

Principles of Climate Adaptation

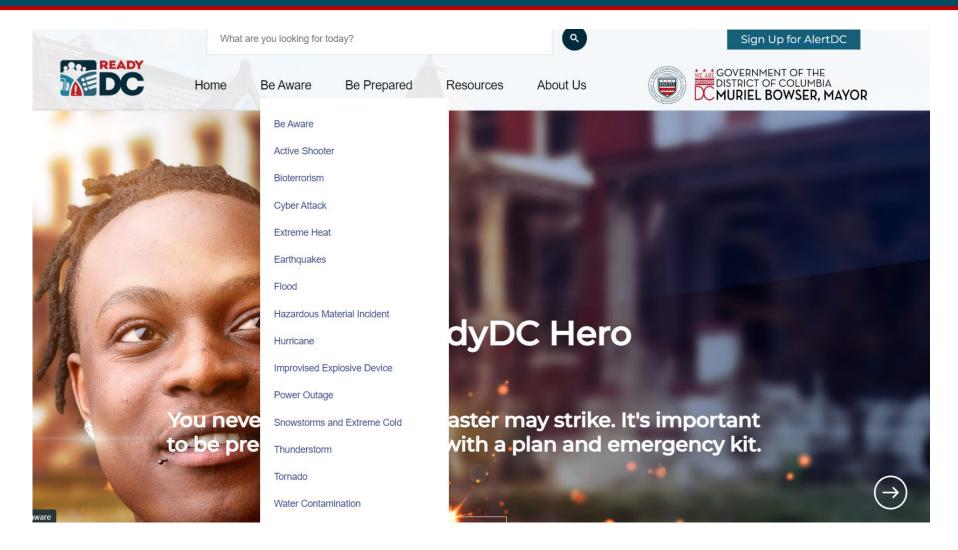
ReadyDC Refresh Case Study

Ensure fairness in decision making

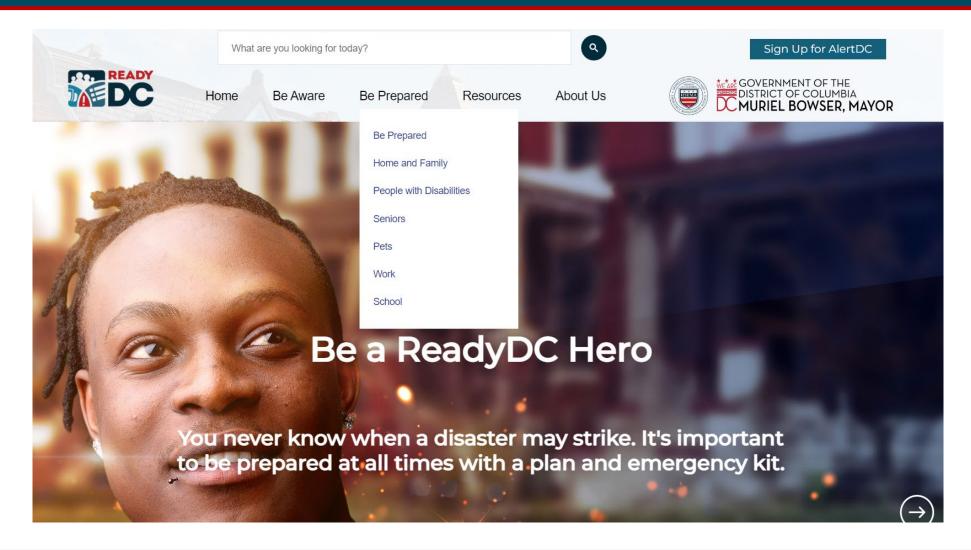
• ...Decision makers hold power. That power is sometimes used to limit people's access to decision-making structures, particularly people and communities on the frontlines of climate change...Use what power you hold to help ensure that all decisions and the processes by which they are made include representatives from all affected groups. Whenever possible, those in power should use the principle of "decide with, not for."...



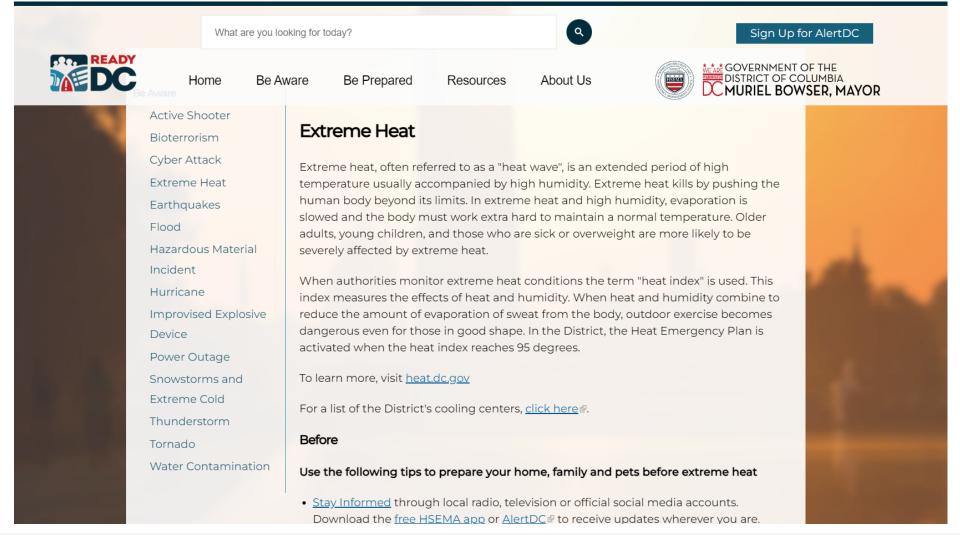
Current ReadyDC Website



Current ReadyDC Website



Current ReadyDC Website

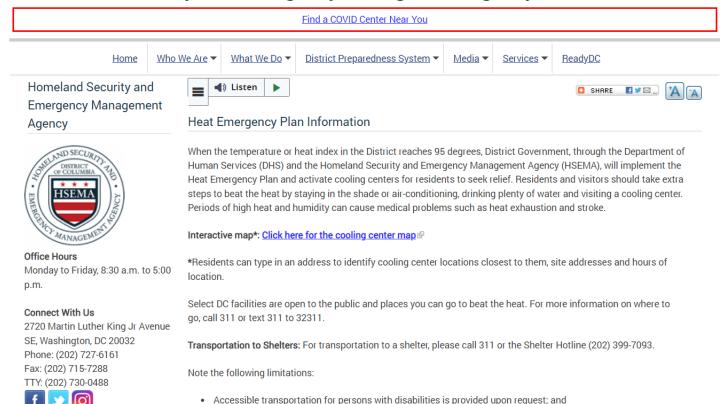






Heat.dc.gov

Homeland Security and Emergency Management Agency



· Unscheduled (on-demand) transportation is limited and subject to traffic and other conditions.

District during heat emergency. For more information on our field safety guidelines, click here.

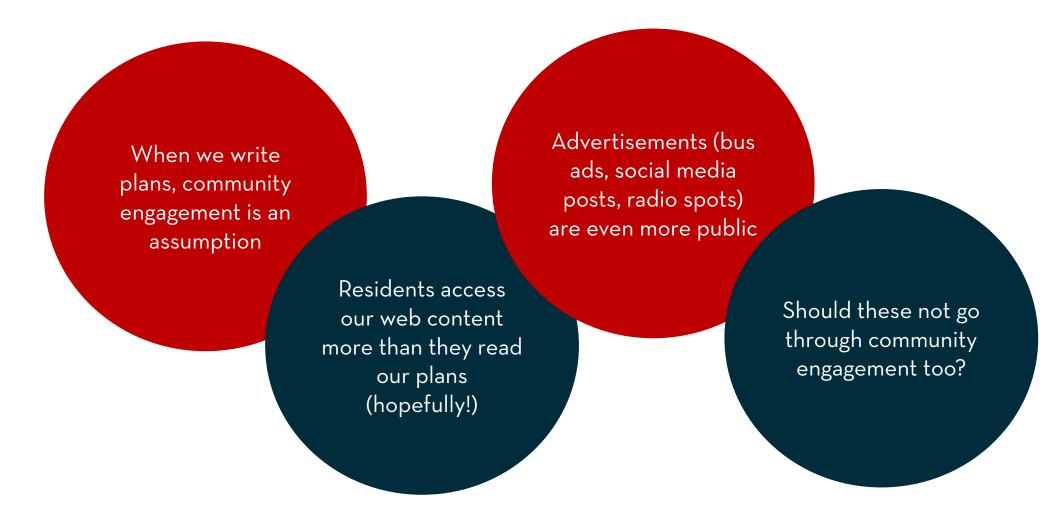
Field Safety: The Department of General Services (DGS) advises caution when using recreational services throughout the



Ask the Director

Agency Performance

Thoughtful Website Design

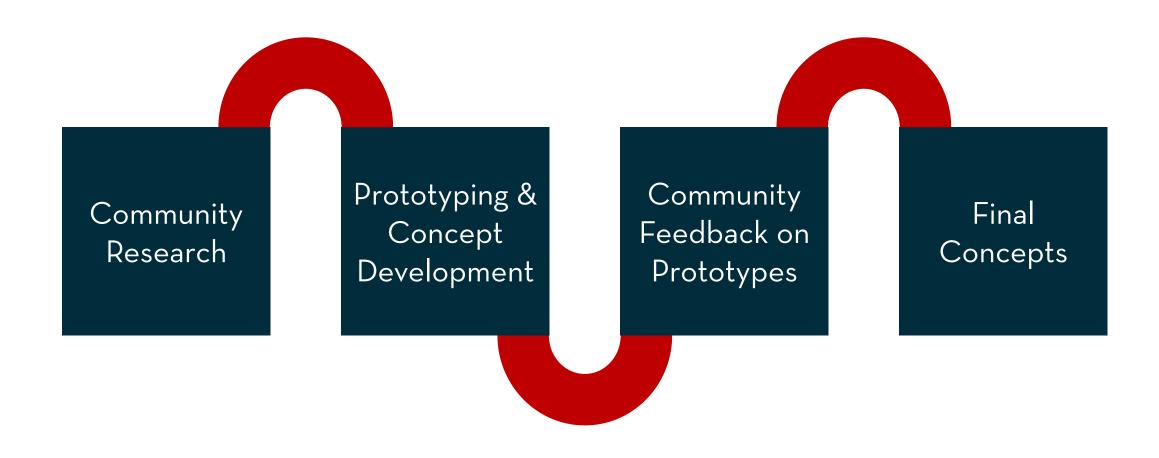


RESEARCH GOAL

Understand the perceptions, needs, awareness, and behaviors of DC residents around emergency preparedness and response to three specific hazards: winter weather, extreme heat, and flooding; and how residents seek, find, and utilize information.



Methodology





Methodology

Community Research What are resident's awareness levels, attitudes, and concerns about natural hazards?

What are residents already doing to be prepared? What stands in the way of action?

How are residents getting information today?



Recruiting criteria (14 participants total)

Primary criteria	Breakdown	Interviewees
Residents of Wards 7 & 8	Ward 7	5
Residents of Wards / & o	Ward 8	4
Spanish speakers	Native speakers of Spanish as a primary language; not comfortable with English	2
Seniors	Age 67+, living at home relatively independently (not in an assisted living facility)	2
Business owners	Small to medium independently-owned businesses	3
Transient residents	Living in DC for 5 years or less, without intention to stay long-term, due to temporary appointments, contracts, or other reasons	2

Secondary criteria	Breakdown	Interviewees
Preexisting health condition	Chronic conditions, e.g. obesity & respiratory conditions	3
Primary transportation	Rely on public transport	5
Homeownership	Homeowner Renter	5 9
Ability	Physical disability	2



Safeguard people

- Safeguard the health, well-being, safety and existence of all people affected by an adaptation action. Focus on more vulnerable populations, engage those who have traditionally been disenfranchised, and consider multiple, intersecting vulnerabilities, systemic injustice, and oppression when identifying problems and solutions.
- Assess all strategies to ensure that they do not have disproportionate negative impacts on these populations. If possible, adaptation strategies should actively strengthen these populations.

INSIGHT 01

When it comes to weather risk, DC residents are guessing.

When it comes to the risk of extreme weather types occurring in DC, or affecting them personally, residents make their own judgments. They may factor in past experiences in locations that were more extreme or well known for specific hazards.

More extreme experiences elsewhere

"I'm from Boston, and went to Syracuse, and snow is not a big deal to me. Here in the Mid-Atlantic, a few flurries are such a big deal."

Notions that DC weather is moderate

"Hurricanes and tropical storms, I'm not concerned; DC isn't a place that has these issues."

Personal judgments on geographic or structural risk

"I'mnot that concerned about floods. It depends on where you live and if your house is low. It floods really bad like at Hains Point-the water level is really bad-or at Rock Creek Park."

"The street gets backed up: floods. I don't worry about heavy rains affecting my first floor apartment though. I wouldn't consider flood insurance, flood-proofing. If I was in the basement apartment, which flooded real bad, I'd be concerned."

Current awareness of risks and existing resources

Awareness signals

Familiar with 100-year foodplain

Familiar with ReadyDC or AlertDC

Know location of cooling/warming center

Know if they are at higher risk of fooding

Connect risk of heat or winter with health/safety

Know if they qualify for flood insurance

Number of residents aware

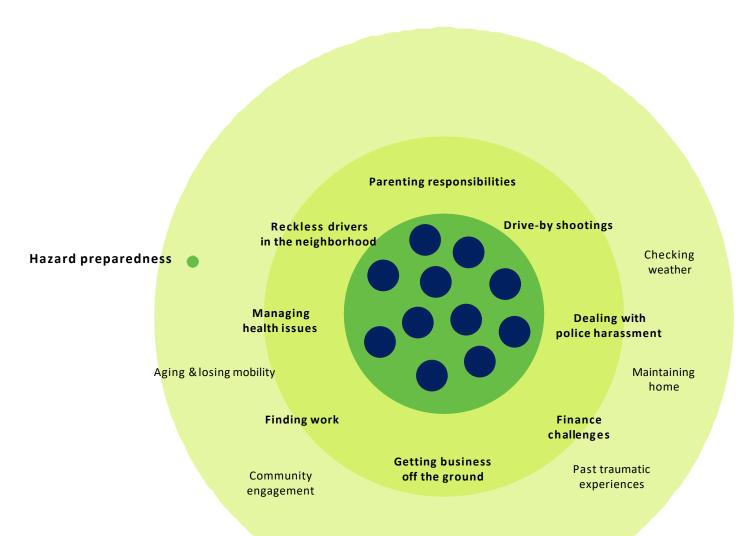


INSIGHT 02

Residents prioritize life's known threats.

It's not that residents don't care or aren't concerned about the weather. It's that they're focused on handling the immediate essentials of today. For many, extreme weather feels like an activity they don't have time or resources to worry about separately.





Recognize context

Contextualize adaptation research, policies, practices, communication, and actions to the appropriate issues, location, and scale. Understand existing, underlying conditions and vulnerabilities that climate change may exacerbate before deciding what adaptation action to take. Design strategies to adjust over spatial and temporal scales, and account for variability and extremes. Assess localized outcomes of adaptation actions



Without a catalyst to act, aware doesn't mean prepared.

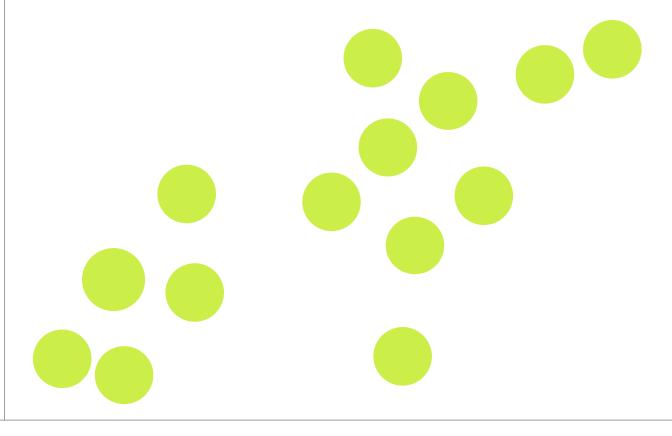
Plenty of work lies ahead in raising the awareness across DC residents, but awareness alone is not enough. Even our most aware residents are not necessarily highly prepared, if they haven't experienced a personal reason to do so.

preparedness

Awareness: Approximated based on knowledge of risk, resources, and actions to take relative to ReadyDC recommendations.

Preparedness: Approximated based on self-reported actions taken relative to ReadyDC recommendations.

This is behaviorally-driven and qualitative in nature, meant only as a representation. Residents are plotted relative to each other and not on an absolute scale.



awareness

PREPAREDNESS, ACTIONS, BARRIERS

Willing responders say that they're a step away from being able to actualize this role, e.g.:

- Not knowing a hypothermia hotline exists
- Not knowing the location of nearby cooling/warming centers

"Cooling centers? I can't see myself going, but I could see myself trying to help someone outside when it's hot by telling them. Warming centers, I didn't know about-I would want to know, so I can tell people to go there.

"The hypothermia hotline, I haven't heard of this-I would definitely consider calling it for someone else."

Ward 7

"Ididn't know that a hypothermia hotline exists. IfI saw this, I wouldn't just consider i t - I would do it."

INSIGHT 06

Despite wanting to be more prepared, residents default to waiting for information to come to them.

Residents have a whole host of sources for information. Notably, almost all are alerts or news that they receive, rather than searches that they initiate.

Current sources of information mentioned by residents



Encountering information

Actively seeking information

Other low-lying and flood-prene locations is imminent or occurrent Additional Details At 4:41 PM EDT, Doppler rades indicated heavy. rain due to thunderstorms. Floriding is singoing or expected to begin shortly in the warned area. Between 0.5 and 1 meh of rain has fallen. Additional rainfall amounts of 0.5 to 1 muh are possible in the warned area http://www.weather.gov/safety Precautionary / Preparedness Actions Turn amount don't drown when encountering flooded roads Most flood deaths occur in vehicles Severbridge" & 2002 Learning

"I do have a notification system for emergency notifications, but I have it silenced. It's a little bit overwhelming.I don't think it's actually that feasible to be used by me. It goes off probably hundreds of times."

INSIGHT 08

Residents want answers that help them navigate in-the-moment decisions during an event.

When asked what information residents need, our participants focused on timely updates that would help inform the many immediate choices they would need to make that affect their days in the short-term.

Highest concerns during an extreme weather event









Effects on my loved ones' health or safety

- + Whether I should go outside
- + Whether I can safely get around in the snow/ice
- + Whether we will be cool or warm enough at home









Driving safely

- + Whether it's safe to drive and get to work
- + Where it's salted/plowed
- + Traffc patterns





Damage to my property

- + Managing ongoing issues during an event
- + Responding to damages in the aftermath
- + Financialimplications





Effects on my business

- + Whether my team can safely come in
- + Whether customers will come
- Whether to open or close
- Actions to avoid liabilities

- Homeowner
- Renter
- Business owner (owns)
- **Business owner (rents)**

INFORMATION & RESOURCES

Questions residents have, when prompted: Floods

"Ihave questions about flooding, as it pertains to where we're located. How does the Anacostia River-or does it-have an impact on flooding? Is that something that we should be concerned about? Is there anything that we should do to prepare for that?"



Jay

Before

- + Are our storm drains being serviced/cleaned?
- + Why can't we get flood insurance?
- + Health concerns from mold, poor ventilation?
- + Are we geographically specifically at risk due to proximity to Anacostia?

Homeowners

- + What actions should take to protect my home (e.g. gutters)?
- + Could there be potential damage to my basement/lower level?

During

- + Is it safe to drive?
- + Are there road closures that will affect me?
- + What are the traffc patterns like?

After

+ Is DC going to repair street damage, like cracks in street from water damage?

INFORMATION & RESOURCES

Questions residents have, when prompted: winter storm



"For winter storm.the [meaning of] signs outside my business that say 'this is the evacuation route for some sort of snow removal.' What does it mean to be on the snow evacuation route?"

Jay

Before

- + Do I need to stock up in groceries/supplies in advance?
- + What do I do if I lose power?
- + How do seniors get their necessities?
- + New immigrants, new to hemisphere, new to seasons, new drivers, delivery drivers: how do I drive safely in winter snow?

Business owners

- + Do I need to salt/take other preventative actions?
- + Other liability protections?

During

- + Is it safe to drive (snow, ice)?
- + Will I still be able to work? Should I go outside at all?
- + Will I be able to get groceries?
- + Will they be plow? When?
- + What do I need to do to park if a street is marked as an evacuation route?

Business owners

- + Is it safe for my team to drive in today? Will customers even come? Should I make the call to not open?
- + What do I communicate to my team if we're already in operating hours? How do I decide if we should close early?

After

Homeowners

+ What to do about snow on the roof? Will it create leaks?

Questions residents have, when prompted: extreme heat

"With extreme heat, knowing what's the threshold-today's an extreme heat day, or what it is compared to being outrageously hot? Knowing like, am I in trouble if I go outside for too long or not hydrating?

Devin



"With extreme heat, I'd love to know if there are services or resources that are provided to businesses to prepare. Based on the population of our community, if we could support in some way by being a cooling center, or if the city will provide water stations."

Jay

Before

- + Can I get access to a place with AC?
- + Is my AC reliable enough?
- + Should I stay inside?
- + Health effects (e.g. sickle cell)?
- + Power outages: Do I need to arrange for backup power supply?

During

- + At what point is there risk of heat stroke if I go outside?
- + What are low-cost options to keep my house cool

Business owners

+ What can I as a business owner do to help with cooling community members?

S

OPPORTUNITY

How might we establish a clear connection between residents' immediate priorities and hazard preparedness?

OPPORTUNITY

How might we help residents understand their personal risk and protect themselves-without needing to experience a crisis?

OPPORTUNITY

How might we empower residents to take actions that are feasible and realistic for them?

OPPORTUNITY

How might we activate everyday responders to their full potential during a weather emergency?

OPPORTUNITY

How might we deliver residents with the information they need in the right moment, in the right context?

OPPORTUNITY

How might we equip community leaders with accurate information to amplify?



Messages we tested









Too shallow



Too detailed



Just right



Concept elements we tested





General

Assess Your Risk

Hazards

() A heat emergency is in effect for the District of Columbia. Find out more >



Be ready for any emergency

Our mission is to increase DC residents and visitors' capacity to prevent, protect against, respond to, and recover from major emergencies. Whether it's a natural hazard like a flood, an act of terrorism, or a technological hazard such as a chemical explosion, there are four things every person can do to be prepared.

Jump to section:

Make an emergency kit	1
Design a family communications plan	1
Check in on your neighbors	1
Sign up for text alerts	1



Baby food:

Make an emergency kit

Make an emergency kit for yourself and each member of your family that will last for at least three days. While you should personalize your kit to suit your specific needs, here's a list of key items that will help you get started.

Download PDF



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Pet dishes:

Include a three-day supply of baby formula, bottles, and nipples.



Favorite snacks:

Add in a three-day supply of your children's favorite non-perishable snacks



Documents and photos:

A three-day supply of any medicine your pet requires



Pet waste:

Include copies of your pet's ID, medical/veccine records, and recent photos in a waterproof/fireproof container



Transportation items:

Include collars, leashes, harnesses, muzzles, carriers, and any other items that will help you safely transport your pet



Personal items

Include your pet's bed and toys, if you can easily take them with you





Create an emergency plan

Having an emergency plan is one of the most important ways you can protect yourself and your family in an emergency.



Contact information:

Your plan should include:

Make and regularly update a list of phone numbers for family members to use to call each other during an emergency.



List of health-related items:

Make and regularly update a list of medications, aflergies, and existing medical conditions for each person to share in an emergency.



Place to meet:

Decide on a place in your neighborhood to meet if you have to evacuate your home



Support network:

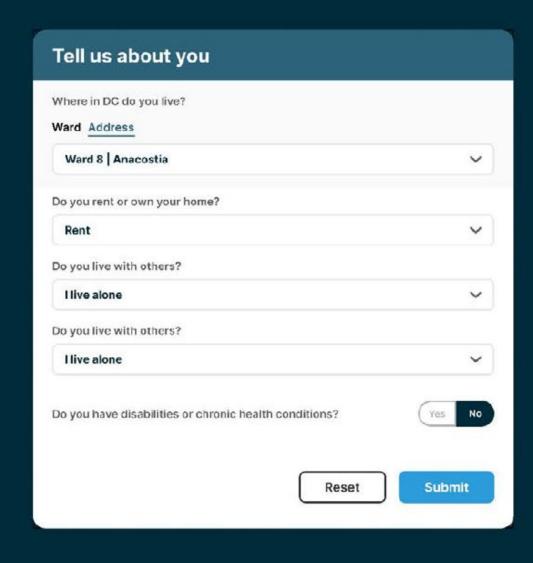
Develop a support network of family members and friends that can help you if you are not at home, like having an extra key to enter your house and turn off your utilities, when an emergency or disaster strikes.



Check in on neighbors

Check on your neighbors, especially seniors, children, those experiencing homelessness, and others who are chronically ill, have disabilities, General





Assess your risk

Find out your risk level of experiencing extreme weather like extreme heat, floods, or snow storms and what you can do about it.

To get started, tell us a little about yourself like which DC ward you live in, your age group, if you have children, and whether you're a homeowner.

Click Submit to find out your results.

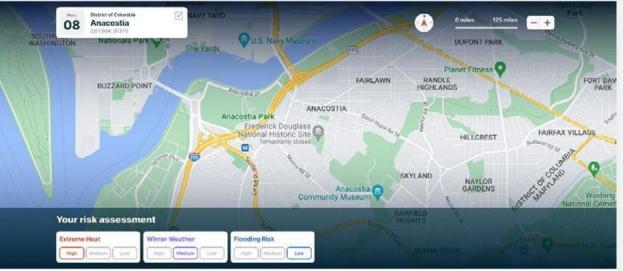




DC General

Assess Your Risk

Hazards



Personalized guidance

Participation .	(Table 1997)	Oraco Contract	ALC: UNKNOWN	Town of	E	6	Commence of the	Comments.
Pet owners 📀	Seniors 🐷	single 🐷	Stewarce Co.	(Faper (+3)	(rappl (+)	(Label (+)	Papel (4)	raper (4)

Extreme Heat

Wards

What to know:

If you are a resident or visitor in Wards 1, 4, and 5-8, you are at greater risk for extreme heat conditions. These areas in DC are hotter due to elevation, limited shade cover, and heat-retaining structures such as buildings and highways.

Learn more >

What you can do about it:

Go to a cooling center:

Use this map to locate a free and air conditioned cooling center near you.

Spend time at a free pool:

Use these maps to locate an outdoor or indoor pool near you to cool down in the cold water.

Plant trees:

Work with a community organization, DC's Department of Energy & Environment or DC's District Department of Transportation to plant trees in your neighborhood to help bring shade cover and cool down temperatures.

Seniors

What to know:

Lanca seems >

Generally, elderly adults may have more difficulty adjusting to sudden changes in temperature than younger people. Specifically, if you have a chronic medical condition or are taking certain medications, your body may not be able to regulate its temperature and sweat properly.

What you can do about it:

Talk to your doctor:

Allow pets indoors during periods of especially high temperatures.

Drink lots of water:

Drink plenty of fluids, like water or gatorade, that help replace electrolytes that might have been lost while in the heat.

Learn more >

3

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Go to a cooling center:

Use this map to locate a free and air conditioned cooling center near you.

Find a buddy:

Make a plan with a friend, family member, or neighbor who can check in on you (and you on them) during weather emergencies.

Pet Owners

What to know:

Your pets are just as much at risk of extreme heat as you. They can overheat outside, in cars, or while on a walk. Be aware that your pet could develop heat stroke, which includes heavy panting, glazed eyes, a rapid heartbeat, difficulty breathing, excessive thirst, fever, and dizziness. If your animal is experiencing these symptoms, take them to the vet immediately.

Note that for most animals, DC law requires that an owner or caretaker may not leave an animal outdoors alone without a person or adequate shelter for more than 15 minutes during periods of extreme weather.

Learn more >

What you can do about it:

Let your pet inside:

Allow pets indoors during periods of especially high temperatures.

Drink lots of water:

Have your pet drink plenty of water that helps replace the fluid that might have been lost white out in the heat.

Keep your pet out of the car:

Work with a community organization to plant trees.

Go to a pet-friendly cooling center:

Call the DC Health's Animal Services Program at 202-535-2323 to find a center near you that allows only.

Use the buddy system:

Make a plan with a friend, family member, or neighbor to check in on each other's pets if you are not at nome when a disaster strikes.

Flooding









Extreme heat guide

Sign up for text alerts

Before During After

Know when you're dangerously hot

Learn more

Learn the signs of overexposure and ways to stay cool during the hottest months of the year.

Heat exhaustion	Heat stroke
Heavy sweating	+ No sweating
Weakness and fatigue	 High body temperature
Fast, weak pulse	 Fast, strong pulse
Muscle cramps	 Altered mental state
Cold chills	 Throobing headache
Nausea	 May lose consciousness
Dizziness	Confusion
Cool down	Get help
Rest in the shade or in an air-conditioned	• Call 9-1-1
space	Take to the Hospital
Drink water	 Apply cold compress
Remove extra clothing	



Keep yourself and your family safe

Take a look at the actions you can take below to keep yourself and your family safe from the heat during the summer months.

Drink lots of water:

Drink more water regardless of how active you are, and avoid caffeinated and alcoholic beverages, because your body will sweat more on hot days.

Keep kids and pets cool:

Don't leave kids or pets alone in cars, ever, because the temperature inside a car can rise very quickly.

Wear loose clothing and sunscreen:

Wear protective, loose-fitting clothing and SPF-15 or higher sunscreen.

Take cold showers:

Use cold water when showering to lower your body temperature.

Use fans properly:

Do not use fans if the temperature inside is greater than 95 degrees Fahrenheit because this can inhibit sweating and body temperature regulation.

Save money by preparing your house

When it comes to money and preparing for extreme heat, we're all looking for ways to save. Take a look below at the actions you can take around your house today that will save you money on utility bills tomorrow.

"I'm so glad I spent the money to seal the cracks around my windows and doors before the summer season. I can see a huge difference on my electricity bill this year. It's really impressive how much a small investment now will save you later!"

Miles, Ward 7 Resident

Check your air conditioning:

Check your AC ducts for proper installation and working condition to make sure that it uses electricity efficiently.

Check your fans:

Make sure your fan turns counterclockwise to help create a downdraft, which allows a direct cooling breeze.

Add weather-stripping:

Seal the cracks around your windows and doors, and cover them with shades throughout the day to keep cool air inside.

Install heat deflectors:

Install some kind of barrier such as aluminum foilcovered cardboard between your windows and curtains to reflect the heat away from your home.

Disconnect power sources:

Unplug or turn off lights and other devices that are not being used to prevent a power outage.

Keep air ducts clear:

Unplug or turn off lights and other devices that are not being used to prevent a power outage.

Create a makeshift air conditioning:

Put a bowl of ice or cold water in front of your fan so the air that blows cools down.

What we're doing for you

Check out the resources we have available to keep you safe from extreme heat.

For everyone

Visit a free and air conditioned cooling center

At 95 degrees Fahrenheit, we activate cooling centers around the city. These centers are open with extended hours and are free to you, and include libraries, rec centers, pools, splash zones, and more.

If you or someone you know needs transportation to a cooling center, call our hotline at 202-399-7093.

Use this map to locate a cooling center near you.

Visit a free pool or spray park

When it's hot out, one of the best ways to cool down quickly is to go swimming or splash around in cold water. We offer free access to indoor and outdoor pools, as well as spray parks to District residents.

Use this map to locate an outdoor pool near you.

Use this map locate an indoor pool near you.

Use this map to locate an outdoor park equipped with kid-friendly fountains near you.

For homeowners

Weatherize your home

The DOEE provides low-income residents with the technical and financial assistance needed to make their homes more energy-efficient, safe, and better protected against extreme heat.

Visit the DOEE Weatherization Assistance Program website or call 202-236-2657 to learn more.

Our DC Sustainable Energy Utility (DCSEU) Department provides financial incentives, technical assistance, and information to help you save money on your energy costs.

Visit the DCSEU website for more information.

Plant trees to increase shade cover

Trees are not only a great investment that increase property value and improve public health and safety. They also help to reduce the urban heat island effect through shading and releasing moisture into the air. To encourage you to plant trees on your property, we offer a rebate program to offset the cost by up to \$100 for each tree you plant.

Visit the Tree Rebate Program website to learn more and to submit your

Install cool or permeable pavement

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Visit the Tree Rebate Program website to learn more and to submit your request form.

Install a green roof or a cool roof

Planting a layer of vegetation, like grass, over a specially designed waterproofing system on top of a roof, known as a green roof, can help

Report a power outage

website to report any outages or downed wires.

Pepco

Call: 1-877-737-2662 Report an issue online

Call: 844-972-4427

Report an issue online

DC Water

Call: 202-354-3600

Use our hotline to get help with a non-emergency

emergency issues, like when the garbage doesn't get picked up on a hot day and it's

Get help with your utilities

(DOEE) provides financial assistance, discounts, and energy efficiency programs to help you with your utility bills.

Call your local utility company or visit their

Washington Gas

Report an issue online

Dial 3-1-1 to reach our hotline for nonstarting to smell.

Our Department of Energy & Environment

Visit the DOEE website or call 202-236-2657 to learn more.

Install a green roof or a cool roof

Planting a layer of vegetation, like grass, over a specially designed waterproofing system on top of a roof, known as a green roof, can help lower surrounding surface temperatures. Check out our green infrastructure programs to incentivize other plant and landscape-based installations on your property, such as financial assistance for installations such as replacement of pavement for planting areas, installing rain gardens, and incentives to reduce water bills.

The DOEE also offers a rebate program of \$10-\$15 per square foot for voluntary installations of green roofs.

Visit the DOEE Green Roof Rebate Program website to learn more.

Cool, or reflective, roofs reduce heat exposure by better reflecting, instead of absorbing, heat from the sun. Cool roofs can be white-coated or made up of sunlight-reflecting roof material. If you are planning to install a roof, be sure to follow our construction code that includes important information about residential cool roofs.

"I have sickle cell anemia, so sometimes my hands and feet swell or I will get body aches. It's very painful and when it's really hot outside, it gets worse. I don't have AC, so knowing where DC's cooling centers are has been a life saver for me! I get up in the morning, pack my things for work, and head over for the day."



For business owners

Become a BEMOC member

Join our Business Emergency Operations Center (BEMOC), an alliance of public-private partners committed to improving the District's ability to prepare for, respond to, and recover from disasters. It's free to join and as a member, you will receive:

- . Real-time information exchange with the public sector
- · Trainings, exercises, and best practice programs
- · Technical assistance for business continuity
- · Key information for long-term recovery

Visit the BEMOC website to learn more and become a member today.





Melissa Deas

Chief Resilience Officer

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