
- PRECIPITATION
- SEA LEVEL RISE
- FLOODING

RISKS

- HEALTH
- INFRASTRUCTURE FAILURES
- WATER QUALITY

ACTIONS

- POLICIES
- STANDARDS
- PROJECTS

Plan Organization

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Transportation & Utilities

Buildings & Development

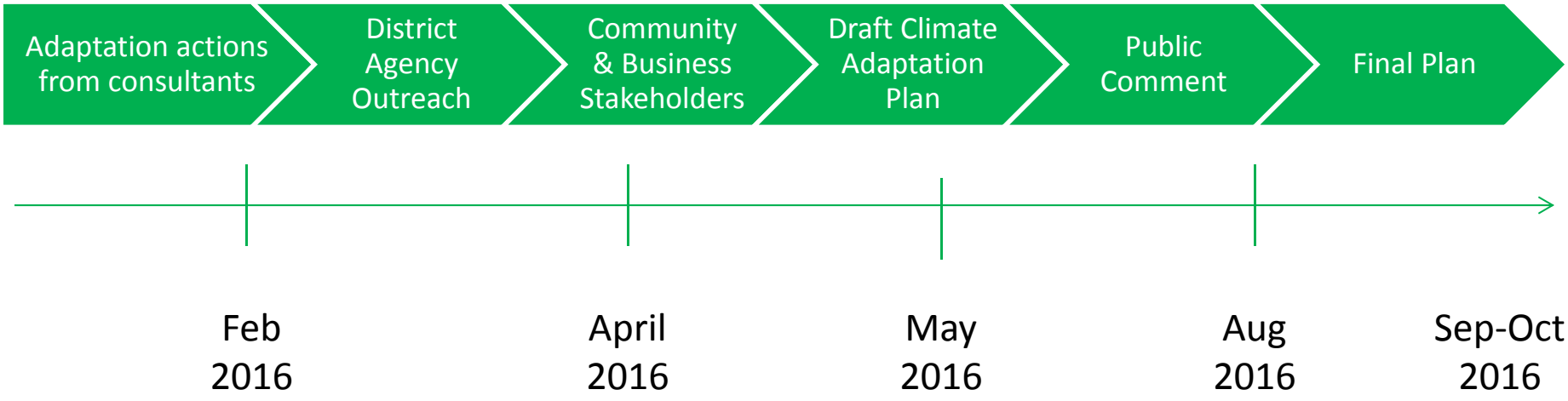
Neighborhoods & Communities

Governance & Implementation

QUESTIONS?

NEXT STEPS

Schedule


Adaptation actions from consultants
District Agency Outreach
Community & Business Stakeholders
Draft Climate Adaptation Plan
Public Comment
Final Plan
Feb 2016
April 2016
May 2016
Aug 2016
Sep-Oct 2016

Contact

Kate Johnson

Phone: 202-299-3355

Email: katherine.johnson@dc.gov

GreenLightDC Grant Program

Innovative research programs can provide the necessary backbone for creation of informed public policies that will help build the truly sustainable city.

In just one generation—20 years—the District of Columbia will be the healthiest, greenest, and most livable city in the United States.

GreenLightDC Grant Program

Program started under the authority of the Green Building Act and funding from the Green Building Fund.

Projects support the goals of the Sustainable DC Plan and aim to broaden the District's adoption and implementation of progressive green building policies and programs.

- **Initiated in 2013**
- **16 projects initiated over 3 years**
- **Total 2015 expenditure: $653,598.67**
- **Total expenditure to date: ~$1.65M**
- **All projects selected and approved by the Green Building Advisory Council**

2032 Goals

- Cut energy use 50%
- Cut GHG emissions 50%
- Increase renewables to 50%
- Cut water use by 40%
- Net-zero energy new buildings
- Retrofit 100% to meet NZE
- Improve EE for Existing Buildings
- Walkable Communities for all residents

2015 Progress

GREEN LIGHT Grants

			Research	Educate	Engage	Innovate	Implement
2013		Green Building Manual and Roadmap	X	X			
2013		Urban Heat Island Effect Study	X	X			
2013		Net Zero/Living Building Challenge Study	X	X			
2014	2015	Smart Buildings Plan	X			X	
2014	2015	Energy Benchmarking Quality Assurance	X	X			
2014	2015	Green Appraisals		X	X		
2014	2015	Greening the MLS		X	X	X	
2014	2015	Green Building Displays		X			
2014	2015	2016 Smarter DC Challenge		X	X		X
2014	2015	2016 Green Finance Structures	X			X	X
2014	2015	2016 Microgrid Feasibility Study	X			X	X
2014	2015	2016 Resident Engagement – Energy & Water Competition		X	X		X
2014	2015	2016 Living Community Plans		X		X	X
2014	2015	2016 Cool Roof Map *(planned)*		X			X
2014	2015	2016 Historic Building Sustainability Guidelines *(planned)*		X			X

Project Partners:

SUSTAINABLE DC

Appraisal Institute®
Professionals Providing Real Estate Solutions

C2ES CENTER FOR CLIMATE AND ENERGY SOLUTIONS

coalition for green capital

Capital - E
Greening Our Built World℠

eco:COACH™

ELEVATE ENERGY
Smarter energy use for all

greenspace

Global Cool Cities Alliance

INTERFACE ENGINEERING

IMT INSTITUTE FOR MARKET TRANSFORMATION

INTERNATIONAL LIVING FUTURE INSTITUTE

nbi new buildings institute

NYU

rbi REALESTATE BUSINESS INTELLIGENCE

Steven Winter Associates, Inc.

DEPARTMENT OF CONSUMER & REGULATORY AFFAIRS

DEPARTMENT OF ENERGY & ENVIRONMENT

GOVERNMENT OF THE DISTRICT OF COLUMBIA

DEPARTMENT OF ENERGY & ENVIRONMENT

POWER DOWN DC:
A Multifamily Energy & Water Challenge

Molly Simpson
Program Analyst, Green Building and Housing Affordability
Urban Sustainability Administration
Department of Energy & Environment

DEPARTMENT OF ENERGY & ENVIRONMENT

AGENDA

- Sustainability in DC
- Program Design
- Methodology
- What's Next?

DEPARTMENT OF ENERGY & ENVIRONMENT

TARGETS: By 2032…

- Cut citywide energy use 50%
- Cut citywide greenhouse gas emissions 50%
- Increase use of renewable power to 50%
- Cut citywide water use by 40%
- Retrofit 100% of existing commercial and multifamily buildings to achieve net-zero energy standards
- Meet net-zero energy use standards with all new construction projects

EMPOWERING GREEN CITIZENS

POWER DOWN DC

A Multifamily Energy & Water Challenge

POWER DOWN DC

GOALS:

- 5% energy use reduction
- 5% water use reduction
- Build community
- Educate residents on efficiency behaviors
- Work toward District sustainability targets

POWER DOWN DC

A Multifamily Energy & Water Challenge

DEPARTMENT OF ENERGY & ENVIRONMENT

Steven Winter Associates, Inc.

CORE ENGINEERS CONSULTING GROUP

DC SUSTAINABLE ENERGY UTILITY

relayfoods.com

&pizza

4PFOODS

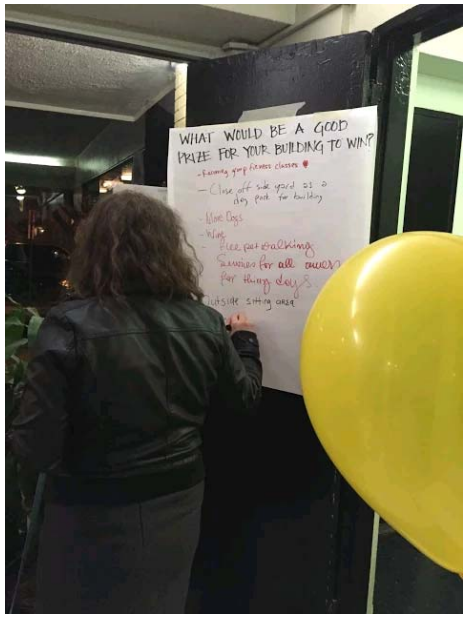
DISTRICT OF COLUMBIA HOUSING AUTHORITY
Commitment to Excellence

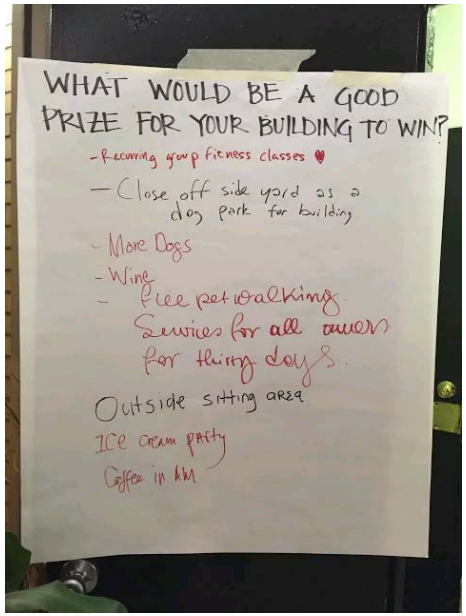
Enterprise

Group 14 ENGINEERING

PROGRAM DESIGN

EVENTS





POWER DOWN DC
A Multifamily Energy & Water Challenge

PROGRAM DESIGN

COMMITMENTS AND PROMPTS

POWER DOWN DC
A Multifamily Energy & Water Challenge

GET INVOLVED
Earn points for your building across three categories

ENERGY | WATER | PARTICIPATION

Join our educational events in your building and reduce your energy and water usage

Interested in learning more?
Contact us:

www.powerdowndc.com
info@powerdowndc.com
facebook.com/powerdowndc
@powerdowndc

DEPARTMENT OF ENERGY & ENVIRONMENT

Steven Winter Associates, Inc.

TOP 10 WAYS TO **SAVE**

1. Use **cold water** for laundry
2. **Turn off** electronics when not in use and use energy saving features
3. **Turn off** lights when you leave the room
4. Make sure refrigerator door **fully closes**
5. **Replace** incandescent bulbs with CFL or LED
6. Use **blinds or shades**
7. Reduce shower time by **5 minutes**
8. Report **water leaks**
9. Run **full loads** of laundry
10. **Turn off** faucet when brushing teeth and washing hands

www.powerdowndc.com

I **PLEDGE** TO:

1. Conserve Energy
2. Not Waste Water
3. POWER DOWN DC

Name:
Unit #:
Goal:

www.powerdowndc.com
facebook.com/powerdowndc
@powerdowndc #powerdowndc

Name:
Email:
Building:

PLEASE RETURN YOUR PLEDGE TO THE FRONT DESK

POWER DOWN DC
A Multifamily Energy & Water Challenge

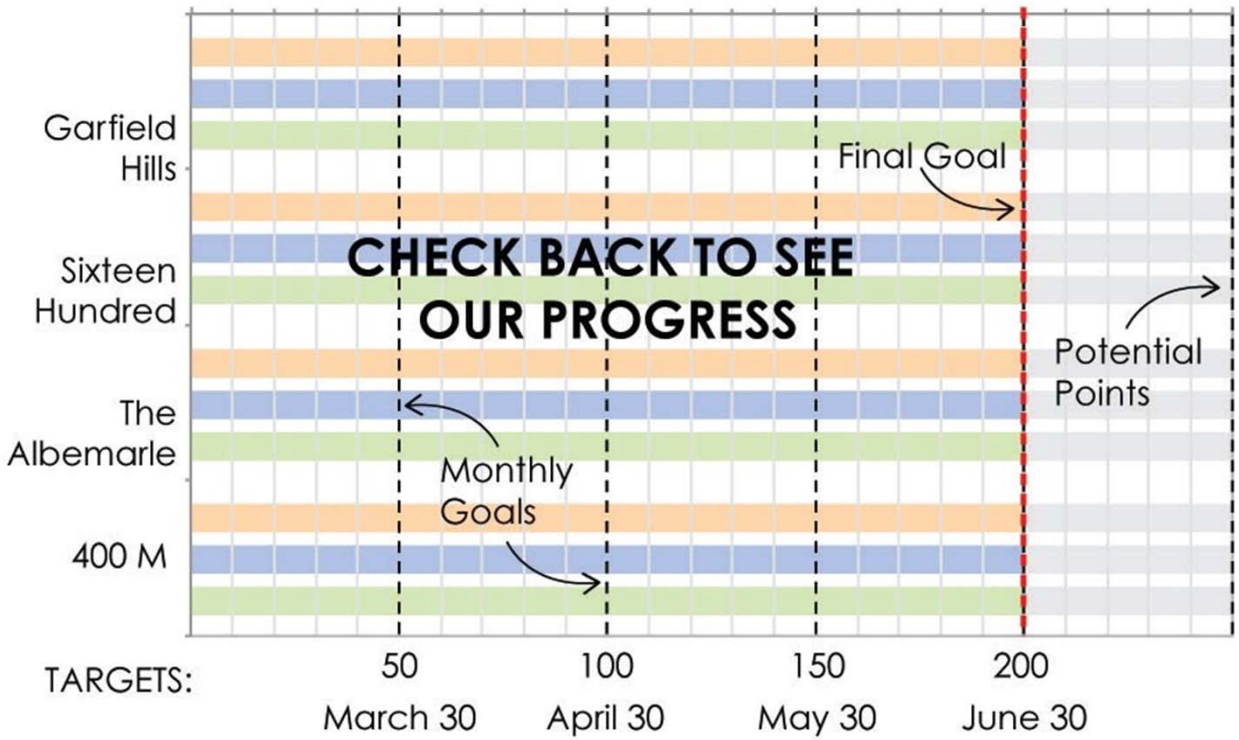
PROGRAM DESIGN

HOW TO WIN

- All buildings can win
- Highest overall reduction
- Final awards ceremony
- Raffles at all events

METHODOLOGY

LEADERBOARD



POWER DOWN DC
A Multifamily Energy & Water Challenge

WHAT'S NEXT

- How to scale program to more buildings
- Refine and cut what isn't working
- Re-imagine competition
- Integrate with other District sustainability programs