Resilient DC

A Strategy to Thrive in the Face of Change

PIONEERED BY THE
ROCKEFELLER FOUNDATION

100 RESILIENT CITIES

WE ARE WASHINGTON
DC
GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Muriel Bowser
Mayor

Fellow Washingtonians:

Washington, DC is one of the strongest, most diverse, and most vibrant cities in the United States – our city's growth and our thriving local economy make me the envy of mayors around the globe. For our growth and prosperity to continue, we must make sure that we are prepared for the unexpected and are resilient in the face of change and challenges.

Cities across the country increasingly look to Washington, DC – our city, not the federal government – for leadership. Through Resilient DC, we have the opportunity to work together across disciplines to tackle 21st century challenges and create models for other cities to follow. We must vigorously address all of the challenges that we have identified – and those that may appear in the future – to ensure that DC not only survives but thrives in the face of change.

The Resilient DC strategy is the result of a nearly two-year process that developed a deeper understanding of some of DC's most important challenges and vulnerabilities. It brings together and aligns the District's major planning efforts into a coordinated strategy to accelerate action, streamline implementation, and embed equity and resilience.

A robust resilience strategy is not limited to emergency management. It must address all areas where the District faces challenges, including affordable housing, economic and social equity, environmental health, and urban mobility. These areas all play roles in strengthening our city, reducing risks, mitigating harm, and improving our ability to recover when we experience disruptions.

The District's strategy must also account for the unique challenges we face as our nation's capital, from potential acts of terrorism to government shutdowns. We recognize the federal government's outsized presence in our city, but we continue to make tremendous strides to grow and promote DC's private sector economy.

To develop Resilient DC, we took a hard look at both potential sudden shocks – like severe weather, flooding, and infrastructure failure – and chronic stresses, such as the high cost of housing, that challenge our city on a daily basis. Building a Resilient DC is about addressing both everyday issues – such as poverty and inequality – and also the infrequent, unexpected, and potentially catastrophic events that our city could face. This comprehensive approach ensures that we are not only stronger and better prepared to overcome disruptions, but also to provide benefits to our residents in the absence of disruptions.

We have a responsibility to think ahead and plan for the future. The Resilient DC strategy outlines goals with generational ambition. By examining our challenges and vulnerabilities, we will not only build a more resilient DC, but also create new opportunities for residents and ensure that every Washingtonian – whether their family has been here for five minutes or five generations – gets a fair shot.

Sincerely,

Muriel Bowser, Mayor

Michael Berkowitz
100RC President

On behalf of the entire 100 Resilient Cities team, congratulations to Mayor Bowser and to the District of Columbia on the release of *Resilient DC*, a major milestone for the District and for our partnership. Through this ambitious Resilience Strategy, the District is poised to embark on a set of initiatives that will help all Washingtonians thrive in the face of change — positioning DC as a leader for the nation and for other global cities around the world.

Resilient DC stands out in the 100RC Network as a strategy that is both comprehensive in its scope and innovative in its approach. This is a forward-thinking roadmap that addresses longstanding and persistent challenges, such as flooding, crime, and inequality, while simultaneously preparing the District for emerging and future challenges, such as the impacts of technology and growth on DC's economy and neighborhoods.

For example, we see in the Resilient Rivers Focus Area a bold and integrated approach to building resilience at the community level, setting the stage for critical investments that will yield environmental, economic, and social benefits for Washingtonians along one of the District's great treasures, the Anacostia River. In addition, the District is advancing a suite of comprehensive initiatives to preserve and increase the supply of affordable housing for residents, as well as setting forth groundbreaking support to prepare DC's workforce for the impacts of automation, expanding training opportunities while nurturing growth in promising sectors. Finally, this strategy builds upon the District's leadership in climate action, embedding and accelerating mitigation and adaptation efforts across District Agencies, partners, and communities.

This innovative strategy would not be possible without the tireless efforts of Chief Resilience Officer Kevin Bush and his team. Kevin led an inclusive engagement effort across DC's eight wards, District Agencies, and multi-sector partners. His vision and leadership, in combination with trailblazing commitment from Mayor Bowser, leave the District equipped to confront some of its most intractable resilience challenges.

As DC shifts from strategy development to implementation, we are confident that the ambitious initiatives outlined in *Resilient DC* will prepare the District to thrive no matter what shocks and stresses it may face — ensuring a more secure and vibrant future for all Washingtonians, while leading the way in the global urban resilience movement.

Sincerely,

Michael Berkowitz, President
100 Resilient Cities

Executive summary

Population growth, climate change, and digitization combined with inequality and persistent social challenges threaten the success of any city. If we become more resilient then we can strengthen our collective capacity to thrive in the face of change. Building our city's resilience is about addressing everyday disasters, like poverty and inequality, so that we can bounce back quicker from catastrophic events, like floods and infrastructure failure. This approach ensures that we're stronger and better prepared for a disaster. It also provides benefits on an everyday basis. This strategy provides a roadmap for building greater resilience in Washington, DC. It is the result of a nearly two-year process of shared

discovery that resulted in a deeper, cross-sector understanding of some of DC's most important challenges. In total, more than 100 community leaders and subject matter experts contributed, in addition to the 1,100 residents, from all eight wards, who shared their ideas for building resilience.

The Strategy is organized around three main drivers of change: economic and population growth; climate change; and technological transformation. It also includes a chapter focused on individual resilience, acknowledging that we can only become a more resilient city by addressing longstanding challenges related to health and safety.

Goal 1, Inclusive Growth, envisions a DC where all residents benefit from our continued economic and population growth, whether they have been here for five minutes or five generations. This section outlines initiatives that will show the world how to leverage growth and counter growing inequality.

Goal 3, Smarter DC, envisions a DC that embraces advancements in technology, while minimizing the negative consequences of change. This section outlines initiatives that will make DC a technology-enabled city with strong support and safeguards for its residents.

Goal 2, Climate Action, envisions a DC that is prepared for the impacts of climate change and where residents and businesses take bold action to combat its causes. This section outlines initiatives that will uphold the commitments of the Paris climate agreement and lead the country in the response to climate change.

Goal 4, Safe and Healthy Washingtonians, envisions a DC where every neighborhood is safe, our residents are strong and healthy, and all Washingtonians can thrive. This section outlines initiatives that build individual resilience for all residents by addressing disparities in health and reducing crime in all neighborhoods.

In addition, the Strategy places special emphasis on the fundamental role of equity and governance, and outlines two signature, place-based resilience building efforts that unite activities described across all four goals.

This is a tactical implementation strategy that seeks to bring together and align other major planning efforts into one coordinated strategy to accelerate action, streamline implementation, and embed equity and resilience.

Shocks and Stresses
Throughout all four goals in this strategy, we used a framework of shocks and stresses to understand DC's vulnerabilities and to prioritize initiatives.

Shocks are sudden, acute disasters, like storms, floods, heatwaves, or cyberattacks. These also include economic crises, like a government shutdown or relocation of a major employer. Stresses, on the other hand, are the slow-burning disasters that weaken our city every day, and also magnify the impact of shocks. These include the everyday impacts of poverty, trauma, and stressed transportation systems. Most of the initiatives in this strategy build resilience to numerous shocks and stresses. Some of the priority shocks and stresses addressed in Resilient DC include the following:

Government Shutdown
Washington, DC occupies a unique position as the seat of the federal government, which accounts for roughly a third of DC's workforce and owns a quarter of the land within its borders. The 35-day federal government shutdown in early 2019 negatively impacted workers across the region and illustrated the importance of continuing to diversify the economy. This strategy outlines efforts to grow the innovation economy, make DC a prime location for workers of the future, and further buttress DC from the disruptive actions of the federal government.

Strained Transportation Systems
The Washington, DC region is one of the most congested in the country. Recently, transportation systems have been strained by population growth, weather events, and aging infrastructure. This stress can sometimes result in a shock (Metro's months-long SafeTrack initiative, for example, caused disruption throughout the region). Improving transportation systems will increase our ability to respond to and recover from major disasters, while addressing everyday issues like traffic safety, economic inequality, and lengthy commutes. Therefore, this strategy outlines initiatives to make getting around DC cheaper, faster, and more convenient and people-centered.

Shortage of Affordable Housing
The District's population, at roughly 700,000 today, is expected to increase to nearly a million people by 2045. The cost of housing is projected to increase as the gap between housing supply and demand widens, and as housing prices continue to grow at a faster rate than incomes. A lack of housing can exasperate efforts to recover from a disaster if residents have nowhere to go. This strategy focuses extensively on efforts to decrease the housing cost burden and limit displacement. Doing so will increase our resilience to major disasters and help us absorb our population growth while preserving affordability for longtime residents.

Flooding
Formed along the banks of two tidal rivers, Washington, DC is a delta city. Sea level rise increases our risk of flooding along the Potomac and Anacostia rivers. Heavy rains, made more frequent and intense by climate change, can quickly overwhelm our stormwater infrastructure and cause inland flooding. With more than 66 inches of total annual rainfall, 2018 was a record-breaking year. Addressing this increased risk requires a comprehensive and holistic approach that relies on built and nature-based approaches. This strategy contains initiatives that focus on increasing our understanding of flood risk and building defenses, many of which (like green space) deliver multiple benefits.

Introduction

What is resilience?

Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and thrive no matter what kinds of chronic stresses and acute shocks they experience.

The systems in a resilient city demonstrate seven qualities, described below.

Integrative

Integrated processes bring together systems and institutions and can also catalyze additional benefits as resources are shared and actors are enabled to work together to achieve greater ends. For example, integrated city plans enable a city to deal with multidisciplinary issues like climate change, disaster risk reduction, and emergency response through coordination.

Inclusive

Inclusive processes emphasize the need for broad consultation to create a sense of shared ownership or a joint vision to build city resilience.

Integrated and inclusive relate to the processes of good governance and effective leadership which ensure that investments and actions are appropriate, address the needs of the most vulnerable, and collectively create a resilient city — for everyone.

Resourcefulness and reflectiveneess are about the ability to learn from the past and act in times of crisis.

Resourceful

Resourceful people and institutions are able to recognize alternative ways to use resources in times of crisis in order to meet their needs or achieve their goals.

Reflective

Individuals and institutions that are **reflective** use past experience to inform future decisions and will modify standards and behaviors accordingly.

Redundant

Redundancy refers to the spare capacity purposively created to accommodate disruption due to extreme pressures, surges in demand, or an external event. It includes diversity when there are multiple ways to achieve a given need. For example, energy systems that incorporate redundancy provide multiple delivery pathways that can accommodate surges in demand or disruption to supply networks.

Redundancy, robustness, and flexibility are qualities that help to conceive systems and assets that can withstand shocks and stresses as well as the willingness to use alternative strategies to facilitate rapid recovery.

Robust

Robust design is well-conceived, well-constructed, and well-managed and includes making provisions to ensure failure is predictable, safe, and not disproportionate to the cause. For example, protective infrastructure that is robust will not fail catastrophically when design thresholds are exceeded.

Flexible

Flexibility refers to the willingness and ability to adopt alternative strategies in response to changing circumstances or sudden crises. Systems can be made more flexible through introducing new technologies or knowledge, including recognizing traditional practices.

City Resilience Framework

Developed by Arup and The Rockefeller Foundation, the City Resilience Framework (CRF) provides a lens to understand the complexity of cities and the drivers that contribute to their resilience, with common language that enables cities to share knowledge and experiences.

The CRF is built on four essential dimensions of urban resilience: Health & Wellbeing; Economy & Society; Infrastructure & Environment; and Leadership & Strategy. Each dimension contains three "drivers," which reflect the actions cities can take to improve their resilience.

Health & Wellbeing

The systems that ensure everyone living and working in the city has access to what they need to survive and thrive.

Economy & Society

The social and financial systems that enable urban populations to live peacefully and act collectively.

Infrastructure & Environment

The man-made and natural systems that provide critical services, protect, and connect urban assets enabling the flow of goods, services, and knowledge.

Leadership & Strategy

The processes that promote effective leadership, inclusive decision-making, empowered stakeholders, and integrated planning.

See https://www.rockefellerfoundation.org/report/city-resilience-framework-2/ for more information on the City Resilience Framework.

Fosters Long-Term & Integrated Planning

Empowers a Broad Range of Stakeholders

Promotes Leadership & Effective Management

Leadership & Strategy

Meets Basic Needs

Supports, Livelihoods & Employment

Ensures Public Health Services

Health & Wellbeing

Promotes Cohesive & Engaged Communities

Ensures Social Stability, Security & Justice

Fosters Economic Prosperity

Economy & Society

Provides Reliable Communication & Mobility

Ensures Continuity of Critical Services

Provides & Enhances Natural & Manmade Assets

Infrastructure & Environment

A Federal District

As the capital of the United States of America, Washington, DC stands out among cities.

DC is not just a city. In fact, District Government fulfills the functions of a city, county, and state. Yet, it does not have the same rights, authority, or governance structure as states. In recent years, the District has proven its ability to govern effectively, earning some of the highest credit ratings among U.S. jurisdictions. The District of Columbia Home Rule Act of 1973, enacted by Congress and approved by DC voters, devolved some congressional powers to local government. Also called the Home Rule Charter, the Act provides for an elected Mayor and the Council of the District of Columbia, but some critical authorities are retained by Congress.

DC Government is led by the Mayor and a 13-member Council. One councilmember is elected from each of DC's eight wards, five councilmembers are elected at-large to represent all of DC, and one of the at-large members is elected as the chairperson. Under Home Rule, DC still lacks senators and voting representation in the House of Representatives. In addition, Congress has authority to review all legislation passed by the Council, and the President of the United States appoints its judges. The District now has local budget authority; however, Congress continues to approve budgets for the District's local funds. Congress largely adopts what the District passes, but sometimes adds so-called "policy riders," which legislates local issues that are not voted on by the people of the District or their representatives.

Home Rule specifically prohibits the Council from enacting laws that:

- Lend public credit for private projects;
- Impose a tax on individuals who work in DC but live elsewhere;
- Make any changes to the Heights of Buildings Act of 1910;
- Pass any law changing the composition or jurisdiction of the local courts;
- Enact a local budget that is not balanced; and
- Gain any additional authority over the National Capital Planning Commission, Washington Aqueduct, or District of Columbia National Guard.[1]

Recent intrusions into local affairs and lack of full democracy motivated the District's seventh Mayor, Muriel Bowser, to champion statehood for DC. In November 2016, 86% of DC voters supported a statehood referendum and an Admissions Act is pending in Congress.[2]
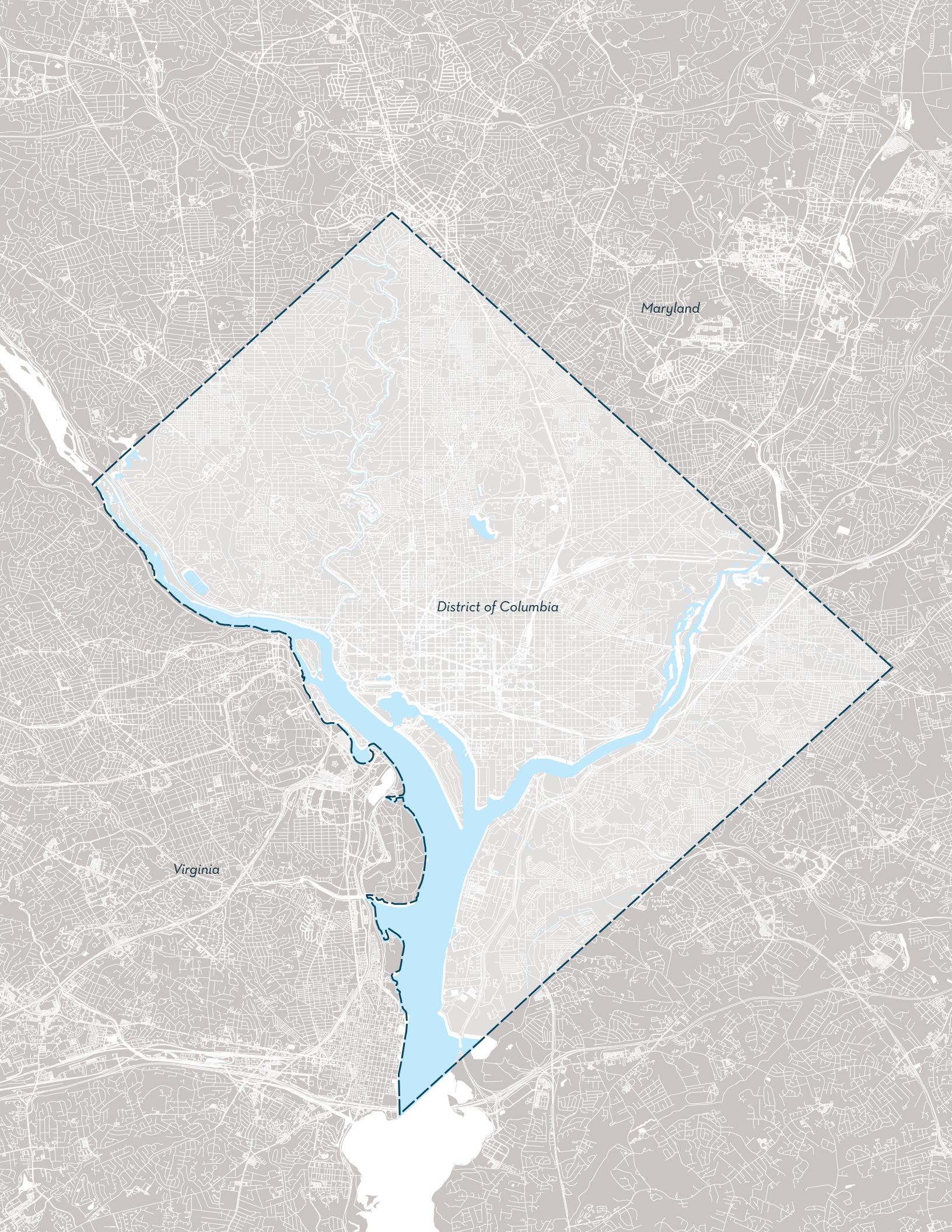
Maryland

District of Columbia

Virginia

Timeline of recent major shocks

2001

9/11

The terror attacks of September 11, 2001 exposed the District's vulnerability to a variety of shocks and stresses.
Radio and cellular communication within public safety agencies failed due to increased use, according to then-police Chief Charles Ramsey, and many city residents reported that their cell service failed. The attack led to a 3% decrease in tourism in 2002, according to the National Tour Association. The city's hotel occupancy rate fell to a decade-low of 66.7% and remained depressed through 2003.

2003

HURRICANE ISABEL

On September 18, Hurricane Isabel made landfall on the Outer Banks of North Carolina.
The storm weakened over land. During that time, Washington, DC experienced sustained winds below tropical storm force. Even still, the storm caused widespread damage in the District, downing 1,600 trees and leaving 129,000 customers temporarily without power. Storm surge also resulted in flooding in the Washington Navy Yard. In total, the storm caused $125 million in damages in 2003 dollars.

2006

FEDERAL TRIANGLE FLOODING

In 2006, DC experienced a 200-year storm event, which dropped more than six inches of rain in six hours.
As the lowest point in the city, the Federal Triangle area experienced the greatest flooding. The existing stormwater drainage infrastructure (a combined sewer system) could not handle the large volume of rainfall over such a short period and it overflowed. The storm caused up to three feet of flooding in city streets in the Federal Triangle area and flooded the 9th and 12th Street tunnels under the National Mall as well as two underground Metro stations. The flooding also caused extensive property damage, power loss, transportation delays, and infrastructure and equipment damage, costing tens of millions of dollars to repair and forcing government facilities to close for several days.[3]

2011

EARTHQUAKE

On August 23, 2011 at 1:51 p.m., an earthquake with a magnitude of 5.8 occurred along the Central Virginal Seismic Zone 5 miles from Mineral, Virginia and 84 miles southwest of the city.[5]
The shaking from this earthquake was felt as far away as New England. While the earthquake did not cause widespread damage in the city, it did highlight the vulnerabilities of certain types of building structures: a few buildings sustained minor damage and both the Washington Monument and the National Cathedral sustained major damage as a result of the earthquake.

2012

DERECHO

On June 29, 2012 — one of DC's hottest days on record, with a high of 104°F — the DC area experienced one of the most destructive thunderstorms in its history.
On the day before and morning of the derecho, the National Weather Service Storm Prediction Center was forecasting low probability of any type of severe storm. However, late in the afternoon and evening, with little to no warning, wind gusts of 60-80 mph ripped through the DC area. Thirteen people were killed, hundreds of trees were downed, and approximately 68,000 customers were without power in Washington, DC. Furthermore, DC Water urged residents to conserve water as pumps were offline and not able to refill reservoirs. Seventeen Metro stations experienced isolated power outages and third-rail electricity was knocked out on the Red Line. It took weeks to rebuild the power grid in many locations.[6]

2013

NAVY YARD SHOOTING

On the morning of Monday, September 16, 2013, a gunman entered Washington Navy Yard Building 197 and carried out the deadliest workplace mass shooting in the nation's capital.
Over the course of 69 minutes, the gunman terrorized thousands of employees, killing 12 people and wounding 14 others, including a police officer. Within minutes of the first reports of gunshots, hundreds of police and naval officers surrounded the Naval Sea Systems Command headquarters. However, communication problems among federal and local authorities complicated the search for the gunman.[7]

2016

SAFETRACK

SafeTrack was an accelerated track work plan to address safety recommendations and rehabilitate the Metrorail system to improve safety and reliability.
At the time, Metrorail operated 135 out of 168 hours per week, which left insufficient time for maintenance and other track work. Through the plan, Metrorail combined three years of track work into one year through 16 SafeTrack surges that closed or reduced capacity across the Metrorail system. These closures created widespread disruption to individuals that live and work in DC. Rail trips fell 12 percent from June through December, compared to the same period the year before. Rail trips have continued to fall even through SafeTrack was completed.

2009

METRO TRAIN COLLISION
On Monday, June 22, 2009, Washington Metropolitan Area Transit Authority (WMATA) Metrorail train 112 crashed into stationary Metrorail train 214.
The accident occurred during evening rush hour on the aboveground track on the Metrorail Red Line near the Fort Totten station in Washington, DC after the automatic train control system failed. It was later discovered that a malfunctioning electronic circuit led to the crash. The accident killed nine people, including the train operator, and injured 70 others in the deadliest accident in Metrorail's 33-year history. Emergency response agencies reported transporting 52 people to local hospitals.[4]

2010

SNOWMAGEDDON
During the winter of 2009–2010, DC was paralyzed by four of the area's largest snow events in 144 years on record:

December 20, 2009: 16.4 to 20 inches of snow fell within the District's boundaries.

February 5–6, 2010: 18 to 32 inches of snow, ranking among the top five largest snow events in 144 years on record.

February 9–10, 2010: Three straight hours of wind gusts of more than 35 mph, visibility of a quarter-mile or less, and blowing snow.

February 25–27, 2010: The city's fourth-largest snowstorm, with 17.8 inches of snow measured at Reagan National Airport.

The combined storms knocked out power to more than 140,000 Pepco customers, caused the cancelation of almost 10,000 flights in and out of the region and the closure of schools and government offices, and limited many streets to pedestrian pathways. As a result, the storms had significant impacts on the local economy.

The Restaurant Association of Metropolitan Washington highlighted six Washington-area restaurants as an example, noting that the February 2010 blizzards cost them about $400,000 — with restaurant workers losing a combined $60,000 in hourly wages.

Due to unsafe conditions for repair crews, some residents were left without power for over five days. The U.S. Office of Personnel Management said each snow day resulted in the loss of $100 million of worth of work by government employees. The District Government estimates the average cost of a fully-deployed snow removal operation at over $110,000 per shift.

2017

HEALTH CARE ACCESS EAST OF THE RIVER
In August 2017, District regulators shut down the maternity ward at United Medical Center — the only obstetrics facility in Southeast Washington — after serious care concerns, declining admissions, and financial troubles.
The city had taken over management of the hospital in 2010, following the third bankruptcy filing since its opening in 1966. For residents, the closure meant decreased access to nearby care and led to some confusion over which other hospitals would accept different levels and types of insurance coverage. It also highlighted the complicated landscape of health care in DC — even when UMC's maternity ward was open, most women in Southeast DC traveled across the District to hospitals in Northwest and Northeast to give birth. However, UMC was reportedly the only hospital providing prenatal care to "walk-ins" and was a site where women could give birth in emergencies. District officials are working on a plan to build a new hospital in Southeast DC to replace UMC.

2019

UNITED STATES FEDERAL GOVERNMENT SHUTDOWN (2013, 2018, 2018–2019)
The United States federal government has experienced three significant partial shutdowns in the past decade.
During a shutdown, "non-essential" federal employees are furloughed, while employees deemed to be "essential" work without pay. Federal wages and salaries alone account for 7.5% of the region's economy and although many federal employees receive back pay, many lower-wage contract employees do not. The District Government is able to remain open using reserve funds already approved by Congress and often assumes the expenses of some federal responsibilities within the city. However, many federal resources are unavailable during a shutdown such as museum access and payments from Medicaid and other social benefit programs.[8]

October 2013: 800,000 furloughed employees for 16 days[9]

January 2018: 692,000 furloughed employees for three days[10]

December 2018 to January 2019: +/- 800,000 furloughed employees for 35 days[11]

Learning from past work

Resilient DC is a tactical implementation strategy focused on activities that will make DC thrive in the face of change. This strategy seeks to bring together and align other major planning efforts into one coordinated strategy to accelerate action, streamline implementation, and embed equity and resilience. Here are some of the ways that the Focus Areas and Goals in *Resilient DC* align with other District planning efforts.

1 Safer, Stronger DC outlines a comprehensive public safety agenda that will bring stability, opportunity, and more services to the neighborhoods that have been hardest hit by crime. It outlines a community-based, public health approach to violence prevention that emphasizes the holistic needs of individuals and their community.

2 LIVE. LONG. DC. is the District's strategic plan to reduce opioid use and misuse and to reduce opioid-related deaths by 50 percent by 2020. It was created by a public–private working group of more than 40 stakeholders, and outlines strategies to address the opioid epidemic through prevention, treatment, and recovery support.

3 Workforce Investment Opportunity Act Unified State Plan[12] seeks to create a workforce ecosystem that is coordinated, easily accessible, customer-focused, and efficient. The plan outlines activities designed to ensure that every DC resident is ready, able, and empowered to discover and attain their fullest potential through lifelong learning, sustained employment, and economic security. This plan is required to receive federal funding for workforce development.

4 Healthy People 2020[13] sets goals, population-level health outcome objectives, and targets for the year 2020. It also recommends evidence-based strategies to improve key health outcomes for District of Columbia residents.

5 Cultural Plan seeks to strengthen arts, humanities, culture, and heritage in neighborhoods across the city by increasing cultural participation, supporting artists and talent development, stimulating cultural production, and informing decision-making.

6 DC's Economic Strategy[14] seeks to ensure DC becomes the global model for inclusive prosperity and resilience, showcasing how diversity and innovation can drive equitable economic growth. It provides an update to the last economic strategy, which was released in 2012.

7 Housing Preservation Strike Force Report[15] summarizes the conclusions of the Mayor's Housing Preservation Strike Force. These conclusions lay out an action plan to preserve the District's existing affordable housing strategy, with a special emphasis on covenants that are set to expire in 2020.

8 Consolidated Plan[16] provides an analysis of government policies, functions, and data to determine housing market conditions and affordable housing and community development needs. This five-year plan is required to receive funding from the U.S. Department of Housing and Urban Development through the Community Development Block Grant, HOME Investment Partnerships, Emergency Solutions Grant, Housing Opportunities for Persons with AIDS, and National Housing Trust Fund programs.

9 Climate Ready DC summarizes the expected impact of climate change on built infrastructure and community resources. It also outlines 77 adaptation strategies, designed to prepare the District for the impacts of climate change.

10 Clean Energy DC identifies 55 actions to reduce the city's greenhouse gas emissions by 50% of 2006 levels by 2032, and 80% of 2006 levels by 2032.

11 Sustainable DC outlines actions to make DC the healthiest, greenest, most livable city in the country. The Department of Energy and Environment released this plan in 2013 and is currently updating it.

	FOCUS AREAS			GOALS			
	Resilient Rivers	Equity in Governance		1 Inclusive Growth	2 Climate Action	3 Smarter DC	4 Safe and Healthy Washingtonians
1 SAFER, STRONGER DC		●					●
2 LIVE. LONG. DC.							●
3 WORKFORCE INNOVATION & OPPORTUNITY ACT (WIOA)				●		●	
4 DC Healthy People 2020				●			●
5 DC OP				●		●	
6 DC ECONOMIC STRATEGY	●			●	●	●	
7 HOUSING PRESERVATION STRIKE FORCE FINAL REPORT				●			
8 FIVE YEAR CONSOLIDATED PLAN				●		●	
9 CLIMATE READY DC	●	●		●	●		
10 CLEAN ENERGY DC					●		
11 SUSTAINABLE DC PLAN	●	●		●	●		●
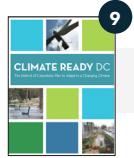
100 Resilient Cities

100 Resilient Cities (100RC) — pioneered by The Rockefeller Foundation — is a global network that helps cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of the 21st century.

In 2016, under the leadership of Mayor Muriel Bowser, Washington, DC was selected from more than 1,000 cities around the world to become part of the 100RC network.

Through its participation, DC is committed to demonstrating leadership in urban resilience and ensuring that everyone thrives in the face of change.
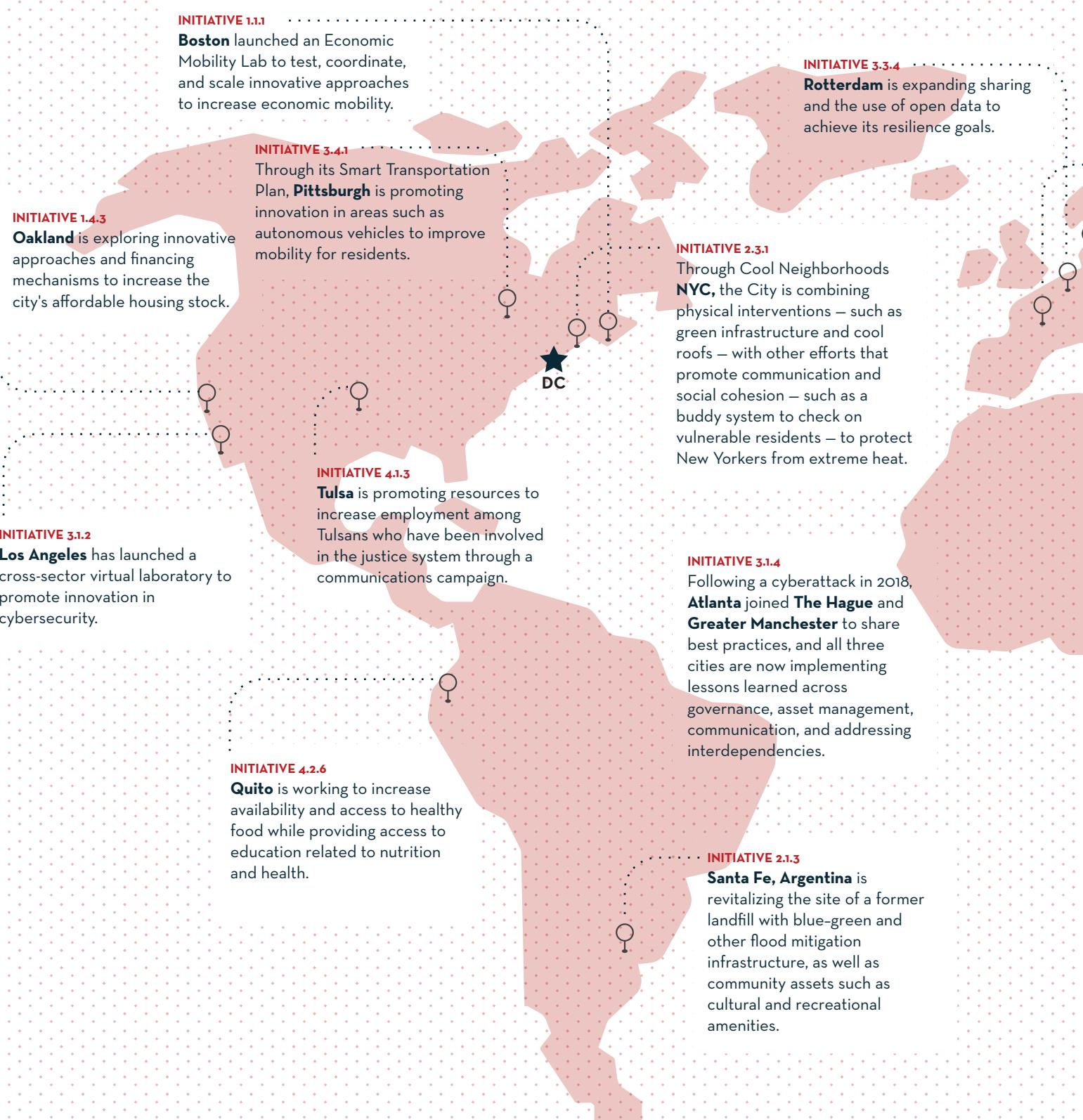
DC and 100RC view resilience as not just the shocks — floods, terrorist attacks, and other acute events — but also the stresses that weaken the fabric of a city on a day-to-day or cyclical basis, such as economic hardship or social inequality. By addressing both the shocks and the stresses in a holistic manner, DC will be better able to respond to adverse events and deliver basic functions in both good times and bad.

The 100RC program supports resilience building at the city level along four pathways.

- Financial support for the creation of a new position in the government that will lead the effort, the Chief Resilience Officer.

- Technical and logistical support for the development of a Resilience Strategy that will serve as DC's roadmap toward greater resilience.

- Access to solutions, tools, and specialized partnerships from the private, public, academic, and nonprofit sectors to help implement *Resilient DC*.

- Inclusion into a network of other cities to advance the practice of resilience globally through best practices, innovation, and peer-to-peer learning.

Inspiration from the 100 Resilient Cities Network

CITIES ACROSS THE 100RC NETWORK HAVE INSPIRED NUMEROUS INITIATIVES IN RESILIENT DC.

INITIATIVE 1.1.1
Boston launched an Economic Mobility Lab to test, coordinate, and scale innovative approaches to increase economic mobility.

INITIATIVE 3.4.1
Through its Smart Transportation Plan, **Pittsburgh** is promoting innovation in areas such as autonomous vehicles to improve mobility for residents.

INITIATIVE 3.3.4
Rotterdam is expanding sharing and the use of open data to achieve its resilience goals.

INITIATIVE 1.4.3
Oakland is exploring innovative approaches and financing mechanisms to increase the city's affordable housing stock.

INITIATIVE 2.3.1
Through Cool Neighborhoods **NYC,** the City is combining physical interventions — such as green infrastructure and cool roofs — with other efforts that promote communication and social cohesion — such as a buddy system to check on vulnerable residents — to protect New Yorkers from extreme heat.

INITIATIVE 3.1.2
Los Angeles has launched a cross-sector virtual laboratory to promote innovation in cybersecurity.

INITIATIVE 4.1.3
Tulsa is promoting resources to increase employment among Tulsans who have been involved in the justice system through a communications campaign.

INITIATIVE 3.1.4
Following a cyberattack in 2018, **Atlanta** joined **The Hague** and **Greater Manchester** to share best practices, and all three cities are now implementing lessons learned across governance, asset management, communication, and addressing interdependencies.

DC

INITIATIVE 4.2.6
Quito is working to increase availability and access to healthy food while providing access to education related to nutrition and health.

INITIATIVE 2.1.3
Santa Fe, Argentina is revitalizing the site of a former landfill with blue-green and other flood mitigation infrastructure, as well as community assets such as cultural and recreational amenities.

INITIATIVE 3.3.1

Vejle is increasing the use of smart technology across the city, starting with streetlights, to improve energy efficiency, mobility, and safety.

INITIATIVE 2.3.3

Paris is launching a citizen reserve network, in partnership with community organizations, to promote social cohesion and foster preparedness at the neighborhood level.

INITIATIVE 1.2.2

Amman is incentivizing the growth of startups, including among immigrants, through support such as co-working spaces.

INITIATIVE 2.2.1

Surat is monitoring climate trends and impacts and integrating these trends with multi-hazard risk planning through mapping, leveraging regular GIS analysis.

INITIATIVE 4.2.4

In implementing the VicHealth Mental Wellbeing Strategy, **Melbourne** is working to promote mental health among residents, particularly young people.

How this strategy was developed

This strategy is intended to be a holistic, action-oriented roadmap to accelerate work that builds DC's resilience to change. It is the product of a multi-year process of mutual discovery and dialog that involved stakeholders from multiple silos of government and sectors of society. The entire process is outlined below.

1
Forming a partnership

On February 9, 2017, Mayor Muriel Bowser joined 100 Resilient Cities and community leaders to launch DC's resilience effort at an agenda-setting workshop. The workshop brought a diverse set of stakeholders from across DC government, the private sector, nonprofits, academia, and civic groups into the planning process. The goal of the workshop was to discuss and prioritize threats the city is facing, along with resilience-building tools and plans to address those threats. This began the process of identifying priorities, actions, and metrics for the city's resilience effort. Participants also discussed their priorities for a Chief Resilience Officer (CRO) in order to inform the search for candidates. Following this event, the Mayor formed a Resilience Cabinet, made up of 17 agency directors and deputy mayors, to help guide the effort.

2
Launching *Resilient DC*

After an exhaustive search, Mayor Muriel Bowser appointed Kevin Bush as DC's first Chief Resilience Officer on July 21, 2017. Appointing a CRO is an essential element of the 100 Resilient Cities partnership. CROs from cities around the world regularly share best practices and surface innovative thinking through the 100 Resilient Cities Network. The CRO position is specifically designed to break down existing barriers, account for pre-existing work, and create partnerships that build resilience, with a particular focus on low-income and vulnerable populations. 100 Resilient Cities provided funding for this position through its partnership with DC. With the appointment of a CRO, DC began to build the foundation for its Resilience Strategy.

3
Setting a baseline

In late 2017, the DC Government began diagnostic and analytical work to assess DC's existing resilience and identify focus areas for further research and engagement. In total, *Resilient DC* consulted more than 500 individuals from government, business, nonprofit, and institutional sectors; interviewed dozens of staff members and directors from more than 15 agencies; cataloged more than 400 activities that already contribute to DC's resilience; reviewed the 25 most recent citywide plans; and gained a better understanding of DC's exposure and vulnerability to shocks and stresses. The Preliminary Resilience Assessment, completed in March 2018, summarizes that work and provides a high-level assessment of DC's threats, strengths and weaknesses, capacities, and challenges and opportunities for building greater resilience. It concluded by outlining key areas for further research and engagement. These included a focus on governance, climate action, economic mobility, technological change, equity, and the Anacostia River. The assessment was reviewed by the City Administrator, the Mayor's Resilience Cabinet, and the Commission on Climate Change and Resiliency.

Resilient DC also recognized that there has been a tremendous amount of engagement with residents over the last few years. In fact, since 2015, DC has produced more than 25 citywide strategic and policy plans. As a result, staff also analyzed the nearly 1,000 ideas identified in those plans to make sure that we are building upon prior engagement efforts.

Resilient DC assessed these ideas, both new and old, based on which would have the greatest impact in addressing DC's shocks and stresses. The 68 initiatives in this strategy reflect the final review of the Mayor's Resilience Cabinet.

4
Research and discovery

On May 21, 2018, DC convened more than 100 representatives from multiple areas of government and sectors of society to begin a process of research and discovery. At this meeting, DC formed five multi-sector working groups to better understand DC's critical issues and identify ways to increase urban resilience. During the summer, these groups volunteered their time and expertise to conduct analysis, gather best practices, and learn together. DC brought these groups together in September to present their findings and brainstorm ideas. This model of intensive community engagement allowed DC Government officials and stakeholders to learn about and explore cross-sector challenges and solutions side-by-side over the course of several months.

In late October, the Mayor's Resilience Cabinet and Commission on Climate Change and Resiliency held a joint meeting to review what the working groups had learned. This meeting, the Vision-Setting Workshop, was used to develop a vision, goals, and objectives for *Resilient DC*. That structure now serves as the outline for this strategy.

5
Collaborative idea generation and refinement

In November 2018, DC Government launched an online platform (http://www.neighborland.com) to gather ideas and solicit feedback from a variety of stakeholders across the city. More than 1,100 residents participated in this process. Through this platform, residents were able to refine and vote on which initiatives respond to DC's shocks and stresses. The online platform was organized around the vision, goals, and objectives established by the Cabinet and Commission.

In tandem with this platform, in late 2018, the District held open houses in all eight wards as well as 14 workshops with key stakeholder groups. These more traditional public engagement forums were structured to align with the online platform, and the ideas generated during the in-person meetings were subsequently added to the Neighborland site. This allowed *Resilient DC* to maximize outreach and feedback from DC residents through a variety of platforms.
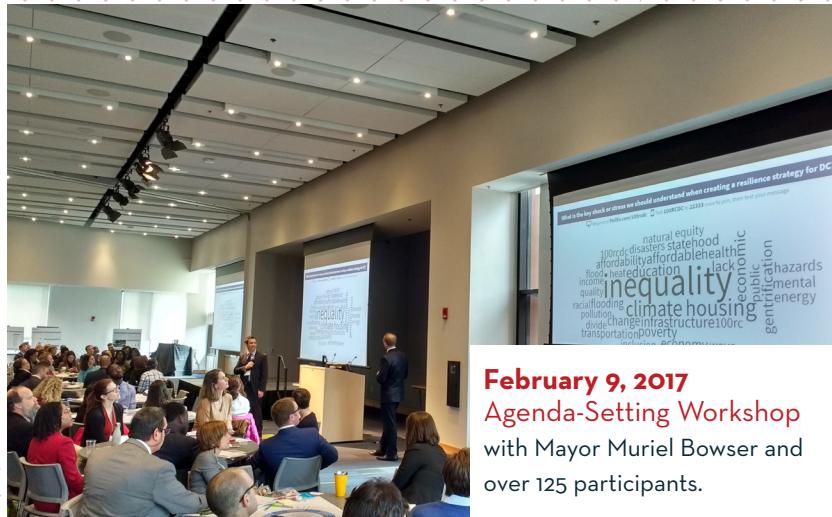
February 9, 2017
Agenda-Setting Workshop
with Mayor Muriel Bowser and
over 125 participants.

May 2016

**Washington, DC
selected to join
100RC program**

2016

2017

**Mayor formed a
Resilience Cabinet with
17 Agency directors and
Deputy Mayors**

July 21 2017 to March 2018
Setting a baseline
400 activities cataloged
25 citywide plans reviewed
500 individuals consulted
staff from over 15 agencies interviewed

March, 2018
Preliminary Resilience
Assessment completed.

May 21, 2018
Cross-sectoral convening with
100 representatives.

March, 2019
Launch of
Resilient DC

2018

2019

June to October, 2018
Research and Discovery
Vision Setting Workshops
and ideation meetings.

**December 2018 to
February 2019**
Compilation of ideas and
design of 48 initiatives for
Resilient DC.

November, 2018
Month of Engagement
Neighborland survey:
946 participants

26 Community events:
over 400 participants

8 open houses: over 200
participants

Support from 100 Resilient Cities Platform Partners

As a member of 100 Resilient Cities, Washington, DC received pro bono tools and services from several private sector and nonprofit partners to help address priority shocks and stresses and support the development of *Resilient DC*.

Deltares
Enabling Delta Life

Deltares provided technical analysis and advisory support that accelerated plans to create an integrated urban flood model that combines riverine, coastal, and rainfall flooding, as described in Initiative 2.2.1. This modeling will allow the District to understand flooding vulnerabilities more effectively and prioritize climate adaptation investments.

Neighborland

Neighborland partnered with the District to create an online portal for stakeholders and residents to provide feedback throughout the development of initiatives in *Resilient DC*, including at in-person workshops and open houses.

frog design held a workshop with District Agencies to generate new ideas for creative community engagement. The workshop helped inspire efforts to build a more inclusive and responsive government in the Equity in Governance Focus Area.

Perkins Eastman

Perkins Eastman led a design workshop with cross-sector stakeholders that explored design approaches to yield multiple benefits including mitigating flood risk, enhancing base security, connecting residents to the river, habitat restoration, and other resilience benefits at Fort McNair. The ideas generated at this workshop contributed to the Resilient Rivers Focus Area.
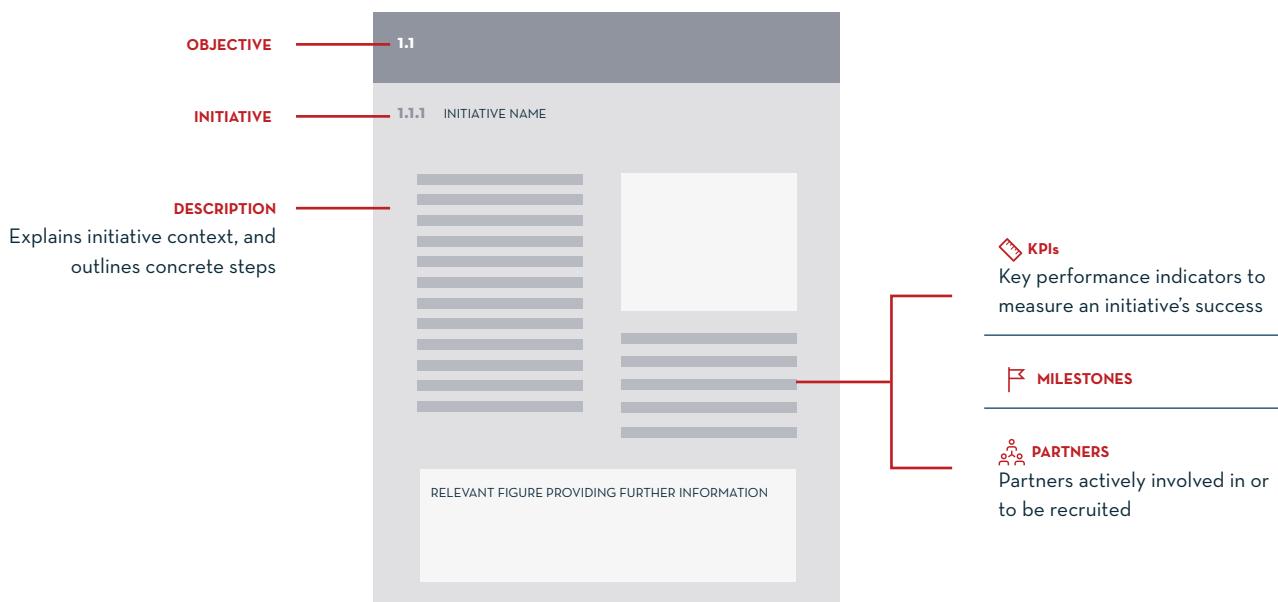
A guide to this Resilience Strategy

Resilient DC **is divided into goals, objectives, initiatives, and focus areas.**

2 focus areas that are either flagship initiatives to showcase resilience or address issues fundamental to building resilience

4 goals that set generational ambitions to thrive in the face of expected change

16 objectives that outline the work necessary to meet each of the goals

68 initiatives that are specific, coordinated efforts and commitments to adapt to and leverage change

OBJECTIVE — **1.1**

INITIATIVE — **1.1.1**   INITIATIVE NAME

DESCRIPTION
Explains initiative context, and outlines concrete steps

RELEVANT FIGURE PROVIDING FURTHER INFORMATION

KPIs
Key performance indicators to measure an initiative's success

MILESTONES

PARTNERS
Partners actively involved in or to be recruited

Implementation

The goals, objectives, initiatives, and focus areas of this strategy are informed by past efforts, analysis of current conditions, and input from stakeholders across the city. Successful implementation of this strategy must be shared by government agencies, businesses, nonprofit organizations, and residents as building resilience requires sustained, coordinated action from inside and outside of government.

Each initiative and focus area outlines successive actions, involving multiple actors, to address a specific resilience challenge. Many initiatives incorporate prior efforts and ideas, seeking to accelerate action and increase impact. Implementation of this strategy will require sustained, executive-level focus to coordinate partners and secure resources.

1

The Office of the City Administrator (OCA) will manage the implementation of this strategy. The Chief Resilience Officer will serve as a project manager and work with District agencies and external partners to overcome barriers to implementation, connect people and resources, track progress, and mitigate risks.

2

This team will provide regular reports to the City Administrator, the Mayor's Resilience Cabinet, and the Commission on Climate Change and Resiliency for oversight and tracking. In addition, the CRO will work with the Office of Budget and Performance Management to ensure that agencies' annual performance plans reflect their contribution to this work. OCA will also hold a cross-agency budget review to align resources and ensure implementation.

3

This implementation-focused structure will bridge the gap that often exists in government between planning and action. Delivery units are increasingly used by governments to provide sustained, executive-level focus on key promises made. This small team, within the Office of the City Administrator, will increase DC's capacity to delivery on key policy goals.

Vision

· · · · · · · · · · · · · · · · · ·

Thrive in the Face of Change

Strategy structure

Focus Areas

Resilient Rivers

Equity in Governance

Goals

Inclusive Growth

Climate Action

Smarter DC

Safe and Healthy Washingtonians

OBJECTIVES

1.1 Create robust pathways to the middle class and beyond

1.2 Ensure a diverse, innovative, and growing economy

1.3 Build strong, diverse communities that all residents can afford to live in

1.4 Ensure there is ample housing to accommodate growth

1.5 Make transportation cheaper, faster, and more convenient and people-centered

1.6 Close the educational achievement gap

2.1 Incorporate climate projections into land use, building regulations, and capital investment

2.2 Measure and track climate risk (exposure and vulnerability) and adaptation progress

2.3 Increase resilience to climate change at the neighborhood and household level

2.4 Invest in climate action

3.1 Improve the whole community's ability to mitigate, respond to, and recover from cyberthreats

3.2 Make DC a prime location for workers of the future and prepare for automation

3.3 Leverage new technology and big data for civic solutions

3.4 Adapt to new transportation technologies and increase mobility

4.1 Reduce crime in all neighborhoods and reverse the recent spike in homicides

4.2 Close health access and outcome gaps across all neighborhoods

Most initiatives in this strategy address multiple shocks and stresses.

FOCUS AREAS
1.1 Create robust pathways to the middle class and beyond
1.2 Ensure a diverse, innovative, and growing economy
1.3 Build strong, diverse communities that all residents can afford to live in
1.4 Ensure there is ample housing to accommodate growth
1.5 Make transportation cheaper, faster, and more convenient and people-centered
1.6 Close the educational achievement gap
2.1 Incorporate climate projections into land use, building regulations, and capital investment.
2.2 Measure and track climate risk (exposure and vulnerability) and adaptation progress
2.3 Increase resilience to climate change at the neighborhood and household level
2.4 Invest in climate action
3.1 Improve the whole community's ability to mitigate, respond to, and recover from cyberthreats
3.2 Make DC a prime location for workers of the future and prepare for automation
3.3 Leverage new technology and big data for civic solutions
3.4: Adapt to new transportation technologies and increase mobility
4.1 Reduce crime in all neighborhoods and reverse the recent spike in homicides
4.2 Close health access and outcome gaps across all neighborhoods

OBJECTIVES AND INITIATIVES

1.1.1 Create an economic mobility lab by 2023
1.1.2 Launch three place-based pathways to middle-class areas by 2023
1.1.3 Double the number of DC youth that graduate from college by 2030
1.1.4 Train 1,000 DC residents to participate in the commercial building sector by 2030
1.2.1 Build a robust innovation pipeline to support underrepresented entrepreneurs
1.2.2 Create 500 new tech businesses founded by underrepresented entrepreneurs
1.2.3 Strengthen support to weather federal government shutdowns
1.2.4 Earn an A+ in the Thumbtack Small Business Friendliness Survey by 2023
1.3.1 Support homeowners to mitigate the rising cost of living
1.3.2 Improve the condition of rental properties while protecting renters from displacement
1.3.3 Preserve existing small businesses and nonprofit organizations in DC
1.3.4 Preserve existing cultural institutions in DC
1.3.5 Strengthen pathways to homeownership for District residents
1.3.6 Activate Poplar Point and the RFK campus as places for DC residents to live and work
1.4.1 Increase the supply of market rate affordable housing units 25% by 2030
1.4.2 Preserve 100% of the existing subsidized affordable housing stock
1.4.3 Produce 12,000 new units of affordable housing by 2023
1.4.4 Secure a regional commitment to house 7 million people by 2050
1.5.1 Make transportation cheaper
1.5.2 Make transportation more convenient
1.5.3 Make transportation across DC faster
1.5.4 Make transportation more people-centered
1.6.1 Expand access and improve the quality of early childhood education in all eight wards
1.6.2 Support teachers
1.6.3 Support students and families
1.6.4 Improve school performance
2.1.1 Ensure that all new buildings are built to be climate-ready by 2032
2.1.2 Retrofit all at-risk buildings or remove them from high-risk areas by 2050
2.1.3 Invest in infrastructure that is built to last and that provides multiple benefits
2.1.4 Design climate-ready neighborhoods and developments
2.2.1 Create a tool that allows residents to understand climate risks and track adaptation progress
2.2.2 Establish DC Government-wide climate change adaptation policy, guidance, and procedures by 2023
2.2.3 Utilize the expertise of the Commission on Climate Change and Resiliency to advance the District's climate-related goals
2.2.4 Create a regional climate adaptation effort to support local action by 2023
2.3.1 Launch a data-driven campaign to significantly reduce the urban heat island
2.3.2 Increase affordability and adoption of flood insurance
2.3.3 Launch the Resilience Hubs and Resilience Corps programs by 2023
2.3.4 Pilot a microgrid on the St. Elizabeth's East campus by 2023
2.4.1 Increase the efficiency of District Government buildings 20% by 2030
2.4.2 Set up the DC Green Bank
2.4.3 Implement the Clean Energy Omnibus Act of 2018
2.4.4 Pilot new financial tools and products for resilience
3.1.1 Adopt cybersecurity best practices to improve the District Government cybersecurity posture
3.1.2 Launch a DC Cybersecurity Partnership to promote best practices by 2023
3.1.3 Launch a Cybersecurity Corps program to train the next generation of cybersecurity professionals
3.1.4 Ensure that 100% of District agencies plan for cyber threats by 2023
3.2.1 Implement new future of work protections and resources for freelance workers by 2025
3.2.2 Transition workers at risk from automation
3.2.3 Expand training opportunities, particularly in non-automatable fields
3.2.4 Promote care economy careers
3.3.1 Re-charter the Smarter DC initiative to accelerate the use of smart city technologies by 2023
3.3.2 Become a global leader of smart city innovation by 2023
3.3.3 Expand use of machine learning and prediction to target scarce resources
3.3.4 Expand and maximize the effective use of District Government data
3.4.1 Guide the deployment of new automotive technologies to maximize benefits and address challenges
3.4.2 Create a regional advanced mobility strategy
3.4.3 Reimagine public space for the future
3.4.4 Make DC the center of innovation in mobility technology and policy
4.1.1 Reverse this year's spike in homicides with precision policing targeted at illegal guns and repeat violent offenders
4.1.2 Build up the police force to 4,000 active officers by 2022, with all new officers without cars
4.1.3 Turbo charge re-entry services
4.1.4. Take over supervision of juveniles and adults from the federal government
4.2.1 Address the opioid epidemic through a roadmap with prevention strategies
4.2.2 Establish integrated neighborhood health and social services delivery systems
4.2.3 End geographic and racial gaps in infant and maternal mortality through personalized interventions to address social determinants of health
4.2.4 Provide a complete continuum of care for residents with severe mental health illness or substance abuse disorders
4.2.5 By 2022, ensure all high-risk Medicaid members are in a health home and all of Medicaid is in managed care
4.2.6 Partner with the private sector to establish grocery stores or full-service bodegas with fresh produce in every neighborhood

Cyberattack
Economic downturn
Extreme heat
Flooding

SHOCKS

Automation
Carbon pollution
Complex governance
Education and workforce gaps
Gentrification
Health disparities
Inequality
Sea level rise
Shortage of affordable housing
Strained transportation systems
Traffic injuries
Undiversified economy
Violence

STRESSES

Focus Areas

Resilient Rivers

With the release of this strategy, we are launching a Resilient Rivers program to rethink the relationship between DC's waterways and the communities that thrive along them. This program will result in infrastructure designs that achieve multiple community-informed objectives.

RECENT PROGRESS

DC's rivers are cleaner, more accessible, and healthier than they have been in decades. The progress being made along the Anacostia River stands out as an international example of river restoration and riverfront regeneration. This progress has fueled the development of several new riverfront neighborhoods, including the Capitol Riverfront and the Wharf, and will continue to increase the residents, visitors, and businesses that come to the Anacostia and Potomac rivers to live, work, and play.

As we continue to rediscover DC's 47 miles of coastline, we must also address the increased risk of flooding caused by climate change, erosion, and land subsidence. The average high tide of the Potomac and Anacostia rivers has increased by 11 inches over the past 90 years. The U.S. Army Corps of Engineers predicts another 40.8 inches of sea level rise by 2080. In addition, the National Climate Assessment predicts that the frequency and intensity of tropical storms will increase in the Mid-Atlantic. These two factors increase the risk of flooding in DC's riverfront communities.

Recognizing these challenges, we convened experts and community groups for an intense, months-long period of research, discovery, and opportunity assessment. These individuals volunteered their time and expertise to gather best practices on urban waterfront development and anti-displacement strategies, inventory public access points along the river, and more. In addition, on May 30, 2018, the Anacostia Waterfront Trust, Resilient DC, the Urban Waters Federal Partnership, and Congresswoman Eleanor Holmes Norton hosted "Equity, Resilience, and the Anacostia River Corridor: Conference and Ideas Forum." Residents, businesses, and other stakeholders came together to discuss best practices in urban parks and strategies for limiting displacement. Speakers included representatives from Atlanta and San Francisco, who spoke about their work building urban resilience. The timing of these efforts coincided with the 100-year anniversary of Anacostia National Park, the 15-year anniversary of the landmark Anacostia Waterfront Framework, and other milestones. Many of the stakeholders involved in this effort also participated in a campaign to celebrate the river through the Year of the Anacostia. Their ideas informed this initiative and are infused throughout the Resilience Strategy.

MOVING FORWARD

Building on this momentum, we will work together as government, philanthropy, and the community to make the goals and objectives of this Resilience Strategy manifest along the Anacostia River. Specifically, we will:

- Use inclusive engagement to inform the design of capital investments that do double duty — addressing the impact of climate change while providing increased community services, particularly for vulnerable riverfront communities.
- Proactively invest in anti-displacement strategies, recognizing the economic pressures that often accompany increased investment.

Through this process, we will design implementable resilient infrastructure investments, in multiple sites, that have strong community support. These measures will move beyond traditional infrastructure investments (e.g. levees) and toward layered, distributed, and systemic measures that work together toward greater resilience. Special attention will be paid to how parks, roads, and sidewalks can work together, as a system, to protect against flooding and to cool neighborhoods on hot summer days.

Anacostia River

National Arboretum

Kenilworth
Aquatic Gardens

Benning Road
Power Plant

Langston Golf Course

Kingman and
Heritage Islands Park

RFK Stadium

The Wharf

Nationals Park

Yards Park

Audi
Field

11th Street Bridge

Fort
McNair

Anacostia National Park

Hains Point

Frederick Douglass
National Historic Site

Parks

Point of interest

Pilot Locations

This place-based effort will begin in two areas: Southwest DC and the Kenilworth Park area (i.e. Mayfair, Kenilworth, Eastland Gardens, and Parkside neighborhoods). Both were identified as Priority Planning Areas in Climate Ready DC, recognizing the areas' increased vulnerability to climate change. Taken together, these two areas will showcase how an interdisciplinary approach can achieve multiple benefits for the community, with an emphasis on two of DC's greatest resilience challenges: climate and growth.

SOUTHWEST DC

Large areas of Southwest DC are at risk from several types of flooding. In this area, we will create a strategy to design, prioritize, and construct capital improvements on parklands (e.g. Randall, Lansburgh, 3rd and I Street Park, and King Greenleaf) and transportation right-of-way to manage stormwater and mitigate flood risk. This strategy will also identify and adopt Special Design Guidelines for Southwest DC, such as parks that capture and treat large amounts of stormwater. This is similar to best practices seen in Denmark, the Netherlands, Argentina, and New Orleans.

KENILWORTH PARK

The neighborhoods surrounding Kenilworth Park are some of the most at risk to flooding in DC. In addition, these neighborhoods are currently experiencing significant disparities across a variety of indicators of opportunity when compared to the District as a whole. Many plans and initiatives have recently been developed for the area, from climate equity to planned investments. Furthermore, the Kenilworth North area, which is currently owned by the National Park Service, is expected to transition to District of Columbia control in the future. Therefore, we will seize this opportunity to lead a community-centered process that aligns ongoing and planned investments to achieve community objectives and lower flood risk.

Equity in Governance

Equity is fundamental to resilience. Acute shocks, such as hurricanes and building fires, often expose long-simmering inequalities that are caused by chronic stresses. Furthermore, these stresses, left unaddressed, can be as damaging as acute shocks. Inclusive cities adopt policies that promote greater equity and help correct historical wrongs that have resulted in inequality of opportunity.

Inequality has its roots in institutional and systemic biases that intentionally and unintentionally excluded certain people based on race, ethnicity, gender identity, sexual orientation, or other aspect of identity. For example, past policies like redlining, which allowed mortgage lenders to discriminate against Black people, and the placement of sources of pollution near minority neighborhoods continues to be a source of injustice for people of color. In fact, a recent national study found that three out of four previously redlined communities continue to struggle, 80 years after they were redlined.[17]

Historically, government has been a powerful actor among societal systems that have disenfranchised entire classes of people based on their race or other aspect of identity. As government has been part of the problem, it must be part of the solution. Inclusive governments establish policies and programs that correct past injustice and empower their residents to participate, prosper, and reach their full potential.

RECENT PROGRESS

DC has long been committed to confronting and correcting the legacy of institutional bias. Recently, under the leadership of Mayor Muriel Bowser, the District has made historic investments in education and childcare, with a focus on creating "pathways to the middle class" for all residents. For example, the administration has:

- Made a $12.5 million investment in affordable, high-quality childcare.

- Increased funding for DC's traditional and charter public schools in school year 2018–19 by $94 million.

- Opened the DC Infrastructure Academy in Ward 8 to create a pipeline for residents to high-demand infrastructure jobs, with an average hourly wage of $48.75.

- Released A Fair Shot Toolkit for African American Prosperity, which includes information on DC Government-funded programs that can help individuals, families, and business owners find their pathway to economic prosperity.

MOVING FORWARD

We recognize that decades of structural and institutional racial bias has created persistent racial inequalities across a wide range of indicators of opportunity. Race should no longer be an accurate predictor of wealth, achievement, or health in Washington, DC. To achieve this, we will accelerate and make explicit efforts to eliminate racial disparities. Specifically, we will:

- Identify an appropriate partner to launch a series of community dialogues with community organizations and academic institutions, to discuss the lasting effects of historic structural racism, facilitate opportunities for conversation, learning, and healing, and surface new ideas for addressing disparities and building social cohesion.

- Train District Government employees to recognize and address bias, expanding the existing Metropolitan Police Department (MPD) program to other agencies. This ongoing training will focus on untangling racism and institutional racism, culture, equity and equality, and intentional and unintentional bias in the context of policy, programming, and engagement.

- Develop indicators measuring racial disparities across key areas and leverage these indicators to track progress annually toward advancing more equitable outcomes.

- Formally charter the existing Equity Officers Community of Practice to share best practices and coordinate activities across District Government.

Key terms

Equity is just and fair inclusion into a society in which all can participate, prosper, and reach their full potential.

Equality is a state in which everyone gets the same opportunities and experiences outcomes not dependent on race, sex, sexual orientation, or other aspects of identity.

Inclusion is the action or state of including or of being included within a group or structure. More than simply diversity and numerical representation, inclusion involves authentic and empowered participation and a true sense of belonging.

Structural racism (or structural racialization) is racial bias across institutions and society. It describes the cumulative and compounding effects of an array of factors that systematically privilege White people and disadvantage people of color. Since the word "racism" often is understood as a conscious belief, "racialization" may be a better way to describe

a process that does not require intentionality. Race equity expert John A. Powell writes: " 'Racialization' connotes a process rather than a static event. It underscores the fluid and dynamic nature of race... 'Structural racialization' is a set of processes that may generate disparities or depress life outcomes without any racist actors."

Institutional racism is racial inequity within institutions and systems of power, such as places of employment, government agencies, and social services. It can take the form of unfair policies and practices, discriminatory treatment, and inequitable opportunities and outcomes. A school system that concentrates people of color in the most overcrowded and under-resourced schools with the least qualified teachers compared to the educational opportunities of White students is an example of institutional racism.

We will also build a more inclusive and responsive government that establishes a robust feedback loop between engagement and decision-making to deliver more equitable outcomes for all DC residents. Through this effort, we will:

- Centralize initiation, review, approval, and oversight of strategic and policy plans within the Executive Office of the Mayor.
- Create a consolidated application for all individual benefits and programs.
- Outline a shared framework and approval process for strategic and policy plans that focus on interagency alignment and resource allocation (e.g. budget and performance).
- Seek to align employee performance plans with agency performance plans.
- Create a public engagement community of practice and professionalize engagement across DC Government via guidance, training, and standard operating procedures.

Goals

Goal 1: Inclusive Growth

We envision a DC where all residents benefit from our continued economic and population growth, whether they have been here for five minutes or five generations. With the initiatives outlined below, DC will show the world how to counter growing inequality and address historical inequities.

During the past several years, DC has experienced robust economic growth; however, this growth has not benefited residents equally. Existing inequalities, much of it due to the country's legacy of structural racism, are pronounced along racial and geographic lines. At the same time, DC's population is growing and its demographics are changing. Many neighborhoods are experiencing dramatic changes in population size, household income, educational attainment, and racial makeup.

What we know

The city's population will grow to 987,000 by 2045 (an increase of 29.6% from 2015)[18] and the region's population will grow to 6,876,000 by 2045 (an increase of 28.0% from 2015).

Population

2045

2015

The region will face a shortfall of 690,000 housing units by 2045, a 20% increase from the 575,000 currently needed to close the housing gap.[19]
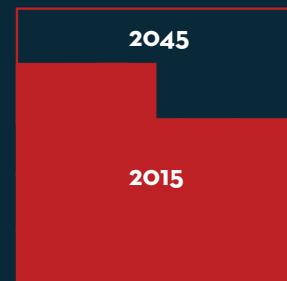
Housing shortfall

2045

2015

Our Vision

To grow average household net worth and eliminate disparities by race

Existing net worth inequality, much of it due to the country's legacy of structural racism, has widened and is pronounced along racial and geographic lines. In 2013 and 2014, Black households had an average net worth of $3,500 while White households had an average net worth of $284,000.[20] This contrast is attributed mainly to lower home values, higher rates of unemployment, lower median incomes, and a long history of barriers to wealth building.

Wealth creation including both income generation and asset building — while breaking the social structures that created the disparities — will be important ways that residents grow their net worth.

To shrink income inequality

Today, the average household income of the top 5% of income earners is 520% higher than the bottom 20%, placing DC's income gap among the top five among the largest U.S. cities.[21] Income inequality rankings list DC as having the second highest income inequality among the 100 most populous U.S. cities from 2014 to 2016.[22] Creating pathways to the middle class, investing in education, and supporting the underrepresented will contribute to closing the income inequality gap.

To decrease housing cost burden

DC's population is growing and its demographics are changing. Many neighborhoods are experiencing dramatic changes in population size, household income, educational attainment, and racial makeup. In addition, rents are growing faster than incomes: from 2002 to 2013, the middle 20% of incomes increased on average 9% compared to an average 44% increase for rent.[23] For the bottom 20% of incomes, incomes have grown 0% while rent has increased 14%.[24] This gap makes it unsustainable for many residents to continue living in their homes.

NET WORTH
By race (2013 & 2014)
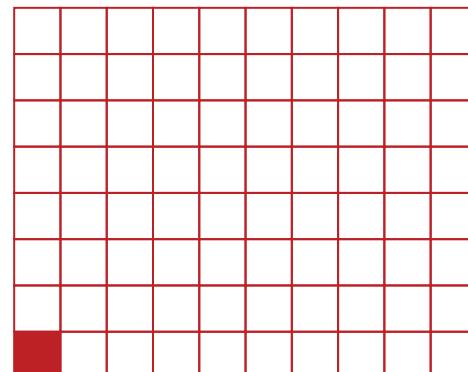
$3,500
Black households

$284,000
White households

Kijakazi, Kilolo, Rachel Marie Brooks Atkins, Mark Paul, Anne Price, William A. Darity, Jr. and Darrick Hamilton. "The Color of Wealth in the Nation's Capital." Urban Institute. November 1, 2016. Accessed April 14, 2019. https://www.urban.org/research/publication/color-wealth-nations-capital.

A survey conducted by DC Government revealed that Black residents are about three times as likely to be at risk of becoming residentially unstable.[25] Residential instability (past and future moves due to costs, better conditions, more space, or missed payments) is associated with poorer educational and health outcomes, lower community cohesiveness, and poverty.

Building strong and affordable neighborhoods to accommodate growth and resist displacement will contribute to reducing residents' housing cost burden.

INCREASE IN INCOME VS. RENT
(2002 to 2013)

Middle 20% of incomes

Bottom 20% of incomes

| 9% Income increase | 44% Rent increase | 0% Income increase | 14% Rent increase |

Rivers, Wes. "Going, Going, Gone: DC's Vanishing Affordable Housing." Fiscal Policy Institute. March 12, 2015. Accessed April 14, 2019. https://www.dcfpi.org/wp-content/uploads/2015/03/Going-Going-Gone-Rent-Burden-Final-3-6-15format-v2-3-10-15.pdf.

To equip DC youth with the skills and qualifications required for high-paying jobs

DC experiences a striking difference in educational attainment, which in turn is reflected in job opportunities. In 2015, White adults were four times more likely than Black adults to hold a bachelor's degree or higher.[26] That same year, 60% of jobs required a bachelor's degree or higher, while 40% of DC adults did not qualify for these jobs.[27] Investing in education and increasing access to opportunities will respond to the need to align educational attainment with jobs.

To improve the small business climate

DC, like many major U.S. cities, has a high cost of doing business. Office rent and labor costs are the main driving forces behind this cost in DC. Compared to the surrounding area, DC has a higher cost of doing business due primarily to labor, energy, and tax costs.[28] Tax costs, in particular, are much higher than the surrounding area. However, compared to peer cities (New York City, Boston, San Francisco), DC has lower costs of doing business.[29] Despite high business costs and a complex regulatory environment, DC is considered small-business friendly relative to peer cities. While DC is home to significant growth companies and a strong growth equity ecosystem, it lags in startup density and availability of capital for startups. Stimulating a diverse and innovative economy while protecting underrepresented business owners will contribute to supporting small businesses.

1.1

Create robust pathways to the middle class and beyond

1.1.1

Create an economic mobility lab by 2023

Economic mobility is the ability of an individual or family to change their economic status (moving from poverty to the middle class, for example). Research has shown that one's ability to climb the economic ladder is dependent on many factors beyond traditional workforce development programs. Each year, the District Government invests millions of dollars in programs to provide pathways up the economic ladder, yet too many residents still experience poverty. Recognizing this, in 2015, Mayor Muriel Bowser outlined goals for creating pathways to the middle class for residents in all eight wards. These included investments in education, public safety, economic opportunities, and more. Going forward, we will create an economic mobility lab to accelerate these efforts by investing in evidence-based approaches that reduce poverty and increase economic mobility. By learning from research, gathering new evidence, and investing in what works, the District will coordinate and expand proven programs that increase economic opportunity for residents. Through this initiative we will:

- Convene local experts and practitioners to define economic mobility in DC and gather data on poverty and poverty reduction programs.

- Create a research scientist position charged with evaluating poverty reduction programs, proposing new approaches, and evaluating them to see what works.

- Prioritize job training programs that specifically target hard-to-employ, chronically unemployed, and/or geographically isolated residents.

KPIs
- # of programs evaluated
- Rank-rank slope coefficient (a measure of intergenerational mobility)
- $ invested in programs that have been proven to increase mobility
- Research scientist position created

PARTNERS
DOES, WIC, OCA/Lab@DC, DOEE, OSSE

Areas with concentrations of
single-parent households

**Family
structure**

**Social
networks**

Lower
test scores

Income
inequality

Lack of support from
friends and family

Less
expenditure

Shrinking
schools

School quality

Smaller
middle class

**Upward Economic
Mobility Barriers**

Segregation

Racial
segregation

Long commute
times

Income
segregation
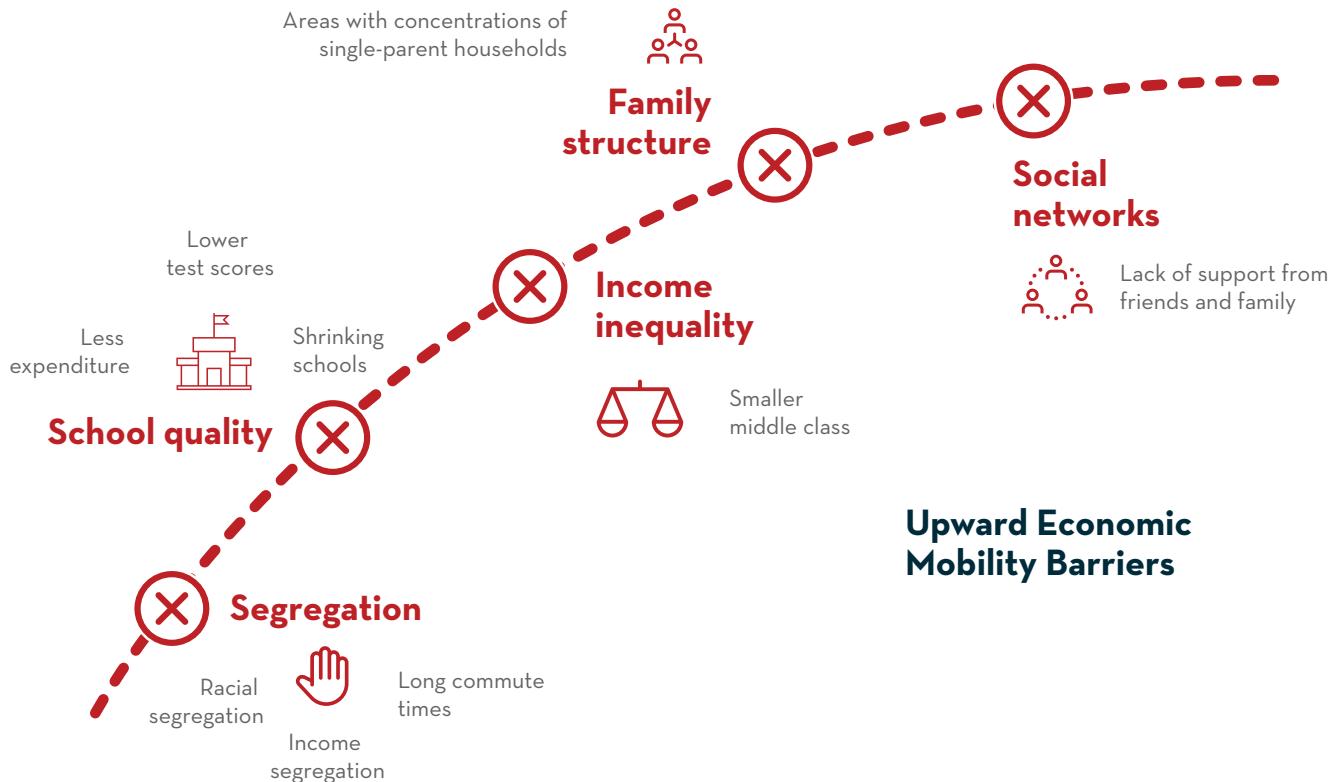
**The probability that a child born in the bottom quintile
of the income ladder reaches the top quintile[1]**

In the US   **7.5%**
In DC   **11%**

Climbing the rungs of the economic ladder[2]

top quintile   **26%**

4th quintile   **24%**

middle quintile   **21%**

2nd quintile   **18%**

bottom quintile   **12%**

**29%
remain below
the middle**

Percent Distribution of Households Within Income Quintile

1 Chetty, Raj, and Nathaniel Hendren. "The
  Impacts of Neighborhoods on Intergenerational
  Mobility I: Childhood Exposure Effects." The
  Quarterly Journal of Economics133, no. 3 (2018):
  1107-162. doi:10.1093/qje/qjy007.

2 U.S. Census Bureau. Current Population Survey.
  2018 Annual Social and Economic Supplement.
  *Percent Distribution of Households, by Selected
  Characteristics Within Income Quintile in 2017.*
  Accessed April 2019. https://www.census.gov/
  data/tables/time-series/demo/income-poverty/
  cps-hinc/hinc-05.html..

1.1.2

Launch three place-based pathways to middle-class areas by 2023

Neighborhoods have been shown to shape a child's opportunity for economic mobility.[30] Opportunity Zones were created by the federal government to provide tax incentives for investments in new businesses and commercial projects in low-income communities. District Government has a limited ability to influence these private investments; however, collective impact approaches have been shown to bring people together in a structured way to achieve shared goals. Collective impact approaches involve various partners developing shared outcomes, committing to track and report on those outcomes, and working together to achieve them. By creating a high-profile, place-based approach, we can ensure that communities get the most out of this new federal government program. Therefore, through this initiative we will:

- Identify 3 of the 25 Census Tracts in Wards 7 and 8 certified as Opportunity Zones to pilot a place-based effort to increase economic mobility using a collective impact approach.

- Work with residents and businesses in the identified Census Tracts to co-create a shared vision for their communities. Then, we will work with local nonprofits to develop key shared outcomes around economic mobility.

- Convene regular meetings with government, nonprofits, and private companies to track and report the identified outcomes in each Census Tract.

◇ **KPIs**
- # of shared, community-supported outcomes tracked
- # of organizations and individuals participating
- $ of private capital invested in designated Opportunity Zones

⚲ **PARTNERS**   DMPED, OP, DOEE, DCPS, OSSE

Opportunity Zone Program

Investors receive tax benefits for long-term investments in Opportunity Zones for new amenities such as:

Fresh food grocery stores
Affordable housing
Small businesses
Job creation

Available resources:

Tax credits
Microloan programs
Grants
Training programs
Etc.

Collective Impact

Common agenda
Collectively define the problem and create a shared vision to solve it.

Shared measurements
Agree to track progress in the same way and continuously improve.

Strong backbone
Build a team dedicated to the work of the group.

Coordinated activities
Ensure activities are mutually reinforcing.

Continuous communication
Build trust and relationships among all participants.

Adapted from collectiveimpactforum.org

1.1.3   ## Double the number of DC youth that graduate from college by 2030

Although roughly 100,000 students[31] are enrolled in one of DC's colleges and universities each year, most of these students[32] move from outside of Washington, DC to attend college. A college education provides one of the strongest pathways to economic security, yet too few students are graduating from college. In 2015, District officials estimated that 56% of students who graduated from high school in 2008 did not finish college within six years.[33] There are two affordable options for DC's college-bound youth: the University of the District of Columbia (the only public institution of higher education in DC) and the District of Columbia Tuition Assistance Grant (which is intended to offset out-of-state tuition). Through this initiative, we will invest in both in-state and out-of-state pathways to higher education. In addition, we will:

- Use evidence-based approaches to increase the number of DC students that apply to college and use the DC Tuition Assistance Grant.

- Invest in critical capital improvements, including a renovation of the Van Ness Campus, at the University of the District of Columbia to drive improved academic outcomes.

- Identify barriers to full-time study (e.g. housing, textbook, and transportation costs) at the University of the District of Columbia.

KPIs
- # of graduates from UDC
- % increase in funding for UDC
- % of eligible students receiving DC Tuition Assistance Grants

PARTNERS   DME, OSSE, UDC, OCA

Top ten universities in DC by total enrollment

University of the District of Columbia has the highest enrollment of students from DC (86%), followed by Trinity Washington (60%) and Strayer University - DC (45%). The remaining universities enroll 2% or less students from DC.

Enrollment from DC
- 45% or higher
- 2% or less

George Washington University
♂ 27,973

Georgetown University
♂ 19,005

Uni. of the District of Columbia
♂ 4,247

Gallaudet ♂ 1,578

American University
♂ 13,858

Howard University
♂ 9,392

Trinity Washington
♂ 1,964

Catholic University of America
♂ 6,023

National Defense University
♂ 1,022

Strayer University - DC
♂ 959

College Navigator - National Center for Education Statistics. Accessed April 14, 2019. https://nces.ed.gov/collegenavigator.

1.1.4
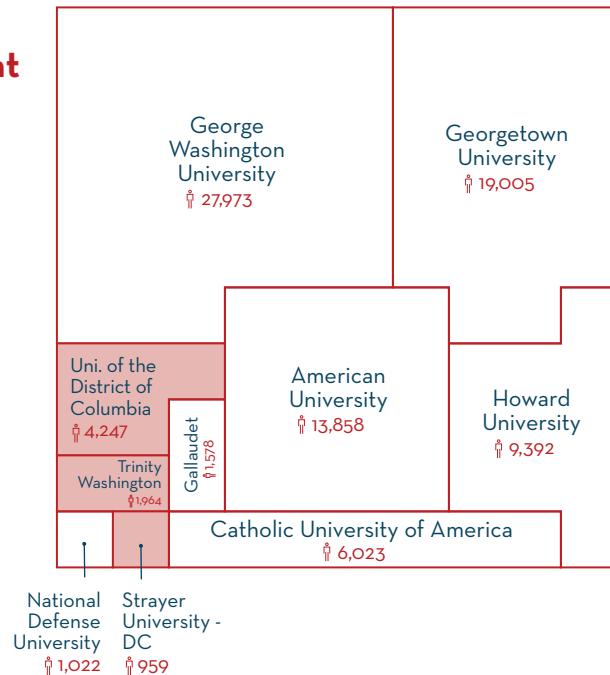
Train 1,000 DC residents to participate in the commercial building sector by 2030

The building industry in Washington, DC is booming. Between 2001 and 2018, nearly 200 million square feet of development occurred.[34] At the same time, DC has a history of adopting some of the most progressive green building requirements in the country and was named the world's first LEED Platinum city.[35] The District's First Source program is designed to provide DC residents priority consideration for all new jobs created by municipal financing and development programs. However, many unemployed city residents do not have the advanced skills necessary to access jobs in commercial building trades. Therefore, through this initiative we will:

- Work with UDC, unions, and green building organizations to develop a green building apprentice program to increase the number of residents with the skills necessary to participate in the development boom.

- Continue to support the Department of Employment Services (DOES) office charged with ensuring the successful implementation of the First Source program.

- Use additional resources to improve the protocols and policies regarding data capture and monitoring of contracts that are subject to First Source.

- Continue to invest in existing pathways to the green economy, such as Solar Works DC, and explore new green pathways such as high school academies in partnership with businesses.

KPIs
- # of DC residents participating in an apprentice program
- # of DC residents hired through First Source

PARTNERS
DOES, UDC

Ensure a diverse, innovative, and growing economy

1.2.1 Build a robust innovation pipeline to support underrepresented entrepreneurs

The innovation pipeline consists of several steps: research and development, commercialization, startup, and growth. These steps track the path from an idea to a mature company. Although DC is home to significant growth companies and a strong growth equity ecosystem, it lags in startup density and availability of capital for startups. A few steps in the innovation pipeline could be improved and, in turn, lead to increased economic growth and diversity. DC's Economic Strategy launched several efforts to address this, including the establishment of an Inclusive Innovation Fund. This fund is currently in development with $1.5 million in seed funding from District Government and is intended to expand access to capital for underrepresented entrepreneurs.

Building on these efforts, we will:

- Map all existing resources available at each stage of the innovation pipeline.

- Assemble additional partners and programs to address gaps in the innovation pipeline, strengthen existing efforts, and launch new efforts to support startups.

KPIs
- $ higher education R&D expenditures
- # utility patents per capita
- # place in the Kauffman Index of Startup Activity
- # place in the Kauffman Index of Growth Entrepreneurship
- $ invested from DC Inclusive Innovation Fund
- # of businesses supported by DC Inclusive Innovation Fund

PARTNERS   DMPED, DMGEO, DCRA, DSLBD, WDCEP, IN3, DC BID Council, FCC

DC INNOVATION PIPELINE (as compared to other U.S. States, 2017)

	Research	Commercialization	Start-up	Growth company	
	R&D investment[1]	Seed[2]	Early-stage VC[3]	Late-stage VC[4]	Private equity[5]
State ranking*	30	3	18	11	21
USD per capita*	7341	35	33	74	0.69
Total USD (in millions)*	488	24	162	361	103

● TOP 10   ● MIDDLE 20   ● BOTTOM 20

1   Latest R&D data is for 2013
2   The first stage of venture capital investment often used to build a proof of concept or received broadly prior to launch
3   The period of venture capital investment between seed and late stage deals, when companies have a proven concept and little revenue
4   The final period of venture capital investment (usually after series C), when companies have increased revenue, are evaluated by path to profitability, and are near exit
5   Capital that is not noted on the public stock exchange. Private equity involves investors giving private companies capital in exchange for equity

* Data from 2015: Pitchbook, National Science Foundation

1.2.2

Create 500 new tech businesses founded by underrepresented entrepreneurs

Each year, DC's universities invest more than half of a billion dollars in research and development.[36] In addition, the region is home to regulators and funders such as the Food and Drug Administration and the National Institute of Health. Yet, DC lags behind other metropolitan regions in the commercialization of ideas — a critical step in the innovation pipeline. The Pathways to Inclusion Report (DMPED, 2016) and the subsequent DC Economic Strategy (DMPED, 2017) outlined several steps to increase early stage investment in businesses led by underrepresented entrepreneurs. Since then, in 2017, Howard University's Inclusive Innovation Incubator (In3) opened to provide incubator and community space at Howard University to underrepresented entrepreneurs. In 2018, the District partnered with The Marathon Foundation to create the DC Inclusive Innovation Fund to invest in early stage businesses led by underrepresented entrepreneurs. Building on these efforts, through this initiative we will:

- Provide seed funding for the DC Inclusive Innovation Fund to help raise capital and support DC entrepreneurs.

- Expand In3, or create similar programs in collaboration with other DC universities, private businesses, and the federal government.

- Continue to showcase innovation in DC through annual competitions, marketing, and talent recruitment campaigns.

KPIs	- # of new businesses started through the incubator
	- # of jobs created through the incubator
	- Additional funds raised for the Inclusive Innovation Fund

PARTNERS	WDCEP, DMPED, DMGEO, Howard University, UDC

Investment in R&D (2018)
TOP UNIVERSITIES IN DC
BY TOTAL ENROLLMENT (IN MILLIONS)

George Washington University
$245.5

Georgetown University
$212.3

Howard University
$45.7

American University
$56

Catholic Univ. of America $24.2

Gallaudet University $7.6
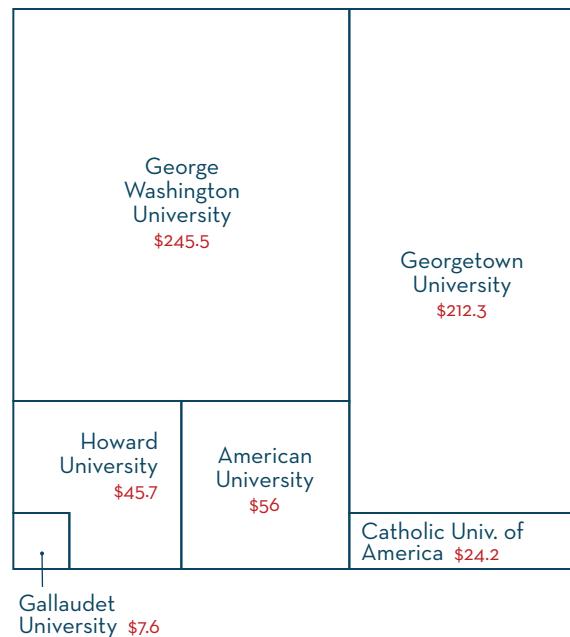
Data unavailable: University of the District of Columbia, Trinity Washington University, National Defense University, Strayer University-District of Columbia.

Indiana University Center for Postsecondary Research (2018). Carnegie Classifications 2018 public data file, http://carnegieclassifications.iu.edu/downloads/CCIHE2018-PublicDataFile.xlsx, January 28, 2019.

1.2.3

Strengthen support to weather federal government shutdowns

As the capital of the United States, DC's economy is linked to the federal government. In fact, the federal government directly employs roughly 200,000 people in DC. This number does not include the additional contractors and retail employees that rely on economic activity generated by federal workers. For example, during the 2018-2019 partial government shutdown, an additional 112,500 contractors were out of work.[37] When the largest employer in the region closes, there are tremendous impacts on the economy. Federal government appropriations now allow the District to continue spending locally-generated revenue in the event of a federal government shutdown. Starting in 2018, the District Government has even stepped in to maintain the 126 National Park Service properties located in DC. We will strengthen support for residents, businesses, and local government to weather federal government shutdowns. Through this initiative, we will:

- Build off Financially Fit DC and launch a financial literacy program to promote emergency savings accounts and provide financial coaching, prioritizing low-income residents and federal contractors.

- Safeguard and assess the number of days in reserve.

- Partner with local cultural institutions, such as museums and restaurants, as well as other civic and philanthropic partners to offer subsidized admission and other incentives (e.g. restaurant week) that boost tourism in the event of a federal government shutdown, helping to reduce the shutdown's economic impact.

- Compile an after-action report from the most recent shutdown to gather lessons learned, inventory government and non-government aid, and identify gaps.

KPIs
- % of residents with three months of savings
- # of residents receiving financial literacy training
- # of institutions offering incentives to boost tourism
- % change in economic impact experienced during a shutdown

PARTNERS   DC Financial Literacy Council, DISB

Share of employment in DC by industry

Private   Other gov.   Federal

DC   70%   5%   25%

DC metro   78%   10%   11%
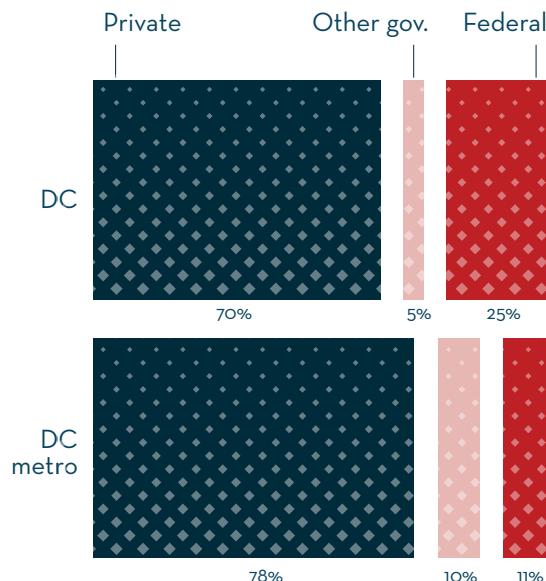
DOES. "Industry Employment Statistics." March 22, 2017. Accessed April 14, 2019. https://does.dc.gov/node/184552.

1.2.4

Earn an A+ in the Thumbtack Small Business Friendliness Survey by 2023

The Thumbtack Small Business Friendliness Survey is an annual study of small business owners' perceptions of government policy. The District consistently scores high on ease of hiring but lower on regulations, licensing, and government websites.[38] To better support small businesses, through this initiative we will:

- Make it easier to open and operate a business by partnering with a university and/or foundation to hire a Lab@DC research fellow to pilot removal science, the process of identifying and repealing regulations that pose a burden without any correlative public policy benefit.

- Seek nominations for burdensome or unnecessary processes, policies, and regulations that can be repealed or removed.

- Conduct a randomized control trial to determine if repeal or removal of the process, policy, or regulation is warranted.

- Repeal or abandon unnecessary processes, policies, or regulations that do not weaken the District's policy goals in order to remove barriers for small businesses.

KPIs
- # rank in Thumbtack Small Business Friendliness Survey
- Score in Thumbtack Small Business Friendliness Survey

PARTNERS
DSLBD, DMGEO, DCRA, WDCEP, Lab@DC

Small business report card

	2018 Grade	2017 Grade
Overall Friendliness	C+	A-
Ease of Starting a Business	B+	C
Ease of Hiring	A+	B+
Overall Regulation	C-	B
Employment, Labor, and Hiring Regulations	A-	A
Tax Regulations	D+	B
Licensing Regulations	C-	C+
Training and Networking Programs	C+	B
Government Websites	F	A-

Puente, Lucas. "2018 Thumbtack Small Business Friendliness Survey." Thumbtack. Accessed August 14, 2019. https://www.thumbtack.com/survey.

1.3

Build strong, diverse communities that all residents can afford to live in

1.3.1 Support homeowners to mitigate the rising cost of living

Current homeowners in rapidly growing neighborhoods of Washington, DC fear displacement in anticipation of community revitalization efforts that drive property appreciation and, therefore, higher property taxes and cost of living. Several District Government programs are already available for property tax relief, including caps, tax credits, deductions, abatements, and deferrals for certain eligible property owners. In addition, myriad programs exist that could help a homeowner reduce the cost of owning and operating a home (such as programs to reduce the cost of utilities and repairs, or to help homeowners generate revenue such as by allowing room rentals or the construction of accessory dwelling units). However, these programs are not packaged and marketed to cost-burdened homeowners. Therefore, through this initiative we will:

- Inventory existing programs that reduce the cost of owning and operating a home (such as weatherization, property tax relief, and loans for small repairs).

- Conduct focus groups with homeowners to identify gaps and determine reasons for underutilization of programs.

- Launch "Front Door," a user-friendly website to access and learn about programs to facilitate navigating existing programs.

- Identify and create any new programs to fill gaps.

- Bundle and market these programs to cost-burdened homeowners.

KPIs	- # of homeowners engaged
PARTNERS	DHCD, DMPED, OP, OCTO, Lab@ DC, DOEE, OTR

Housing Cost Burden
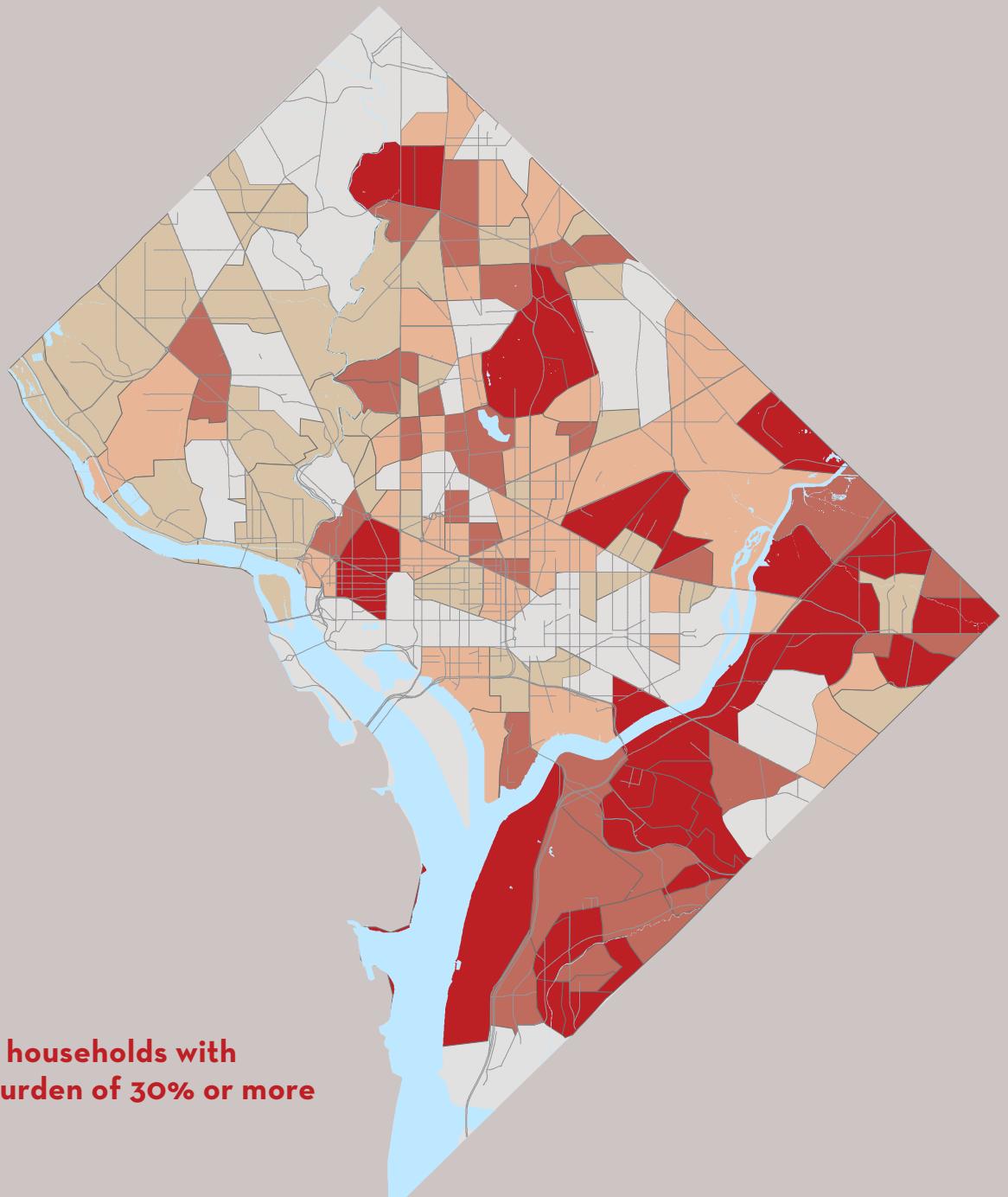
**Percentage of households with
housing cost burden of 30% or more**

- 15% - 27%
- 28% - 32%
- 33% - 39%
- 40% - 46%
- 47% - 63%

1.3.2

Improve the condition of rental properties while protecting renters from displacement

The amount of household income that is spent on housing costs is referred to as housing cost burden. Roughly 40% of DC renters spend more than 35% of their income on housing, with 25% spending more than 50%. These cost-burdened and extremely cost-burdened renters struggle to afford to live in DC and often accept substandard housing conditions to remain close to their jobs and social support. The District already has strong protections for renters but the fear of retaliation or loss of affordable units adds complexity to this issue. Fear is compounded for undocumented immigrants. Therefore, we will address these issues in tandem to improve living conditions, while protecting renters from displacement. Through this initiative we will:

- Revisit the Housing Preservation Strike Force Report and launch an internal task force, with a sharp focus on additional actions to minimize renter displacement.

- Identify mechanisms and processes to align eviction prevention case management with property inspections.

- Partner with organizations to support undocumented immigrants and ensure that their rights as tenants are understood and protected.

KPIs
- # of process improvements and mechanisms created to align case management and property inspections
- # of partnerships with organizations to support undocumented immigrants

PARTNERS
OTA, DCHA, DHCD, DOEE, DCHFA, DHS, DCRA

Neighborhood Change
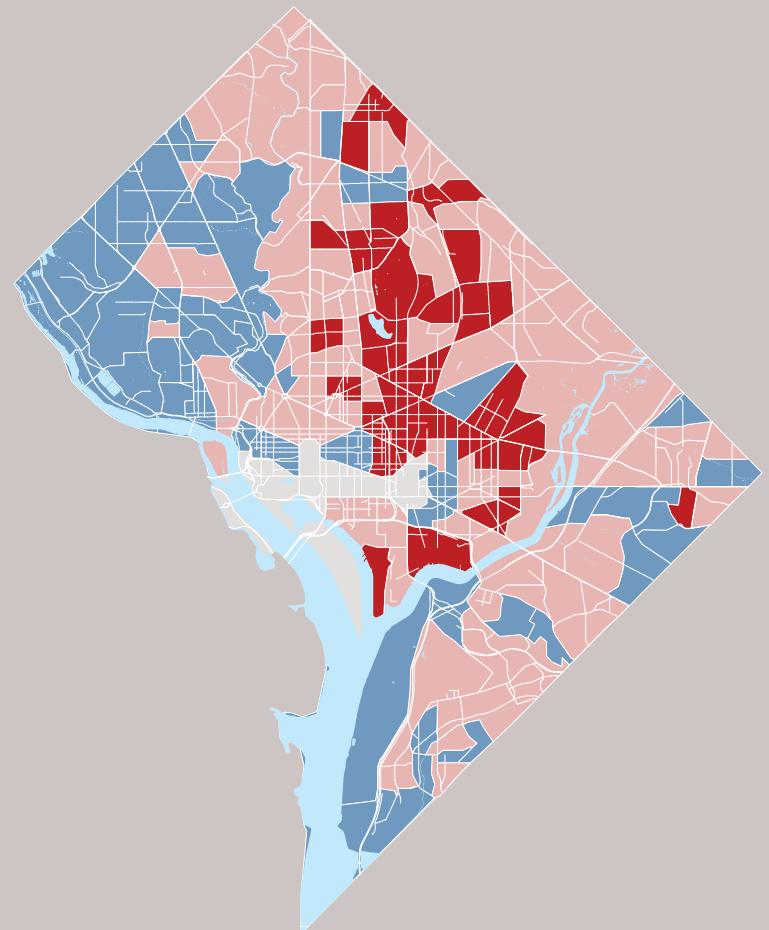
Change in Black population in DC

Percentage point change in share of Black population of total by Census Tract, 2010-2017

●	●	●	●	●
<-15	-14 - 0	1 - 14	>15	No data

Change in White population in DC

Percentage point change in share of White population of total by Census Tract, 2010-2017

●	●	●	●	●
<-15	-14 - 0	1 - 14	>15	No data

1.3.3
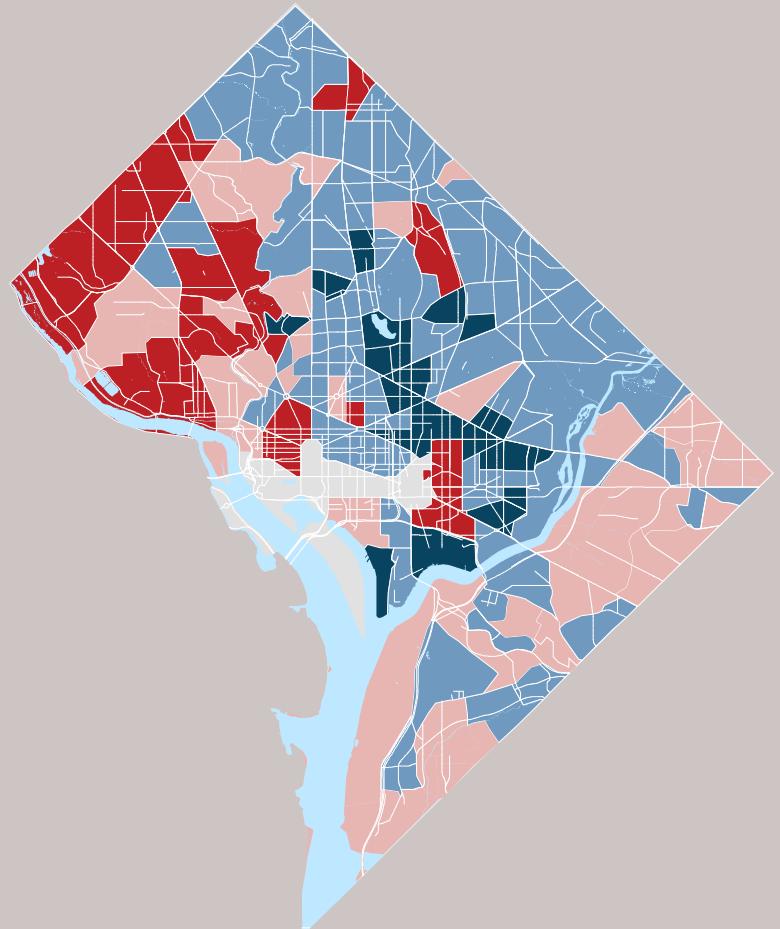
Preserve existing small businesses and nonprofit organizations in DC

Many of Washington's longtime small businesses and nonprofit organizations are struggling to stay open as commercial rents and other operating costs are increasing. Small businesses make DC's economy diverse, provide pathways to the middle class, and are an integral part of DC's culture. Nonprofit organizations provide many critical services to support DC's most vulnerable residents. Together, these organizations are an important part of DC's civic fabric. To support small businesses and nonprofits in transitioning neighborhoods, we will:

- Identify commercial areas in transition and nonprofits struggling to cope with rising administrative costs.

- Target struggling businesses in these areas for technical assistance. For example, in identified areas, we will increase access to capital for small upgrades or improvements and target services such as marketing, research, and innovation consulting.

- Expand the DC Small Business Resource Center to include a small business mentorship program targeted at businesses in transitioning neighborhoods.

- Provide loans for local small businesses to buy property so they can stay or expand in their communities.

KPIs
- # of small businesses in transitioning neighborhoods
- % increase of capital for small upgrades or improvements for small businesses
- small business length of operation

PARTNERS   DSLBD, DMGEO, DMPED

1.3.4   ## Preserve existing cultural institutions in DC

Culture is important to the District of Columbia. It embraces who we are, reflects our diversity, and brings us together. Culture is also an important part of our economy, where it accounts for an estimated $30 billion in annual spending and 112,370 jobs.[39] Many cultural stakeholders, from individual artists to larger institutions, are challenged by the increasing cost and competition for physical space. To further support cultural institutions, through this initiative we will:

· Implement the DC Cultural Plan.

· Explore caps on or the reduction of property taxes on cultural facilities.

· Create a cultural facilities fund to fill funding gaps for upgrades to cultural facilities.

· Create a capacity building grant program for cultural facilities.

KPIs

- # of cultural institutions operating in DC
- # of grantees receiving the capacity building grant
- # of investments through the cultural facilities fund for cultural facility upgrades

PARTNERS   DCCAH, OP, OCFTME, OTR

1.3.5

Strengthen pathways to homeownership for District residents

For many, homeownership is an important pathway to building wealth. The District's share of homeowners peaked in 2007 at 47.2 percent. It has continued to decline since then and fell to 40.7 percent in 2017. This is below the national average of 64.4 percent but similar to other major cities. The District has long supported prospective homeowners through programs like Home Purchase Assistance Program (HPAP), Employer Assisted Housing Program (EAHP), and Negotiated Employee Assistance Home Purchase Program (NEAP), which offer financial assistance to District residents and/or District Government employees. To strengthen pathways to homeownership, through this initiative we will:

- Call on bankers and lenders to provide special loans for DC Government workers who want to buy a home in the neighborhoods they serve.

- Expand programs like the Home Purchase Assistance Program in targeted neighborhoods.

KPIs
- % of households that are homeowners
- # of applicants to HPAP, EAHP, and NEAP

PARTNERS DHCD, DCHFA

1.3.6

Activate Poplar Point and the RFK Campus as places for DC residents to live and work

Height restrictions and the inability to annex neighboring land limits the amount of space available for development in the District. At the same time, there are very few large parcels of land available for development. These constraints make it difficult to increase the supply of housing and keep up with the pace of population growth. The RFK Stadium Campus and Poplar Point represent two of the remaining areas in DC available for large tract development. The District has been in on-going conversations with community members, property owners, and the federal governments. Going forward, through this initiative, we will:

- Convert the nearly 27 acres of asphalt at RFK to provide greater community amenities.

- Continue to activate the remainder of the RFK Campus as a place for DC residents to live, work, and play.

- Work with the federal government to transfer the 100 acre Poplar Point site to local control.

◇ KPIs	# of housing units created
⚇ PARTNERS	DMPED, NPS, OFRA

1.4

Ensure there is ample housing to accommodate growth

1.4.1 **Increase the supply of market rate affordable housing units 25% by 2030**

The city's population has risen every year since 2006 and has soared over the last decade, increasing by more than 100,000 people. The DC Office of Planning projects that DC's population will continue to grow to over 894,000 people by 2035.[40] The housing cost burden is projected to increase as the gap between housing supply and demand widens and as housing prices continue to grow at a faster rate than incomes. The District's zoning regulations stipulate how a property is used as well as the size and location of the building. The District updated its zoning regulations in 2016. In some areas of the city, this increased the density allowable by right (i.e. without the need for special review). Not all of affordable housing is subsidized. If the supply of housing more closely matches the demand for housing, then the cost of housing will be more affordable. Therefore, we will launch an effort to rapidly increase the supply of market-rate (unsubsidized) affordable housing units. Through this initiative we will:

- Identify residential and mixed-use parcels that are not built to currently allowable density.

- Conduct focus groups with property owners to understand barriers to increased density (e.g. access to financing, lack of awareness).

- Develop tools to help property owners create new housing. This will help increase the supply of housing to keep pace with population growth.

- Study the impacts of building taller and more densely and how that could address the need for more affordable housing.

- Support the development of Accessory Dwelling Units through the Housing Production Trust Fund.

KPIs
- # increase of market rate affordable units
- % increase of residential and mixed-use properties that are built to their highest and best use

PARTNERS
OP, DHCD, DCHFA, DCHA, CSG, GGW, FC2, DMPED

Accessory Dwelling Units (ADU)
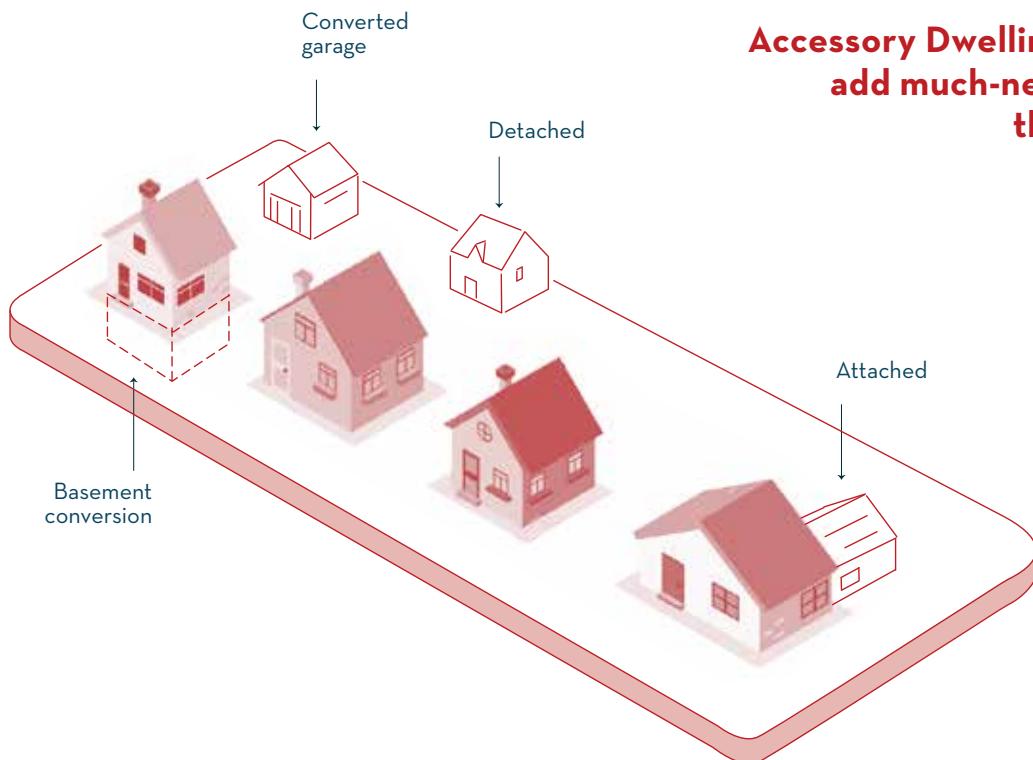
Accessory Dwelling Units could add much-needed housing throughout DC

Converted garage

Detached

Attached

Basement conversion

ADU Overlay Zones
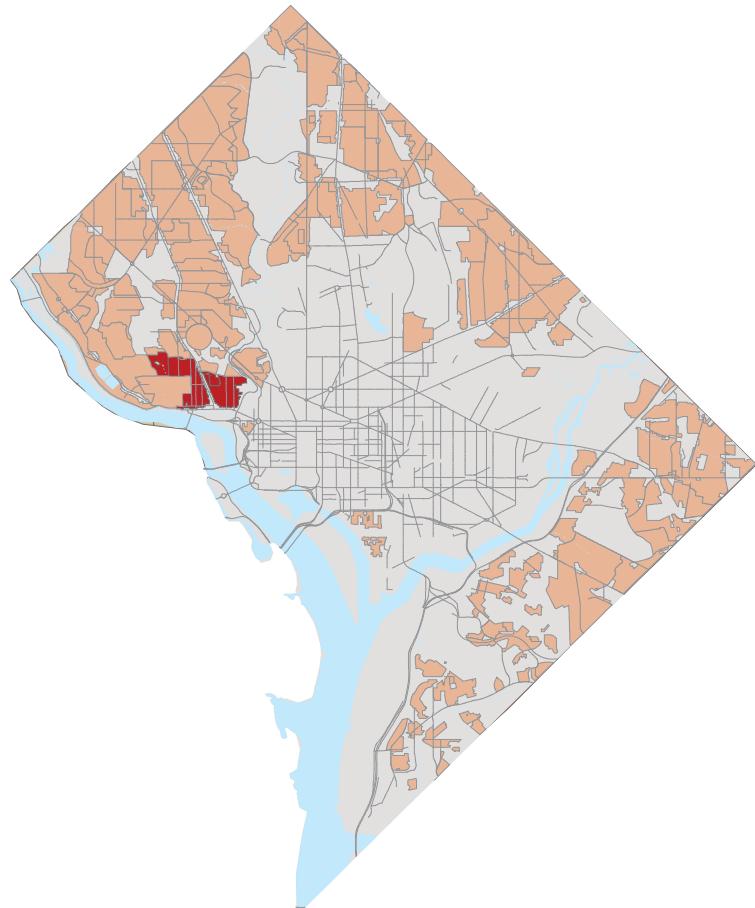
○ As of right

● Requires Board of Zoning Adjustment approval

DCGISopendata. Zoning Regulations of 2016. SHP. September 9, 2016.

1.4.2   **Preserve 100% of the existing subsidized affordable housing stock**

Many federal and District Government programs subsidize the creation of privately owned affordable housing, supplementing public housing that is owned and operated by the government. These subsidy programs offset the reduced revenues that result from lower, more affordable rents. Non- and for-profit developers combine these subsidies with traditional financing and other sources to develop affordable housing. Most of these subsidies require the building owner to maintain a period of affordability, some of which are expiring. Between 2006 and 2014, the city lost at least 1,000 units of subsidized housing. An additional 13,700 units have subsidies that are set to expire by 2020. In 2015, Mayor Muriel Bowser established the DC Housing Preservation Strike Force to develop a plan to preserve existing affordable housing covenants that are due to expire. The Task Force released its final report in November 2016. Now, the District's first Housing Preservation Officer is working to create and utilize a Housing Preservation Fund to stem the loss of subsidized affordable housing. Through this initiative we will:

• Identify and connect with owners of currently affordable properties and provide financial and technical assistance to owners to preserve affordable housing.

• Invest an additional $15 million into the Housing Preservation Fund.

KPIs
- # of subsidized units preserved
- Amount added to Housing Preservation Fund

PARTNERS   DHCD, DCHFA, DCHA, DMPED

Affordable housing subsidies

Support to developers in exchange for affordable housing

⬤ Government intervention

Direct support to renters to find housing in the private market (i.e. vouchers)

Allowable size

Allowable size

No affordable units

With affordable units

Regulatory incentives or bonuses

Use of vacant public land
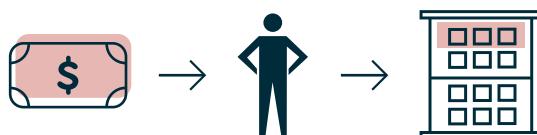
Government owned and managed housing (i.e. public housing)
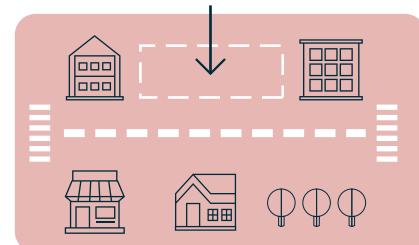
Direct funding

or financing
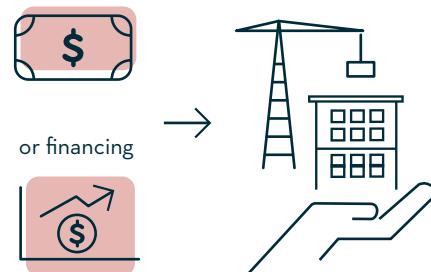
1.4.3 **Produce 12,000 new units of affordable housing by 2023**

Demand for housing is rising as DC's population grows. As a result, the cost of housing is rising as well. Housing supply is not keeping up with the pace of population growth. This includes the supply of subsidized affordable housing. The National Association of Realtors forecasts that, over the next twenty years, DC's median home price will increase by 3.9% per year, while median income will increase by only 2.8% per year. In 2017, 47.9% of households in DC experienced rental cost burden. The Housing Production Trust Fund (HPTF) is the major tool used to produce and preserve affordable housing in the District of Columbia. It is a special revenue fund that provides gap financing for projects affordable to low- and moderate-income households. The HPTF was created by the Housing Production Trust Fund Act of 1988. The program is funded through 15% of revenue from deed recordation and transfer taxes, as well as through the District's general fund. Mayor Muriel Bowser has committed $100 million annually to the fund each year of her administration — more than any city per capita in the country. Through this initiative we will:

- Increase the annual investment in the Housing Production Trust Fund to $130 million in order to create 12,000 new units by 2023.

- Learn from private sector approaches to increase affordable housing, such as the Federal City Council's Affordable Housing Initiative.

- Craft programs to produce deeply affordable housing for our most vulnerable families and individuals.

- Invest in more workforce housing for teachers, social workers, police officers, and firefighters.

Housing Stock vs. Demand
THOUSANDS OF UNITS
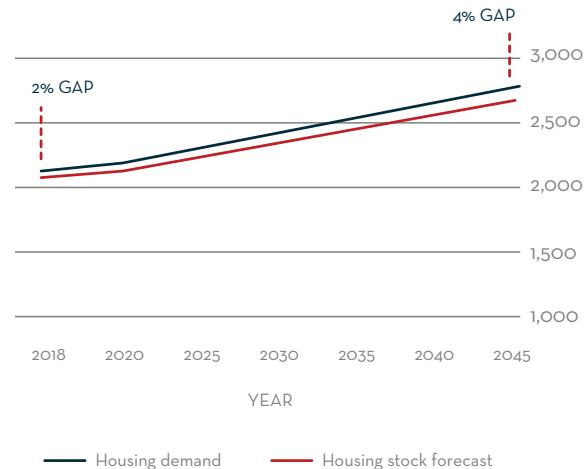
Bean, Chuck. 2018. "Meeting the Region's Current and Future Housing Needs." Memorandum, Metropolitan Washington Council of Governments. Accessed January 2019. https://www.mwcog.org/documents/2018/09/12/regional-housing-memo-to-cog-board-cog-board-affordable-housing-housing/.

KPIs
- # of new affordable housing units
- $ increase in Housing Production Trust Fund

PARTNERS
DHCD, Housing Production Trust Fund Board, DCHFA, DCHA, DMPED

1.4.4   **Secure a regional commitment to house seven million people by 2050**
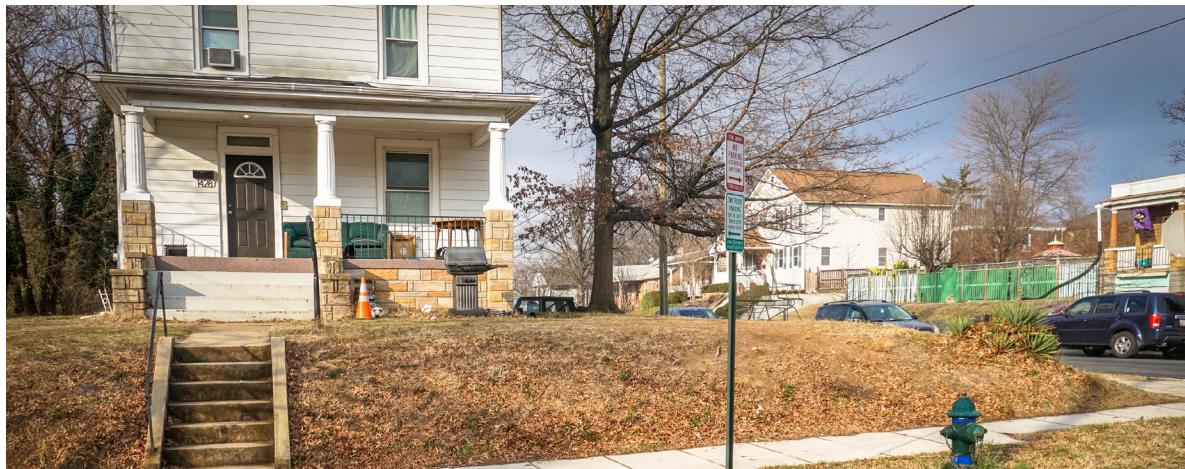
The daytime population of DC is nearly double that of its nighttime population. Workers from around the region commute into DC on a regular basis. The District of Columbia is only 68 square miles but anchors an economy reaching into several states. Population growth is expected to outpace supply throughout the region. Without an integrated regional approach, this growth could stress transit systems, exacerbate rising housing costs, and pose other challenges. That's why the Mayor has committed to producing 36,000 units of housing in DC alone and challenged the region to creating 240,000 units across the region by 2025. This would put the region on the path to housing seven million people by 2050. The Metropolitan Washington Council of Governments has a membership of 300 elected officials from 24 local governments, the Maryland and Virginia state legislatures, and U.S. Congress.

Through this initiative we will launch an effort at the Council of Governments to create a regional housing strategy. Specifically, we will:

- Work to secure housing production targets from neighboring jurisdictions.

- Work through the Council of Governments to create a regional housing strategy to rapidly increase housing supply in alignment with the most recent long-term transportation plan. This strategy should also outline a plan to meet regional fair housing goals.

- Work with neighboring jurisdictions to implement the strategy and meet our regional housing production targets.

- Create a regional commitment to increasing housing supply with access to transit and jobs to meet population forecasts.

- Fulfill the Mayor's commitment of producing 36,000 units of housing in DC by 2025.

✎ KPIs	- Approval of a regional housing strategy
⚇ PARTNERS	DHCD, OP, MWCOG

1.5

Make transportation cheaper, faster, and more convenient and people-centered

1.5.1

Make transportation cheaper

The Washington Metro Area faces relatively high congestion delays and costs. These transportation costs are offset when residents have access to public transit or live close enough to work that walking or biking is a viable option. Unfortunately, the lowest income areas of DC are also some of the most underserved by Metro. Employers can subsidize their employees' transportation costs, including transit and biking. In addition, the District can help subsidize certain bus routes. The District has already created at least 6 different transit subsidy programs (e.g. seniors, children, adult learners, and individuals with a disability). Going forward, through this initiative, we will:

- Make public transportation free for certain bus routes.

- Call on employers to offer paid mobility programs and cash out programs (such as providing cash or transit subsidies to employees who do not park at work).

KPIs
- # of new employers offering transportation subsidies to their employees
- % increase in bus ridership on free bus routes

PARTNERS   WMATA, DC BID Council

1.5.2   # Make transportation more convenient

The District's population has grown significantly over the past decade leading to increased congestion. In fact, DC is the 18th most congested city in the world.[41] Three quarters of public transit riders and half of drivers face commutes of over 30 minutes.[42] Some neighborhoods, particularly in Ward 8, have less access to public transit and less jobs, resulting in disproportionally longer commute times. Recently, the District started a Transit Priority Program and has installed Transit Signal Priority at almost 200 intersections. Going forward, through this initiative, we will:

- Increase services in neighborhoods with minimal public transportation access through subsidized micro-transit mini-shuttles or partnerships with ride-sharing services.

- Call on regional transit providers (WMATA, MARC, VRE, Circulator) to improve regional integration (such as coordinated schedules, increased Union Station capacity and frequency, fare integration, free transfers) and expand night and weekend service for key residential and employment zones.

KPIs   - # or workers with less than a 45-minute commute time by ward

PARTNERS   DDOT, WMATA

1.5.3

Make transportation across DC faster

The majority of commuters still continue to commute via automobile. Additionally, 88% of drivers commute alone.[43] Congestion will continue to get worse as population grows, unless more commuters opt out of driving alone. The District has made significant investments in bicycling infrastructure and was among the first U.S. cities to pilot docked and dockless bikes and scooters. Going forward, through this initiative, we will:

• Significantly speed up movement through DC by designating bus rapid transit lanes, and non-traditional vehicle "mobility corridors" for bikes, ride-sharing pools, and scooters. This will include a $122M investment to create the K Street Transitway, providing faster cross-town transit and a world-class boulevard through the heart of DC.

• Study congestion dynamic mobility pricing and how that funding could be dedicated for new transportation infrastructure and subsidies.

KPIs
- % of commuters choosing car alternatives to commute to work
- Average commute time
- # of bus rapid transit lanes

PARTNERS   WMATA, DDOT

1.5.4   # Make transportation more people-centered

Washington, DC is one of the most walkable urban areas in America.[44] However, a small percentage of overall commuters get to work by walking or biking. When neighborhoods have a high mix of uses (e.g. office, retail, residential) within walking distance, then residents are more likely to walk or bike to run their daily errands. This helps reduce congestion and transportation costs, and improves the environment. To further increase the walkability and bikeablity of DC, through this initiative, we will:

· Improve walkability and neighborhood amenities through more car-free zones, plazas, and five more Great Streets east of the river.

· Expand bicycle infrastructure, including increased investment in Capital Bikeshare infrastructure and electrification.

KPIs
- # of Great Streets
- Miles of car-free streets
- # of dockless charging stations

PARTNERS   DDOT, DOEE, OP, DMOI

Close the educational achievement gap

1.6.1

Expand access and improve the quality of early childhood education in all eight wards

Early childhood education ensures that children get a head start and allows working parents to continue to work. It is, therefore, an important tool to address existing education and economic gaps. DC already offers free, high-quality, full-day pre-kindergarten education to 3- and 4-year-olds across all wards in Washington, DC. However, many families must balance the high costs of early child care with the income earned from returning to work. Through this initiative, we will:

· Develop industry-leading standardized metrics to measure and incentivize quality improvements in all child care and pre-K centers.

⬦ KPIs	- # of children enrolled in pre-K and child care
⚇ PARTNERS	DCPS, OSSE, DCPCSB

1.6.2

Support highly effective teachers

Recent education reforms have led to significant improvement DC's K–12 school system. The District remains committed to retaining high-performing teachers and increasing the quality of education for DC's youth. The average teacher turnover rate in DC public schools is 25%, which is higher than the national average of 16%. At the same time, according to the National Center for Education Statistics, DC teachers are among the highest paid in the nation, even after adjusting for cost of living. This high rate of turnover makes educating students more expensive and can make the District's education goals harder to achieve. To address this, through this initiative, we will:

· Create new teacher leadership roles to provide additional enriching career pathways and opportunities, helping to reenergize the profession.

· Improve teacher retention through investment in teacher housing.

⬦ KPIs	- # of new teacher leadership roles created - % average teacher turnover rate - # of units of teacher housing created
⚇ PARTNERS	DCPS, DCHFA, DHCD, DMPED, OSSE, DCPSCB

1.6.3

Support students and families

Student proficiency and readiness for college and career rates have been increasing for all students across all subgroups (e.g. race/ethnicity and special needs). However, significant disparities persist in educational attainment by race. Some of this gap can be attributed to higher rates of absenteeism which may be attributed to correspondingly higher rates of trauma. Through this initiative, we will:

- Reduce absenteeism through trauma-informed wraparound services for students and families.

- Provide free, high-quality tutoring services to every DCPS student who is below grade level.

⬦ KPIs	- # of students tutored - # of student days absent
⛋ PARTNERS	DME, DCPS, OSSE, DBH, DMHHS, DYRS

1.6.4

Improve school performance

Achievement has increased for all students and DCPS has become among the fastest improving urban school districts in the country. However, significant disparities persist in education outcomes by geography. For example, there are no 5 STAR schools (most highly rated) in Wards 7 or 8 and there are no 1 or 2 STAR (lowest rated) in Wards 2 and 3. Much of this can be attributed to trauma and factors outside of school. However, improvements can be made and lessons learned from past turnaround schools. Through this initiative, we will:

- Establish a cohort of turnaround principals to bolster school quality.

- Replicate high-performing programs to ensure that more children have access to seats in high-performing high schools.

⬦ KPIs	- # of 4–5 STAR Rated Schools
⛋ PARTNERS	DCPS, OSSE

Goal 2: Climate Action

We envision a DC that is prepared for the impacts of climate change and where residents and businesses take bold action to combat its causes. With the initiatives outlined below, DC will uphold the commitments of the Paris climate agreement and lead the country in the response to climate change.

The climate is changing. Heatwaves are longer and more frequent. Rainstorms are more intense. Sea level rise makes the potential impact of tropical storms worse. Furthermore, DC is susceptible to three types of flooding: riverine, coastal, and rainfall. Climate change is increasing the likelihood of all of these. Risk is not just about the likelihood of something bad happening. It is also a function of vulnerability. Climate change will disproportionately impact some people more than others. DC has long been a leader in the response to climate change. In fact, prior planning efforts, such as Climate Ready DC, have identified many strategies and ideas. Yet, the scale of the climate problem requires a proportionate response.

Therefore, this strategy focuses on implementation and measures to institutionalize climate action. Together, we will respond to the climate crisis, address the root causes of vulnerability, and do our part to cut carbon pollution.
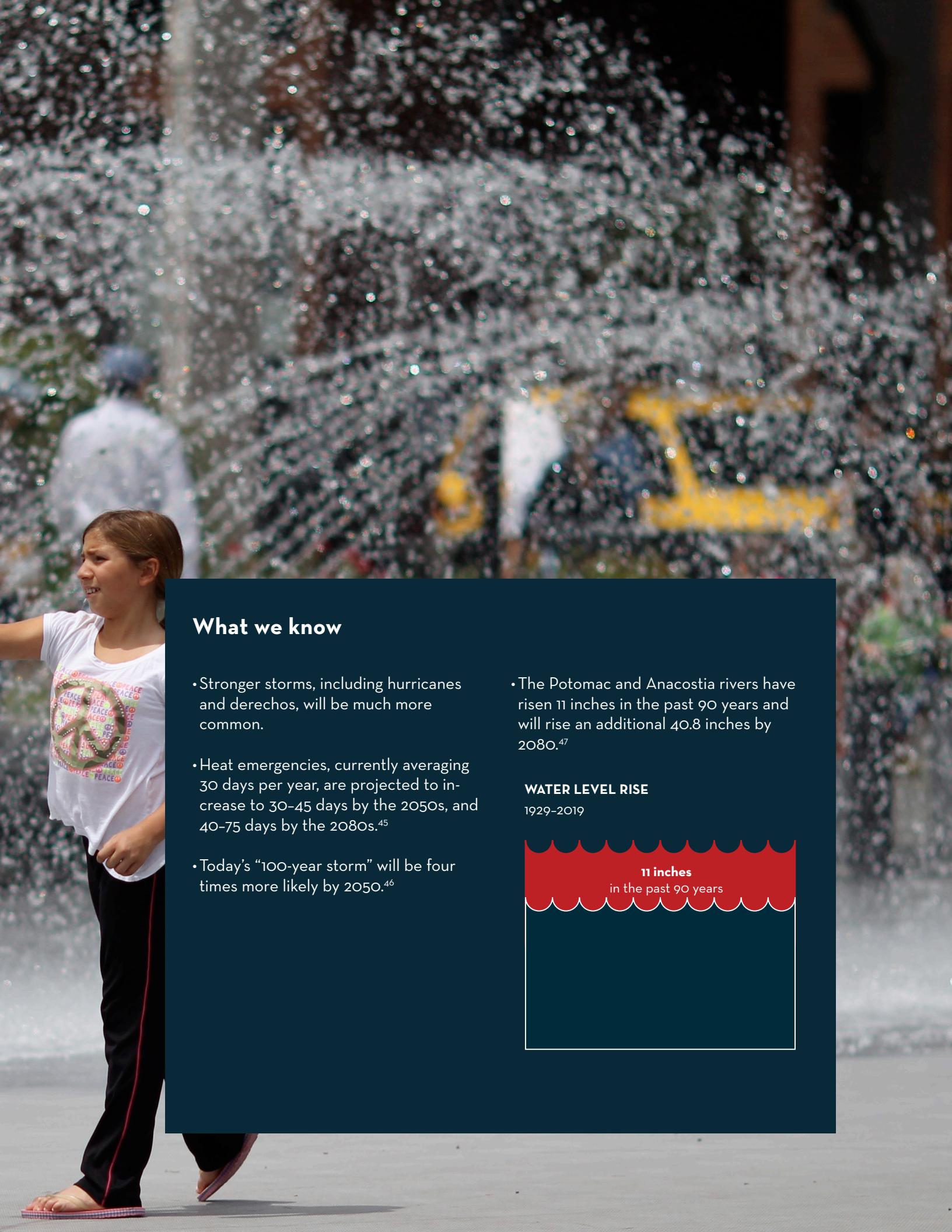
What we know

- Stronger storms, including hurricanes and derechos, will be much more common.

- Heat emergencies, currently averaging 30 days per year, are projected to increase to 30–45 days by the 2050s, and 40–75 days by the 2080s.[45]

- Today's "100-year storm" will be four times more likely by 2050.[46]

- The Potomac and Anacostia rivers have risen 11 inches in the past 90 years and will rise an additional 40.8 inches by 2080.[47]

WATER LEVEL RISE
1929–2019

11 inches
in the past 90 years
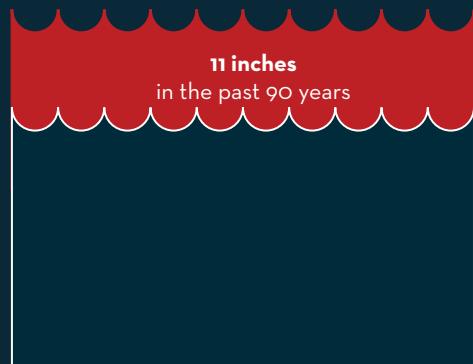
Our Vision

To be climate resilient by 2050

Climate change is projected to increase the frequency and intensity of heatwaves, the mean tide of DC rivers, and the frequency and intensity of heavy rain events. Average annual temperatures have already increased 2°F[48] during the last 50 years and are projected to increase an additional 4.5°F by the middle of the century.[49] In 2018, DC experienced 25 heat emergency days (where the heat index is 95°F or higher). Climate scientists have predicted that DC will experience more than twice that by 2080. That means that, in 2080, our summer will be one long heat emergency.[50] An increase in heat will cause challenges across the city. Vulnerable populations' lack of access to cooling can cause dehydration, and more heat will also increase use of air conditioning, putting a strain on the electrical grid and increasing greenhouse gas (GHG) emissions. In addition, water levels for both tidal rivers, the Potomac and Anacostia 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%.[51] Today's 100-year precipitation event could become a 25-year event by mid-century.[52] The Mayor has committed to being climate resilient by 2050. This requires regulatory frameworks that include climate resilience, retrofitting buildings, and strengthening community response and physical protection measures.
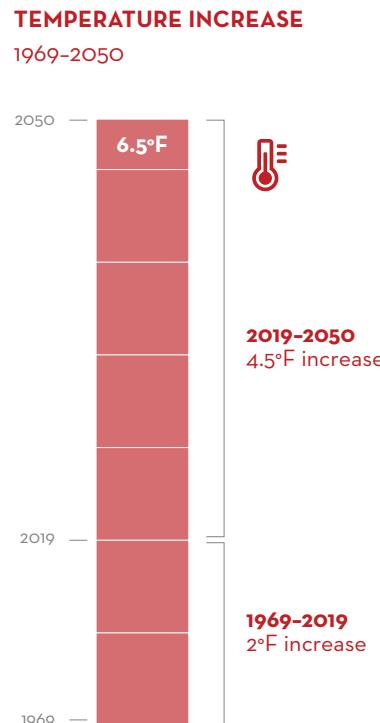
TEMPERATURE INCREASE
1969–2050

2019–2050
4.5°F increase

1969–2019
2°F increase

National Climate Assessment, Climate Science Special Report. Accessed April 14, 2019. https://science2017.globalchange.gov.

To be carbon neutral by 2050

In 2016, the District's citywide greenhouse gas (GHG) emissions totaled 7.5 million metric tons of carbon dioxide equivalent (MMtCO2e). This is approximately 11 tons of CO2e per resident, which is comparable to other cities on the East Coast.[53] This is a 29% decrease since the city's first inventory from 2006 and puts the District on track to meet our ambitious climate goals. However, there is a long way to go to become carbon neutral by 2050. Currently, citywide emissions are driven by the energy used to power, heat, and cool our buildings (75% of emissions) followed by transportation (21%) and waste (4%). Within these sectors the main sources of emissions are electricity (57%), gasoline (19%), and natural gas (18%). The District's Clean Energy DC plan provides a roadmap to achieving our interim goal of cutting GHGs in half by 2032. Achieving carbon neutrality by 2050 will require innovative policies, funding and financing strategies, and participation from all stakeholders to ensure a carbon-neutral District benefits all residents.

GREENHOUSE GAS EMISSIONS
By sector

19%
Institutional government buildings

19%
Passenger vehicles

6%
Other

24%
Residential buildings

32%
Commercial and industrial buildings
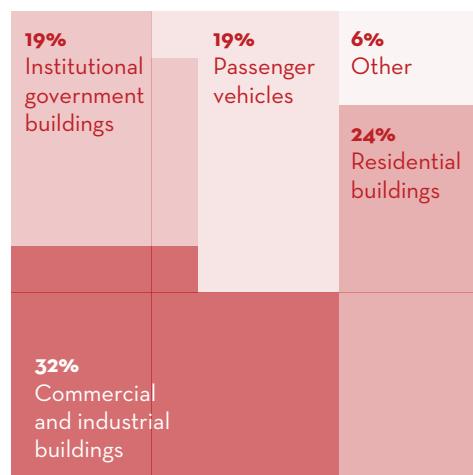
Climate Ready DC, 2016

Paris Climate Agreement

On December, 12 2015, countries participating in the United Nations Framework Convention on Climate Change (UNFCCC) in Paris reached a landmark agreement to combat the causes and effects of climate change. This agreement has since been ratified by 184 of the 197 countries that are party to the UNFCCC. President Trump subsequently pledged to withdraw from the Paris Climate Agreement at the earliest possible date. In response, a group of 407 US mayors, representing 70 million Americans, committed to uphold the commitments and goals of the Paris Climate Agreement. On September 13, 2018, Mayor Muriel Bowser took that commitment even further —joining mayors from around the world to pledge to become carbon neutral and climate resilient by 2050.

2.1

Incorporate climate projections into land use, building regulations, and capital investment

2.1.1

Ensure that all new buildings are built to be climate-ready by 2032

The Washington, DC region is experiencing a development boom. In fact, in 2018, only Dallas-Fort Worth and New York City saw more construction starts.[54] These buildings are intended to last decades. But the future may be much hotter and wetter than it is now. As a result, these buildings should be built to last to protect residents, visitors, and workers during heatwaves, tropical storms, and floods. In addition, when possible, building and site design should contribute to neighborhood adaptation, which could include vegetation to provide cooling and water management. Climate Ready DC outlined several strategies to increase the resilience of new buildings to climate change. These range from providing backup power to applying adaptation check lists to large developments. To accelerate these strategies and strengthen support from the building industry, we will:

• Inventory current regulations for new construction and substantial rehabilitation.

• Identify process improvements to relieve regulatory burden without weakening requirements.

• Strengthen requirements that would address increased heat and flood risk (such as passive survivability or a building's ability to support its occupants in the event of a power outage).

• Train the building industry on green building requirements and cutting-edge green building techniques.

KPIs
- # of buildings built to meet climate resilience certifications, such as RELi
- # of new or improved requirements for new buildings
- Average length of time to review new development

PARTNERS
DCRA, DOEE, DCBIA, HSEMA, Green Building Advisory Council

2.1.2   **Retrofit all at-risk buildings or remove them from high-risk areas by 2050**

Building codes and development regulations shape new construction and substantial renovation; however, most of DC's building stock is already built. Climate Ready DC outlines several strategies focused on incentives and retrofits to ensure buildings are safer for residents, visitors, and workers during heatwaves, tropical storms, and floods. These strategies include deep energy retrofits for DC Government buildings and floodproofing critical facilities in high-risk areas. To accelerate and target this work, we will:

- Use climate projections to identify the buildings most at risk from heat and flooding.

- Assess existing regulations, incentives, and tools that can enable building-level adaptation response measures, through focus groups and surveys with multiple building sectors (including homeowners).

- Develop, improve, and market a suite of existing and new programs, policies, outreach efforts, and regulations that fortify buildings to climate-related hazards.

- Develop policies and programs to support the relocation and removal of uses in areas where building retrofits are inadequate or too expensive, given the level of risk.

New construction vs existing buildings
BUILDING PERMITS

— 99.8%

Existing buildings

Permits for new buildings

— 0.2%

KPIs	- # of at-risk buildings - % of at-risk buildings that have taken steps to mitigate risk
PARTNERS	DOEE, DCRA, HSEMA, AOBA, UDC

DCGISopendata. Building permits in 2018. XLS. January 5, 2018. Accessed February 23, 2019. https://hub.arcgis.com/items?owner=DCGISopendata.

DCGISopendata. Building footprints. XLS. March 8, 2017. Accessed February 23, 2019. https://hub.arcgis.com/items?owner=DCGISopendata.

2.1.3
_____

Invest in infrastructure that is built to last and that provides multiple benefits

Under the District of Columbia Home Rule Act, the District may issue debt to finance capital projects; however, the District's total debt service may not exceed 12% of General Fund revenues within any six-year capital planning period. At the same time, the District fulfills many of the functions that a city, county, and state would in a different jurisdiction. As a result, capital needs far exceed available funds. In addition, capital projects are often built to last decades and will be subject to changes in climate due to global warming. Climate Ready DC has outlined several strategies to build climate-ready infrastructure — including the development of infrastructure resilience guidelines. In addition, DC Government has long utilized nature-based approaches, such as tree planting and rain gardens, to achieve multiple benefits (e.g. cleaner air and water as well as cooler sidewalks). To accelerate this work, while increasing multiple benefits of infrastructure, we will:

- Create, test, refine, and promote the use of infrastructure resilience guidelines and project delivery manuals for multiple infrastructure sectors.

- Work with independent infrastructure operators (such as Pepco and DC Water) to promote the adoption of climate resilience guidelines.

- Require agencies to coordinate capital budget requests within their cluster (i.e. organizational groups of agencies that report to the same deputy mayor) in order to generate more multi-benefit infrastructure projects.

- Create and utilize clear and explicit scoring criteria that align with the District's priorities (including climate action) for capital budget requests.

- Charter an expert infrastructure review committee to assess agency capital budget requests and advise the Executive Office of the Mayor.

- Pilot two resilience districts along the Anacostia River to illustrate how coordinated, multi-benefit infrastructure investments can address flood risk and deliver additional benefits (see Resilient Anacostia River Focus Area).

◇ **KPIs**
- # of infrastructure resilience guidelines and project delivery manuals developed
- % of infrastructure projects for which resilience guidelines have been developed
- capital budget reviewed by expert committee
- # of agencies using scoring criteria and guidance

👥 **PARTNERS**
CFO, OBPM, DMGEO, DMPED, DMPSJ, GovOps, DME, DOEE, DDOT, DCWater

Capital Needs

$8.2 billion
identified

$3.3 billion gap

Filling the gap requires
creative and innovative
approaches that provide
multiple benefits or
reduce costs.

$11.5 billion needed in
capital investments
through 2024 (estimated)

2.1.4

Design climate-ready neighborhoods and developments

Land use and urban design have an important role to play in climate resilience. Quality of life and building safety are influenced by the neighborhoods around them and the resilience of a city is defined by the sum of its neighborhoods. The impacts of climate change (such as rising sea levels, increased frequency of heavy rains, and increases in the frequency of heat events) will affect all neighborhoods. Areas along the Anacostia River, such as Buzzard Point, Hill East, and Poplar Point, are primed for redevelopment and significantly at risk from climate change. DC is currently updating its Comprehensive Plan, which will include climate resilience. To accelerate this work at the neighborhood level, we will:

- Gather lessons learned from the Buzzard Point Vision Framework and Design Review Guide process.

- Identify three to five neighborhoods and/or large tract developments in addition to Hill East and Poplar Point with significant climate risk and potential for redevelopment.

- Create or update the respective small area plan, design review guidelines, and/or vision framework, in these neighborhoods considering climate risk and based on extensive public engagement.

- Scale this approach to other neighborhoods in DC.

KPIs
- # of updated/new small area plans in climate-risk areas
- # of updates to Comprehensive Plan related to climate resilience

PARTNERS OP, DMPED, DOEE

Measure and track climate risk (exposure and vulnerability) and adaptation progress

2.2.1

Create a tool that allows residents to understand climate risk and track adaptation progress

The District released climate projections and scenarios in 2015 and a vulnerability and risk assessment in 2016 as part of the process to create Climate Ready DC. This high-level analysis is a critical first step in understanding how climate change will impact Washington, DC. Further research is needed to understand current and future riverine, coastal, and interior (rainfall) flood risk. A number of vulnerability factors increase the risk for various populations and areas of DC. Building on this work, this initiative will facilitate a data-driven response to climate risk and help prioritize climate adaptation investments. Specifically, we will:

- Create a community-informed climate vulnerability index to prioritize investments where they are needed most.

- Develop an integrated urban flood model that combines riverine, coastal, and interior (rainfall) flooding.

- Compile and publish geospatial data on current and projected urban heat island, flood risk, and vulnerability.

- Publish and maintain a public geospatial tool that communicates climate risk and climate adaptation progress. This tool will be managed by an expert who will be responsible for updates, maintenance, and assisting public, private, and nonprofit institutions in using the tool to allocate scarce resources and drive collective action to address climate-related risk.

Types of flooding

KPIs	- Community-informed climate vulnerability index score
PARTNERS	OCTO, OP, DOEE, DGS, Commission on Climate Change and Resiliency

Climate Risk Indicators
Climate change will have varying degrees of impact on people and places

Exposure to Climate Risks

Exposure to heat
Land covered by tree canopy

Exposure to flood
Buildings in the floodplain
Impervious surfaces

Exposure to poor air quality
Ozone levels

Assets serving at-risk populations
Hospitals
Long-term care facilities
Schools
Correctional facilities

Sensitivity to Climate Risks

Health and wellness
Adult asthma prevalence
Residents with a chronic illness
Residents with a disability
Residents with mental health needs
Residents with end-stage renal disease

Age
Senior citizens
Young children

Housing
No access to air conditioning
Rental housing
Substandard housing

Race and Ethnicity
Race
Ethnicity

Adaptive Capacity to Climate Risks

Mobility
Walkability of neighborhood
Households without access to a
personal car

Language
Limited English language
proficiency

Socioeconomic status
Single-parent households
Population in poverty
Population without a high school diploma
Households receiving public assistance
Housing cost-burdened households

Workforce
Labor participation

2.2.2

Establish DC Government-wide climate change adaptation policy, guidance, and procedures by 2023

Climate change will have wide-ranging impacts on District agencies' missions, programs, and operations. For example, extreme heat both triggers asthma attacks and damages transportation infrastructure. These impacts will require increased government services. Research has shown that every $1 spent on mitigating impacts results in $6 saved in future costs.[55] Recognizing this, Moody's Investors Service and other ratings agencies have begun to consider climate change risks in their credit analyses and ratings of public debt.

This initiative will:

- Formally designate a climate champion at each District Government agency.

- Launch a District-wide process for climate adaptation planning. This process will require agency-specific climate vulnerability assessments that identify the impact of climate change on agency mission, programs, and operations. These assessments will utilize a common set of climate projections which will be shared with all agencies.

- Using findings from agency climate vulnerability assessments, select agencies and develop climate adaptation plans that identify actions to lower climate risk and incorporate these actions into their Agency Performance Plans.

KPIs
- % of agencies with designated climate champions
- % of agencies with climate adaptation plans

PARTNERS
OBPM, Commission on Climate Change and Resiliency, DOEE

Credit Rating Agency Issues Warning On Climate Change To Cities

npr

December 1, 2017

Bloomberg

Moody's Warns Cities to Address Climate Risks or Face Downgrades

November 29, 2017

Flavelle, Christopher. "Moody's Warns Cities to Address Climate Risks or Face Downgrades." Bloomberg.com. November 29, 2017. Accessed April 14, 2019. https://www.bloomberg.com/news/articles/2017-11-29/moody-s-warns-cities-to-address-climate-risks-or-face-downgrades.

Rott, Nathan. "Credit Rating Agency Issues Warning on Climate Change to Cities." NPR. December 01, 2017. Accessed April 14, 2019. https://www.npr.org/2017/12/01/567843604/credit-rating-agency-issues-warning-on-climate-change-to-cities

2.2.3 **Utilize the expertise of the Commission on Climate Change and Resiliency to advance the District's climate-related goals**
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The District created the Commission on Climate Change and Resiliency in 2017. This interdisciplinary commission is charged with informing District Government agencies' responses to climate change. The Commission is made up of District residents that are experts in a variety of fields — all of whom are committed to supporting the District's continued leadership on climate action. Few cities have established a similar body, which has the potential to accelerate DC's climate-related work. To realize the potential of this body, we will:

• Dedicate staff to support the Commission on Climate Change and Resiliency.

• Create and maintain a dashboard that tracks District Government implementation of Climate Ready DC, Clean Energy DC, Sustainable DC, and the All-Hazards Mitigation Plan.

• Regularly report on progress at the Commission's quarterly meetings and disclose climate-related risk and adaptation progress annually in the DC budget.

◇ **KPIs**
- # staff supporting Commission
- # of monthly users/visitors to the dashboard
- # of annual progress reports disclosed
- % of actions completed in Climate Ready DC, Clean Energy DC, Sustainable DC, and the All-Hazards Mitigation Plan

⸝⸝⸝ **PARTNERS**
Commission on Climate Change and Resiliency, DOEE, HSEMA

Commission on Climate Change and Resiliency

On February 18, 2017, DC Government created a Commission on Climate Change and Resiliency to assess the potential impacts of the changing climate and adverse weather events. This includes the District's ability to mitigate and adapt to climate change, as well as prepare, plan for, absorb, recover from, and adapt to adverse events. The Commission is tasked with transmitting reports and recommendations to the Council and the Mayor, as well as establishing the Climate Change and Resiliency Fund. The Commission is made up of eight members appointed by Council and eight members appointed by the Mayor. It first met on January 3, 2018.

2.2.4 **Create a regional climate adaptation effort by 2023 to support local action**

Climate-related risks do not adhere to administrative boundaries. Responding to the threat of climate change necessitates a regional response to address impacts on regional systems (e.g. energy, transportation, and water). The Metropolitan Washington Council of Governments has established a Climate & Energy Planning Area under its Environment Committee. Building on that work, we will:

- Share climate projections with neighboring jurisdictions and institutions.

- Advocate for a Climate Resilience Subcommittee of the MWCOG Climate Energy & Environment Policy Committee and charge it with supporting watershed-level adaptation efforts.

- Work with MWCOG to develop a climate adaptation planning toolkit for use by MWCOG jurisdictions, neighboring jurisdictions, and other institutions.

KPIs
- # of neighboring jurisdictions that have climate adaptation plans
- # of meetings held by Climate Resilience Subcommittee

PARTNERS
MWCOG, State of Maryland, State of Virginia, Prince George's County, Arlington County, Montgomery County

Metropolitan Washington Council of Governments

The Metropolitan Washington Council of Governments is a regional association of governments with representatives from DC, Maryland, Virginia, and the federal government. It was founded in 1957 and continues to serve as a venue for discussing regional issues, including the environment, community development, homeland security, public safety, and transportation. The COG board consists of 34 members that are appointed each year by its member governments.

2.3.1

Launch a data-driven campaign to significantly reduce the urban heat island
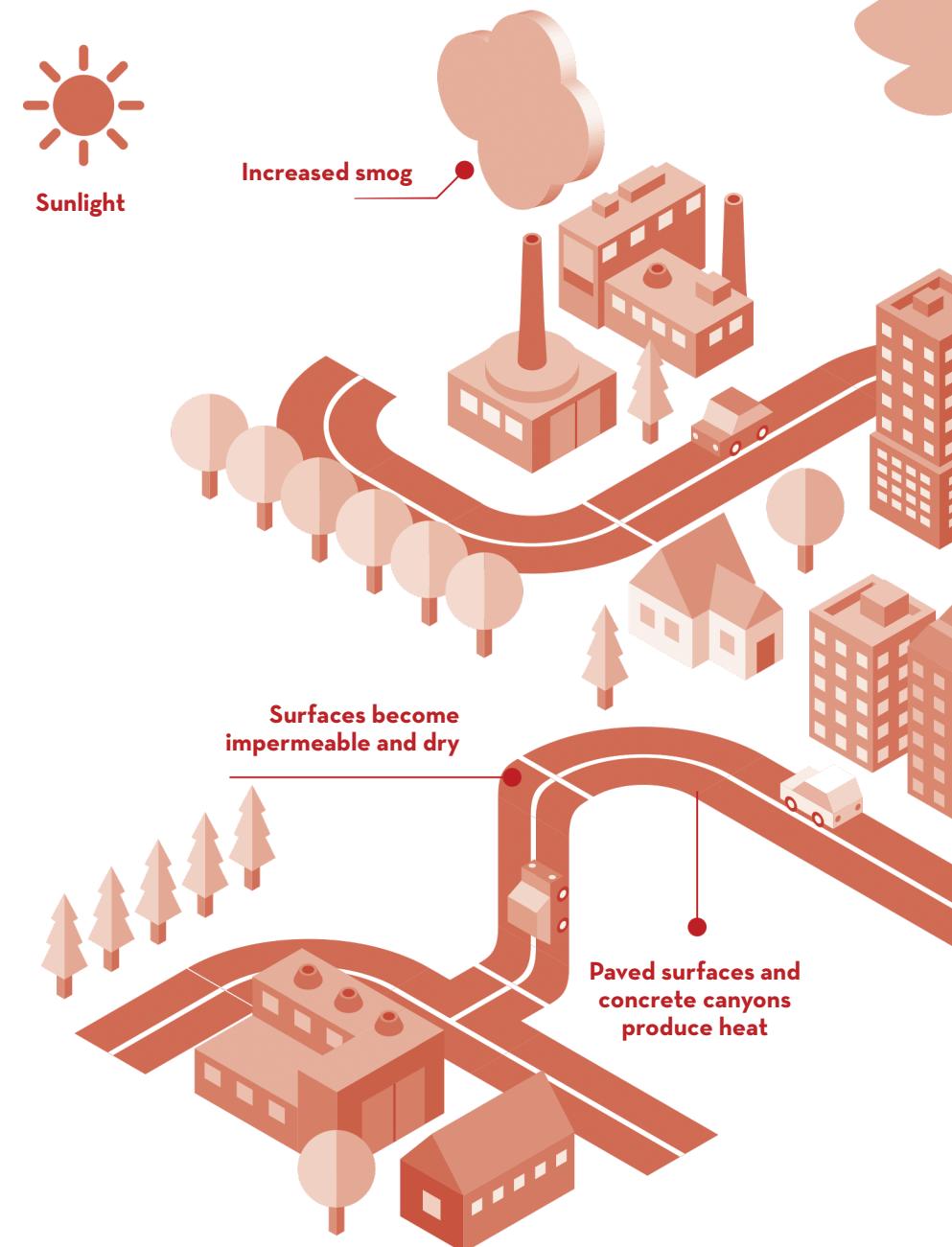
The urban heat island effect occurs when construction materials, impervious cover, and other factors make urban areas warmer than non-urban areas.[56] As temperatures increase due to climate change, this effect will worsen. By targeting resources where they are needed most, we can reduce temperature differentials and minimize the impact of rising temperatures. Several strategies to identify and reduce the urban heat island are described in Climate Ready DC. Building on that work, we will:

- Create a map-based tool that combines data on the urban heat island, heat-related illness, tree canopy, land cover, cool roofs, and green infrastructure.

- Use this tool to prioritize, accelerate, and evaluate DGS, DDOT, DHS, DPR, and DOEE investments to eliminate urban heat islands (e.g. drinking water, trees, plantings, green and cool roofs, paving materials, hyperthermia shelter locations). This will prioritize resources in areas where the urban heat island effect is the worst, such as in Queens Chapel, Michigan Park, and Bloomingdale.

- Ensure all residents have access to free, accessible cooling areas or centers within walking distance of their home.

KPIs
- °F difference between areas of the city on July 1
- % of green space
- Amount of tree canopy

PARTNERS
DGS, DDOT, DHS, DPR, DOEE, HSEMA, Casey Trees

Urban Heat Island

High: 101.9°F

Low: 85.4°F

Shandas, Vivek; Voelkel, Jackson; Williams, Joseph; Hoffman, Jeremy. 2019. "Integrating Satellite and
Ground Measurements for Predicting Locations of Extreme Urban Heat." Climate 7, no. 1: 5
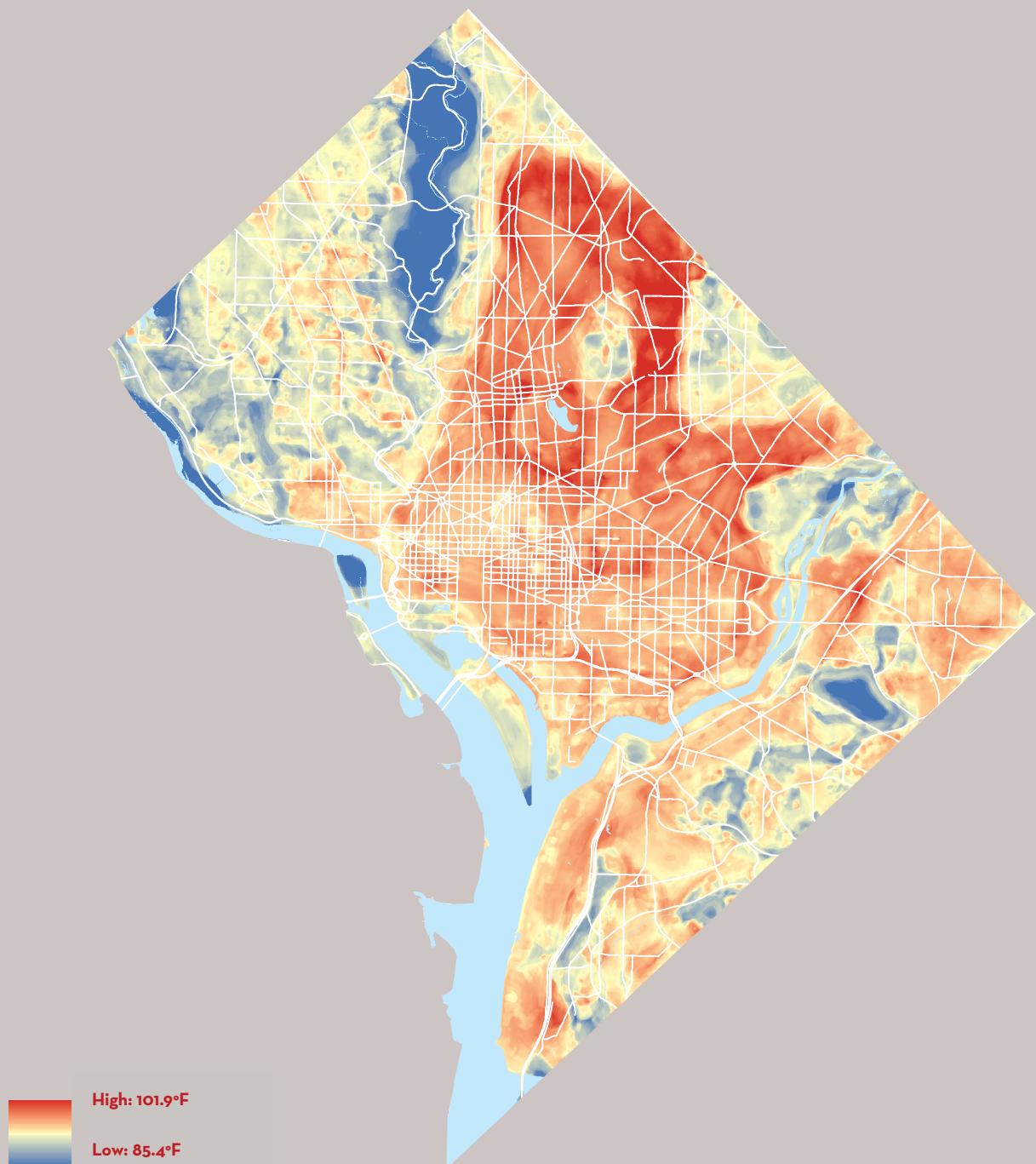
Causes and impacts of the urban heat island effect

The urban heat island effect occurs when construction materials, impervious cover, and other factors make urban areas warmer than non-urban areas. As temperatures increase due to climate change, this effect will worsen.

Health effects

Emergence of infectious diseases

Respiratory difficulties, heat cramps, and heat-related mortality

Circulatory and cerebrovascular effects like heat exhaustion, dehydration, heat collapse/syncope, and heat stroke

Sunlight

Increased smog

Surfaces become impermeable and dry

Paved surfaces and concrete canyons produce heat

U.S. Global Change Research Program. "Fourth National Climate Assessment: Summary Findings." USGCRP, 2018. Accessed April 14, 2019. https://nca2018.globalchange.gov/.

Air conditioning increases the use of energy

Warm air rising from a city may collide with moist air from a nearby body of water, releasing precipitation

Heat from the building surface

Gases (from cars and others) become trapped and create more heat

Less ground storage of rainfall

Other effects

Reduced labor capacity (water loss of 1–2% of body weight can reduce labor capacity by 6–7%)

Reduced productivity

Lower air quality as pollutants produced from vehicles, industries and people are trapped by the urban landscape

Change in weather and climatic conditions

Depleted water quality

Increased energy demand and consumption due to high demand of air conditioners and fans

Amplified emission of air pollutants and greenhouse gases

How to prepare for increased heat

Rooftop gardens

Vertical gardens

Solar panels

Window shades

Increased ventilation

Cool roofs

Rainwater capture

Shade from trees

Tree protection

Permeable, light-colored pavement

Community emergency heat plans

Recharge local groundwater
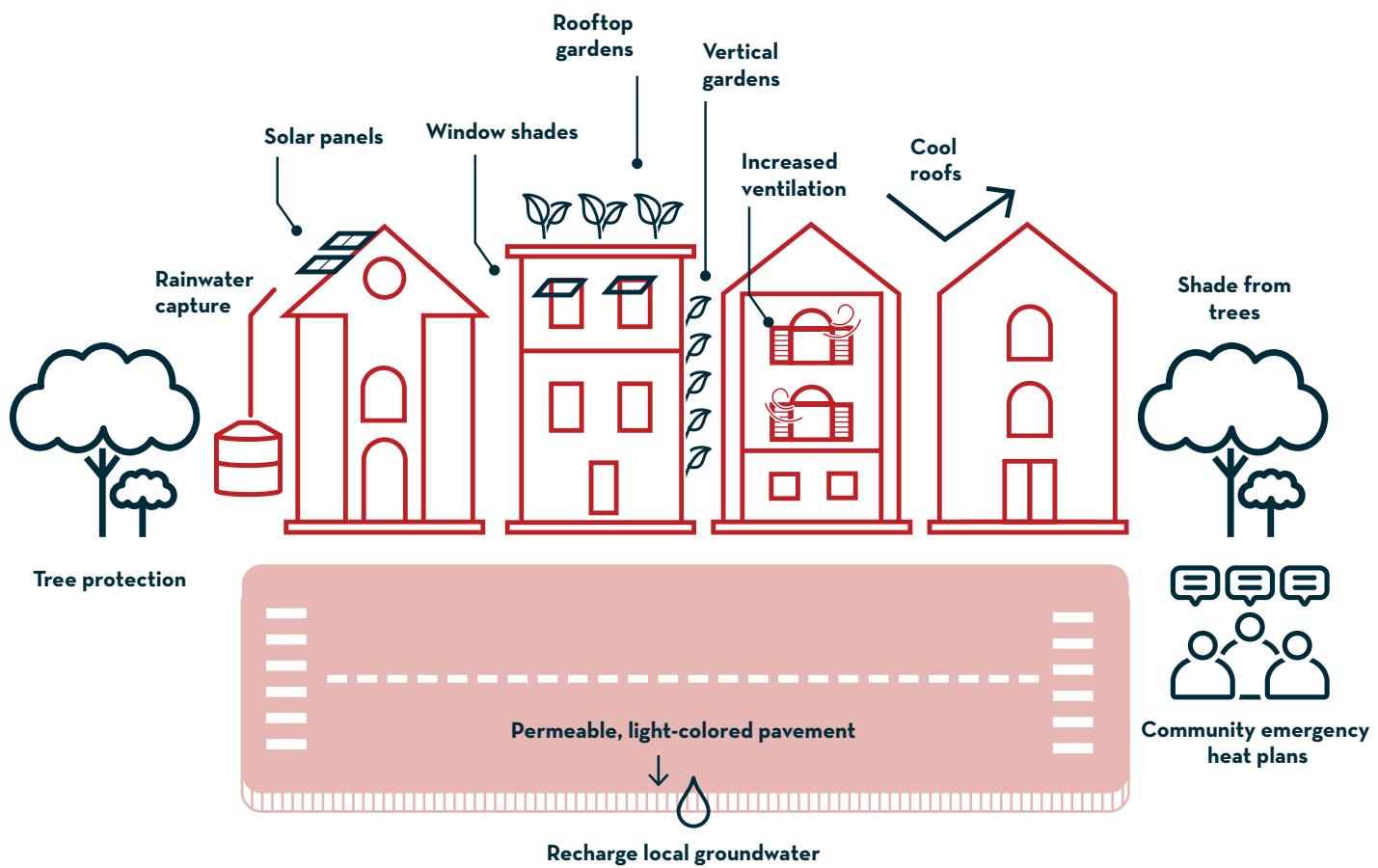
2.3.2   ## Increase affordability and adoption of flood insurance

There are roughly 1,770 buildings within the Special Flood Hazard Area, an area designated by FEMA as having high flood risk. There are approximately 2,000 flood insurance policies supported by the National Flood Insurance Program active throughout the District. However, more than 80% of these are in lower-risk areas. This initiative will lower flood risk and the cost of flood insurance for businesses and residents. Flood insurance is a critical component of any climate adaptation strategy as it allows property owners to be made whole after a flood and provides a financial incentive for hazard mitigation. Through this initiative, we will:

- Take the necessary steps to bring the District's flood risk management program into good standing with FEMA, which administers the National Flood Insurance Program.

- Take steps to increase awareness of and mitigate risk from flooding. This will include a campaign to increase building owner awareness.

- Develop and offer supplementary flood insurance through District action, if necessary.
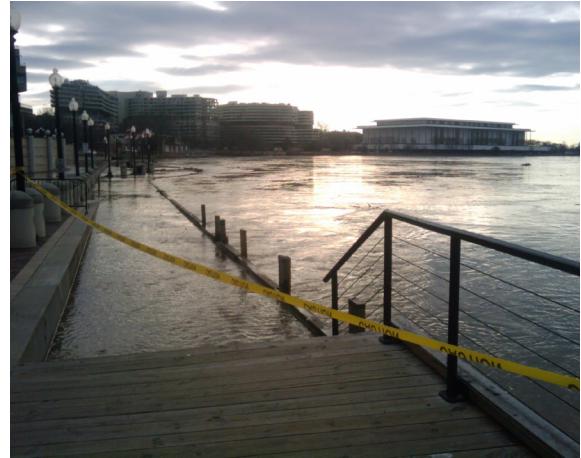
KPIs
- % of homeowners/businesses in the Special Hazard Flood Area with flood insurance
- % of updated Flood Insurance Rate Maps
- % of the floodplain for which a 30-year projection has been developed based on updated Flood Insurance Rate Maps
- % of homeowners/businesses in the 30-year projection of the SFHA with flood insurance

PARTNERS   DOEE, DISB, DHCD, FEMA

Critical infrastructure within the current floodplain

FEMA FIRM Floodplains from 2016

- 100-year floodplain
- 500-year floodplain
- Select critical infrastructure within 50 feet of a floodplain*

*Includes public schools (5), charter schools (1), Metro stations (4), electric substations (3), and hospitals (0).

Federal Emergency Management Agency. FIRM Floodplains from 2016. SHP. DCGISopendata, September 7, 2018.
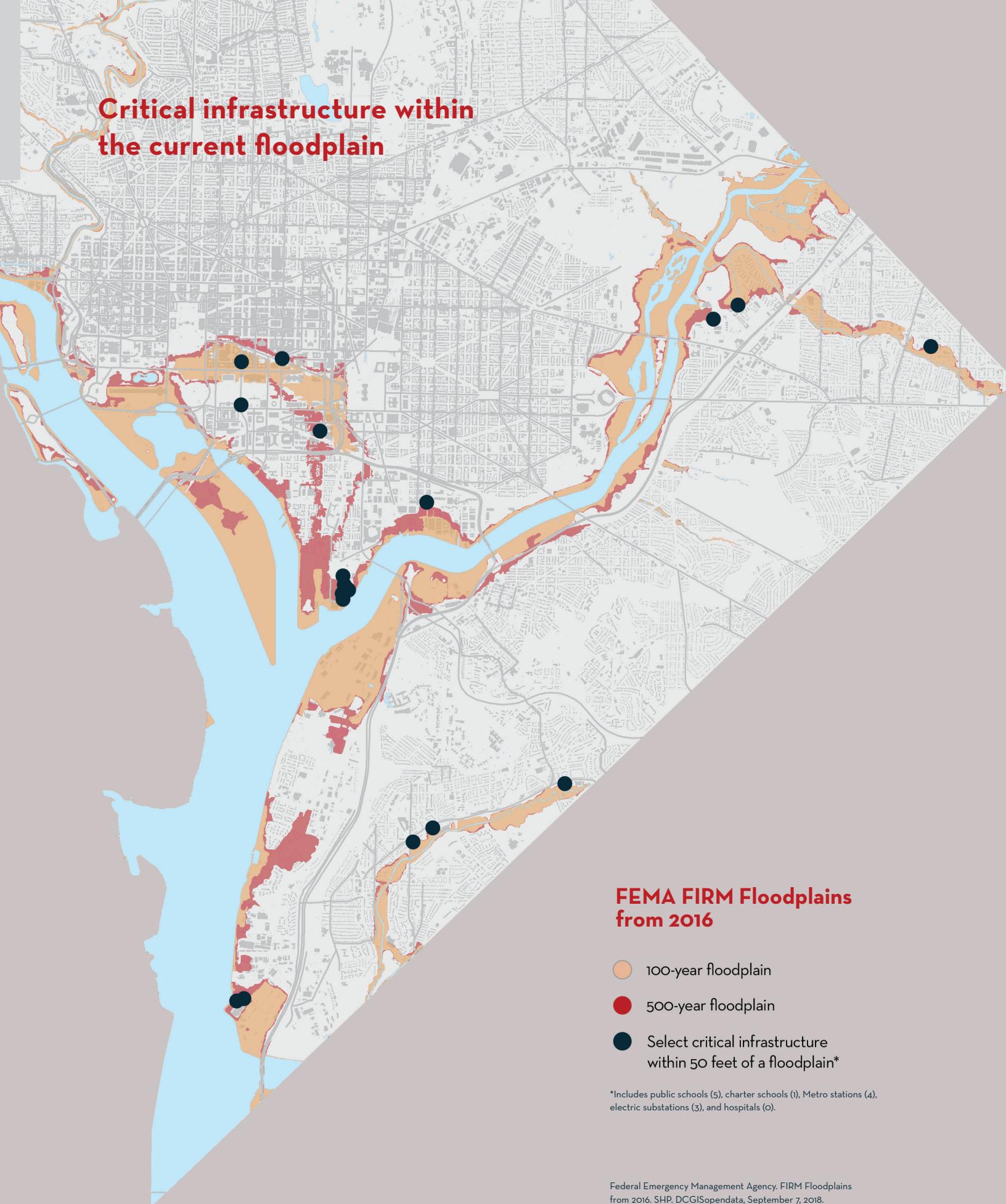
Risk of flooding over a 30-year mortgage

0.2% chance:
500-year flood

1% chance:
100-year flood

A

B

House A has a 1% chance of flooding in a single year and a 26% chance of flooding during a 30-year mortgage.

House B has a 0.2% chance of flooding in a single year and a 6% chance of flooding during a 30-year mortgage.
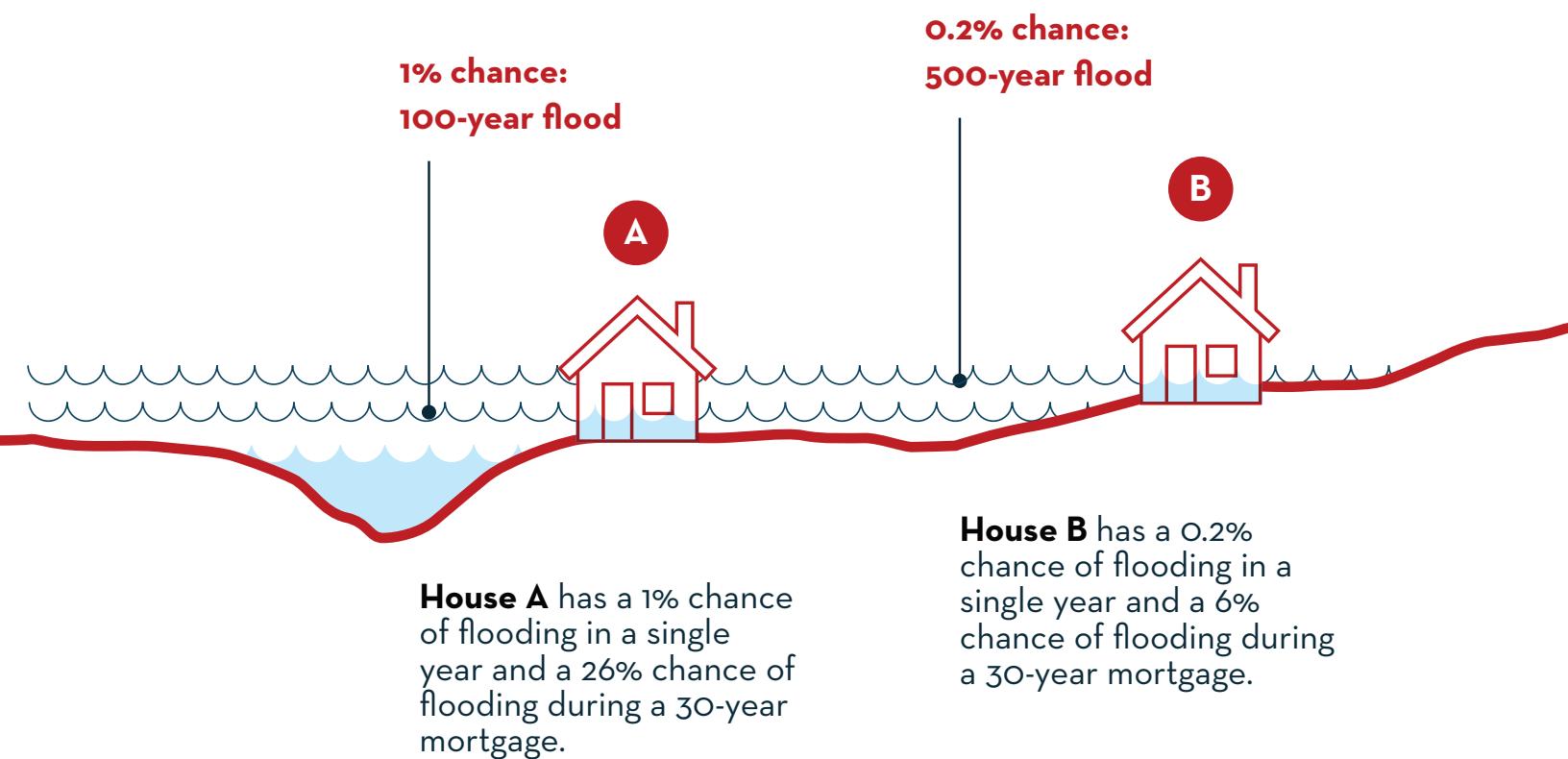
2.3.3   Launch the Resilience Hubs and Resilience Corps programs by 2023

Not all climate adaptation measures are focused on the built environment. Social resilience refers to an individual's or community's ability to cope with an adverse event, like a flood, heatwave, or any other shock. Efforts should be made to help neighbors, families, and communities to come together and support each other during times of adversity and relative calm. Community Emergency Response Team (CERT) training courses, which are offered by the Homeland Security and Emergency Management Agency (HSEMA) through federal funding, train citizens to be better prepared to respond after an emergency, and Climate Ready DC calls for Community Resilience Hubs. Building on these efforts, we will create a two-pronged program to increase social cohesion and resilience. Through this initiative, we will:

- Launch a program called Resilience Corps. Resilience Corps will consist of paid neighborhood captains who work to promote awareness of and adaptation to climate change while building social cohesion. The captains will be responsible for building neighborhood-based networks of volunteers in partnership with ServeDC. During the steady state, neighborhood captains will work to promote existing programs that lower risk for vulnerable populations (e.g. mental health services and loans for small repairs). In addition, the captains will be charged with hosting neighborhood block parties that increase neighborliness and awareness of and access to services.

- Pilot Resilience Hubs in trusted community facilities in areas with high climate risk that can act as a place of refuge and hub for resources and information in the event of a disaster. With community input, we will pilot this program in one or both of the neighborhoods identified in the Resilient Rivers Focus Area.

KPIs
- # of neighborhood captains
- # of volunteers
- # of Resilience Hubs

PARTNERS ServeDC, DOEE, HSEMA, USDN, CNCS, MOCA, DHS, DPR

Resilience hub
Helps prepare for shocks and builds a more connected community

Resources to meet community needs are on hand.

- Fresh water
- Food
- Ice
- Refrigeration
- Basic medical supplies
- Charging stations
- Fuel

The existing and well-used building is trusted by the community and built to withstand shocks.

- Programming at the Hub is designed and led by community members
- Hub offers heating and cooling
- Hub is accessible and open to everyone

Reliable energy systems to sustain operations during a power outage (solar panels, generator, reserve batteries, etc.)

Trained staff or volunteers to manage operations and help in the event of a shock.

2.3.4

Pilot a microgrid on the St. Elizabeths East campus by 2023

Climate change could lead to increased power outages for two reasons. First, hotter temperatures will increase the need for air conditioning which could overwhelm the electric grid. Second, intense storms could knock out power from fallen trees and wind. In addition to assisting during disruptions caused by climate change, microgrids can also help a community with other disruptions caused by surges, human error, terrorism, and degraded infrastructure. Microgrids are distributed energy systems that have the ability to separate (or island) themselves from the larger grid. This allows them to maintain power in the event of a larger outage. Through this initiative we will:

- Pilot a microgrid on the St. Elizabeths East campus to provide energy for the Unified Communications Center (UCC), HSEMA, and the new hospital.

- Document lessons learned from the microgrid pilot.

- Build more microgrids, prioritizing critical infrastructure (e.g. Fire and Emergency Services Department, Metropolitan Police Department, hospitals) and vulnerable populations.

KPIs
- % change in load capacity
- % change in number of disruptions caused by surges, outages, etc.
- $ per kWh
- Tons of carbon dioxide equivalent

PARTNERS
UCC, HSEMA, DMPED, St. Elizabeths East, Pepco

2.4

Invest in climate action

2.4.1   ## Increase the efficiency of District Government buildings 20% by 2030

Each year, DC Government spends more than $25 million on electricity costs. More efficient buildings reduce operating costs, increase thermal comfort, and increase the passive survivability of buildings. When the power goes out, a more efficient building will remain at a comfortable building temperature longer. To accelerate the District's investment in energy efficiency, we will:

- Determine the feasibility of entering into long-term energy performance contracts, energy-as-a-service contracts, or similar vehicles.

- If necessary, propose legislation to enable long-term financing and/or procurement of energy efficiency measures.

- Launch a systematic and sustained campaign to retrofit existing District Government buildings, prioritizing efficiency measures that also adapt to climate change.

BASELINE ENERGY USE INTENSITY

96 kBtu
PER SQUARE FOOT

for District Government buildings larger than 10,000 square feet

Source: DGS

KPIs — Energy use intensity of the District Government buildings portfolio

PARTNERS DGS, Pepco, WGL

2.4.2

Set up the DC Green Bank

Many property owners and managers would invest in renewable energy and energy efficiency but do not have the up-front capital necessary. As a result, several jurisdictions have created green banks that offer low-interest loans and other products to enable these investments. The District is in the process of standing up its green bank. This initiative will accelerate DC's progress toward becoming a carbon-neutral and climate-resilient city by 2050. Through this initiative, we will:

• Stand up the Green Finance Authority — established via the Green Finance Authority Establish Act of 2018 — by appointing a board and hiring staff.

• Develop and expand the offering of loan products that enable clean energy, clean infrastructure, clean transportation, stormwater best management practices, energy efficiency, water efficiency, or green infrastructure projects and programs.
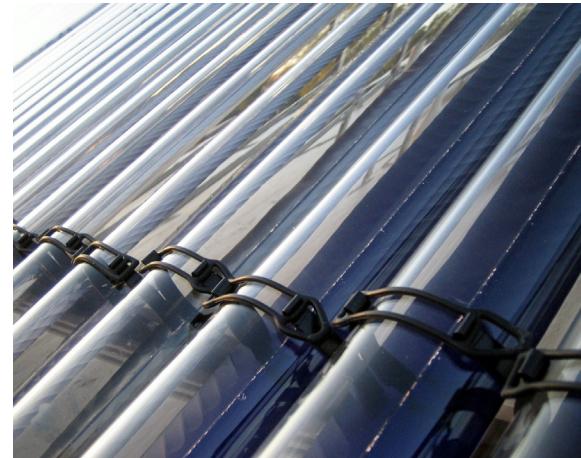
KPIs	- # of contracts signed - # of projects funded or partially funded
PARTNERS	DOEE, OP3, MOTA

2.4.3

Implement the Clean Energy Omnibus Act of 2018

The District recently passed ground-breaking climate legislation to accelerate the decarbonization of DC. This initiative will result in the acceleration of DC's progress toward becoming a carbon-neutral and climate-resilient city by 2050. We will provide executive-level support from the Mayor's Office to ensure implementation of the Clean Energy Omnibus Act of 2018. This will:

• Establish a building energy performance standard program.

• Increase the renewable portfolio standard to 100% by 2032.

• Enter into a regional compact to reduce transportation-related carbon pollution.

• Provide incentives (through vehicle excise taxes) for fuel-efficient vehicles.

• Expand the Sustainable Energy Trust Fund by 100% for electricity and 200% for natural gas.

KPIs	- % of Clean Energy Omnibus Act implemented
PARTNERS	DMV, DOEE, MWCOG

2.4.4   **Pilot new financial tools and products for resilience**

Recognizing the need for faster climate action, many institutions have proposed novel financial and procurement tools to facilitate investment in resilience. For example, resilience bonds combine catastrophe bonds (a form of insurance) with up-front funds to mitigate climate-related risk. We will create a resilience finance innovation task force to identify and test new financial tools and products for building climate resilience. Specifically, we will:

• Identify emerging tools (e.g. resilience bonds, social impact bonds, green bonds, outcome-based procurement, and insurance products).

• Determine potential resilience projects that have not been funded and assess the feasibility of alternative financial tools and pilot as appropriate.

• Calculate and publish a study on the cost of inaction on climate adaptation to drive further investment in climate resilience.

KPIs
- # projects in the pipeline that have been identified to apply these financial tools
- # pilots where tools have been applied successfully

PARTNERS
CFO, OBPM, OCP, DOEE, DGS

Goal 3: Smarter DC

We envision a DC that embraces advancements in technology, while minimizing the negative consequences of change. With the initiatives outlined below, Washington, DC will be a technology-enabled city with strong support and safeguards for its residents.

DC needs to be resilient to three types of technological change: automation and the future of work, the movement of people and goods, and increased cyber threats in an increasingly connected city. Automation occurs when human labor is replaced by a system or process that operates automatically. For example, restaurant orders in many airports are now taken via touchscreen, instead of by a human server. In 2018, DC, like cities across the country, saw the introduction of dockless bikes and scooters, autonomous vehicles tests, and electric skateboards. These mobility technologies could help lower carbon pollution, decrease congestion, and increase access to jobs. They also have safety, land use, and economic implications. Finally, networked, technology-enabled solutions (i.e. smart city approaches) increase efficiency and effectiveness but also increase the potential severity of cyberattacks.

Technological advancements also offer the opportunity to do things more efficiently and effectively. In fact, DC is often cited as a center for civic technology startups and policy innovation. Together, we will take a proactive approach to embrace innovation while minimizing the drawbacks.

What we know

- Fewer jobs will be available to individuals without an advanced degree due to workforce automation (e.g. retail, administrative services, and accommodation/food service).[57]

- There will be a shortage of technology workers as employers look for individuals with cybersecurity and software development skills.[58]

- More jobs will be in the "gig economy," meaning more DC residents will be employed as freelancers or independent contractors.[59]

- The frequency of cyberattacks will increase and the potential impacts will worsen as connected technologies become more abundant.

- By 2035, 38% of all cars sold will be fully autonomous and another 39% will be partially autonomous.[60]

AUTONOMOUS VEHICLES PROJECTION
2035

38%
fully autonomous

39%
partially autonomous
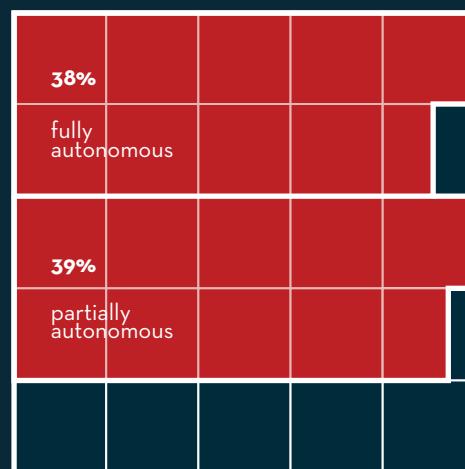
Our Vision

To be the highest ranked city on the EIU Digital Security Index by 2025

"Smart city" technologies, such as big data analytics and infrastructure connected by broadband and wireless internet, have been used throughout the world to make city systems more efficient. As District systems become more digitally connected, they also become more vulnerable to cyberattack if aggressive measures are not widely implemented. From 2015 to 2017, DC moved from number 18 up to number 15 on the Economist Intelligence Unit (EIU) Digital Security Index of 60 global cities.[61] This is an important improvement, but in order to protect Washingtonians, visitors, and the seat of the national government, DC will need to make strategic investments in digital security.

To meet the demand for more jobs and job training in automation-resistant industries

Advancements in technology affect all aspects of life. These changes affect not only the type and availability of jobs but also the education required to do those jobs. In 2017, roughly 76% of DC workers were employed in a sector with low automatability. However, occupations with the highest automatability ratio are low-skill jobs in food service, administration services, and retail. Furthermore, 7 out of the 10 ZIP codes with the most workers in automatable fields have lower per capita income and larger populations of people of color than the DC average.[62] Investments and policies that enable DC to create jobs, attract companies, and train workers in automation-resistant industries will lead to a more equitable and resilient city.[63]
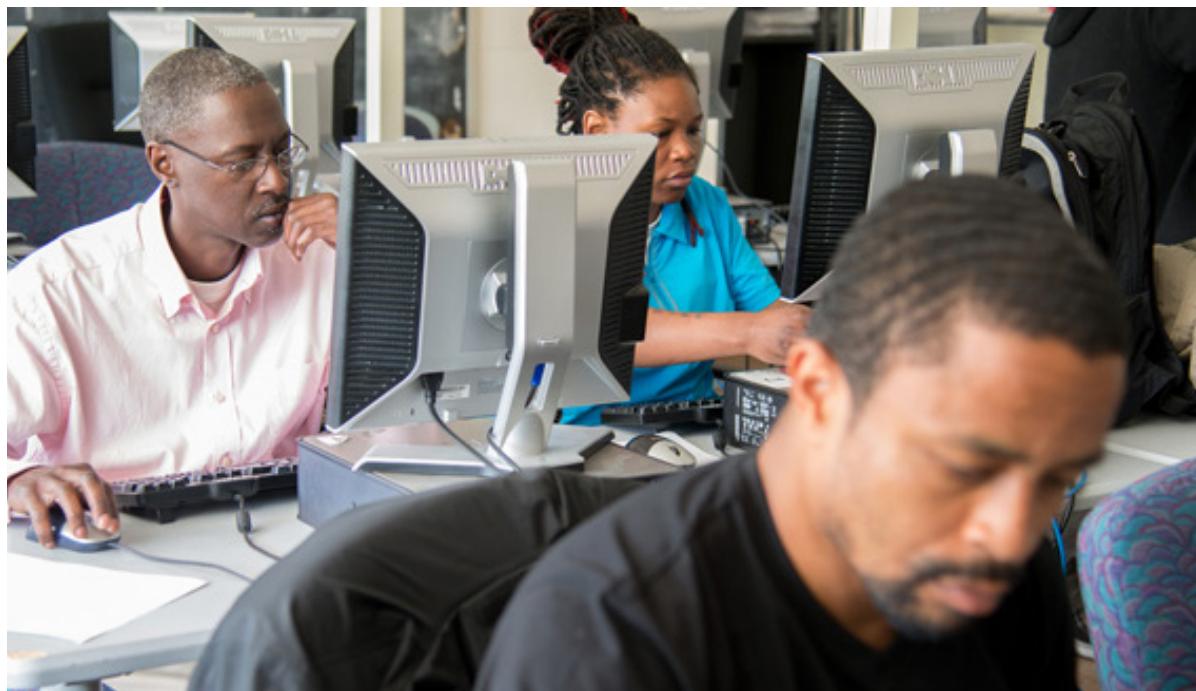
To have a workforce prepared for jobs in cybersecurity and software development

From 2016 to 2026, the United States Bureau of Labor Statistics projects that employment in software development and information security will increase by 30.7% and 28.5%, respectively. As the 9th and 16th fastest growing occupations in the U.S., and both with median annual salaries over $95,000, encouraging the development of these positions and other high-paying IT jobs in the city will increase economic growth and help DC respond to rapid changes in technology and cybersecurity.[64]

To reduce average commute times and costs

Commuters in DC have some of the longest commute times in the country and are suffering the consequences in terms of quality of life and in their wallets. In 2015, congestion cost Washingtonians on average $1,834 annually and annual delays of 82 hours per commuter.[66] Creating an enabling environment that promotes improvements to mobility technologies while planning for future implications of those technologies will position DC as a leader in advanced mobility and increase residents' quality of life.

To maintain first place in growth entrepreneurship and advance to the top 10 for startup activity in the Kauffman Index of Startup Activity

The DC metro area was ranked 1st of 40 metropolitan areas in growth entrepreneurship, but only 25th in startup activity according to the Kauffman Index of Startup Activity in 2017.[65] Maintaining the top ranking in entrepreneurship and improving DC's score in startup activity are essential to remaining a competitive location for technology companies and jobs of the future.

3.1

Improve the whole community's ability to mitigate, respond to, and recover from cyberthreats

3.1.1

Adopt cybersecurity best practices to improve the District Government cybersecurity posture

Damage from cyberattacks can compromise systems and networks in ways that disrupt critical government services. Furthermore, the concentration of symbolic and federal government targets makes DC a likely target of state- and non-state actors. For example, during a five-day period in 2018, DC reviewed and mitigated over 330,000 major cyberattacks against the DC network. To address these risks, the District recently purchased a cyber insurance policy to facilitate the efficient restoration of services in the event of a successful intrusion. The District also requires that contractors maintain a minimum level of cyber insurance coverage. To further increase cyber protections, DC Government will lead by example and adopt cybersecurity best practices that protect critical government systems from such attacks. Through this initiative we will:

• Complete a business system inventory that identifies critical systems in and outside of DC Government networks.

• Improve visibility into the operational health and cybersecurity posture of all network components, server systems, and business applications on DCNet — the District's citywide communications network — across mayoral and independent agencies.

• Develop a standardized and synchronized business system risk management framework that addresses risk, vulnerabilities, and business impacts in a holistic way.

MAJOR CYBERATTACKS AGAINST DC NETWORK

331,019

THREATS RECEIVED AND MITIGATED

FROM NOVEMBER 5 TO 9, 2018

DC Government

KPIs   - EIU Digital Security Index ranking

PARTNERS   OCTO, ORM, HSEMA

3.1.2

Launch a DC Cybersecurity Partnership to promote best practices by 2023

A successful cyberattack on non-District Government entities, including the many governments, institutions, and private companies in Washington, DC, could have a significant impact on residents, businesses, and visitors. While the District Government does not have the authority or ability to monitor and secure these networks directly, we can strengthen cyber preparedness across all sectors by fostering collaboration and education. This will help foster a whole community approach to cyber resilience and market DC as a safe place to do business as well as a leader in cybersecurity innovation. Through this initiative we will:

- Launch a voluntary partnership to educate DC businesses, nonprofits, and institutions, and promote cybersecurity best practices. The partnership will be education-focused and designed to supplement ongoing efforts through the HSEMA Cyber Center, which are geared toward operations and intelligence sharing.
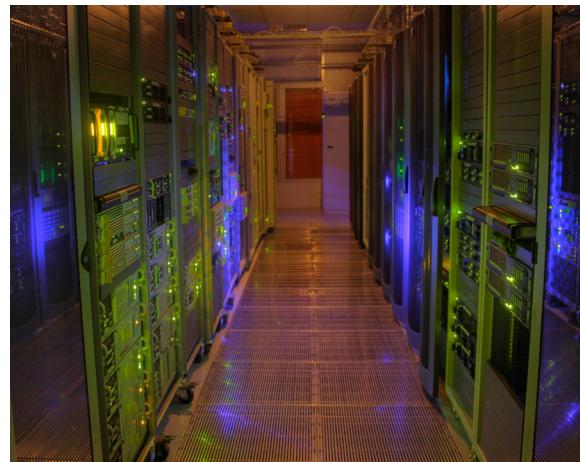
◇ KPIs	- # of partners
⚇ PARTNERS	MWCOG CISO Committee, HSEMA, OCTO

3.1.3   **Launch a Cybersecurity Corps program to train the next generation of cybersecurity professionals**

Careers in cybersecurity are high-paid and projected to grow much faster than other career paths, on average.[67] At the same time, the District faces mounting cyber risks. The DC region is home to several leading cyber institutions, including the National Institutes of Standards and Technology, U.S. Cyber Command at Fort Meade, and the George Washington University's Center of Academic Excellence in Cyber Defense Research. Therefore, this presents an opportunity to train DC youth for high-quality careers in a growing field, while ensuring government and institutions have the workers and soldiers they need to handle increased cyberthreats. Through this initiative we will:

- Partner with these institutions and others to launch the Cybersecurity Corps program, similar to Junior Reserve Officers' Training Corps (JROTC), to train high school students in cybersecurity and defense and place them in careers.

KPIs
- \# of high school students participating in the program
- \# of DC youth pursuing careers in cybersecurity

PARTNERS
CYBERCOM, NIST, DC National Guard, GW

3.1.4   ## Ensure that 100% of District agencies plan for cyberthreats by 2023

Successful cyberattacks could disrupt government services. District agencies must have plans in place to quickly restore services in such an event. Mayor's Order 2012-61 requires each District Government agency to develop and maintain a Continuity of Operations Plan. These plans outline how the agency will continue to deliver services following an adverse event (e.g. flood). To date, these plans have focused on physical threats. We will integrate cyber resilience into every agency's plan in acknowledgement of increasing cyberthreats. Through this initiative, we will:

• Identify and collect existing language in all agency level Continuity of Operations Plans regarding cybersecurity.

• Leverage the work of the Office of the Chief Technology Officer (OCTO) Disaster Recovery redundant system initiative to define agency operational restoral priorities, relationships, dependencies, and roles and responsibilities.

• Finalize a cyber response plan that clearly identifies District priorities and the roles and responsibilities of key cyber resilience staff in DC's COOP framework, in partnership with local universities.

• Increase agency compliance with Mayor's Order 2012-61 to ensure that agencies are adequately prepared for all threats.
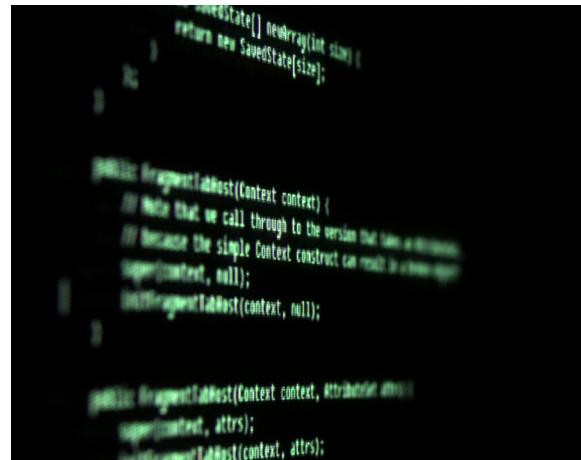
KPIs   - # of agencies that integrate cyber preparedness in their COOP plans

PARTNERS   OCTO, HSEMA

3.2

Make DC a prime location for workers of the future and prepare for automation

3.2.1

Implement new future-of-work protections and resources for freelance workers by 2025

Freelance, contract, independent, and gig economy work is increasingly common — and this trend is likely to continue with ongoing technological change. However, these workers do not enjoy the same protections and benefits of more traditional work, such as retirement savings accounts or certain legal safeguards. As DC's workforce evolves, we will ensure that workers of the future enjoy the same protections as full-time employees and are protected from exploitation. Through this initiative we will:

- Establish legal protections for freelance workers, including requiring a contract, timely payment, freedom from retaliation, and the right to file a complaint.

- Seek a partner to create a future-of-work support program. This program will assist freelance workers by providing or connecting residents with advisory services around legal issues, workers' rights, complaints, and more. It will also be charged with compiling and publicizing government resources to benefit freelance workers.

KPIs
- # of freelance workers assisted
- # of protections created for freelance workers

PARTNERS
DOES, DSLBD

3.2.2

Transition workers at risk from automation

Automation and artificial intelligence will change the workplace, requiring different skills from human workers. In DC, automation will disproportionately impact low-income residents and residents of color, threatening to displace their jobs and exacerbate existing economic inequality. To ensure that DC's workforce is properly prepared or has all the resources it needs to prepare for a job transition due to automation, we will:

- Identify job titles and sectors that are projected to be at high risk from automation.

- Map the skills and experience of those at-risk jobs and compare them to stable jobs (growing professions with a low risk of automation), and identify gaps in skills.

- Align workforce programs and resources to fill the skills gaps identified in order to transition at-risk workers into stable work, expanding training and educational opportunities or launching new ones.

◇ **KPIs**
- Employment rate in sectors that are at low risk of automation
- Number of workforce programs aimed at transitioning workers

⛗ **PARTNERS** DOES, UDC, DME, DMGEO

Areas with the greatest share of workers whose jobs are at risk from automation

Automation or automatability is the act of replacing or supplementing human labor with apparatuses, machines, tools, processes, or systems.

● Workers that live in these ZIP Codes have the highest average automatability levels.
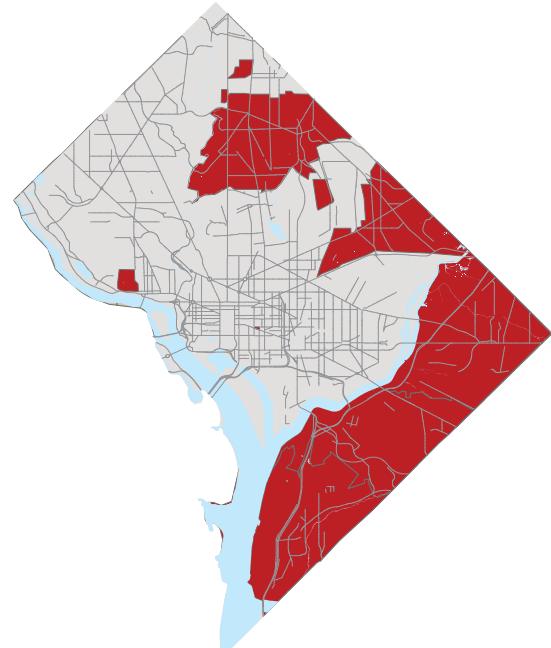
AECOM. "Impact of Automation." Internal report for District of Columbia. Unpublished. September 9, 2018.

3.2.3   **Expand training opportunities in non-automatable fields by 2023**

Hospitality, retail, and administrative services are the sectors expected to be most affected by automation. These are also often the jobs most available to individuals without a college degree. Nurturing automation-resistant industries that show high potential for growth in DC — accessible to workers of varying skill levels—will help insulate the city from the effects of automation and ensure availability of high-quality jobs in the future for residents from all educational backgrounds. To strengthen the school-to-career pipeline — accessible to all K–12 student s— that is flexible and responsive to a changing economy, including automation, we will:

- Prioritize and align K–12 Career and Technical Education (CTE) programs, including Career Academies and other opportunities, toward sectors and job titles that are resistant to automation.

- Form new partnerships with employers in the private, public, and nonprofit sectors to train Washingtonians in skills and sectors that are projected to be high wage, in high demand, and resistant to automation. This will lead to new work-based learning experiences — such as internships, job shadowing, and industry field trips — that prepare more DC students for high-quality jobs.

KPIs
- Number of K–12 students participating in automation-resistant CTE programs
- Number of new CTE partnerships launched

PARTNERS   OSSE, DME, DOES

Automatability of Jobs in DC, 2017
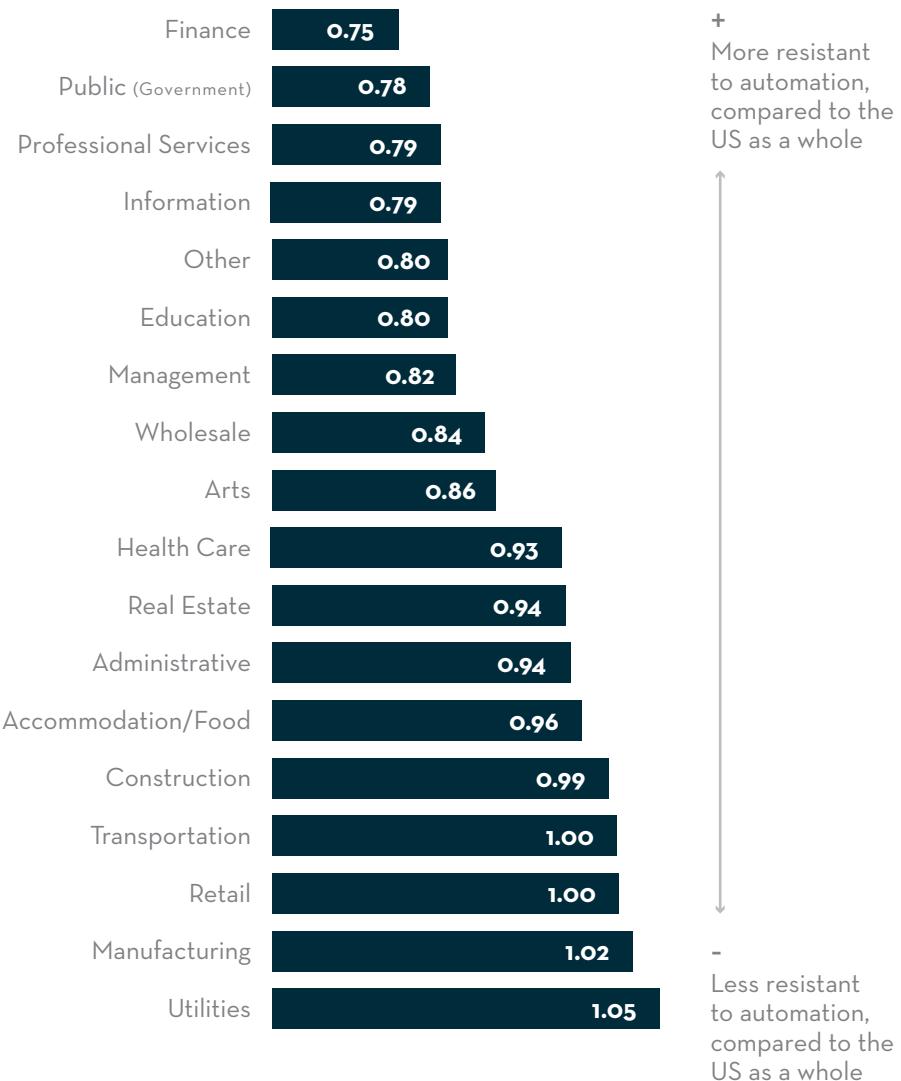
Category	Value
Finance	0.75
Public (Government)	0.78
Professional Services	0.79
Information	0.79
Other	0.80
Education	0.80
Management	0.82
Wholesale	0.84
Arts	0.86
Health Care	0.93
Real Estate	0.94
Administrative	0.94
Accommodation/Food	0.96
Construction	0.99
Transportation	1.00
Retail	1.00
Manufacturing	1.02
Utilities	1.05

+
More resistant
to automation,
compared to the
US as a whole

–
Less resistant
to automation,
compared to the
US as a whole

AECOM. "Impact of Automation." Internal report for District of Columbia. Unpublished. September 9, 2018.

3.2.4

Promote care economy careers

Care work, including jobs in childcare, health care, and elder care, represents some of the most automation-resistant careers. These sectors are also underdeveloped relative to their potential in DC. Moreover, the growth of these sectors provides important co-benefits for DC families by increasing access to quality family care services. For all of these reasons, we will promote care economy jobs, providing the city's workforce with increased access to affordable family care resources while meeting demand with a well-trained workforce. We will:

- Identify and reduce barriers to participation in the care economy by making it easier to open and operate care facilities. For example, we will simplify registration, permitting, and operation processes, and streamline access to payment support programs (such as Medicaid, Medicare, and other subsidy and voucher programs).

- Train students and workers in early childhood and home/elder care through additional educational and workforce development programs.

- Gather and make available resources for care-related businesses and careers in one accessible location (e.g. website and career fair) to help entrepreneurs navigate DC government.

<table>
<tr><td>✎ KPIs</td><td>- # of DC residents working in the care economy
- # of new care facilities opened
- # of DC residents participating in care economy training programs</td></tr>
<tr><td>👥 PARTNERS</td><td>DOES, DSLBD, DCRA, DHCF, CFSA, DHS, DC Health</td></tr>
</table>

Career growth in care industries
CHANGE, 2016–2026

BASELINE 7.4 (ALL OCCUPATIONS)
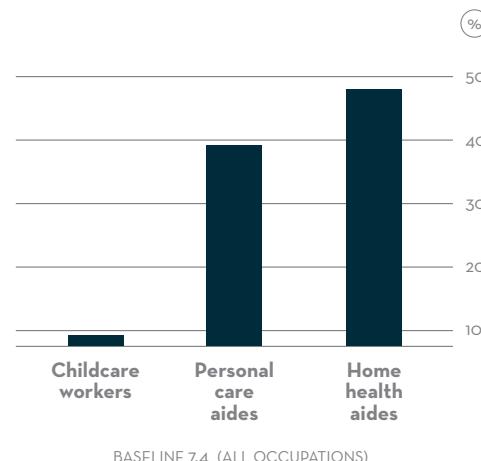
Automation is expected to impact care work less than other industries.

0.22	0.57	0.57
Childcare workers	Personal care aides	Home health aides

0 —— MORE AUTOMATABLE ⟶ 1
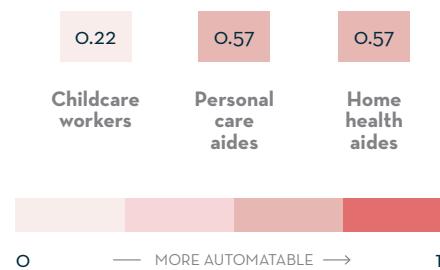
Careers in the care economy show high potential for growth in DC.

0.74	0.23	0.23
Childcare workers	Personal care aides	Home health aides

LESS DEVELOPED   1   MORE DEVELOPED
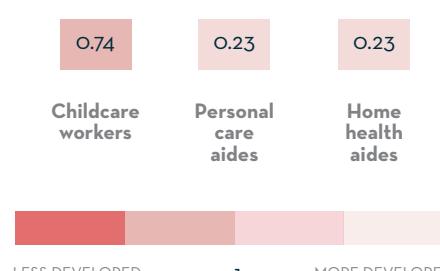
Bureau of Labor Statistics. Employment by detailed occupation, 2016 and projected 2026. XLS. January 30, 2018.

AECOM. "Impact of Automation." Internal report for the District of Columbia. Unpublished. September 9, 2018.

3.3

Leverage new technology and big data for civic solutions

3.3.1

Re-charter the Smarter DC initiative to accelerate the use of smart city technologies by 2023

Smart city is a term used to describe solutions to civic challenges that rely on networks, internet of things, or other connected technology. For example, the District installed remotely managed, sensor-based LED streetlights on a stretch of Pennsylvania Avenue to improve operations and reduce costs. The Smarter DC initiative is an effort, led by the Office of the Chief Technology Officer, to explore how smart city technologies can be used in the District. Building upon this work, the next phase of Smarter DC will accelerate the implementation of innovative solutions. Through this expanded effort, we will:

- Re-charter the Smarter DC initiative as an advisory group for District agencies seeking smart city solutions to existing problems.

- Expand access to smart city solutions for District agencies through a single vetted source for new, connected technologies. Smarter DC will also serve as a single point of contact for industry within District Government.

- Develop technical specifications for devices that connect to DCNet.

- Gather challenges from agencies and host a smart city industry day and/or issue a consolidated request for interest to formalize these efforts.

KPIs
- # of smart solutions leveraged across District government
- Launch of smart city industry day

PARTNERS
OCTO

Smart city applications

Buildings

- Automation and optimization of services (heating, energy usage, lighting, ventilation, etc.)
- Fire detection and intelligent extinguishing
- Controlling access and monitoring of restricted areas

Utilities

- Utility grid that monitors and manages energy, water consumption, and loss

Transportation

- Use of sensors in roadways, street lights, and transit
- Monitoring availability of parking spaces

Environment

- Sensors to monitor environmental conditions such as pollution, wildlife counts, water runoff, etc.

Infrastructure

- Monitoring of buildings, bridges, and dams
- Warning systems for emergencies
- Monitors for solid waste levels in containers
- Intelligent street lightning adaptive to weather
- Public Wi-Fi

3.3.2

Become a global leader of smart city innovation by 2023

The DC Economic Strategy identified smart cities and civic solutions as a promising source of economic growth. This includes companies that focus on emerging approaches to urban infrastructure, transportation, energy, and sustainability, as well as government-focused smart city technologies. This industry cluster is expected to grow by $88.7 billion by 2025.[68] To capitalize on and accelerate this opportunity, we will leverage our role as the nation's capital and home to a high concentration of policymakers to establish DC as a global innovative hub for socially minded technology startups. To accomplish this aim, we will:

◇ KPIs	- # of socially minded technology startups
⚲ PARTNERS	WDCEP, DMPED, DSLBD, DMGEO

- Institutionalize an annual competition with a cash or contract award to foster businesses that use technology for social benefits, building upon efforts like GigbitDCx.

- Spotlight DC-based businesses that use technology for civic solutions through programs like InnoMAYtion.

3.3.3

Expand the use of machine learning and prediction to target scarce resources

Technological innovations present new opportunities to develop predictive models that allow the District to deliver core services more effectively and at a lower cost. For example, Lab@DC, a team in the Office of the City Administrator, has built models around rodent control and housing inspections, and is working on models to target resources for chronic absenteeism and lead exposure. To continue this work, we will:

◇ KPIs	- # of predictive models launched by Lab@DC
⚲ PARTNERS	OCA

- Increase the use of predictive data models across District Government in order to target scarce resources and improve service delivery by executing new partnerships between Lab@DC and DC Government agencies. For example, these data models can be leveraged to tackle additional challenges such as housing affordability by promoting anti-displacement tools to cost-burdened homeowners.

3.3.4

Expand and maximize the effective use of District Government data

The District has the opportunity to drive more effective decision-making and realize even greater benefits by continuing to innovate around the expanded use of open data. Mayor's Order 2017-115 establishes a comprehensive data policy for DC Government. This policy recognizes the value of making its data freely available to the public whenever possible, and many of the District's 1,600 datasets are available online at opendata.dc.gov. To build upon these efforts and expand the use of open data to address District challenges, we will:

- Promote the Open Data DC portal by continuing to increase available datasets.

- Foster cross-agency collaboration to use data to address specific resilience challenges. This will include holding open data workshops with potential data user groups.

- Launch partnerships with academic institutions and nonprofits to develop tools that increase utility and usage of open data.

- Create and maintain a data lake (i.e. a central repository for data) that will improve data integration and utility.

Open Data DC
Connecting You with Government Data

Find District Data...

KPIs
- # of datasets made publicly available
- # of cross-agency collaborations launched
- # of data partnerships launched

PARTNERS   OCTO, Lab@DC, universities

3.4

Adapt to new transportation technologies and increase mobility

3.4.1

Guide the deployment of new automotive technologies to maximize benefits and address challenges

Self-driving vehicles will impact the workforce and employment, urban planning, parking, pollution, and a range of other issues. Recognizing this fact, DC became a member of the Bloomberg Aspen Initiative on Cities and Autonomous Vehicles in 2017. The Mayor established an Autonomous Vehicles Working Group in 2018 to explore the implications of this technology further. Most recently, the District partnered with Ford Motor Co. to train residents at the DC Infrastructure Academy for jobs in maintaining autonomous vehicles (AVs). Continuing this work going forward, we will:

- Work to ensure that AV livery vehicles help meet the District's mobility and environmental goals.

- Learn from pilots like the 10th Street SW pilot that will connect the National Mall and Banneker Park to the Wharf via autonomous shuttles.

- Continue to electrify the DC Circulator fleet and build out infrastructure to keep them running in the event of a grid failure.

KPIs	- % of circulator buses that are electric vehicles
PARTNERS	DMPED, MPD, OCA, DDOT, HSMEA, FEMS, DMV, OCTO, DOEE, DGS, OP, DFHV, Office on Aging, Office of Disability Rights

3.4.2 Create a regional advanced mobility strategy

Mobility is the ability and level of ease of moving people around the region. In the DC region, residents, workers, and visitors take the bus, train, subway, walk, bike, ride scooters, or drive to get where they need to go. New technologies, such as AVs, electric-assisted bicycles, and dockless bicycles and scooters, will add new tools to address mobility challenges. A regional approach to mobility would better allow the region to address congestion and mobility challenges. To plan proactively for technological change while fostering an integrated regional approach, we will:

• Launch an effort within the Metropolitan Washington Council of Governments to create a regional advanced mobility strategy that integrates new technologies and prioritizes the sustainability of public transit.

• Work with the federal government to obtain the fair share contribution for WMATA and support for a regional mobility strategy.

KPIs
- % of total funding for WMATA that is paid by the federal government
- Advanced mobility strategy completed

PARTNERS   MWCOG, OFRA, DDOT, WMATA

3.4.3   ## Reimagine public space for the future

Technology, such as AVs and drones, has the potential to reshape public space — for example, reducing the need for parking in the city's downtown core. By proactively planning for such changes, the District has the opportunity to maximize additional benefits for residents and achieve cost savings. To take advantage of this opportunity, we will:

- Launch a competition, in partnership with a local university, to design public space in the context of emerging technologies for mobility and changing modes of transportation to address equity issues.

- Pilot winning designs through pop-up interventions in existing spaces. Retrofits should increase non-motorized modes of transportation.

⬗ KPIs	- # of pilots launched
⚇ PARTNERS	DDOT, OP, OCTO

3.4.4   ## Make DC the center of innovation in mobility technology and policy

Recently, DC has been at the vanguard of new mobility technologies in the U.S. New technologies, such as dockless scooters, require new policies and regulations to ensure safety and address equity. To continue DC's leadership in this space, we will:

- Hold additional MobilityTalks conferences on best practices related to emerging smart technologies in transportation.

- Showcase and highlight local innovation in mobility, specifically those that address transportation equity.

⬗ KPIs	- # of attendees at MobilityTalks conferences
⚇ PARTNERS	DDOT, OP, DMPED
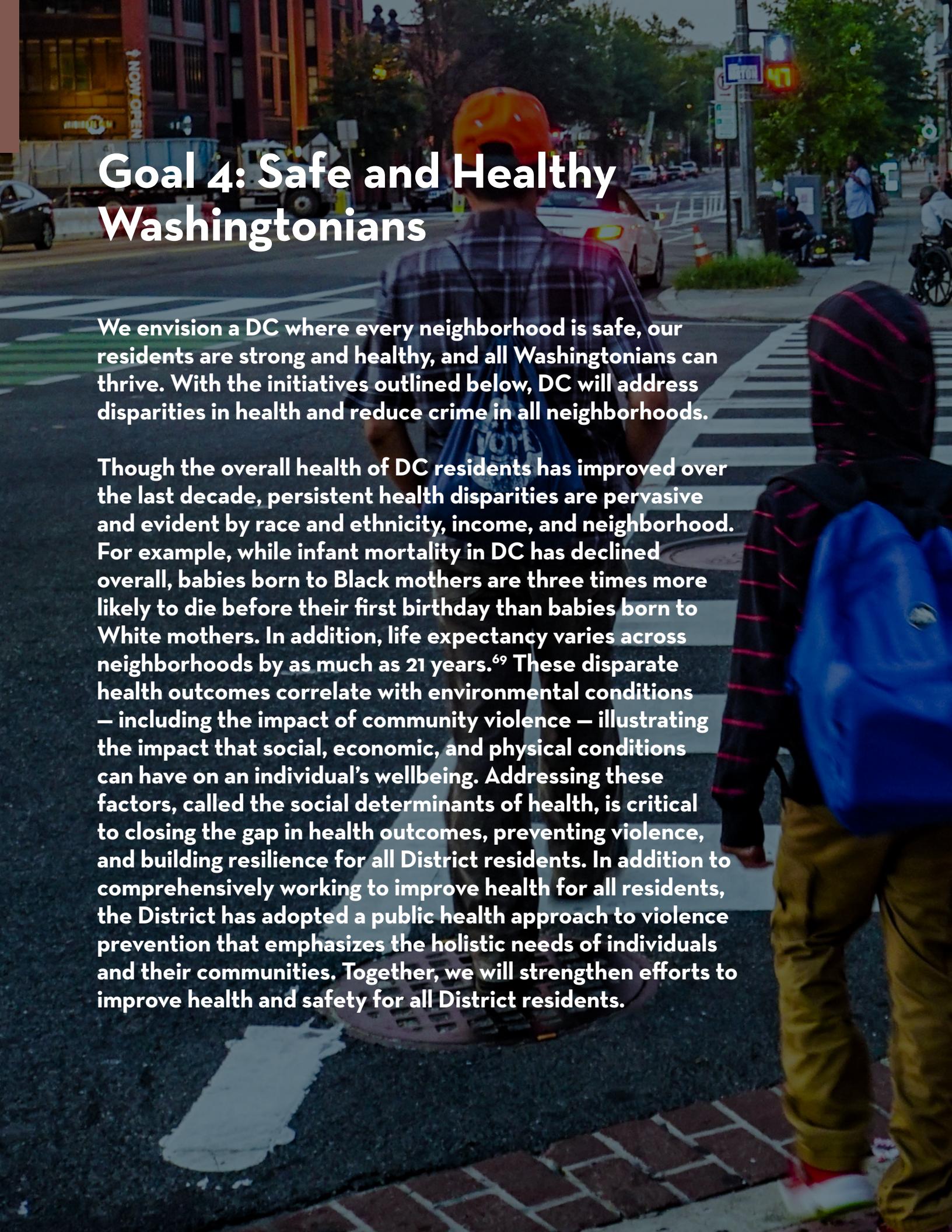
Goal 4: Safe and Healthy Washingtonians

We envision a DC where every neighborhood is safe, our residents are strong and healthy, and all Washingtonians can thrive. With the initiatives outlined below, DC will address disparities in health and reduce crime in all neighborhoods.

Though the overall health of DC residents has improved over the last decade, persistent health disparities are pervasive and evident by race and ethnicity, income, and neighborhood. For example, while infant mortality in DC has declined overall, babies born to Black mothers are three times more likely to die before their first birthday than babies born to White mothers. In addition, life expectancy varies across neighborhoods by as much as 21 years.[69] These disparate health outcomes correlate with environmental conditions — including the impact of community violence — illustrating the impact that social, economic, and physical conditions can have on an individual's wellbeing. Addressing these factors, called the social determinants of health, is critical to closing the gap in health outcomes, preventing violence, and building resilience for all District residents. In addition to comprehensively working to improve health for all residents, the District has adopted a public health approach to violence prevention that emphasizes the holistic needs of individuals and their communities. Together, we will strengthen efforts to improve health and safety for all District residents.

What we know

- Health is determined by social, environmental, and physical conditions.

- Life expectancy varies across DC neighborhoods by as much as 21 years.[70]

- While overall violent crime has decreased in recent years, homicides have spiked in the last year.

- There was a 178% increase in fatal overdoses due to opioid use from 2014 to 2016.[71]

OPIOID-RELATED DEATHS
2014, 2016

	2014	2016	
250			
200			
150			
100			
50			
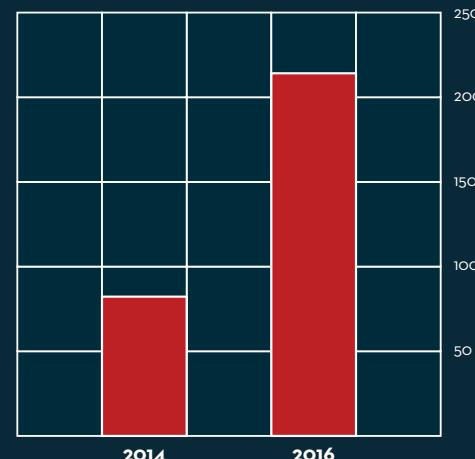
Our Vision

To reduce crime in all eight wards

Like in most cities, crime is concentrated in certain areas of DC. For example, in 2018, 21% of all violent crime occurred in Ward 8, while only 2% occurred in Ward 3. The District has recognized that a public health approach that emphasizes the holistic needs of individuals and their communities is necessary to prevent and reduce crime. Investments in public safety, housing, employment, transportation, and wellness programs lay the foundation for District residents to live in communities where they feel safe and supported. Healthy communities — those that have quality schools, economic opportunities, clean and well-designed physical environments, and structured activities that young people find meaningful — have prosocial benefits that create conditions which improve community safety and protect against violence. Precision policing, support to reduce recidivism, and access to opportunity will also help break the cycle of violence that still affects many of DC's neighborhoods.

To eliminate racial and geographic disparities in health outcomes

Many of DC's residents and neighborhoods enjoy exceptional health; however, significant racial and geographic disparities exist in health outcomes. Residents and neighborhoods experiencing poor health outcomes are also generally faring worse across other factors that determine health, including income, housing, transportation, food, medical care, environment, and safety. For example, low educational attainment correlates with risk for living in poverty as well as with higher rates of fair or poor health, including higher prevalence and poorer outcomes for a range of health conditions including stroke, heart disease, and diabetes. In addition, the increased health risks of unemployment are well known, showing that people who are unemployed are 54% more likely to have fair or poor health, and 83% more likely to develop stress-related conditions and other diseases. Holistic efforts that combine improvements in clinical care with efforts focused on social, environmental, and economic factors will help address disparities in health outcomes.

Life expectancy

**Life expectancy in
years by Census Tract
from 2010 to 2015**

- 83 - 91
- 78 - 83
- 74 - 78
- 70 - 74
- 63 - 70
- No data

4.1

Reduce crime in all neighborhoods and reverse the recent spike in homicides

4.1.1

Reverse 2019's spike in homicides with precision policing targeted at illegal guns and repeat violent offenders

Although overall violent crime in DC is down and near record lows, shootings and homicides have increased. The availability of guns and lack of meaningful consequences for carrying or using guns is partly to blame. Recently, the District has created an office that engages shooters in conflict resolution, job training, and mental health counseling. Through this office, the Pathways Program has engaged 50 people per year and has shown promising early results. To continue this work, through this initiative, we will:

- Provide stronger supervision and prosecution of repeat gun offenders.

- Advocate for stronger gun control law nationally.

KPIs
- # of shootings
- # of homicides

PARTNERS   MPD, ONSE, OFRA

32%
OF HIGH SCHOOL STUDENTS

have seen or heard people where they live be violent or abusive

Office of the State Superintendent of Education. 2017. "Youth Risk Behavior Survey." Accessed April 14, 2019. https://osse.dc.gov/sites/default/files/dc/sites/osse/publication/attachments/2017%20YRBS%20Report.pdf

Homicide cases in Washington, DC
20 YEAR TREND

NUMBER OF CASES

----- Trendline

Metropolitan Police Department. 2019. District Crime Data at a Glance. Accessed April 14, 2019. https://mpdc.dc.gov/page/district-crime-data-glance.
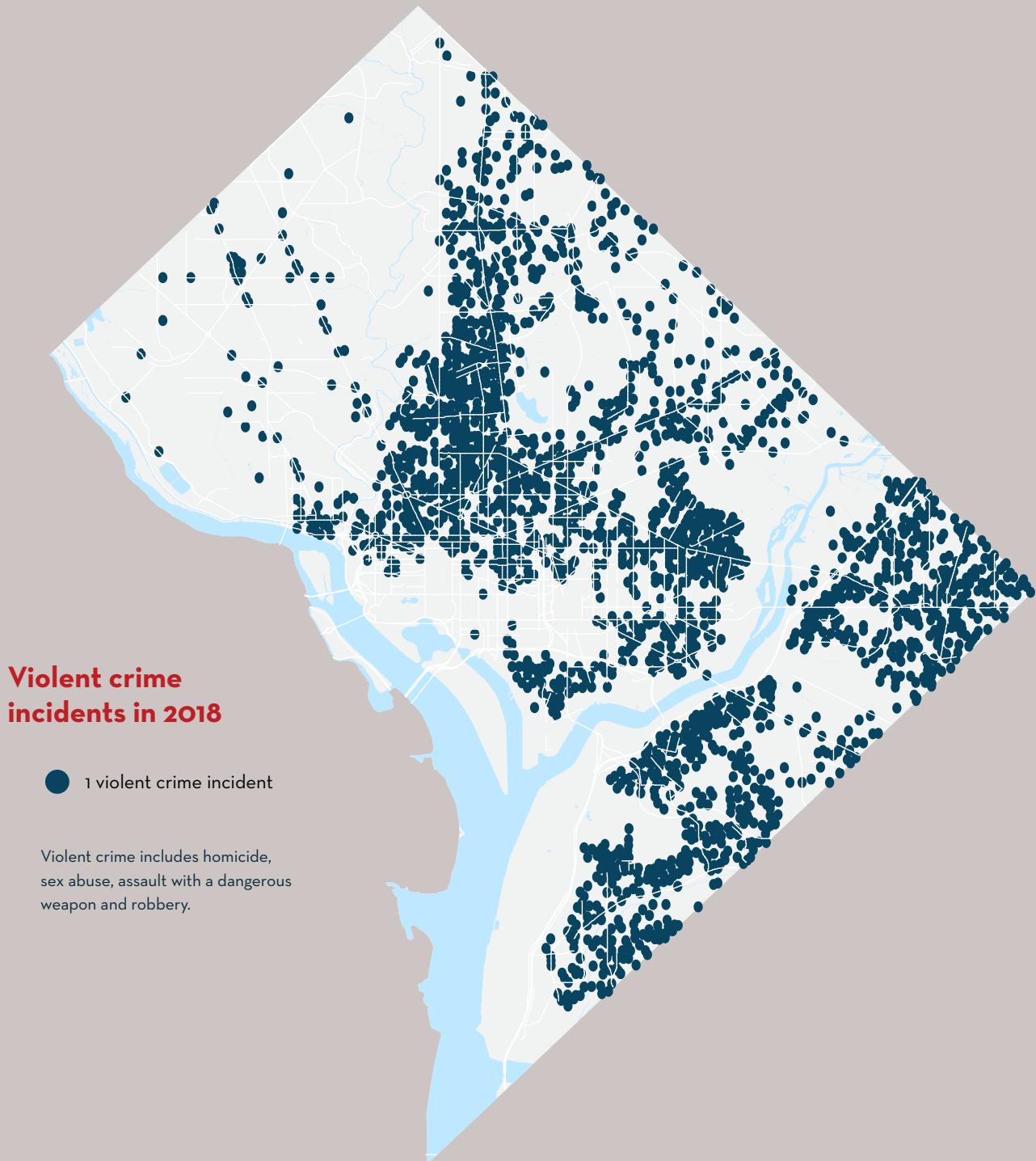
Violent crime

Violent crime incidents in 2018

● 1 violent crime incident

Violent crime includes homicide, sex abuse, assault with a dangerous weapon and robbery.

4.1.2

Build up the police force to 4,000 active offers by 2022, with all new officers without cars

The Metropolitan Police Department is one of the 10 largest local police agencies in the country. It has an authorized strength of 4,000 sworn officers; however, the District has had difficulty recruiting and retaining members. Recent efforts, including launching joinmpd. dc.gov; implementing the Recruit Six-Month Rental Assistance Program; expanding the Employer Assisted Housing Program; launching the Anacostia Public Safety Academy, the Senior Law Enforcement Officer Program, and the Police Officer Retention Program; and continuing the expansion and enhancement of the MPD Cadet Program have shown progress. To continue this progress and ensure that we have a police force that is resourced, trained, and reflects DC values, we will:

• Dedicate 200 additional officers to community policing assignments that are deployed on foot, bike, Segway, and scooter.

⬦ KPIs	- # of sworn officers
⚇ PARTNERS	MPD

+ 200 OFFICERS

will be deployed on foot, bike, Segway, and scooters
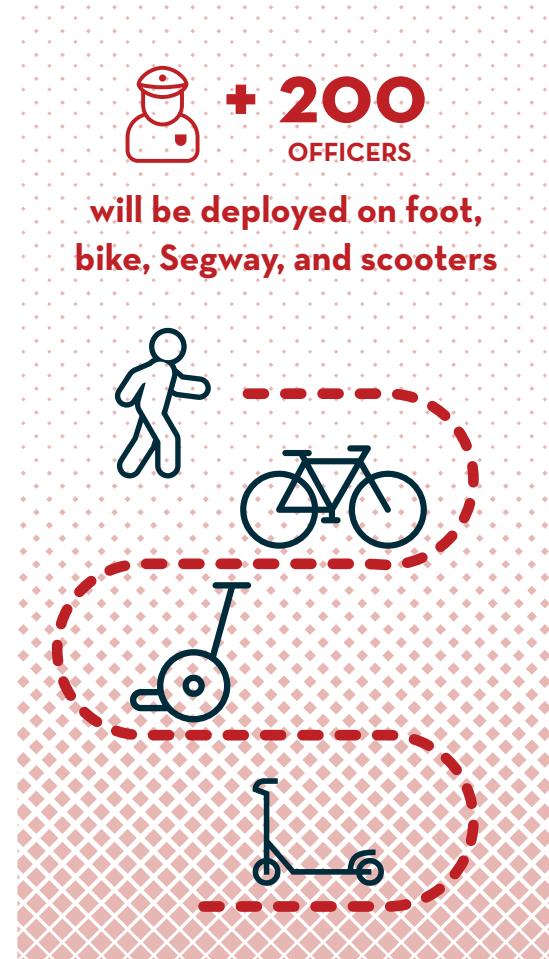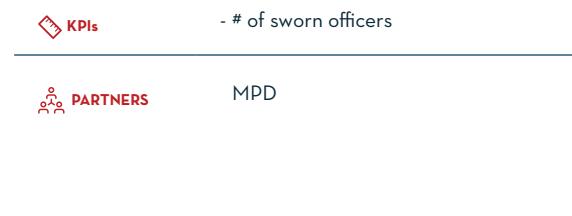
Office of the Mayor. "Mayor Bowser Announces a New Focus on Deploying More Car-Free Officers". January 15, 2019. Accessed April 14, 2019. https://mayor.dc.gov/release/mayor-bowser-announces-new-focus-deploying-more-car-free-officers.

4.1.3

Turbo charge re-entry services

A belief that economic success and independence is unattainable can often lead to crime. This is especially true among returning residents who come back from incarceration believing that the barriers to success are insurmountable. Therefore, through this initiative, we will:

- Launch the READY Center, a one-stop shop where formerly incarcerated District residents can access critical post-release services such as housing and employment assistance as well as educational and health care support and opportunities.

KPIs   - # of repeat offenders

PARTNERS   DOES, DBH, MORCA, DMV

The READY Center is a one-stop shop where formerly incarcerated District residents can access critical post-release services and is a collaboration between six District agencies, including the Department of Corrections, and community based organizations.

Through the **Department of Motor Vehicles** participants may apply for identification cards, driver's license, and arrange payment to resolve outstanding tickets.

Mayor's Office of Returning Citizens Affairs will aid in obtaining birth certificates, social security cards, ticket adjustments, and various training programs.

The **Department of Behavioral Health** will link individuals to behavioral health resources and services that they may need. Individuals will have access to a social worker, mental health specialist, and peer support specialist.

DC READY Center

The **Department of Employment Services** will provide assistance by assessing individuals' skill sets and workforce training needs and by connecting them to work readiness programs.

Department of Human Services helps participants apply for Medicaid benefits, Supplemental Nutrition Assistance Program (SNAP), employment and educational programs, and family support services.

Correctional facility

Office of the Mayor. "Mayor Bowser Launches the READY Center, Connecting Returning Citizens To Housing, Employment, and Other Critical Programs." February 12, 2019. Accessed April 14, 2019. https://mayor.dc.gov/release/mayor-bowser-launches-ready-center-connecting-returning-citizens-housing-employment-and.

4.1.4

Take over supervision of juveniles and adults from the federal government

The District is the only jurisdiction in the country where the supervision of adults and juveniles convicted of local crimes is undertaken by the federal government. For example, the housing of felony offenders is overseen by the Federal Bureau of Prisons, meaning that offenders can be incarcerated thousands of miles from DC and their support networks. In addition, the supervision of individuals on probation is currently done by Court Services and Offender Supervision Agency, a federal agency. This can complicate coordination with local agencies, including MPD. Through this initiative, we will:

- Work with the federal government to explore pathways to transfer supervision of juveniles and adults to the District Government.

KPIs — - # of days to take over supervision

PARTNERS — MPD, DOC, OFRA, MORCA, DMPSJ

Close health access and outcome gaps across all neighborhoods

4.2.1 Address the opioid epidemic through a roadmap with prevention strategies

As opioid-related deaths continue to rise across the nation, Washington, DC has also experienced an alarming increase in fatal opioid overdoses. There were 83 opioid-related deaths in 2014, 114 in 2015, 231 in 2016, and 279 in 2017. There was a 178% increase in fatal overdoses due to opioid use from 2014 to 2016. In 2018, the District released LIVE. LONG. DC. a strategy to reduce opioid use, misuse, and related deaths. Going forward, through this effort, we will:

- Reverse more than 700 overdoses through Naloxone kits, and train residents in Naloxone use.

- Provide treatment to thousands of individuals with opioid use disorder, and ensure recovery support and care coordination for our residents.

- Actively monitor trends in opioid use and tailor responses based on real-time data.

- Create innovative public education campaigns targeting those who are most likely to overdose on heroin and educate young people on the dangers of misusing prescription opioids.

Opioid-related cases
BY MONTH
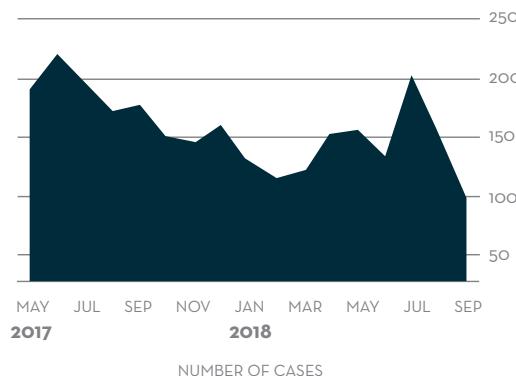
District of Columbia Fire and EMS Department. 2018. "Suspected Opioid Cases Detailing Narcan Use and Cardiac Arrests (5/1/2017 to 9/17/2018)."

KPIs	- # of opioid-related deaths
PARTNERS	DMHHS, DBH, DC Health

4.2.2 ___

Establish integrated neighborhood health and social services delivery systems

Despite progress and prosperity in recent years, families in certain neighborhoods continue to lag behind their fellow residents in health and economic mobility. This is due to many factors across health, education, safety, and social environment. Many existing programs address individual factors, but navigating and combining these programs can be difficult for families that are already struggling. Comprehensive, place-based programs can help combine government services to address social determinants of health in a holistic way. Therefore, through this initiative, we will launch Families First DC in 10 communities and:

- Support community-driven grant processes to augment and enhance government service.
- Combine and collaborate among existing District initiatives to create a comprehensive place-based family resource center that works to identify upstream opportunities and early interventions.

◇ KPIs	- # of family resource centers
⚭ PARTNERS	DMHHS, DBH, DHS, DHCD, DYRS

Distribution of hospitals

- ● Hospital
- ● 1.5-mile radius
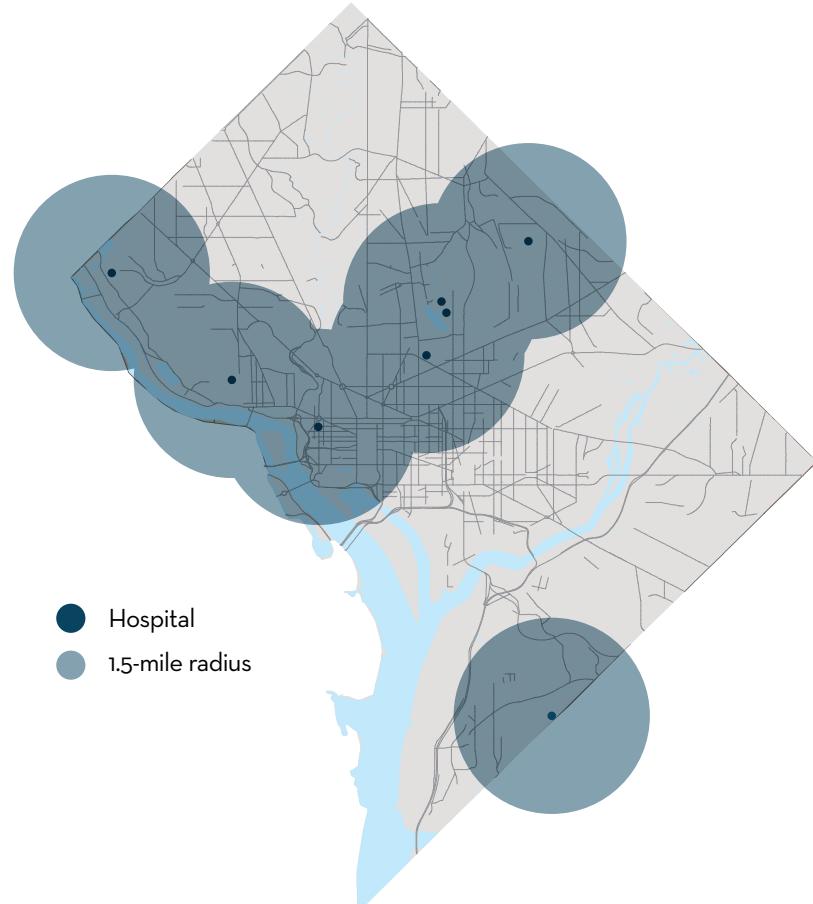
DC Health. "DC Healthy People 2020 Framework." Accessed April 14, 2019.
https://dcehealth.dc.gov/page/dc-healthy-people-2020.

4.2.3

End geographic and racial gaps in infant and maternal mortality through personalized interventions to address social determinants of health

DC's infant mortality rate has declined over the past decade, but infant mortality among infants of Black mothers is 5 times higher than that of infants born to White mothers. In 2018, Mayor Muriel Bowser held the inaugural Maternal and Infant Health Summit to discuss these persistent disparities by race. Through this initiative, we will:

• Launch a Thrive by Five Coordinating Council to drive progress on initiatives that improve outcomes for mothers and babies in the District.

KPIs — # of infant deaths per 100,000 live births

PARTNERS — TFCC, DMHHS

4.2.4

Provide a complete continuum of care for residents with severe mental health illness or substance abuse disorders

Like many cities across the nation, the District faces challenges in ensuring all residents have access to the array of mental health care services that can help reduce the epidemic of opioid use and support communities experiencing increased violence and trauma. Gaps in the Medicaid service array and a complex system of oversight have impacted the District's capacity to manage behavioral health services in a holistic way. Many District agencies provide ancillary behavioral health services, including the school system, foster care and protective services, and the justice system, among others. This division of services has sometimes resulted in service gaps and confusion about points of entry, and a disconnect between beneficiaries' physical and behavioral health care. Mayor Bowser has released several strategies and plans that call for increased coordination of health care services, including LIVE. LONG. DC. — the District's strategy to end illegal opioid use. The District's Department of Behavioral Health has secured additional resources that will, in part, support a comprehensive approach to behavioral health care, focusing on promotion, prevention, treatment, and recovery services.

Through this initiative, we will:

• Review the authorities that govern behavioral health services (i.e., Mental Health Rehabilitation Services, MHRS, and Adult Substance Abuse Rehabilitation Services, ASARS) to identify gaps in DC's current service array.

• Seek to increase the number and type of mental health services billable to Medicaid, enhancing coordination and supporting better data.

• Work with the Department of Healthcare Finance to establish new services and/or enhance those services currently available.

KPIs — In development

PARTNERS —
- DHCF
- MHRS and ASURS providers
- Consumers/clients
- DC Behavioral Health Planning Council

Infant mortality rate by ward

Number of deaths per 1,000 live births of children under one year of age from 2012 to 2016.

District of Columbia Department of Health. 2018. "Perinatal Health and Infant Mortality Report."

- 9.33 or greater
- 5.80 - 9.32
- 5.15 - 5.79
- 2.28 - 5.14
- 2.27 or less
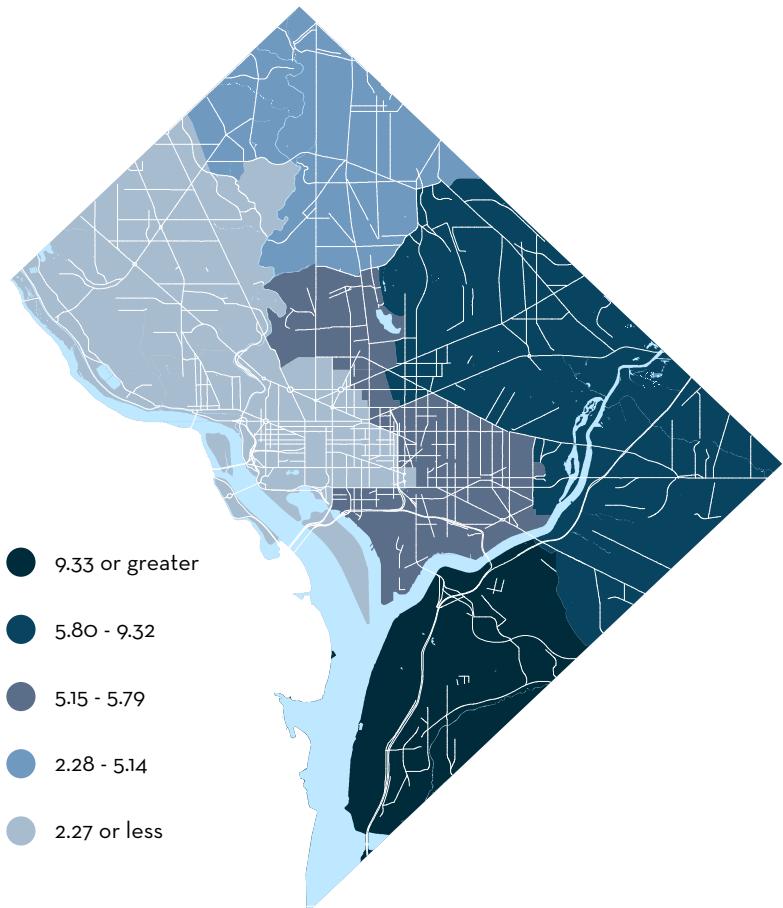
Mental Health Professional Shortage Areas

Health Professional Shortage Areas are designated by the Health Resources and Services Administration as having shortages of primary care, dental care, or mental health providers and are based on geography (a county or service area), population (e.g., low income or Medicaid eligible) or facilities (e.g., federally qualified health centers, or state or federal prisons).

Health Resources & Services Administration. n.d. Health Professional Shortage Areas (HPSAs) find. Accessed April 14, 2019. https://data.hrsa.gov/tools/shortage-area/hpsa-find.

DC Department of Health. "Health Systems Plan 2017." Accessed April 14, 2019. https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Health%20Systems%20Plan%202017_0.pdf
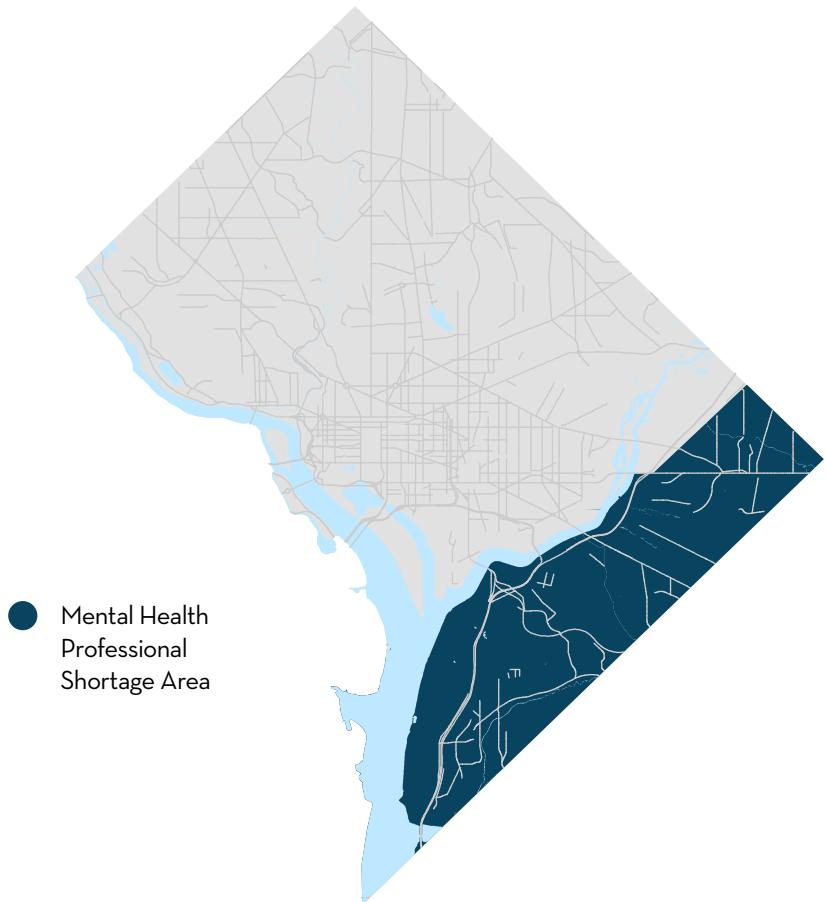
- Mental Health Professional Shortage Area

4.2.5 **By 2022, ensure all high-risk Medicaid members are in a health home and all of Medicaid is in managed care**

Despite having the second highest health care coverage rate in the nation, District residents still struggle to achieve positive health outcomes and many are not accessing needed treatment. Building off the tremendous coverage gains the District achieved under the ACA coverage expansion, DHCF's strategic vision is to transform the health system into a more organized, accountable, and person-centered system that supports Medicaid beneficiaries across the continuum of their health journey. As the largest payer in the District, the District Medicaid program has the ability and the responsibility to align District-wide efforts to optimize health system performance, improve beneficiary experience and quality, improve population health, and reduce per capita cost of health care. The DC Medicaid program provides health insurance coverage to over 250,000 District residents. Most of the Medicaid beneficiaries participate in the managed care program where managed care companies coordinate beneficiary care. The remainder of beneficiaries, or nearly one quarter of the Medicaid population (approximately 51,000 residents), are in the Medicaid Fee for Service (FFS) program where care is often unmanaged and not coordinated. The average FFS beneficiary cost is nearly three times the managed care cost. As is often the case for individuals with complex health needs, the health care system can become fragmented for the very individuals who most need coordinated, person-centered care. This initiative supports the transformation of the health care delivery system for nearly half of the FFS Medicaid beneficiaries into a more organized, accountable, and person-centered system through the expansion of health homes and managed care (for this initiative, FFS beneficiaries are defined as non-dual aged, blind, and disabled adults).

Building on efforts to connect Medicaid beneficiaries with a health home and better coordinated care, we will:

- Transition nearly half of the FFS Medicaid beneficiaries into managed care by 2022.

- Increase branding and awareness about current health homes — My Health GPS program, the primary care health home, and My DC Health Home targeting individuals with severe mental illness.

- Enhance current health home programs to better address care coordination needs for high-risk beneficiaries.

- Engage health care providers, District agencies, community partners, and other stakeholders to support practice transformation to value-based care models.

KPIs — DHCF will utilize existing KPIs, including:

- Providing access to comprehensive health care services for District residents
- Ensuring the delivery of high-quality health care services to District residents

PARTNERS — CFSA, DC Health, DBH

4.2.6

Partner with the private sector to establish grocery stores or full-service corner stores with fresh produce in every neighborhood

In 2017, Washington, DC had 73 community gardens, 134 school gardens, 41 large full-service grocery stores, 18 urban farms, and 62 farmers markets. Yet, some neighborhoods (most notably in Wards 7 and 8) do not have easy access to full-service grocery stores with fresh produce. This impacts families' ability to affordably eat healthy. Through this initiative, we will:

- Partner with the private sector to establish grocery stores or full-service corner stores with fresh produce in every neighborhood.

KPIs	- % of DC residents with access to fresh produce within a 1/2 mile of their home
PARTNERS	DMPED, DC Food Policy Council

Summary of initiatives

Timeframe

📅 ◉○○ short term

📅 ◉◉○ medium term

📅 ◉◉◉ long term

Shocks

cyberattack

extreme heat

economic downturn

flooding

Stresses

affordable housing

automation

carbon pollution

complex governance

education/workforce gaps

gentrification

health disparities

inequality

sea level rise
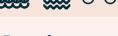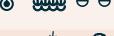
strained transportation

traffic injuries

undiversified economy

violence

Focus Areas		
Resilient Rivers	🗓 ◉○○	(icons)
Equity in Governance	🗓 ◉○○	(icons)

Goal 1: Inclusive Growth

Objective 1.1 Create robust pathways to the middle class and beyond

		Timeframe	Shocks and Stresses addressed
1.1.1	Create an economic mobility lab by 2023	🗓 ◉○○	(icons)
1.1.2	Launch three place-based pathways to middle-class areas by 2023	🗓 ◉◉○	(icons)
1.1.3	Double the number of DC youth that graduate from college by 2030	🗓 ◉◉○	(icons)
1.1.4	Train 1,000 DC residents to participate in the commercial building sector by 2030	🗓 ◉◉○	(icons)

Objective 1.2 Ensure a diverse, innovative, and growing economy

1.2.1	Build a robust innovation pipeline to support underrepresented entrepreneurs	🗓 ◉○○	(icons)
1.2.2	Create 500 new tech businesses founded by underrepresented entrepreneurs	🗓 ◉◉○	(icons)
1.2.3	Strengthen support to weather federal government shutdowns	🗓 ◉○○	(icons)
1.2.4	Earn an A+ in the Thumbtack Small Business Friendliness Survey by 2023	🗓 ◉◉○	(icons)

Objective 1.3 Build strong, diverse communities that all residents can afford to live in

1.3.1	Support homeowners to mitigate the rising cost of living	🗓 ◉◉○	(icons)
1.3.2	Improve the condition of rental properties while protecting renters from displacement	🗓 ◉◉○	(icons)
1.3.3	Preserve existing small businesses and nonprofit organizations in DC	🗓 ◉◉○	(icons)
1.3.4	Preserve existing cultural institutions in DC	🗓 ◉◉○	(icons)
1.3.5	Strengthen pathways to homeownership for District residents	🗓 ◉○○	(icons)
1.3.6	Activate Poplar Point and the RFK campus as places for DC residents to live and work	🗓 ◉○○	(icons)

Objective 1.4 Ensure there is ample housing to accommodate growth

1.4.1	Increase the supply of market rate affordable housing units 25% by 2030	🗓 ◉◉○	(icons)
1.4.2	Preserve 100% of the existing subsidized affordable housing stock	🗓 ◉○○	(icons)
1.4.3	Produce 12,000 new units of affordable housing by 2023	🗓 ◉○○	(icons)
1.4.4	Secure a regional commitment to house seven million people by 2050	🗓 ◉◉◉	(icons)

Objective 1.5 Make transportation cheaper, faster, and more convenient and people-centered

1.5.1	Make transportation cheaper	🗓 ◉◉○	(icons)
1.5.2	Make transportation more convenient	🗓 ◉◉○	(icons)
1.5.3	Make transportation across DC faster	🗓 ◉◉○	(icons)
1.5.4	Make transportation more people-centered	🗓 ◉○○	(icons)

Objective 1.6 Close the educational achievement gap

1.6.1	Expand access and improve the quality of early childhood education in all eight wards		
1.6.2	Support highly-effective teachers		
1.6.3	Support students and families		
1.6.4	Improve school performance		

Goal 2: Climate Action

Objective 2.1 Incorporate climate projections into land use, building regulations, and capital investment.

2.1.1	Ensure that all new buildings are built to be climate-ready by 2032		
2.1.2	Retrofit all at-risk buildings or remove them from high-risk areas by 2050		
2.1.3	Invest in infrastructure that is built to last and provides multiple benefits		
2.1.4	Design climate-ready neighborhoods and developments		

Objective 2.2 Measure and track climate risk (exposure and vulnerability) and adaptation progress

2.2.1	Create a tool that allows residents to understand climate risk and track adaptation progress		
2.2.2	Establish DC Government-wide climate change adaptation policy, guidance, and procedures by 2023		
2.2.3	Utilize the expertise of the Commission on Climate Change and Resiliency to advance the District's climate-related goals		
2.2.4	Create a regional climate adaptation effort by 2023 to support local action		

Objective 2.3 Increase resilience to climate change at the neighborhood and household level

2.3.1	Launch a data-driven campaign to significantly reduce the urban heat island		
2.3.2	Increase affordability and adoption of flood insurance		
2.3.3	Launch the Resilience Hubs and Resilience Corps programs by 2023		
2.3.4	Pilot a microgrid on the St. Elizabeth's East campus by 2023		

Objective 2.4 Invest in climate action

2.4.1	Increase the efficiency of District Government buildings 20% by 2030		
2.4.2	Set up the DC Green Bank		
2.4.3	Implement the Clean Energy Omnibus Act of 2018		
2.4.4	Pilot new financial tools and products for resilience		

Goal 3: Smarter DC

Objective 3.1 Improve the whole community's ability to mitigate, respond to, and recover from cyberthreats

3.1.1	Adopt cybersecurity best practices to improve the District Government cybersecurity posture		
3.1.2	Launch a DC Cybersecurity Partnership to promote best practices by 2023		
3.1.3	Launch a Cybersecurity Corps program to train the next generation of cybersecurity professionals		
3.1.4	Ensure that 100% of District agencies plan for cyberthreats by 2023		

Objective 3.2 Make DC a prime location for workers of the future and prepare for automation

3.2.1	Implement new future of work protections and resources for freelance workers by 2025	📅 ◉◉○	
3.2.2	Transition workers at risk from automation	📅 ◉◉○	
3.2.3	Expand training opportunities, particularly in non-automatable fields	📅 ◉○○	
3.2.4	Promote care economy careers	📅 ◉◉○	

Objective 3.3 Leverage new technology and big data for civic solutions

3.3.1	Re-charter the Smarter DC to accelerate the use of smart city technologies by 2023	📅 ◉○○	
3.3.2	Become a global leader of smart city innovation by 2023	📅 ◉○○	
3.3.3	Expand the use of machine learning and prediction to target scarce resources	📅 ◉○○	
3.3.4	Expand and maximize the effective use of District Government data	📅 ◉○○	

Objective 3.4: Adapt to new transportation technologies and increase mobility

3.4.1	Guide the deployment of new automotive technologies to maximize benefits and address challenges	📅 ◉○○	
3.4.2	Create a regional advanced mobility strategy	📅 ◉○○	
3.4.3	Reimagine public space for the future	📅 ◉◉○	
3.4.4	Make DC the center of innovation in mobility technology and policy	📅 ◉◉○	

Goal 4: Safe and Healthy Washingtonians

Objective 4.1 Reduce crime in all neighborhoods and reverse the recent spike in homicides

4.1.1	Reverse this year's spike in homicides with precision policing targeted at illegal guns and repeat violent offenders	📅 ◉○○	
4.1.2	Build up the police force to 4,000 active officers by 2022, with all new officers without cars	📅 ◉○○	
4.1.3	Turbo charge re-entry services	📅 ◉○○	
4.1.4	Take over supervision of juveniles and adults from the federal government	📅 ◉○○	

Objective 4.2 Close health access and outcome gaps across all neighborhoods

4.2.1	Address the opioid epidemic through a roadmap with prevention strategies	📅 ◉○○	
4.2.2	Establish integrated neighborhood health and social services delivery systems	📅 ◉○○	
4.2.3	End geographic and racial gaps in infant and maternal mortality through personalized interventions to address social determinants of health	📅 ◉○○	
4.2.4	Provide a complete continuum of care for residents with severe mental health illness or substance abuse disorders	📅 ◉○○	
4.2.5	By 2022, ensure all high-risk Medicaid members are in a health home and all of Medicaid is in managed care	📅 ◉○○	
4.2.6	Partner with the private sector to establish grocery stores or full-service corner stores with fresh produce in every neighborhood	📅 ◉○○	

Acronyms

General Acronyms

100RC	100 Resilient Cities
ADU	Accessory Dwelling Unit
AIDS	Acquired Immunodeficiency Syndrome
AOBA	Apartment and Office Building Association
AV	Automated Vehicles
BID	Business Improvement Districts
CERT	Community Emergency Response Team
COOP	Continuity of Operations Plan
CRF	City Resilience Framework
CRO	Chief Resilience Officer
CSG	Council of State Governments
CTE	Career and Technical Education Programs
DC	District of Columbia
DCGIS	District of Columbia Geographic Information System
EAHP	Employer Assisted Housing Program
EIU	Economist Intelligence Unit
FC2	Federal City Council
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GGW	Greater Greater Washington
GHG	Greenhouse Gas
GIS	Geographic Information System
GW	George Washington University
HOME	HOME Investment Partnerships Program
HPAP	Home Purchase Assistance Program
IN3	Inclusive Innovation Incubator
JROTC	Junior Reserve Officers' Training Corps
KPIs	Key Performance Indicators
LEED	Leadership in Energy & Environmental Design
MARC	Maryland Area Regional Commuter
MWCOG	Metropolitan Washington Council of Governments
MWCOG CISO	Metropolitan Washington Council of Governments Chief Information Security Officers Committee
NE	Northeast DC
NEAP	National Electrical Annuity Plan
NIST	National Institute of Standards and Technology
NPS	National Park Service
NW	Northwest DC
NYC	New York City
R&D	Research and Development
RFK	Robert F. Kennedy Memorial Stadium
SE	Southeast DC
SFHA	Special Flood Hazard Area
SHP	Strategic Healthcare Programs
SW	Southwest DC
TFCC	Thrive by Five Coordinating Council
UDC	University of the District of Columbia
UMC	United Medical Center
UNFCCC	United Nations Framework Convention on Climate Change
USALEEP	U.S. Small-area Life Expectancy Estimates Project
USD	United Stated Dollar
USDN	Urban Sustainability Directors Network
VC	Venture Capital
VRE	Virginia Railway Express
WDCEP	Washington DC Economic Partnership
WGL	Washington Gas and Light
WMATA	Washington Metropolitan Area Transit Authority

District Government Agencies

CFO	Chief Financial Officer
DBH	Department of Behavioral Health
DCCAH	DC Commission on the Arts and Humanities
DCHA	DC Housing Authority
DCHFA	DC Housing Finance Agency
DCPCSB	District of Columbia Public Charter School Board
DCPS	DC Public Schools
DCRA	Department of Consumer and Regulatory Affairs
DDOT	District Department of Transportation
DFHV	Department of For-Hire Vehicles
DGS	Department of General Services
DHCD	Department of Housing and Community Development
DHCF	Department of Health Care Finance
DHS	Department of Human Services
DISB	Department of Insurance, Securities and Banking
DME	Deputy Mayor for Education
DMGEO	Deputy Mayor for Greater Economic Opportunity
DMHHS	Deputy Mayor for Health and Human Services
DMOI	Deputy Mayor for Operations and Infrastructure
DMPED	Deputy Mayor for Planning and Economic Development
DMPSJ	Deputy Mayor for Public Safety and Justice
DMV	Department of Motor Vehicles
DOC	Department of Corrections
DOEE	District Department of Energy and Environment
DOES	Department of Employment Services
DPR	Department of Parks and Recreation
DSLBD	Department of Small and Local Business Development
DYRS	Department of Youth Rehabilitation Services
FEMS	Fire and Emergency Medical Services Department
GovOps	Government Operations
HSEMA	Homeland Security and Emergency Management Agency
MOCA	Mayor's Office of Community Affairs
MORCA	Mayor's Office on Returning Citizen Affairs
MOTA	Mayor's Office of Talent and Appointments
MPD	Metropolitan Police Department
OBPM	Office of Budget and Performance Management
OCA	Office of the City Administrator
OCFTME	DC Office of Cable Television, Film, Music and Entertainment
OCP	Office of Contracts and Procurement

OCTO	Office of the Chief Technology Officer
OFRA	Office of Federal and Regional Affairs
ONSE	Office of Neighborhood Safety and Engagement
OP	Office of Planning
OP3	Office of Public-Private Partnerships
ORM	Office of Risk Management
OSSE	Office of the State Superintendent of Education
OTA	Office of the Tenant Advocate
OTR	Office of Tax and Revenue
UCC	Unified Communications Center
WIC	Workforce Investment Council

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Acknowledgements