donohue
themak +
miller, plc

April 4, 2022

Chairman Hill
D.C. Board of Zoning Adjustment
441 4th Street, N.W., Suite 210
Washington, D.C. 20001

Re: Maret/BZA Application #20643
Motion for Stay

Chairman Hill,

On behalf of Friends of the Field (the "Friends") and following the decision of the Board today to approve the referenced application, we are submitting the attached Motion for Stay. We ask that the Board consider this request at the next opportunity.

Copies of this filing are being sent to all parties.

Thank you.

Sincerely,

Edward L. Donohue
for Friends of the Field

Enclosures

BEFORE THE ZONING COMMISSION OR
BOARD OF ZONING ADJUSTMENT FOR THE DISTRICT OF COLUMBIA

FORM 150 – MOTION FORM

THIS FORM IS FOR PARTIES ONLY. IF YOU ARE NOT A PARTY PLEASE FILE A FORM 153 – REQUEST TO ACCEPT AN UNTIMELY FILING OR TO REOPEN THE RECORD.

Before completing this form, please review the instructions on the reverse side. Print or type all information unless otherwise indicated. All information must be completely filled out.

CASE NO.:	20643
Motion of:	☐ Applicant ☐ Petitioner ☐ Appellant ☑ Party ☐ Intervenor ☐ Other _____

PLEASE TAKE NOTICE, that the undersigned will bring a motion to:

Stay the Board's decision pending appeal to the Court of Appeals.

Points and Authorities:

On a separate sheet of 8 ½" x 11" paper, state each and every reason why the Zoning Commission (ZC) or Board of Zoning Adjustment (BZA) should grant your motion, including relevant references to the Zoning Regulations or Map and where appropriate a concise statement of material facts. If you are requesting the record be reopened, the document(s) that you are requesting the record to be reopened for must be submitted separately from this form. No substantive information should be included on this form (see instructions).

Consent:

Did movant obtain consent for the motion from all affected parties?

- ☐ Yes, consent was obtained by all parties
- ☐ Consent was obtained by some, but not all parties
- ■ No attempt was made
- ☐ Despite diligent efforts consent could not be obtained

Further Explanation: Motion to be filed immediately upon announcement of BZA decision.

CERTIFICATE OF SERVICE

I hereby certify that on this 06 day of APRIL, 2022

I served a copy of the foregoing Motion to each Applicant, Petitioner, Appellant, Party, and/or Intervenor, and the Office of Planning in the above-referenced ZC or BZA case via: ☐ Mailed letter ☐ Hand delivery ☒ E-Mail ☐ Other _____

Signature:	E. C. Donohue
Print Name:	EDWARD L. DONOHUE
Address:	117 ORONOCO STREET
Phone No.:	703 549 5384
E-Mail:	EDONOHUE@DTM.LAW

BEFORE THE BOARD OF ZONING ADJUSTMENT
OF THE DISTRICT OF COLUMBIA

Application of
The Maret School BZA Case No. 20643

Friends of the Field's Motion for Stay of BZA Decision
April 6, 2022

Friends of the Field ("Friends"), a party in this proceeding, will appeal from the BZA's decision and Order permitting the Maret School ("Maret") to construct a multi-purpose athletic facility on land Maret leases from the Episcopal Center for Children ("ECC"). Section 701.2 of the BZA's Regulations authorizes the BZA to stay the effectiveness of its final decision either on its own motion or at the request of a party pending an appeal to the Court of Appeals. Unless the Board issues a stay sua sponte, Section 701.3 provides that the party seeking a stay must prove that:

(a) The party seeking the stay (or, in the case of a stay to be issued on the Board's own motion, the party in whose favor the stay would be ordered) is likely to prevail on the merits of the motion for reconsideration or rehearing, the sua sponte review, or the appeal;
(b) Irreparable injury will result if the stay is denied;
(c) Opposing parties will not be harmed by a stay; and
(d) The public interest favors the granting of the stay.

We show below that the Friends satisfies these requirements.

(a) Friends Is Likely to Prevail in the Court of Appeals.

The Board ignored the law in contravention of the authority of the Zoning Commission, the plain language of the Zoning Regulations and its own precedent.

Prior to its decision in this case, the Board had never held that a private educational institution could build a sports complex, a dormitory, or a cafeteria that was not an accessory to the educational institution. In *National Cathedral School*, Application No. 16433, the Board considered whether a pre-existing special exception could be extended. The Board determined that:

> to approve an expansion of a special exception, the use must also be either part of or accessory to, the existing special exception principal use.

Id. at 8. The Board found that the proposed sports field was "an extension of the principal use," *Id.*, and if that characterization could not be fairly established, an accessory use. In doing so, the Board stated that:

> an athletic facility is nearly always provided to students of a private school and can be characterized as customarily incidental and subordinate to a private school.

Id. at 9.

Because the Applicant in this case has no existing principal use to expand, the Board has simply created new law in this case. The Board has decided, contrary to its own precedent, that an athletic facility alone can be characterized as a principal private school use. In doing so, the Board has, in the words of the Office of the Attorney General, "effectively amend[ed] the Zoning Regulations governing the uses permitted in the R1-B zone," supplanting the public rulemaking process and the legal authority of the Zoning Commission. BZA Exh 268. The Board has "conflate[d] a subsidiary use with its dominant use" and in doing so, "diminish[ed] the public's faith in the zoning process by confirming that the 'game is rigged' [and] strip[ping] the public of the procedural protections they would be entitled to if the Zoning Regulations were properly followed." *Id.*

The Board has abandoned its determination in the *National Cathedral School* case that an athletic facility is customarily incidental and subordinate to a private school. In doing so, the Board disturbs the entire accessory use analysis it conducted in the *National Cathedral School* case, and all cases relying on it since. The Board has adopted the Applicant's unprecedented theory that "the proposed Athletic Facilities are, in fact, educational facilities – no matter how close to, or how far from, Maret's Woodley Park campus they are located." BZA Exh 282, Applicant's Post-Hearing Statement, page 3.

The Board ignored the law in contravention of its own precedent and that of the Court of Appeals.

There is no precedent for the Board's decision in this case, and it is contrary to the precedents of the Court of Appeals. As such, the Party in Opposition has a high likelihood of success on the merits in its appeal of the Board's decision.

In the *National Cathedral School* case, the Court of Appeals affirmed the BZA's either/or analysis:

> Specifically, the BZA found that the facility constitutes either an extension of the principal use of the school or an "accessory use." Because the Board's finding that it is an accessory use is sustainable, we need not consider whether the facility is reasonably characterized as an extension of the principle [sic] use.

Because the Court of Appeals decided the appeal on the basis of accessory use, the BZA's alternative "extension of a principal use" determination has no precedential value.

The Board's decision in this case marks an extreme departure from both Application No. 16433 and the Court of Appeals' decision affirming that case on the basis of accessory use. When considering Friends' appeal, the Court will determine (1) whether a multi-sport athletic facility more than three miles from the private educational institution it serves is consistent with the District's zoning regulations, and (2) whether a multi-sport athletic facility which will be subleased to non-

school third parties for more hours than it will be used by the educational institution is a principal educational use or is an impermissible business imposed in an R-1B zoned residential neighborhood.

Friends' appeal will have the implicit or explicit support of the Office of the Attorney General. The Court will understand that, as the Board's former counsel, the OAG has considerable expertise in interpreting the District's zoning regulations.

We hope the Board will understand that its Order will likely be overturned by the Court.

(b) Irreparable Injury Will Result if the Stay is Denied.

If the Board grants Maret's application, Maret will immediately begin construction of its multi-sports complex. As the attached affidavits demonstrate, Maret's contractors have already begun, before the issuance of a Board Order, to prepare for cutting down trees, including heritage trees, and moving other heritage trees. On March 25 and 26, there was a full scale effort by workmen to begin digging the perimeter of heritage trees to be relocated, and at least in one location erect a silt fence. The workmen doing the work explained that they were root pruning the heritage trees. Site preparation is clearly underway in anticipation of receiving zoning approval to move these stately heritage trees. The foreman pointed out all four heritage trees are to be saved. Their above-ground root ball diameters have already been marked with white paint. Trees have been pruned to conform to the root ball diameter. The foreman also stated that tree transplanting must begin immediately. [Attachment 1 - Russell Declaration; Attachment 2 - Patton Declaration; Attachment 3 - Zachary Declaration].

Tree removal is but the first step in Maret's construction project. After trees are removed, Maret's contractors will begin excavation and grading. Contractors will begin to install drainage structures to manage stormwater, prior to installing approximately 3.7 acres of artificial turf.

Maret has indicated that it plans to begin using the Field in the fall of 2023. Litigation in the Court of Appeals is not likely to be concluded before the commencement of the athletic use of the Field.

When Friends prevails in the Court of Appeals, it will be virtually impossible to undo Maret's construction. Maret cannot restore the trees or heritage trees. The heritage trees Maret will have moved cannot survive a second transplanting.

The damage to the Field will be irreparable if Maret is permitted to begin construction during the processing of the Friends' appeal.

(c) Neither the ECC, the Maret School nor the ANC Will Be Harmed by a Stay.

Although the Episcopal Center for Children is not a Party to this case, a significant portion of the public support for Maret's Off-Site Athletics Facility is based on the promise of reviving the

ECC, which has been closed for almost three years. Though not necessary to grant the stay, it is important to note that a stay will not harm ECC. ECC chose to close its school in June 2019, leaving its students to find new placements and its teachers to find new jobs. No ECC students or teachers will suffer harm if the stay is granted. The institution will also not suffer harm if the stay is granted. ECC advocated against protecting its entire campus via the historic preservation process. The campus, already subdivided, will not suffer any harm if the stay is granted.

The Maret School will not be harmed by a stay because its sports teams use the Maret school grounds and District of Columbia facilities at Jelleff and Wilson High School. Maret's rights to use Jelleff extend to 2029 and its rights to use Wilson High School athletic facilities has no termination date. Additionally, the record is clear that there are other options such as Dwight Mosley, the public, natural turf field on which Maret had a previous successful arrangement for its students to play. That arrangement lasted for 6 years. A Court of Appeals ruling will certainly come in time for Maret to begin and complete construction to begin operations on the Field well before 2029.

Importantly, if construction is not stayed and the Court of Appeals overturns the Board's Order, Maret will have spent millions of dollars to construct the multi-sports complex, to the detriment of its current and future students and parents, and will be required to spend untold millions to attempt to restore the Field to its pre-construction condition.

Although the ANC is a party to this proceeding, it has no independent interest which would be harmed by a stay.

(d) The Public Interest Favors a Stay

Friends' arguments to the ANC and to the Board raised several aspirational issues. We believe that a stay will give the District time to update its regulations to protect its citizens and the environment in which they live. Current District regulations require developers to prepare for 15-year storms. Although Maret has stated that they will prepare for 25-year storms. the District has already concluded that protection from even 25-year storms is inadequate. [Attachment 4 - Climate Ready DC]. The District is actively investigating whether and how to improve stormwater management in a future sure to see more intense storm events at more frequent intervals.

We acknowledge that the District now permits construction of artificial turf athletic fields.

But it is undisputed that every form of artificial turf contains PFAS, a carcinogen and a "forever chemical." It is undisputed that people playing on artificial turf will come in physical contact with PFAS and will breathe PFAS particles escaping from the turf. Athletes will carry PFAS particles home on their athletic shoes and clothing. Neighborhood residents will breathe PFAS. And PFAS seeping from the artificial turf will be conveyed by stormwater throughout the Rock Creek watershed to the Chesapeake Bay. On March 25, THE WASHINGTON POST published an article about restaurant chains beginning to remove PFAS from wrappings surrounding food products. [Attachment 5 - Washington Post]. Everyone except Maret (and the ANC) acknowledges the danger of PFAS. Every parent of a Maret athlete or of a child whose sports team subleases the Field is, or should be, concerned of the harm the turf could cause. The District will have to consider its current position allowing PFAS in artificial turf, in food packaging, and other aspects affecting the environment of its residents. A stay will give the District time to reconsider its approval of material containing PFAS.

The public interest would also be served by hearing from District planners about the City's long-range needs for parks and recreation facilities. Maret and its supporters have claimed they would create a "wonderful benefit" for the City by allowing their off-site athletics facility to be used some of the time by outside groups, while Maret would control access and use. Meanwhile, the City's Department of Parks and Recreation ("DPR") is engaged in a District-wide parks and recreation master planning effort, Ready2Play, and expects a draft of the plan to be made public in April. Ready2Play will: develop a 20-year vision for DPR; take a broad look at parks and recreation throughout DC; assess trends and community needs, including equity considerations; provide a blueprint for investments and improvements; and develop a roadmap of strategies and actions. Residents would benefit from this impartial assessment of parks, sports, and recreation provision. Mayor Bowser's $19.5B FY 2023 Fair Shot Budget has been characterized as "the most equitable budget in the history of the District of Columbia," and includes $13.5 million for expanded recreation," so, in the Mayor's words: "we can ensure kids in all eight wards, regardless of their families' income, can grow up with the same opportunities to play sports and enjoy the benefits of being an athlete that wealthy and middle-class children all across our country have access to." So far, discussion of the Maret ECC proposal has been dominated by private interests telling residents what is good for them.

For each of the foregoing reasons, Friends of the Field respectfully requests that the BZA stay the effectiveness of its final decision pending Friends' appeal to the Court of Appeals of the BZA's decision and Order permitting Maret to construct a multi-purpose athletic facility on land Maret leases from the Episcopal Center for Children.

BEFORE THE BOARD OF ZONING ADJUSTMENT
OF THE DISTRICT OF COLUMBIA

Application of
The Maret School BZA Case No. 20643

Declaration of Claudia Russell
In Support of Motion for a Stay

I, Claudia Russell, having been duly sworn according to law, state as follows:

1. I live at 5860 Nebraska Avenue, adjacent to the Episcopal Center for Children and its Field.

2. On March 8, 2022, a neighbor called to tell me that VIKA employees, the civil engineering firm employed by Maret to develop their plans, were in my front yard quite close to my house. The VIKA employees were attempting to trace utilities and had not requested permission to be on my property nor my neighbors at 5864 Nebraska Avenue. When I questioned the VIKA employees, they apologized for trespassing and explained that they were tracing utilities.

3. On March 18, 2022, there was tree work being done on the ECC property. I was told by a representative of Wetlands Studies and Solutions working for VIKA and Maret, that they were trimming dead branches off the heritage trees scheduled to be relocated. The workmen were there most of the day.

4. On March 25 and 26, there was a full scale effort by workmen to begin digging the perimeter of heritage trees to be relocated, and at least in one location erect a silt fence. The workmen doing the work explained that they were root pruning the heritage trees. This is clearly site preparation underway in anticipation of receiving zoning approval to move these stately heritage trees.

Respectfully submitted,

Claudia Russell

Claudia Russell

District of Columbia
Signed and sworn to before me on
April 6, 2022
by Claudia Russell

Notary Public
My commission expires 7/31/24

BRIAN COMBS
NOTARY PUBLIC
DISTRICT OF COLUMBIA
MY COMMISSION EXPIRES 07-31-2024

BEFORE THE BOARD OF ZONING ADJUSTMENT
OF THE DISTRICT OF COLUMBIA

Application of
The Maret School BZA Case No. 20643

Declaration of Carol Zachary
In Support of Motion for a Stay

I, Carol Zachary, having been duly sworn according to law, state as follows:

1. I live at 2832 Rittenhouse Street N.W, adjacent to the Episcopal Center for Children and its Field.

2. On Friday, March 25, 2022, I was listening to chain saws being revved and what sounded like something being pounded and decided to investigate what was happening behind a house at 6006 28th Sttreet adjacent to the ECC property. I received permission from the residents to cross their property to the fence between their house and the ECC lot. I saw one man digging a straight trench and two others standing by. There was a circle of white paint around the big tree right behind their property. The trench ran parallel about four feet from the fence and was about 10 inches deep and 40 feet long at that stage of excavation.

3. The workers stopped when they saw me approach. I asked them what was happening and the worker I presumed was the foreman approached. He explained that they were digging a trench to put in a wall to prevent erosion when they uproot the tree for relocation. The foreman later said "We have to do this before we dig up tree." "We have to do it now. We have to do in spring time."

Respectfully submitted,

Carol Zachary

District of Columbia
Signed and sworn to before me on
April 6, 2022
by Carol Zachary

Notary Public
My commission expires 7/31/24

BRIAN COMBS
NOTARY PUBLIC
DISTRICT OF COLUMBIA
MY COMMISSION EXPIRES 07-31-2024

BEFORE THE BOARD OF ZONING ADJUSTMENT
OF THE DISTRICT OF COLUMBIA

Application of
The Maret School BZA Case No. 20643

Declaration of David Patton
In Support of Motion for a Stay

I, David Patton, having been duly sworn according to law, state as follows:

1. I live immediately across from the east end of the Rittenhouse Street alley. I have benefitted greatly from the District's 2019 Low Impact Development project to rebuild the alley, repave 28th Street, and install new curband gutter and a bioremediation cell on the eastside of 28th Street. The project has (at least for now) eliminated basement flooding in my house, which had previously been a frequent problem. I appreciate the stormwater management benefits the alley project provides, and I'm wary that massive work on the ECC property could have unanticipated and unintended consequences.

2. I have witnessed Davey Tree and Wetlands Studies and Solutions workers on the ECC property engaged in site preparation, in anticipation of zoning approval for the Maret athletics fields project. On March 18 workers were in the heritage trees, and had a truck and chipper parked in the Utah Street alley. Men with chainsaws were trimming and removing live and dead branches from heritage trees.

3. On March 25 and 26, a crew were working at the base of one of the heritage trees at the end of the Utah Street alley. This work is on the critical path schedule for the Maret project, as shown in Wetlands' tree transplant plan.

Respectfully submitted,

David Patton

District of Columbia
Signed and sworn to before me on
Apr 6 2022
by David Patton

Notary Public
My commission expires 7/31/24

BRIAN COMBS NOTARY PUBLIC DISTRICT OF COLUMBIA COMMISSION EXPIRES 07-31-2024

ATTACHMENT 4

CLIMATE READY DC

The District of Columbia's Plan to Adapt to a Changing Climate

CLIMATE READY DC

LETTER FROM MAYOR MURIEL BOWSER

Climate change is no longer a distant threat. In order to prepare Washington, DC for the future, we can and must respond to new and substantial challenges created by climate change. Climate Ready DC is our plan for adapting to a changing climate that could bring more dangerous heatwaves, severe storms, and flooding along our rivers. For the development of this plan, we partnered with leading climate scientists to assess our vulnerabilities and identify solutions to reduce our risks. We have also listened to your ideas for how to build stronger, more resilient communities.

The good news is that we are well on our way to building a Climate Ready DC. The District's investments in expanding our tree canopy, managing stormwater, and greening our construction codes are helping us to prepare for hotter summers and heavier rains. Our programs to save energy and install solar energy are also helping to make our power system more durable.

But, we have much more work to do to ensure that all District residents are protected—in particular those who are most economically and physically vulnerable—and we cannot do it alone. Implementing our plan will involve input from residents and stakeholders in all eight wards.

Together, we can build a nation's capital that is not only climate ready, but stronger, healthier, and more resilient.

Sincerely,

Muriel Bowser
Mayor

CLIMATE READY DC

The District of Columbia's Plan to Adapt to a Changing Climate

ACKNOWLEDGMENTS

The scientific research and technical analysis conducted to support Climate Ready DC was funded by the District of Columbia Sustainable DC Innovation Fund (DOEE ID# 2013-9-OPS). Dozens of individuals from District, regional, and federal agencies and organizations provided valuable input throughout the planning process.

District of Columbia:

Department of Energy & Environment - Tommy Wells, Director

Produced in Collaboration with:

Area Research

Perkins + Will

Kleinfelder

Atmos Research and Consulting

Advisory Group Participants:

District Agencies & Instrumentalities:

DC Housing Authority

DC Water

Department of General Services

Department of Health

Department of Housing and Community Development

Department of Transportation

Department of Public Works

Deputy Mayor for Health and Human Services

Homeland Security and Emergency Management Agency

Office of Planning

Other Participants:

Georgetown Climate Center

Metropolitan Washington Council of Governments

National Capital Planning Commission

National Park Service

TABLE OF CONTENTS

FOREWORD

Introduction

Cities across the country and around the globe are recognizing their responsibility to prepare for a changing climate, and the District is no exception. In recent years, we have seen how climate change is already impacting us with record-breaking heat waves and snowstorms, flooding caused by rising sea levels and heavy rains, and the destructive 2012 derecho storm. These events are sobering reminders that without action, increasingly severe weather events will threaten to disrupt our power grid, harm our economy, and cost lives.

Recognizing the need to prepare and adapt, the Sustainable DC Plan established a goal to make the District more resilient to future climate change. Climate Ready DC is the District's strategy for achieving this goal while helping to ensure that our city continues to grow greener, healthier, and more livable. The District also remains committed to reducing our contribution to climate change by cutting our GHG emissions by 50% by 2032 and 80% by 2050.

Process

During the last two years, the Government of the District of Columbia—led by the Department of Energy & Environment (DOEE)—has been working with a team of technical experts to develop Climate Ready DC. In consultation with stakeholders from District agencies, as well as regional organizations and the federal government, the team assessed the impacts of climate change on our businesses and residents, especially those most physically and economically vulnerable during emergencies. The plan has been informed and strengthened by input from numerous community partners to ensure that the actions called for reflect the challenges, needs, and priorities of District residents in all eight wards—many of whom have already been impacted by climate change. Through community meetings, events, and an online survey, we received comments from more than 300 people and organizations on the draft plan. This final version incorporates many of those comments, and the others will be an integral part of the implementation planning process for Climate Ready DC.

It is clear from our discussions with stakeholders and the comments we received that the District must prioritize better solutions for communities that, in addition to the impacts of climate change, face fundamental challenges related to housing affordability, rising utility costs, and limited access to services and economic opportunities. Our most vulnerable residents should not only bounce back after disasters, but bounce forward. This fundamental principle is echoed by our Sustainable DC goals to advance equity and diversity. To ensure the goal of providing equitable access to services, resources, and economic opportunities remains at the forefront of this and future initiatives, DOEE will convene a group of diverse community stakeholders and city leaders to guide the equitable implementation of Climate Ready DC.

What is Climate Change Adaptation?

Climate change adaptation means being prepared for a changing climate by taking action to reduce the potential impacts of climate change to people, buildings, and infrastructure like water systems, roads and electricity, and natural gas networks.

CLIMATE CHANGE IMPACTS FOR DC

In order to plan for climate change, we first must understand the changes we are likely to experience. DOEE worked with leading climate scientists to identify likely changes for the District from today through the 2080s. The results of that study are summarized below.

The District's Climate Future

As a result of climate change, DC will experience:

- Much warmer average temperatures
- Up 2-3 times as many dangerously hot days
- Longer, hotter, and more frequent heat waves
- More frequent and intense heavy rain events
- Higher tides as a result of rising sea level

While scientists are not yet able to model the local effects of climate change on extreme weather like the 2012 derecho, the likelihood of severe storms fueled by warmer temperatures and more water in the atmosphere is expected to grow in the future.

Rising Temperatures & Heat

Rising Temperatures: Average annual temperatures have increased 2°F during the last 50 years, and are expected to continue to rise. Historically, the average summer high temperature was 87°F. This is projected to increase significantly to between 93°F and 97°F by the 2080s.

Heatwaves & Dangerously Hot Days: As average temperatures rise, extreme heat days will increase and heatwaves will last longer and occur more frequently.

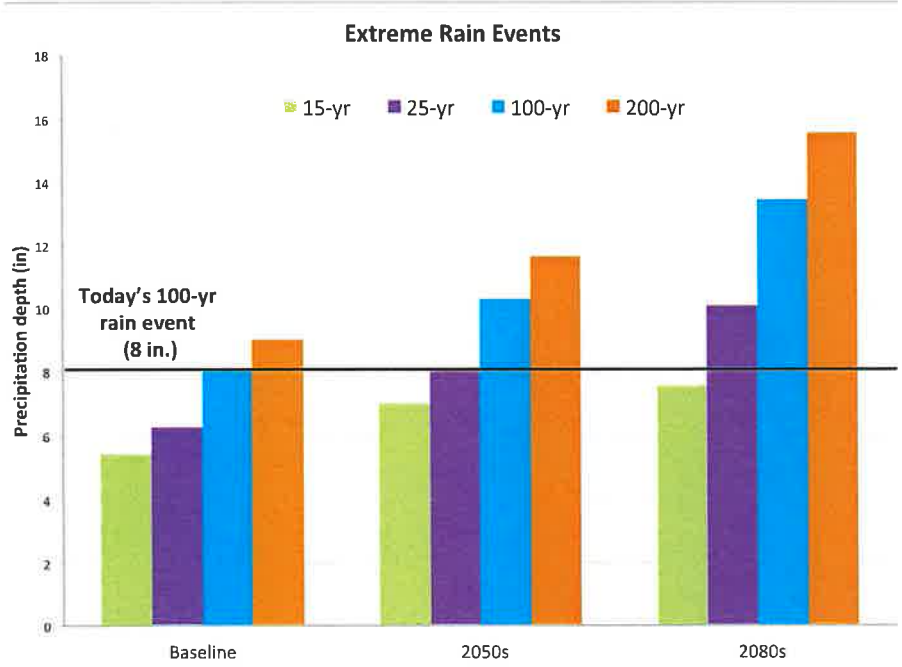
In 2012, DC experienced a record-breaking heatwave when temperatures soared above 95°F for 11 straight days. This previously unprecedented event could occur every one to two years by the 2050s.

Another important measure of heat is the heat index, which combines air temperature and humidity to measure what hot weather actually feels like to the human body. When the heat index reaches 95°F, the District activates its heat emergency plan. Historically, DC averages 30 of these dangerously hot days each year. Heat emergencies are projected to increase to 30-45 days by the 2050s, and 40-75 days by the 2080s.

Heat Emergency Days

Rainfall & Flooding

Rainfall: Annual amounts of precipitation have not changed significantly; however, more precipitation is falling in the fall and winter and less in the summer. What is expected to change significantly is the frequency and intensity of heavy precipitation events, from rain to snow, that can cause flooding and pollution from stormwater runoff. As shown in the chart, today's one in 100-year precipitation event could become a one in 25-year event by mid-century, and a one in 15-year event by the 2080s.



2006 Federal Triangle Flood

In June of 2006, the District experienced several days of heavy rain, the equivalent of a 200-year storm, which overwhelmed the sewer system and caused significant flooding of the Federal Triangle area downtown. The flooding shut down federal agencies and several Smithsonian museums, inundating the 9th and 12th Street tunnels under the National Mall, and flooding two Metro stations. The Federal Triangle flood, which resulted in millions of dollars in damage, demonstrated the potential costly impacts of increasingly frequent and severe rain events.

12th Street, NW Tunnel
Photo Credit: National Capital Planning Commission

Sea Level Rise & Storm Surge

Sea Level Rise: Over the last century, warmer oceans and melting ice due to climate change have caused sea levels to rise around the globe. This change in sea level rise poses significant risks to coastal cities and those adjacent to tidal rivers. In Washington, DC, water levels for the Potomac and Anacostia Rivers, both tidal rivers, have increased 11 inches in the past 90 years due to sea level rise and subsidence. As a result, nuisance flooding along our riverfront has increased by more than 300%, according to the National Oceanic and Atmospheric Administration. By 2080, the U.S. Army Corps of Engineers predicts up to 3.4 feet of additional sea level rise in DC. While this estimate accounts for both ice loss and ocean warming, recent studies have found faster rates of ice loss, which could result in even higher sea levels by the end of the century.

Storm Surge: DC is also vulnerable to coastal storms, like hurricanes, that cause storm surge flooding. Climate change can make these storms stronger. More intense storms coupled with rising sea levels puts the District at even greater risk for coastal flooding in the future.

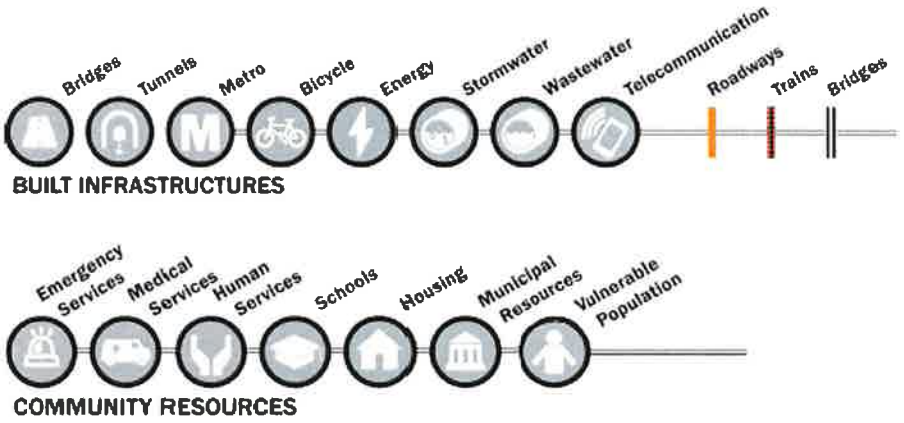
Storm Surge Map

CLIMATE RISKS AND VULNERABILITIES

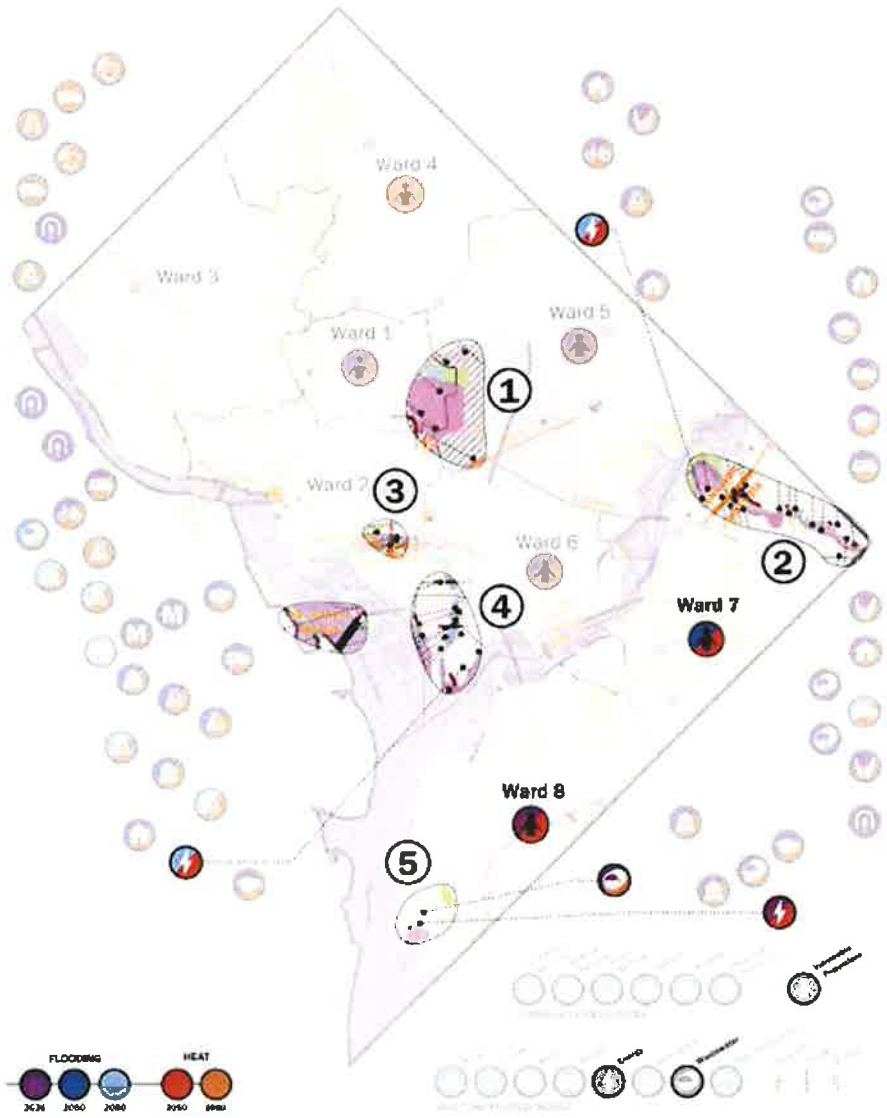
Based on the projected changes in temperature, rainfall, and sea level rise, DOEE and our technical experts conducted an assessment of the risks that these changes are likely to pose for DC's infrastructure, our community resources and facilities, and our residents. We developed planning scenarios for heat waves, heavy rain events, rising sea levels, and flooding in order to identify and rank the areas at greatest risk. The rankings were developed with input from District agencies and external stakeholders. They are based on both the probability of critical infrastructure, community resources, and other assets being exposed to a climate-related event and the potential impact of that exposure on the functionality and livability of the District. The areas with the most assets and people at risk were identified as priority areas for the implementation of Climate Ready DC.

The following section summarizes the key findings from each area of the assessment. The maps below demonstrate the projected risk extreme heat and flooding pose to the city's infrastructure and community resources in 2020, 2050 and 2080.

Scope of Vulnerability Assessment



Priority Planning Area Map



Measuring Risk

Risk is measured based on the probability of occurrence and the consequence of an impact such as flooding. For example, given the same probability of flooding, an electrical substation was considered to be at higher risk than a Capital Bikeshare station. The loss of one electrical substation would have a greater consequence as it could leave many residents and businesses without power, while the flooding of a Bikeshare station would likely impact fewer people and be easier and less expensive to repair.

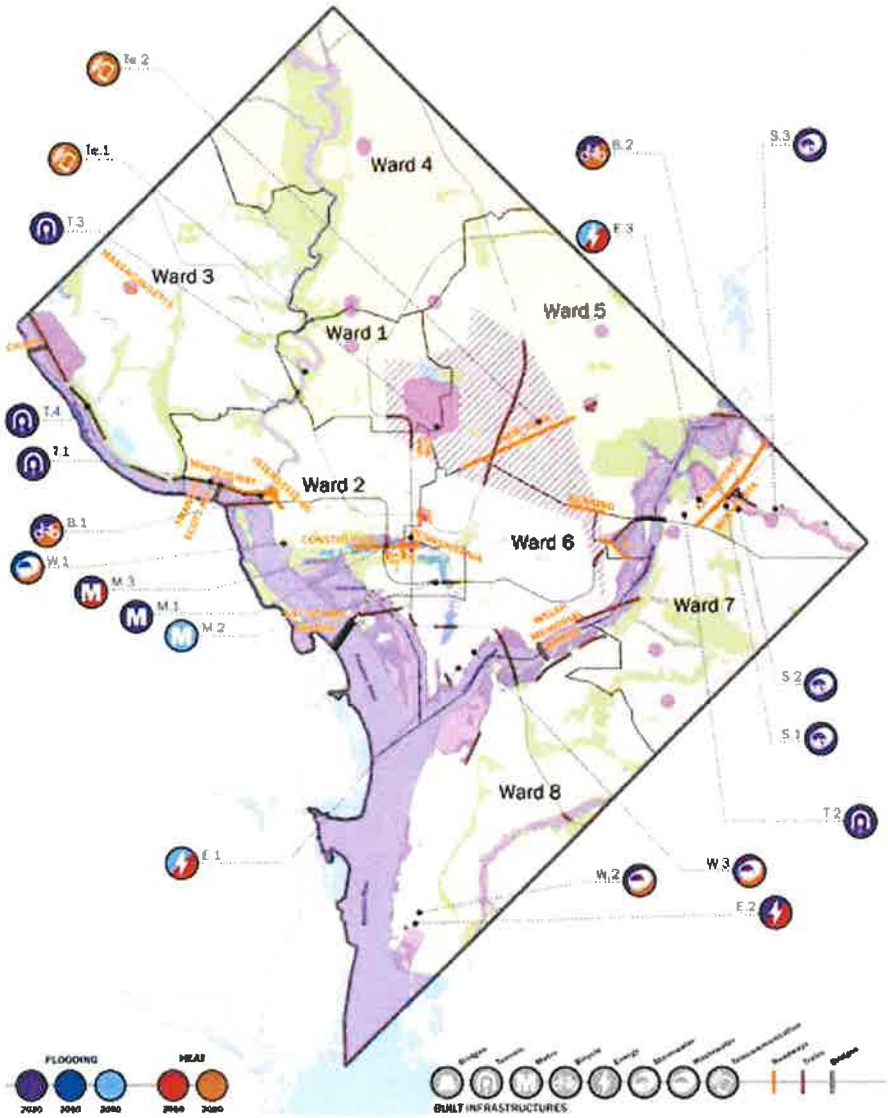
Infrastructure

The District's energy, transportation, water, and communication systems are essential to keeping the city running. The 2012 derecho—a severe storm that knocked out power in many parts of DC for several days during a record-breaking heatwave—highlighted the potential consequences of infrastructure failures on providing services. Ensuring the resilience of these systems to future changes in climate is a priority for Climate Ready DC.

The infrastructure map that follows illustrates the infrastructure assets that were identified as being at greatest risk. The key findings for each system include:

- **Transportation:** The Metrorail system is at-risk to increased heat and flooding. Several underground stations already experience regular flooding while above ground rail lines, including Metrorail, MARC, VRE and Amtrak lines, could be damaged by hotter and longer heatwaves in the future. Key bridges that span the Potomac and Anacostia Rivers and many major roadways, including several that are currently designated as emergency evacuation routes, are also at risk from flooding and sea level rise.
- **Energy:** Three of the District's 19 electric substations evaluated by the study were identified as at-risk to flooding now or in the future. Substations are essential to distributing power throughout the District.
- **Water:** Stormwater and sewer collection systems, which were designed based on historic rainfall events, will be strained by more frequent and severe rain events and potential inundation from sea level rise and coastal storms—resulting in localized flooding and increased stormwater run-off.
- **Communication:** Local cellular, TV, and radio systems were found to be only marginally impacted by climate change. However, these systems rely heavily on electrical networks, so they are also at risk when the electricity infrastructure is compromised.

Infastructure Map



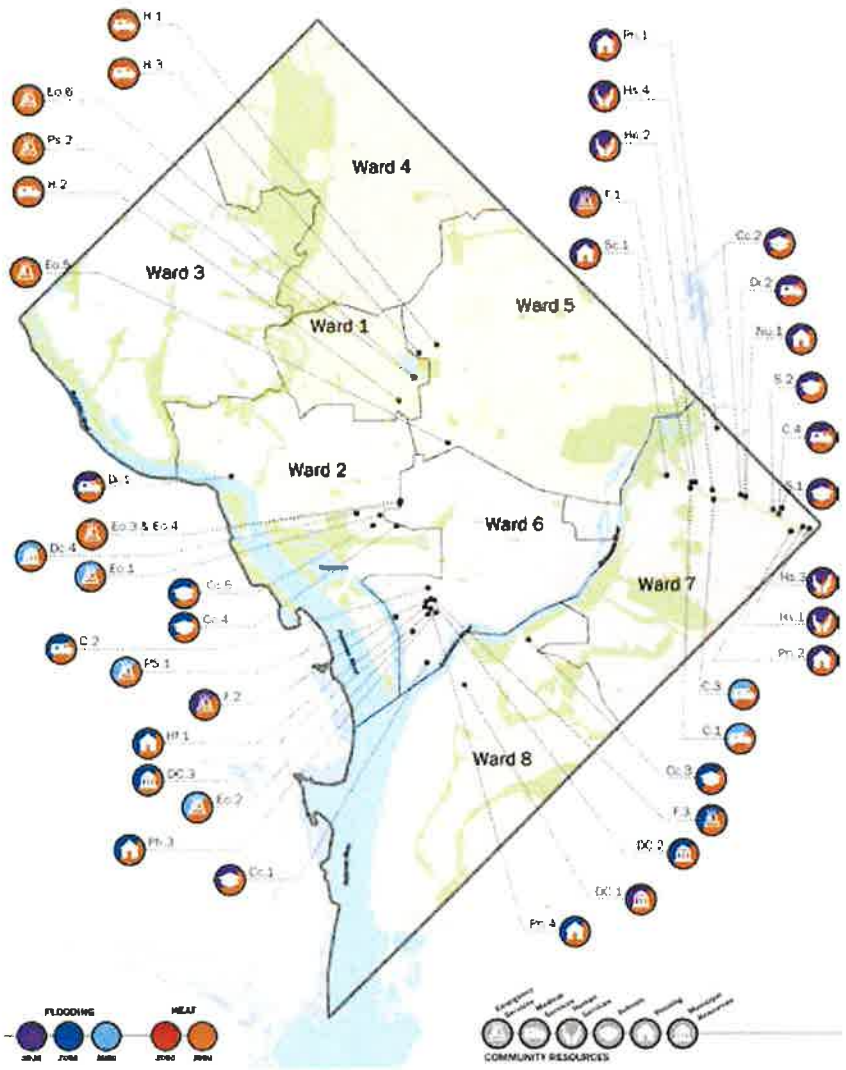
Community Resources

The District's community resources include all of the facilities that provide public services to residents, visitors, and businesses, including public safety, healthcare, and education. Many of these facilities, like schools and recreation centers, also serve as emergency shelters and cooling centers during severe weather and heatwaves.

The following Community Resources map shows the community resources at greatest risk based on their location in areas likely to be exposed to flooding. All buildings are assumed to be at risk to extreme heat by 2080 given that current building systems are designed to operate under cooler temperatures. The map shows that the at-risk community resources are concentrated in a few areas:

- **Watts Branch:** Ward 7 is home to the largest number of vulnerable community resources, including schools, medical services, and public housing located along the flood-prone Watts Branch.
- **Downtown DC:** The area around Federal Triangle is home to several District agency headquarters and operations centers that are at risk to flooding from both heavy rain events and sea level rise from the Potomac River, as demonstrated by the 2006 flood.
- **Southwest DC:** Several District agencies, public housing properties, police and fire stations, and schools located in Southwest DC are at risk from future flooding.

Community Resources Map



People

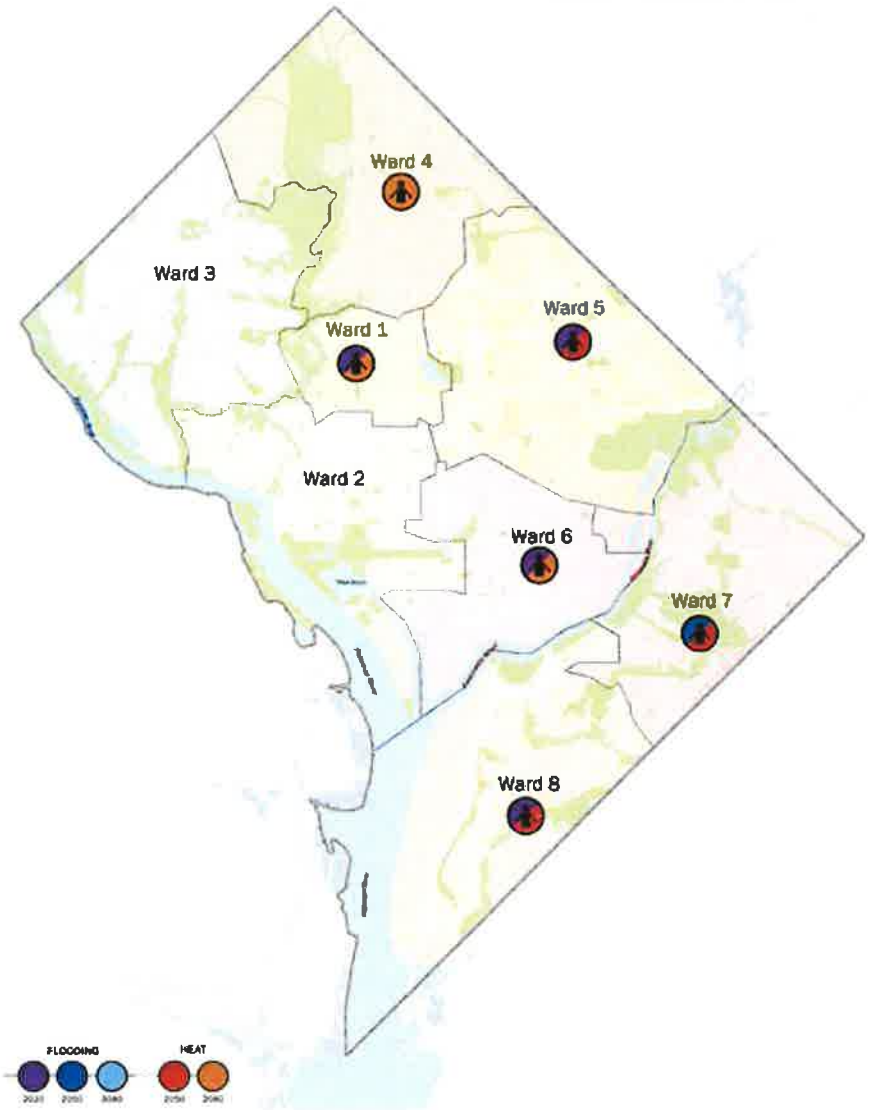
Climate change will not affect everyone equally. Individuals who are most vulnerable to climate change are those who are more sensitive to events like heatwaves and those who have less capacity to adapt and respond to the stresses caused by climate change. For example, older adults tend to be more sensitive to heat and more likely to suffer heat stroke or worse. And, an individual who can afford to install and run air-conditioning has greater capacity to adapt to heat waves than someone who cannot afford air-conditioning. In order to identify the areas of DC that include the largest number of residents with higher vulnerability, we assessed social and economic indicators, including unemployment, poverty prevalence, rates of obesity and adult asthma, and age.

The results, shown in the Vulnerable Populations map, demonstrate that vulnerability to climate change is not evenly distributed across the District. Wards 7 and 8 are most vulnerable given high levels of unemployment, poverty, obesity, and asthma, as well as a large elderly population. Moderately vulnerable wards are: 5, 6, 1, and 4.

Natural Resources

Climate change will also impact the District's natural environment, including our streams and groundwater, wildlife, and plants. A separate assessment of the vulnerability of District wildlife and habitat was completed for the 2015 District of Columbia Wildlife Action Plan (WAP). The WAP identifies the species and habitats at greatest risk to the effects of climate change and recommends climate-smart management actions for habitat restoration and protection.

Vulnerable Populations by Ward



ADAPTATION STRATEGIES

While the risks that DC faces due to climate change are significant, there are also many actions that we can take to manage those risks and adapt to our changing climate. Many of these actions are already underway.

The following section outlines the action plan for a Climate Ready DC. The plan is organized into four sectors: Transportation & Utilities, Buildings & Development, Neighborhoods & Communities, and Governance & Implementation. For each sector we have established goals, targets, and specific actions. The goals and targets are outlined in this section, and a full summary of all the actions is provided at the end of this document. A key first step in realizing Climate Ready DC will be the development of a detailed implementation plan that will identify timeframes, potential funding sources, and metrics for tracking our progress.

Transportation & Utilities

Goal: Improve transportation and utility infrastructure in order to maintain viability during periods of extreme heat, severe weather, and flooding.

Climate change will further threaten DC's aging infrastructure. The District will work with the public and private operators of our transportation, water and sewer, energy, and communication infrastructure to improve and adapt these systems to withstand the impacts of climate change in order to maintain service and recover quickly from outages. Through better planning and coordination, we can take advantage of ongoing investments and upgrades to our infrastructure to advance resilience. Climate Ready DC identifies five targets for the Transportation & Utilities section:

1. **Develop site-level adaptation plans for all critical facilities and service areas identified as at-risk from sea level rise and flooding.**

   The risk assessment conducted by the Climate Ready DC team identified numerous infrastructure assets at-risk to flooding. Site-level assessments would be necessary to identify potential flood-proofing strategies that could be incorporated into capital improvement plans. Metro and DC Water are already investing in flood-proofing several critical elements of their systems, but those efforts need to be expanded to other critical facilities and service areas.

2. **Increase the resilience of the energy infrastructure.**

   We can increase the resilience of our energy infrastructure by reducing demand for energy while also strengthening assets within our electric and natural gas distribution systems against flooding and extreme heat. Distributed energy resources like solar power, battery storage, and microgrids will be deployed to provide backup power in the event of an outage.

3. **Increase the resilience of water, stormwater, and wastewater systems.**

   By decreasing the load on and increasing the capacity of our stormwater and wastewater systems, we can prevent flooding and stormwater pollution caused by heavier rainfalls. The District is already investing heavily in both green infrastructure and traditional tunnel infrastructure to expand the capacity of these systems. We can further increase capacity by reducing demand on the drinking water system through the capture and reuse of water.

4. **Increase the resilience of communication systems.**

   The ability to communicate, especially during emergencies, is critical to providing essential services before, during, and after a disaster event. The District will work with telecommunication providers to more fully assess the vulnerabilities to our communication systems, including their dependence on the electricity grid.

5. **Increase the resilience of the transportation infrastructure.**

   The District's network of roads, bridges, and transit infrastructure keeps the city running and provides for evacuation and emergency response during extreme weather and other disruptive events. By updating design standards to account for future flooding and extreme temperatures, we can improve the resilience of these systems while identifying alternative evacuation routes for flood-prone areas.

Case Study: Green Infrastructure

DC Water, DOEE, and the District Department of Transportation (DDOT) are all working to install green infrastructure to manage stormwater. During heavy rain events, green infrastructure, such as the raingarden at DOEE's headquarters (pictured to the right), can help reduce flooding and pollution. Replacing paved surfaces with green space can also protect our neighborhoods from more extreme heat.

Photo Credit: Matt Robinson, Department of Energy & Environment

Buildings & Development

Goal: Upgrade existing buildings and design new buildings and development projects to withstand climate change impacts.

Buildings across the city, both public and private, are at risk to climate-related events, including flooding, extreme weather, and heat. We will work to upgrade our existing buildings while ensuring that new buildings, especially large development projects, are designed to be climate-ready. Climate Ready DC identifies six targets for Buildings & Development:

1. **Provide back-up power for emergencies at the most critical facilities.**

   The ability to keep the power on at critical facilities like emergency shelters, hospitals, and police and fire stations is essential to public safety during disaster events. Back-up power can be supplied by a combination of generators, solar and battery storage, and microgrids.

2. **Improve thermal safety of buildings to increase resilience to extreme heat, especially in the event of a power outage.**

   During a heat wave, buildings can become dangerously hot, especially if they are not air-conditioned or the electricity goes out. There are many strategies

for keeping buildings cooler without air conditioning, including increased ventilation, shading, and installing cool roofs. These strategies are critical to the resiliency of our buildings, particularly when air-conditioning may not be installed in a building, when air-conditioning becomes unavailable due to a power outage, or when it is unaffordable to run. The District will incorporate these strategies into its building codes and incentive programs.

3. **Pursue deep energy and water efficiency for all buildings.**

   By continuing to advance energy and water efficiency through our building codes and incentive programs, we can increase the resiliency of energy and water systems by reducing demand, especially during peak periods.

4. **Incorporate climate resilience into development planning and review.**

   We will develop resilience guidelines for new development projects, including public capital projects, to ensure new development is resilient to flooding, extreme weather, and heat, while also aligning our building and zoning codes, and other policies to support them.

5. **Leverage land-use planning to promote resilience.**

   The District's land-use plans and policies provide a powerful tool to advance resilience, especially in flood and heat prone areas. We will incorporate resilience into the District's Comprehensive Plan for land use when it is updated in 2017. We will also evaluate options to expand guidelines and restrictions for building in areas with increased risk to flooding due to climate change.

6. **Provide incentives to encourage private property owners and developers to implement flood resiliency measures.**

   In order to provide property owners with the resources to make new and existing buildings more resilient to flooding, we will explore various incentive options, including the use of nature-based flood control measures like restoring natural floodplains and creating wetlands.

Case Study: Smart Roofs

The Department of General Services (DGS) is implementing a Smart Roofs Plan that will help make our public buildings more resilient using innovative roofing solutions. DGS is installing green roofs and cool roofs to save energy and help keep buildings cool as temperatures rise, as well as investing in solar to help reduce demand on our electric grid.

Crews install a cool roof at Browne Education Campus
Photo Credit: Paul Lanning, Lightbox Energy

Neighborhoods & Communities

Goal: Make neighborhoods and communities safer and more prepared by strengthening community, social, and economic resilience.

Disaster events and emergencies can bring neighbors together to support one another. At the same time, heat waves, storms and other disruptive events do not impact all neighborhoods equally, exacerbating existing inequalities and vulnerabilities. In order to ensure that all DC neighborhoods are prepared for climate-related disasters—and can recover quickly when disasters do occur—the actions in this section focus on improving emergency preparedness and strengthening community institutions while deploying neighborhood-scale solutions to reduce climate risks.

1. **Improve emergency preparedness and planning for climate-related events with a particular focus on those most vulnerable.**

   Emergency preparedness and planning involves various District agencies as well as community institutions, organizations, and individuals. The District will encourage active participation in disaster preparedness training programs, especially for organizations that serve the most vulnerable residents. At the same time, we will continue to evaluate the public health risks of climate change and improve public awareness of those risks.

2. **Strengthen community connections and reduce the economic impacts of extreme weather to improve safety and resilience.**

   Strong, resilient communities have easy access to essential services, like food, water, medical care, and vibrant social networks that enable neighbors to help one another. Through neighborhood planning and investments, we will develop and maintain neighborhoods with a diverse mix of services, housing, and transportation options. By providing capacity-building resources and training for community organizations, we can support community-level preparedness and resiliency planning. Finally, by leveraging existing programs such as the Low Income Home Energy Assistance Program (LIHEAP), the Weatherization Assistance Program, and RiverSmart, we will reduce the economic impacts of rising utility bills on vulnerable residents.

3. **Reduce the risks of extreme heat and the urban heat island.**

   Neighborhoods with large areas of pavement and buildings, and minimal green space, will be more negatively impacted by extreme heat. We will identify and target these areas for expanding green spaces, tree planting, cool roofs and pavements. We will also evaluate our existing heat emergency plans and cooling centers to ensure they meet the needs of the most vulnerable residents, workers, and visitors.

4. **Deploy neighborhood-scale resilience solutions.**

   By leveraging ongoing planning, we will implement hyperlocal, neighborhood-scale energy efficiency and water investments, such as district energy systems and district stormwater and reuse systems, to improve grid reliability, increase building efficiency and provide services to communities. We will also explore the concept of community resilience hubs to locate emergency preparedness and response supplies and training in public and private community facilities, such as churches and community centers.

Case Study: Serve DC CERT Training

Serve DC's Community Emergency Response Team (CERT) volunteer program trains citizens to better prepare and respond to emergencies in their communities and deploys those volunteers during emergencies like snowstorms. When emergencies happen, CERT members provide critical support to first responders, offer immediate assistance to victims, and help organize volunteers at a disaster site. Through CERT training and recommendations from citywide initiatives like Age Friendly DC, we can mitigate the effects of climate change related disasters on our most vulnerable populations.

CERT Training Simulation
Photo Credit: Serve DC

Governance & Implementation

Goal: Establish the policies, structures, and monitoring and evaluation procedures to ensure successful implementation of Climate Ready DC.

The risks posed by climate change cut across various levels of government and private sectors. Therefore, considerations of climate risk must be embedded in the day-to-day operations and planning for how the District and our partners provide services and maintain the infrastructure for our residents, businesses, and visitors. The three targets identified in this section focus on establishing a measureable process for monitoring and evaluating our efforts and aligning those efforts with related initiatives within and outside the District government.

1. **Conduct additional analysis of climate vulnerability and adaptation strategies to account for the latest climate science.**

   As climate science continues to evolve, we will monitor the latest science and deepen our understanding of the potential implications for DC. We will also

provide information and support to the private sector—especially the operators of our infrastructure systems—to conduct vulnerability assessments of their own.

2. **Align Climate Ready DC with related planning efforts.**

   Climate Ready DC will be integrated into related planning efforts and processes, including the District's land-use, natural resource, hazard mitigation and emergency management planning, capital budget planning, building codes, and development review.

3. **Establish the necessary structures to ensure successful implementation of Climate Ready DC.**

   Once Climate Ready DC is finalized, we will develop a supporting implementation plan to identify lead agencies, timelines, and potential costs, benefits, and sources of funding for each of the actions. As District government action alone will not be sufficient to make DC climate ready, we will also leverage new and existing partnerships with the private sector, federal government, and regional partners.

Case Study: DC Silver Jackets 17th Street Levee

Implementing many of the Climate Ready DC solutions will require collaboration across multiple levels of government and with the private sector. The DC Silver Jackets team is helping to improve coordination across local, regional, and federal partners to reduce flood risks. The team is working to upgrade DC's levee system, including the new removable closure on 17th Street, NW near the Washington Monument.

17th Street, NW Levee Installation
Photo Credit: U.S. Army Corps of Engineers Baltimore District

★ ★ ★
CLIMATE
READY
DC

ACTION ITEMS

TIMEFRAME: Short = 1-3 yrs | Medium = 3-10 yrs | Long = 10-20 yrs

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
TRANSPORTATION + UTILITIES					
Goal: Improve the transportation and utility infrastructure to maintain viability during periods of extreme heat, severe weather and flooding.					
TU 1.0	**Develop site-level adaptation plans for all facilities and service areas identified as at-risk from sea level rise and flooding.**				
TU 1.1	Identify at-risk facilities and develop adaptation or retirement plans for those facilities, priotizing upgrades based on the age and criticality of the assets as well as their vulernability.	Sea Level Rise Flooding	HSEMA	Infrastructure owners and operators (DDOT, WMATA, DC Water, Pepco, Washington Gas, etc).	Short
TU 1.2	Conduct near-term (2020s) and long-term flooding (2050s+) evaluations for at-risk facilities based on projected increases in extreme precipitation and storm surges as well as permanent inundation due to sea level rise.	Sea Level Rise Flooding	HSEMA	Infrastructure owners and operators (DDOT, WMATA, DC Water, Pepco, Washington Gas, etc).	Short
TU 2.0	**Increase the resilience of energy systems.**				
TU 2.1	Conduct distribution system planning in order to identify the best strategies for stabilizing the power grid with distributed energy resources including storage, renewable energy and micro-grids capable of islanding. Prioritize locations that could provide backup power to critical facilities, or alleviate congestion on the distribution grid.	Extreme Heat Flooding Extreme Weather	DOEE	DC SEU, Pepco, DC PSC, Washington Gas	Long
TU 2.2	Ensure that climate risks are considered in utility rate cases for investments in new and upgraded infrastructure. Flood proof and/or elevate electric infrastructure including, but not limited to, substations, transformers, switch gear, etc.	Sea Level Rise Flooding	DC PSC	Pepco, DOEE	Medium
TU 2.3	Ensure that climate risks are considered in utility rate cases for investments in new and upgraded infrastructure. Flood proof and/or elevate natural gas infrastructure including, but not limited to, pressure regulating stations, odorization equipment, tanks, controls, electric components, etc.	Sea Level Rise Flooding	Washing-ton Gas	DC PSC, DOEE	Medium
TU 2.4	Conduct site-level studies of extreme heat risk to electric grid infrastructure including transformers and overhead transmission and distribution lines. Identify necessary upgrades and mitigation strategies.	Extreme Heat	Pepco	DC PSC, DOEE	Short-Medium

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
TU 3.0	**Increase resilience of drinking water, wastewater, and stormwater systems.**				
TU 3.1	Update design standards for water and drainage infrastructure to address the projected increase in intensity of precipitation.	Extreme Precipitation	DOEE	DDOT, DC Water	Medium
TU 3.2	Increase combined sewer and separate stormwater system capacity with green and grey infrastructure, including raingardens, green roofs, trees, cisterns, and pervious pavement. Focus first on areas that flood regularly, have steep topography, or have known drainage capacity issues.	Flooding Extreme Precipitation	DOEE	DC Water, DDOT	Long
TU 3.3	In order to prevent hazardous water pollution in the event of flooding, identify facilities with hazardous materials, hazardous wastes, and brownfield sites in flood risk areas. Work with owners to develop prevention and response plans for potential flooding risks.	Extreme Precipitation	DOEE	HSEMA, FEMS	Medium
TU 3.4	Reduce water demand and increase combined sewer system capacity with water recycling and reuse. Explore the use of distributed rainwater harvesting and grey/black water recycling to reduce demand on potable water systems during shortages or disruptions.	Extreme Heat Drought	DOEE	DC Water	Long
TU 3.5	Flood proof critical components of drinking water infrastructure including, but not limited to, pumping stations, raw water reservoirs, finished water storage, waste treatment facilities, building infrastructure, access roads, etc. Implement backflow prevention techniques.	Sea Level Rise Flooding	DC Water	USACE	Medium
TU 3.6	Flood proof critical stormwater and combined sewer infrastructure including, but not limited to, pumping stations, inlets and outlets. Implement backflow prevention techniques.	Sea Level Rise Flooding	DOEE DC Water	DDOT	Medium
TU 4.0	**Increase resilience of communication systems.**				
TU 4.1	Expand the initial findings and recommendations of this report with a comprehensive vulnerability assessment of the AM/FM, TV, cellular communication and internet systems.	All	DC PSC	OCTO, Telecom-munications Com-panies, HSEMA	Short
TU 5.0	**Increase resilience of transportation systems.**				
TU 5.1	Continue and expand efforts to mitigate flooding of the Metrorail system.	Flooding Extreme Precipitation	WMATA	DDOT, DOEE	Medium
TU 5.2	Identify alternate evacuation routes for roads and bridges identified as vulnerable to flooding and/or sea level rise.	Sea Level Rise Flooding	DDOT	HSEMA	Short
TU 5.3	Update design standards for roads and transit infrastructure to account for projected extreme temperatures and extreme precipitation events. Ensure all street tree boxes are filled and that large shade trees are planted in tree boxes where possible.	Extreme Heat Extreme Precipitation	DDOT	WMATA, Amtrak, CSX, MARC, VRE	Long
TU 5.4	Evaluate existing bridges' expansion joints and design for resilience to extreme temperatures.	Extreme Heat/ Cold	DDOT	FHWA	Medium

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
TU 5.5	Evaluate vertical clearance for bridges on waterways based on sea level rise projections.	Sea Level Rise	DDOT	FHWA	Medium
BUILDINGS + DEVELOPMENT					
Goal: Upgrade existing buildings and design new buildings and development projects to withstand climate change impacts.					
BD 6.0	**Provide back-up power for emergencies at all identified critical facilities. Ensure that existing back-up power systems are located above projected flood elevations.**				
BD 6.1	Evaluate the most critical facilities to identify those with or without existing back-up power systems; determine if they are above flood elevations, in good working order, and provide the appropriate capacity for that facility type.	All	HSEMA	DGS, DOEE	Medium
BD 6.2	Flood proof the most critical facilities to protect against future events accounting for sea level rise and increasingly severe precipitation events.	Flooding Sea Level Rise	DGS	HSEMA, DOEE	Long
BD 7.0	**Improve thermal safety + indoor building temperatures to increase resilience to extreme heat, especially in the event of a power outage.**				
BD 7.1	Incorporate recommendations/requirements for improving thermal safety in residential and building codes through the use of passive cooling strategies.	Extreme Heat	DCRA	DOEE, DOH	Short
BD 7.2	Identify existing residential building typologies (e.g. high rises, garden style) where residents are at highest-risk during extreme heat events and develop policies to support and encourage retrofits and upgrades.	Extreme Heat	DOEE	DHCD, DCHA, DCRA	Medium
BD 7.3	Expand existing incentive programs to include thermal safety and urban heat island mitigation measures such as cool roofs, solar shading, and shade trees.	Extreme Heat	DOEE	DCSEU	Short
BD 7.4	Evaluate the public housing portfolio for vulnerability to extreme heat and flooding and incorporate resilience in future capital improvement plans.	Extreme Heat Flooding Extreme Precipitation	DCHA	DOEE	Short
BD 8.0	**Pursue deep energy and water efficiency for all buildings.**				
BD 8.1	Continue to pursue energy efficiency for all commercial and residential buildings through incentive programs, building codes, and financing to increase grid stability by reducing energy demand at peak periods and during extreme events.	Extreme Heat	DCRA	DOEE, DCSEU	Short
BD 8.2	Consider developing a post occupancy energy optimization and retro-commissioning program for new and existing buildings to provide training and incentives to ensure the actual efficiency potential constructed into buildings is realized.	Extreme Heat	DOEE	DCRA, DCSEU	Medium
BD 8.3	Develop incentives, training and technical assistance programs for significant water use reductions including rainwater and greywater harvesting and onsite blackwater treatment.	Extreme Precipitation	DOEE	DC Water, DCRA, DDOT	Medium
BD 9.0	**Incorporate climate resilience into development planning and review processes.**				

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
BD 9.1	Develop climate resilience guidelines for new development projects.	All	DOEE	OP, DMPED, DCRA	Short
BD 9.2	Evaluate sequencing of agency approvals for new building development projects to determine the best point at which to incorporate flood review.	All	DCRA	DOEE, OP	Short
BD 9.3	Assess feasibility of district energy and/or micro grids and district stormwater management for all large development projects.	All	DOEE	OP, DMPED	Medium
BD 9.4	Require all planned unit developments, large tract review, and publicly financed projects to complete an adaptation checklist based on BD 9.1.	All	OP	DMPED, Zoning Commission, DDOT, OCFO, DOEE	Medium
BD 10.0	**Leverage land-use planning to promote resilience.**				
BD 10.1	Conduct a citywide analysis of flood zones to understand the impact of setbacks, buffers, and zoning and land use policies on existing and future developments.	Extreme Precipitation Sea Level Rise Flooding	DOEE	OP	Short
BD 10.2	Incorporate climate resilience into the District's Comprehensive Plan.	All	OP	DOEE, HSEMA	Short
BD 10.3	Propose amendments to floodplain regulations and zoning and land use policies to ensure that waterfront setbacks and buffers allow for future sea-level rise, changes in precipitation patterns, sustainable landscaping practices, erosion, and reduce flood risks.	Sea Level Rise Flooding	DOEE	OP, DCRA	Medium
BD 10.4	Develop a set of flood resilience guidelines for the 500-year floodplain in addition to those existing for the 100-year floodplain for new development and substantial improvements.	Sea Level Rise Flooding	DOEE	DCRA, OP	Medium
BD 10.5	Propose regulations that limit the development of new critical facilities including hospitals, emergency services, shelter facilities and critical infrastructure systems within the 500-year floodplain.	Sea Level Rise Flooding	DOEE	OP, HSEMA	Medium
BD 10.6	Identify buildings in the current 500-year floodplain and create design guidelines for retrofitting the various typologies of buildings.	Sea Level Rise Flooding	DOEE	DCRA	Medium
BD 11.0	**Provide incentives to encourage private property owners and developers to implement flood resiliency measures.**				
BD 11.1	Increase public awareness of flood risks and flood insurance. Offer rebates or grants for flood-resilience measures such as removable flood barriers, dry and wet flood proofing (for nonresidential buildings), elevation (for residential buildings) in vulnerable areas, and wastewater backup valves.	Flooding Extreme Precipitation	DOEE	HSEMA	Medium

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
BD 11.2	Explore the use of buyouts and relocation for flood-prone properties in order to minimize flooding threats to residents and to facilitate the restoration of natural floodplains, as well as to account for future sea level rise. As a first step, assess potential areas through the update of the District's All Hazard Mitigation Plan.	Flooding	DOEE	FEMA, HSEMA	Medium
BD 11.3	Explore the use of tax credits for conservation of floodplains and natural buffers, such as wetlands and riverbank tree planting, in vulnerable areas.	Flooding	DOEE	OCFO, DISB	Medium
BD 11.4	Provide guidelines and encourage developers to consider resilience measures as community benefits for planned unit developments, large tract developments, and similar projects.	All	OP	DOEE	Short
NEIGHBORHOODS + COMMUNITIES					
Goal: Make neighborhoods and communities safer and more prepared by strengthening community, social, and economic resilience.					
NC 12.0	**Improve emergency preparedness and planning with a particular focus on those most vulnerable.**				
NC 12.1	Encourage active participation by residents and businesses in disaster preparedness, response, and recovery training programs including the Community Emergency Response Team volunteer program.	All	HSEMA	Serve DC	Short
NC 12.2	Continue and expand efforts to identify and reach residents with greater vulnerability to climate change impacts including heat and flooding. Provide training to home healthcare, homeless service, and other service providers that engage directly with vulnerable residents.	All	DOH	HSEMA, Office of Aging, DHS, DOEE, ODR, DBH	Short
NC 12.3	Identify opportunities to reduce the economic impacts of severe weather and heat related events on vulnerable residents through existing programs and new partnerships to reduce utility bills and make homes more resilient.	All	DOEE	DOH, Office on Aging, DHCD	Short
NC 12.4	Evaluate health risks that are exacerbated by projected climate shifts as well as the cascading consequences of those shifts, including impacts to air quality. Provide training and capacity-building to public health officials to address increased cases of heat stress as well as the potential for increased prevelance of disease-carrying specimens and infectious diseases.	All	DOH	DOEE	Medium
NC 12.5	Improve public awareness of health risks associated with climate change, and strategies for dealing with extreme heat and natural disasters.	All	DOH	DOEE, HSEMA	Medium
NC 12.6	Create a more in-depth assessment of vulnerable populations at the neighborhood level (where they live, what their needs are) to build upon ward-level assessments completed for this study.	All	HSEMA	DOEE, DOH, OP	Short
NC 13.0	**Reduce risks of extreme heat and the urban heat island.**				
NC 13.1	Develop thermal mapping of the District to identify urban heat-island hot-spots, vulnerable residents, and areas with the greatest potential for cooling.	Extreme Heat	DOEE	OCTO	Short

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
NC 13.2	Reduce the heat-island effect and related increase in outside air temperatures with cool and living roofs, expanded green space, tree planting, and tree protection efforts, prioritizing hotspots and those areas with the greatest number of heat vulnerable residents. Incorporate heat-island mitigation into planning for green infrastructure, tree canopy, and public space initiatives.	Extreme Heat	DOEE	OP, DDOT, DPR	Medium
NC 13.3	Evaluate existing cooling centers based on location, accessibility and needs of vulnerable residents. Consider areas for pets, security, sign-language interpreters, child friendly amenities, accessible restrooms, medical assistance, back-up power, sleeping areas, drinking water, and proximity to transit.	Extreme Heat	HSEMA	DOH, DOEE	Short
NC 13.4	Evaluate and revise existing heat-emergency plan and warning system with community input. Leverage health and temperature data from past events to determine the best activation and warning thresholds. Consider implementing a tiered warning system to account for the increasing severity and duration of heat events.	Extreme Heat	DOH	HSEMA, DOEE	Medium
NC 14.0	**Strengthen community cohesion for safety and resilience.**				
NC 14.1	Assess walkability, bikeability, and public transit access in the District in order to reduce the dependence on personal cars and diversify transportation and evacuation options in the event of an emergency. Use Walk Score or Walkability Index as a tool to evaluate priority planning areas and their dependency on transit systems that may be at greater risk due to climate impacts. Prioritize improvement of walkability and connectivity to those areas as part of the update to the Comprehensive Plan.	All	DDOT	OP	Short
NC 14.2	Develop or maintain planning policies to support neighborhoods with easy access to fundamental resources including, but not limited to, a mix of food, emergency and health services, basic business services, housing types and cost ranges and community spaces such as meeting rooms, community gardens + tool share, park space, libraries and schools.	All	OP	DOH, DGS, DCPL, DHCD, DPR, DSLBD	Long
NC 14.3	Strengthen and encourage active participation in community-based organizations and expand opportunities for civic engagement and volunteerism. Provide capacity-building and training for community level emergency preparedness and resiliency planning. An example is the Evacuteer Program in New Orleans. See www.evacuteer.org.	All	DMGEO	Serve DC, HSEMA	Medium
NC 14.4	Encourage healthy lifestyles through the built environment and neighborhood planning. Apply active design to buildings. Encourage walking and biking for transportation. Provide green space that supports community activities and serves as a rain garden to capture slow precipitation runoff. Provide public spaces that encourage the community to come together to pro-actively foster a culture of resilience. Assess health profiles of priority planning areas to determine where the greatest needs are for lifestyle improvements and prioritize activities to support those areas.	All	OP	DOH	Medium
NC 14.5	Leverage climate adaptation implementation projects to advance workforce development objectives and to promote business continuity planning.	All	DOES	DOEE, DDOT, DSLBD	Medium

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
NC 15.0	**Develop eco-resilience districts and community resilience hubs.**				
NC 15.1	Leverage ongoing work with neighborhood planning to begin to implement neighborhood-scale resilience solutions including district energy and micro grids, and district stormwater and water reuse systems.	All	OP, DOEE	OP	Medium
NC 15.2	Explore the creation of Community Resilience Hubs which would locate emergency preparedness and response supplies and training in resilient community facilities, be they privately or publicly owned (e.g., churches, community centers, etc.).	All	DMGEO, HSEMA	DOH	Medium
NC 15.3	Provide technical and financial assistance to private entities that provide essential services, including universities, hospitals and affordable housing so that these entities may conduct their own risk assessments. Work with these entities to integrate their risk assessments into the larger plan for the District.	All	HSEMA	Private entities hosting critical District facilities	Medium
GOVERNANCE + IMPLEMENTATION					
Goal: Establish the policies, structures, and monitoring and evaluation procedures to ensure successful implementation of the adaptation plan.					
GI 16.0	**Conduct additional analysis of climate vulnerability and adaptation strategies based on current gaps and to account for the latest climate science.**				
GI 16.1	Develop and periodically update comprehensive flood modeling for the District that translates the projections for future sea level rise and extreme precipitation into updated flooding extents and depths for riverine, coastal, and interior flooding.	All	HSEMA	DOEE, DC Water	Short
GI 16.2	Monitor annually the current climate change science regarding impacts that were not comprehensively addressed by the climate change projections, including extreme cold, wind/storms, drought, and groundwater.	Extreme Cold Extreme Wind Drought	DOEE	HSEMA	Short
GI 16.3	Support efforts by infrastructure owners including WMATA, DC Water, Pepco, Washington Gas, and telecommunication providers to conduct more in-depth climate vulnerability assessments of their systems.	All	DOEE	HSEMA	Medium
GI 17.0	**Align Climate Ready DC with related planning efforts including hazard mitigation, comprehensive land-use, comprehensive energy, and capital budget planning.**				
GI 17.1	Incorporate long-term energy resilience planning into the five-year Comprehensive Energy Plan.	All	DOEE	OP	Short
GI 17.2	Integrate climate change adaptation into the District's Hazard Mitigation Plan and related emergency planning efforts.	All	HSEMA	DOEE	Short
GI 17.3	Develop climate change resilience guidelines for all capital projects to ensure that public facilities are resilient to extreme heat, floods, and severe weather. Incorporate climate impact assessments into the planning, design, and engineering of capital projects.	All	EOM	DOEE, DGS	Short
GI 17.4	Add resilience as an element to the Comprehensive Plan for the National Capital: District Elements.	All	OP	DOEE	Short

#	Action (sub-action)	Climate Risks	Lead (s)	Partners	Timeframe
GI 17.5	Revise engineering and building standards and codes to address climate change.	All	DCRA	DOEE	Short-Medium
GI 17.6	Engage with the Historic Preservation Review Board, Zoning Commissioning, and Public Service Commission, etc. to ensure that projects are allowed/encouraged to incorporate greater resilience during design and permitting.	All	DOEE	HPRB, Zoning Commission, PSC, NCPC, OP	Short
GI 17.7	Incorporate climate risks and adaptation strategies into natural resource and ecosystem planning, including the Wildlife Action Plan, Wetland Conservation Plan, and tree canopy planning.	All	DOEE	DDOT	Short
GI 18.0	**Establish the necessary structures to ensure successful implementation of Climate Ready DC.**				
GI 18.1	Develop a supporting implementation plan for the strategy that identifies lead agencies, timelines, and potential funding sources.	All	DOEE	OCA	Short
GI 18.2	Identify potential sources of funding and financing including emerging financing tools like green/climate bonds. Leverage existing capital budgets (for public and private infrastructure) to implement upgrades over time.	Sea Level Rise Flooding	OCFO	OCA	Short
GI 18.3	Develop a plan for monitoring and evaluation including the identification of key indicators of climate vulnerability and successful adaptation. Integrate monitoring and evaluation into existing performance management processes.	All	DOEE	OCA	Short
GI 18.4	Establish a public-private task force with key stakeholders including community organizations and infrastructure owners and operators to oversee and coordinate implementation of the plan, identify funding opportunities, and develop cross-cutting policy recommendations and design guidelines.	All	EOM	DOEE	Short
GI 18.5	Require climate change training for staff responsible for capital infrastructure and large development projects to educate them about climate risks and how to manage them.	All	EOM	DOEE	Medium
GI 18.6	Use existing cross-agency, inter-governmental, and regional networks like the DC Silver Jackets to share technical resources and best practices. Establish an ongoing best practices/lessons learned forum that brings together key representatives from each collaborating agency.	All	EOM	DOEE	Short
GI 18.7	Develop a system to regularly evaluate sea level rise and changes in the 100-year and 500-year flood plain in order to provide clear guidance to developers and regulators.	All	DOEE	OP, DCRA	Medium
GI 18.8	Incorporate health impact analysis in prioritization of transportation projects.	All	DDOT, DOH	OP, DOEE	Short

For more information and to download the complete technical reports that accompany the Climate Ready DC plan, visit doee.dc.gov/climateready.

Front Cover Photo Credits

Photo Credit: Misty Brown

Photo Credit: Pam Panchak, Pittsburgh Post-Gazette

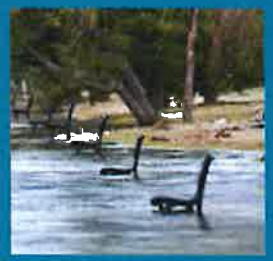


Photo Credit: John Sonderman

Photo Credit: Matt Robinson

The Washington Post *Democracy Dies in Darkness*

Major restaurant chains commit to eliminating 'forever chemicals'

Several restaurant brands react after Consumer Reports finds dangerous chemicals linked to serious health problems widespread in fast food packaging

By Laura Reiley

Yesterday at 3:03 p.m. EDT

Listen to article 4 min

Some of America's favorite restaurants have just committed to taking something off consumers' plates.

Restaurant Brands International, which owns Burger King, Tim Hortons and Popeyes, announced plans late Wednesday to phase out these chemicals in its food packaging worldwide by 2025. Chick-fil-A announced a similar commitment Wednesday evening on Twitter to phase out these chemicals in packaging by the end of this summer.

The companies' embrace of doing more to stamp out chemicals is in response to a just-published investigation by Consumer Reports that detailed how they found toxic chemicals in a majority of the food wrappers and packaging from chain restaurants and grocery stores that they tested.

These chemicals, called PFAS, short for per- and polyfluoroalkyl substances, are used in hundreds of products to make them resistant to heat, water, oil and corrosion. They are sometimes called "forever chemicals" because they are resistant to breaking down naturally in the environment and can remain in people's bodies for years. PFAS from grease-resistant food wrappers can seep into food and contaminate soil and water when packaging reaches landfills.

Consumer Reports tested multiple samples of 118 food packaging products from major restaurant and grocery chains, including paper bags for french fries and wrappers for hamburgers, as well as paper plates and molded fiber bowls for salads. The organization found PFAS chemicals in more than half of the food packages tested.

Although frequent exposure to these chemicals, even at low levels, has been linked to a growing list of health problems, including immune system suppression, lower birth weight and increased risk for some cancers, the Food and Drug Administration has not issued any guidance or set limits for the chemicals in food packaging, said Michael Hansen, senior scientist at Consumer Reports.

Denmark set a limit of 20 parts per million to protect public health, and California's ban on these chemicals in food packaging, which goes into effect in 2023, requires levels below 100 ppm.

The Environmental Protection Agency had established a standard for what it considered safe levels of PFAS in drinking water. Yet, in November, the agency began work to drastically lower their standard for PFAS considered safe in drinking water, in light of more recent studies, Hansen said.

Hansen said his bigger concern is that there are 9,000 man-made PFAS chemicals, with 660 of them commonly used in restaurants and retail, according to the EPA, but virtually no toxicity assessments for most of these chemicals.

Consumer Reports found measurable levels of PFAS chemicals in wrappers from fast-food chains such as McDonald's and Burger King, and even in packaging from companies such as Trader Joe's and Cava that promote more healthful fare.

Nathan's Famous hot dogs had products with some of the highest levels of these chemicals in paper bags used for sides. Other food wrappers with particularly high levels included a paper bag for French toast sticks or cookies at Burger King, a paper bag for cookies at Arby's, and a wrapper for a sandwich wrap at Chick fil-A.

Arby's has very few packaging materials with PFAS, said spokeswoman Rachel Russell, and is on track to have all PFAS removed from packaging products by the end of this year. Nathan's completed a package design partly to reduce PFAS, said Phil McCann, vice president of marketing. The full transition will be completed by December, he added.

Chick-fil-A has been working on eliminating these chemicals since 2018, spokeswoman Chelsea Lee said.

"Chick-fil-A has eliminated intentionally added PFAS from all newly produced packaging going forward in our supply chain. While some legacy packaging may still be in restaurants, it is expected to be phased out by the end of this summer," Lee said. "We've spent the last four years working closely with our suppliers, an independent lab and third-party validator."

In a statement to The Washington Post, Burger King's parent company said: "We are dedicated to only using ingredients and materials that are safe for guests and employees and continuously review our policies to ensure we remain good corporate citizens. The Burger King brand has required that any added perfluoroalkyl and polyfluoroalkyl substances (PFAS) be phased out from all approved, guest-facing packaging materials globally by the end of 2025 or sooner."

For consumers hoping to minimize their chemical consumption, Consumer Reports recommends transferring fast food out of its packaging when possible and not reheating food in the original packaging. They also suggest having domestic water tested for PFAS and patronizing retailers that have pledged to reduce their use of these chemicals. Previous commitments to phase out PFAS have been made by Cava, Chipotle, Freshii, McDonald's, Panera, Sweetgreen, Taco Bell and Wendy's.