TEXT	TYPE	ELEMENT
Built and Natural Environment Washington DC's strong sense of place is rooted in its unique urban environment comprised of neighborhoods that are as diverse as the housing, infrastructure and ecosystems that connect them. The quality and management of this interconnected urban system is directly linked to the community's resilience. The built environment and natural features can protect against the acute shocks and reduce the chronic stresses facing the city; conversely, without proper planning or maintenance, they can make the community vulnerable to the risks posed by these shocks or stresses.	Narrative	Land Use
addresses the provision, protection, and enhancement of the District's physical assets and critical facilities including housing, infrastructure and transportation systems, and its natural, historic and cultural resources. The vulnerability of the District's buildings, infrastructure, and ecosystems to the adverse effects of climate change is expected to increase due to more days with high temperatures, more flooding caused by heavy rainfall and rising sea levels, and more economic disruption from extreme weather events. A robust, multi-pronged strategy is necessary to improve resilience.	Narrative	Land Use
First, the District must consider resilience as it undertakes new development and investment, both public and private. Second, existing structures will need to be improved or upgraded to become more adaptive and resilient over time. Finally, the District must be opportunistic and prepared to incorporate resilience standards into the repair, restoration or reconstruction of its urban systems following destructive, major disaster events.	Narrative	Land Use
The capacity to successfully incorporate the consideration of resilience standards into decisions and policies that govern the physical development, maintenance, and enhancement of the District's built and natural environment is fundamental to achieving the District's vision for a resilient city.	Narrative	Land Use

R-1.1 Creating Safe and Sustainable Housing for All Residents The District is committed to providing a housing supply that is safe, decent, and affordable for all current and future residents. Policies to promote resilient housing specifically address housing that can withstand potential physical shocks from major hazards and stresses. An equally important goal of resilient housing policies is the provision of affordable and inclusive housing that will enhance community resilience. Residents that are not overburdened by housing costs have more financial capacity to deal with underlying chronic stresses and absorb and recover from unanticipated shocks.	Narrative	Housing
While the District continues to incorporate the latest best practices into its Construction Codes, there are additional opportunities to promote more resilient housing. The District must continue to consider alternatives that go beyond uniform codes when local conditions or site-specific needs require it, such as adopting land use policies or development regulations that will ensure the construction of new housing will reduce greenhouse gas emissions and account for projected future climate conditions and sea level rise that will occur during the expected useful life of built structures. The District has already taken steps to do this through the adoption of Flood Hazard Rules that include higher regulatory standards than required by the ICC and National Flood Insurance Program (NFIP). Additionally, the District's Zoning Regulations for waterfront zones prohibit residential uses with only one or two dwelling units in the 100-year floodplain.	Narrative	Housing
As important as addressing new housing, the District must also consider ways to strengthen resilience and increase the adaptive capacity of its older residential building stock, including in historic districts, as most housing in the District of Columbia was constructed prior to modern codes and thus remain more vulnerable to shocks and stresses. This includes promoting and capitalizing on various opportunities to upgrade existing buildings, including through ongoing rehabilitation, restoration and weatherization projects as well as the repair or	Narrative	Housing

redevelopment of properties determined to be substantially-damaged following a destructive event. Overall, the District should apply a preventative, risk-based approach to prioritizing and acting on housing policies and other measures that improve the long-term resilience of its most vulnerable structures and populations.		
The benefits of creating safer and more sustainable housing for all residents go beyond reducing the risk to life and property from shocks or stresses. It decreases demands on emergency response, such as allowing people to shelter-in-place versus evacuating the city or going to public shelters during disaster events. It also decreases the potential disruptive impacts on vital services, commerce, and the economy by reducing the number of people in the workforce who will end up being displaced following such events.	Narrative	Housing

Policy: Resilient & Climate-Adaptive Housing Incorporate current best practices for resilient, climate-adaptive design in the adoption and enforcement of the District's building and housing construction codes to reduce the anticipated adverse effects of future natural hazards and climate threats through the entire useful life of each structure. These codes should be based on projected future climate and/or natural hazard conditions for the District based on best available and actionable data.	Policy	Housing
Policy R-1.1.2: Protection of Hazard-Vulnerable Housing Increase the structural resilience of existing housing units that are determined to be at-risk to natural hazards such as flooding through the promotion of mitigation techniques such as building retrofits and upgrades. This should include a range of structural improvements, but also small-scale risk reduction measures such as elevating electrical or mechanical equipment above design flood elevations.	Policy	Housing
Policy R-1.1.3: Temporary Post-Disaster Housing Provide residents displaced by disaster with local access to emergency shelter and temporary, interim housing as part of the community disaster recovery process. The District will coordinate with federal and regional partners to promptly identify and secure safe, temporary housing options for those in need and will seek to reduce barriers to the provision of interim housing through existing regulations, ordinances, codes, and policies as required.	Policy	Housing
Policy R-1.1.3A: Permanent Post-Disaster Housing Support individuals and households affected by large-scale disaster events in returning to safe, suitable, and affordable housing promptly through technical assistance and clear and comprehensive reconstruction guidelines. This includes special emphasis on rebuilding homes in locations and according to standards that make them more resilient to future shocks and stresses. Ensure the proportion and housing types being reconstructed are consistent with current housing objectives or policies and match post-disaster recovery or redevelopment needs.	Policy	Housing

Policy R-1.1.4: Improvements for Housing Resilience Incorporate measures to improve the structural safety and climate resilience of housing into the provision of financial assistance (e.g., grants, rebates, tax credits, etc.) for improvement or rehabilitation projects that are directed to homes and neighborhoods in identified high-risk areas. This includes flood mitigation retrofits such as installing backflow prevention devices or elevating vulnerable electrical or mechanical equipment above design flood elevations, and expanding access to solar shading, cool roofs, and other home-based cooling measures for low-income, elderly, and other populations vulnerable to extreme heat events.	Policy	Housing
Policy R-1.1: Rental Property Insurance Develop policies and incentives that will encourage residents in all rental housing units to purchase renter's insurance for personal property that is subject to potential loss, regardless of the cause. This should include a focus on housing units located in known high risk areas, including the promotion of flood insurance policies for contents coverage for those living in the city's mapped special flood hazard areas.	Policy	Housing
Action R-1.1.B1: Comprehensive and Integrated Flood Modeling Develop and regularly update the District's floodplain models and maps to account for climate change, projections for increased precipitation and sea level rise, and maximum buildout of the watershed. Develop an integrated flood modeling and mapping of riverine, coastal and interior flood risk that also account for climate change projections. Once complete, use the updated and integrated flood risk models to determine potential flood extents and depths for riparian, coastal, and interior flood events and to determine design flood elevations for any development in flood hazard areas. Consider adopting them as the regulatory flood hazard areas for the District's Flood Hazard Rules.	Action	Environmental Protection

Action R-1.1.B2: Flood Resilience Standards Explore the development of new regulations in the District's Flood Hazard Rules using innovative standards, informed by best practices and updated modeling data, to better protect new or substantially-improved structures located in flood hazard areas.	Action	Land Use Element
Action R-1.1.C: Extreme Heat Protection for Housing Improve thermal safety requirements in residential building codes through maximum allowable temperatures and mandatory passive cooling strategies to increase resilience to extreme heat, especially in the event of a power outage.	Action	Housing
Policy R-1.1.E: Post-Disaster Housing Recovery and Redevelopment Prepare and implement a citywide, post-disaster housing recovery planning strategy with specific policies to address projected conditions and foreseeable issues with renovating or replacing damaged housing. The strategy should identify how the District will operationally manage the range of housing-related needs following a large, destructive hazard event. This includes short-term recovery measures such as the provision of safe, temporary housing for displaced populations, to more intermediate and long-term recovery activities such as expedited permitting procedures and the replacement of permanent, affordable housing that is more resilient and adaptive to future conditions.	Policy	Housing
Policy R-1.1.F1: Post-Disaster Housing Repair and Reconstruction Develop and deploy local guidance to assist homeowners in navigating the interrelated aspects of federal disaster assistance, insurance claims, substantial damage determinations, and the local permitting procedures required to repair or rebuild their homes in compliance with existing codes and regulations. Guidance should emphasize opportunities to improve pre-existing substandard housing conditions during the repair or rebuilding process, and specific attention should be placed on understanding and meeting the anticipated, unique needs of vulnerable populations, such as seniors, low-income households and non-English speakers. Approved guidance shall remain available to be quickly and easily be published and distributed following major events with disaster-specific information as needed.	Policy	Housing

Policy R-1.1.F2: Post Disaster Housing Recovery Program Develop and implement a post-disaster housing recovery program to facilitate basic and temporary repairs that allow residents to quickly re-inhabit their homes. The program should comply with current codes and standards and maximize opportunities to incorporate resilience into the permanent repair and reconstruction process without jeopardizing their eligibility for financial assistance.	Policy	Housing
Action R-1.1.G: Climate Adaptation Financial Assistance Programs for Existing Vulnerable Housing Identify opportunities to expand property owner and tenant access to grants or other financial assistance programs such as energy efficiency, renewable energy, stormwater management, and roof replacement programs that provide homeowners with the ability to make structural upgrades to include hazard and climate resilience improvements based on resilient design guidelines. Eligibility and prioritization criteria should be developed to direct such programs to residential buildings in high risk areas that are not built to current codes and standards and to assist vulnerable populations such as low-income renters, older adults, and those with access and functional needs.	Action	Housing
R-1.2 Providing Hazard-Resilient and Climate-Adaptive Infrastructure Investments in water, sewer, stormwater, energy, and telecommunication systems are essential to the District's future, both to meet demands of existing users and to accommodate future changes and development. The District faces some major infrastructure challenges including an aging and in some cases deteriorating infrastructure system, combined with a steadily growing population and increasing risks posed by natural hazards and climate change.	Narrative	Infrastructure
In recent years, the District has seen how hazard events and climate change can impact the city's infrastructure. For example, the destructive derecho storm in 2012 caused extensive damage to the electric grid and a prolonged power outage which interrupted service to more than 75,000 District customers, including public health care facilities with long-term dependents, in many parts of DC for several	Narrative	Infrastructure

days during a record-breaking, 11-day heat wave. These combined shocks highlighted the severity and interrelated consequences of infrastructure failure, negatively affecting residents with medical needs and disproportionately impacting the lowest-income areas of the city, where 43 percent of the damage occurred. The storm resulted in 22 fatalities across the region and revealed the potential for cascading infrastructure impacts as critical systems such as water/sewer, telecommunications, and transit rely on electricity to operate.		
The District has already begun investing in more resilient and adaptive infrastructure. Several examples include the following: • After the derecho event, the District established DC Powerline Underground (DC PLUG), a $1 billion public-private partnership with Pepco for the strategic undergrounding of overhead power lines to improve electric system reliability. • Following the 2006 flooding of the Federal Triangle area, District and Federal agencies created the highly successful *DC Silver Jackets* interagency partnership to improve collaboration on flood risk management which continues today. The team, which now includes more than 20 local, regional, and federal agencies, implemented a critical upgrade to DC's levee system that will protect the Federal Triangle from riverine flooding in the future. • DC Water implemented a major effort to extend a more than $1 billion stormwater tunnel to the Bloomingdale neighborhood, an area prone to historic flooding, as well as the installation of green infrastructure investments totaling more than $100 million throughout the city.	Narrative	Infrastructure
Infrastructure providers serving the District of Columbia should continue to build upon and expand on these resilience investments in their capital project planning efforts as well as through close coordination with other infrastructure partners.	Narrative	Infrastructure

In addition to infrastructure hardening and other protective functions, infrastructure providers in the District should continue to focus their efforts on improving the future continuity of critical systems that enable the flow of goods, services, and information – particularly during times of crisis. This means developing adaptation plans that may include potential relocation or retirement strategies to be implemented over time, as well as moving to more decentralized utility systems that make them more redundant and reliable, and thereby less susceptible to large-scale and widespread service disruption. It also includes the consideration of projected future climate conditions during the design phase of infrastructure projects, extending through the asset's useful life, and more deliberate scrutiny of proposed infrastructure investments in potentially hazardous locations.	Narrative	Infrastructure

Policy R-1.2.8: Climate Vulnerability Assessments of Infrastructure and Telecommunication Facilities Support efforts by utility and telecommunications providers that serve the District of Columbia to conduct in-depth climate vulnerability assessments and adaptation plans for their own assets and systems, including flooding and extreme heat. This includes site-level evaluations of the vulnerability of each at-risk facility to near-term and long-term climate threats or conditions that may impact their ability to operate and provide reliable continuity of service, particularly during episodic shocks related to extreme weather.	Policy	Infrastructure
Policy R-1.2: Flood Hazard Protection for Critical Infrastructure Facilities Implement retrofits using flood resistant design standards when making improvements to existing infrastructure facilities located in in high-risk flood areas. Consider best practices in selecting intervention to better protect these facilities from current and future flood risks.	Policy	Infrastructure
Policy R-1.2.G: "Microgrid-Ready" Construction Develop regulatory standards and market-based incentives to ensure new development projects of designated sizes or types, or within certain zones, are built to accommodate microgrid connectivity. Such incentives or policies should be designed to expand decentralized power generation in the District, increasing the resilience of not only the energy distribution system but also those buildings or facilities that are dependent upon it.	Policy	Infrastructure
Policy R-1.2.H: Neighborhood-Scale Energy Systems For projects over 500,000 gross square feet and in Small Area Plans, where appropriate, encourage identifying opportunities for neighborhood-scale energy systems, including microgrids, for on-site renewable power generation.	Policy	Infrastructure

Action R-1.2.I: Hazard Mitigation Procedures for Post-Disaster Public Assistance Projects For events that qualified for federal disaster declaration, develop policies and procedures to incorporate hazard mitigation into the repair, relocation, or replacement of damaged public facilities and infrastructure. To maximize federal grant funds available, establish a process for identifying and prioritizing eligible project activities that can leverage additional hazard mitigation funds.	Action	Community Services and Facilities
Policy R-1.2.J: Vulnerability Assessments of District-Owned Facilities Develop vulnerability assessments and physical adaptation plans for District-owned facilities located in high risk flood areas, considering a system-wide and site-specific approaches. Utilize updated climate modeling data as part of the assessment to ensure adaptation plans are responsive to both current and future climate conditions.	Action	Community Services and Facilities
Policy R-3.3.F: District Schools As part of the repair and modernization of District schools, implement improvements to facilitate schools potentially serving as critical facilities for sheltering and community gathering during disasters and emergencies.	Action	Educational Facilities
R-1.3 A Resilient Transportation System	Narrative	Transportation
Despite the focus on multimodal transportation, the transportation system suffers from many issues including deteriorating roadways and bridges, an aging Metro system, traffic congestion and competition for the use of right-of-way space between vehicles, transit, bikes and pedestrians. The challenges with the transportation system have implications for resilience. For example, a more effective transportation system enables residents and workers to evacuate the District in an emergency and allows first responders to reach people during a natural or man-made disaster. It is also critical to creating a safe and efficient system for residents, workers and visitors to go about their daily activities, relieving the chronic stresses of traffic congestions and travel affordability.	Narrative	Transportation

Policy R-1.3.1: Climate-Adaptive and Resilient Transit Improvements Promote the integration of climate-adaptive and resilient design and operational and maintenance protocols for transit systems serving the District of Columbia. This includes the incorporation of resilience standards and best practices into capital project and improvement plans for upgrading or building new facilities, equipment and systems, and into routine maintenance and operations as opportunities arise.	Policy	Transportation
Policy R-1.3.5: DDOT Climate Change Adaptation Plan Continue to implement and routinely monitor and update the DDOT Climate Adaptation Plan to ensure today's transportation network is improved and maintained to withstand future climate conditions. DDOT's Climate Adaptation Plan provides the foundation on which to better understand, anticipate, and prepare transportation assets for changing future conditions.	Policy	Transportation
Policy R-1.3.B: Mitigation Measures for Flood Prone Transportation Facilities Develop, prioritize and implement flood mitigation measures for existing flood-prone transportation facilities, based on vulnerability assessments and in consideration of extreme precipitation events and sea level rise, for waterfront adjacent facilities, projected to occur.	Policy	Transportation
Action R-1.3.D: Conduct Climate Vulnerability Assessment for DDOT Transportation Facilities Conduct a vulnerability assessment of DDOT transportation infrastructure that identifies the elements and areas of the transportation system that are most sensitive to projected climate changes.	Action	Transportation
Action R-1.3.E: Research Resilient Transportation Design Best Practices Research and leverage existing best practices from other metropolitan transportation departments, as DDOT continues to make future adjustments to its design parameters that incorporate hazard mitigation and climate change adaptation. Consider updating design standards to account for projected extreme temperatures and precipitation.	Action	Transportation

Policy R-1.3.F: Climate Adaptation Guidelines for Transportation Projects Develop and implement climate adaptation guidelines for use while designing transportation projects. The guidelines may include evaluating the effectiveness of storm water management, urban heat island mitigation and other technical components to better protect transportation infrastructure from the impacts of climate change.	Policy	Transportation
Policy R-1.3.H: Mobility and Connectivity Access in Vulnerable Neighborhoods Encourage Transportation Planning Board to support initiatives to increase community resilience through increased mobility and connectivity by continuing to reduce barriers to transit access in low-income neighborhoods.	Policy	Transportation
R-1.4 Preserving and Enhancing Natural Resources to Bolster Resilience Washington, DC has a long history of planning and managing the protection of its natural resources. This legacy continues today with many evolving policies, programs, and activities related to the preservation or restoration of the District's land, air, water, and biologic resources. The District has actively prioritized connections between environmental stewardship and innovative solutions to some of its most pressing urban challenges, including sustainable growth and long-term community resilience in the face of a changing climate.	Narrative	Environmental Protection
Following the establishment of the Department of the Environment in 2005, now called the Department of Energy and the Environment, the District has been aggressively pursuing excellence in environmentally responsible and sustainable practices. This includes passing a Green Building Act in 2006, joining global initiatives to address climate change through local reductions in greenhouse gas emissions, and subsequently the launching of some of the District's most ambitious tree planting, water quality improvement, and habitat restoration projects to be undertaken in decades.	Narrative	Environmental Protection
In 2012, the District launched *Sustainable DC* with the goal of making DC the healthiest, greenest, and most livable city in the nation, and it continues to make significant progress on the implementation of 143 actions designed to help reach	Narrative	Environmental Protection

that goal – including steps to not only protect natural resources, but also to begin preparing for and adapting to climate change. In 2016, the District released *Climate Ready DC*, a specific strategy to make the city more resilient to future climate conditions including rising temperatures and more heatwaves, increased heavy rainfall and flooding, sea level rise, and severe storm events. These plans and initiatives, among others, emphasize the importance and value of preserving and enhancing natural resources to bolster resilience for the District.		
The District must continue building its adaptive capacity and resilience to potential shocks and stresses through nature-based solutions, which can provide multiple community benefits beyond just environmental protection. These solutions include the conservation of the naturally protective features of environmental assets or ecosystem services, the expansion of green infrastructure, and the inclusion of non-structural land uses in hazardous, environmentally sensitive locations. These solutions should continue to be integrated with other community goals to improve the quality of life in the District through the promotion of environmental justice and sustainability, the preservation or restoration of natural resources, and the provision of additional inter-connected public parks, recreation, and open space.	Narrative	Environmental Protection

Policy R-1.4.1: Natural Assets and Ecosystems for Hazard Mitigation Expand and leverage the ability of natural landscape features and the beneficial ecosystem services they provide to mitigate natural hazards. This includes supporting and encouraging design and construction that protect, restore and enhance the protective functionality of natural assets to absorb, reduce, or resist the potentially damaging effects of wind, water and other hazard forces. Such approaches should be incorporated into all waterfront development projects.	Policy	Environmental Protection
Policy R-1.4.2: Ecosystem Services and Nature-Based Design Support and encourage development projects, including new construction and substantial improvements or retrofits, that take advantage of ecosystem services and nature-based design to mitigate hazards as well as protect the environment, conserve energy and offer other community benefits. Projects may be structure-specific or applied across defined geographic areas.	Policy	Land Use
Action R-1.4.5: Monitoring Nature-Based Design Projects Monitor nature-based design projects to track progress and implement or revise policies and design guidelines as necessary to enhance hazard mitigation, climate adaptation, and resilience**.**	Action	Land Use
Policy R-1.5.: Non-Structural Land Uses Incorporate non-structural uses within designated special flood hazard areas to help protect and enhance the natural and beneficial functions of floodplains, wetlands, and other undeveloped landscape features. These uses include but are not limited to parks, recreation, and permanently protected open space.	Policy	Environmental Protection
Action R-1.6.: Incentives for Nature-Based Design Explore expanding financial or tax-based incentives and creative financing for promoting development and other projects which incorporate nature-based design or enhance ecosystems services to support hazard mitigation and climate adaptation while conserving floodplains and natural barriers in vulnerable areas.	Action	Land Use

Policy R-1.4.B: Natural Shorelines Encourage as part of waterfront development, the use of natural shorelines that use plants, sand, and limited use of rock to provide shoreline protection from erosion and maintain valuable habitat. Engage and coordinate with District and federal non-profit, and private sector stakeholders to promote the development of natural shorelines or similar eco-engineered structures to limit damage from rising sea levels, coastal storms, flooding, and erosion while preserving and enhancing habitats. As needed, review or amend regulations and development incentives to encourage natural shorelines or similar projects, particularly for waterfront development.	Policy	Land Use
R-1.5 Protecting Historic and Cultural Resources from Shocks and Stresses In Washington, DC, the protection of historic and cultural resources is widely recognized as a critical objective in all aspects of community planning and development. Historic landmarks and cultural sites include the iconic monuments, symbolic places, neighborhoods and important District structures that continue to define the city's unique heritage as our Nation's Capital, but also as a place that hundreds of thousands of people have called home for more than a century. It is a heritage that is rich and varied, vital and valued, and it extends beyond the built environment to the stories of people, communities, and institutions that have contributed to the making of our city.	Narrative	Historic Preservation
During the past 50 years, the preservation of this heritage has become an inseparable part of the District's growth and revitalization. Tens of thousands of historic buildings have been protected and adapted to meet modern needs. Today there are more than 650 historic landmarks and more than 50 historic districts, half of which are local neighborhoods. In all, nearly 27,000 properties are protected by historic designation, but they also include retail and commercial centers, residences, and places of worship and leisure. These outcomes are the result of concerted efforts by citizens, organizations, business leaders, and	Narrative	Historic Preservation

government officials advocating for the value of the city's historic and cultural resources.		
The District continues this legacy of preservation and restoration through its Historic Preservation Plan, which sets forth the current vision and guide for District programs and community preservation activities. While the 2016 Historic Preservation Plan describes a broad range of goals and actions the District and its many partners can take, the District must do more to effectively integrate resilience planning concepts into the process. This includes greater consideration of how natural hazards and the effects of climate change threaten the District's ability to protect and preserve its historic and cultural assets using traditional means. It also includes more specifically identifying opportunities to incorporate preventative and protective policies, tools, and other measures into ongoing preservation efforts as well as post-disaster repair and restoration efforts.	Narrative	Historic Preservation
The following policies and actions help the District go beyond preparedness plans and procedures for possible disaster or emergencies affecting historic and cultural resources. They are also intended to build increased resilience and adaptive capacity to such events in ways that ensure the continued preservation of important historic buildings and sites, despite challenging future conditions that threaten their very existence. They are also meant to facilitate enhanced coordination between the District's Historic Preservation Office and State Hazard Mitigation Officer on the development and administration of flexible, integrated policies that work together before and after disaster strikes.	Narrative	Historic Preservation

Policy R-1.5.1: Resilient Design Principles for Preservation Planning Develop resilient design best practices for historic and cultural resources to guide preservation planning and project implementation. Included in these efforts should be guidance for identifying those potential projects where the no-action alternative is the best course of action for the District to take due to potential negative factors such as poor cost-effectiveness, lack of technical feasibility, and potential increases in hazard vulnerability or life/safety threats.	Policy	Historic Preservation
Policy R-1.5.3: Post-Disaster Recovery and Redevelopment for Historic Properties and Districts Promote the integration of hazard mitigation and climate adaptation strategies into existing historic preservations plans and policies, particularly as it relates to post-disaster recovery and redevelopment. Similarly, partner with the DC Homeland Security and Emergency Management Agency to incorporate historic preservation policies and regulations into the District's post-disaster recovery or redevelopment policies, procedures, and plans in a way that more specifically addresses future climate conditions, including increased hazard events. Integration, promotion and enforcement of these policies and regulations will help to ensure swift repair and restoration of historical and cultural resources in a post-disaster environment.	Policy	Historic Preservation
Policy R-1.5.: Coordination with Historic Preservation Agencies When developing programs, initiatives and other activities related to resilience and historic preservation, require coordination with the District Historic Preservation Office to ensure adherence to National Park Service's Secretary of the Interior's Standards. In addition, District Homeland Security and Emergency Management Agency and the District Hazard Mitigation Officer should advise on project eligibility and maximization of FEMA grants and funding for pre- and post-disaster historic and cultural preservation activities.	Policy	Historic Preservation

Action R-1.5.A: Resilient Design and Permitting Guidelines for the Rehabilitation of Historic Buildings, Landmarks, and Cultural Assets Develop guidelines to enable expeditious stabilization, repair and rehabilitation of historic and cultural resources to mitigate against known natural hazards and to recover following disaster events with consideration of best practices and existing guidelines and policies.	Action	Historic Preservation
Action R-1.5.D: Integration of Historic and Cultural Resources Strategy in District Hazard Mitigation Plan Partner with the DC Homeland Security and Emergency Management Agency to develop a new section for the District's Mitigation Plan that considers current and projected risk and vulnerability of historic and cultural resources to natural and human-made hazards, proposes mitigation actions that are applicable to the unique nature of at-risk historic and cultural resources, and remedies capability limitations to repair, rehabilitate, and mitigate these assets in pre- and post-disaster settings. The addition should include guidance for how to address the relocation of historic National Flood Insurance Program Repetitive and Severe Repetitive Loss structures, if deemed necessary.	Action	Historic Preservation
Action R-1.5.E: Hazard Mitigation and Recovery Guidance for Historic and Cultural Resources Conduct a structure-based assessment of the risk and vulnerability of historic and cultural resources to current and projected future hazards. Evaluate mitigation techniques that are appropriate for historic and cultural resources, such as relocation and onsite hardening of the structure and site. Identify potential funding opportunities for mitigation and recovery of historic and cultural resources, as well as the repair and rehabilitation prior to and following hazard events.	Action	Historic Preservation

Action R-1.5.F: Streamlining of Post-Disaster Permit Procedures for Historic Structures & Districts Develop procedures that streamline the design and permitting of building activities for historic structures and districts following disaster events, exploring options such as reduced permitting fees and expedited application review, while adhering to the applicable requirements under the District's historic preservation law. These procedures should be coordinated with the District Historic Preservation Office.	Action	Historic Preservation
R-2 Community Resilience This section addresses community resilience and includes topics related to healthy communities, social equity, community engagement and the economy. While much of the discussion of resilience is about the vulnerability of infrastructure and buildings to withstand adverse events, the underlying social and economic conditions of communities, and individuals who live and work within the communities, has a large impact on the extent to which people are adversely impacted and can bounce back from events. Thus, community resilience is directly related to the ability of a community to use its assets to improve the physical, behavioral and social conditions to withstand, adapt to, and recover from adversity.	Narrative	Community Services & Facilities
There is a strong connection between resilience and community health, equity and community connectedness, and communities have used multiple strategies to become more resilient. These include: improving access to health care facilities and social services; increasing access to healthy foods (including locally growth foods); expanding communication and collaboration within communities so that individuals can help each other during adverse events; and providing equitable disaster planning and recovery in recognition that some areas of the District will be more greatly impacted than others due to existing socio-economic conditions.	Narrative	Community Services & Facilities

R-2.1 Health and Equity Healthy communities are resilient communities, and resilient communities are healthy communities. According to the U.S. Department of Health and Human Services, "health is a key foundation of resilience because almost everything we do to prepare for disaster and protect infrastructure is ultimately in the interest of preserving human health and welfare."[1] Communities with poor health outcomes (i.e., health inequities) such as higher incidents of disease, low rates of physical activity, poor access to healthy food, and poor access to healthcare are more vulnerable and slower to recover from major shocks and chronic stresses. Poor health outcomes are also intertwined with other issues that impact resilience such as poverty, lack of job opportunities and education. Working to improve poor health outcomes can lead to a community where healthy lifestyles are accessible to all, which improves its ability to withstand and recover from disaster.	Narrative	Community Services & Facilities
Policy R-2.2.2: Extreme Heat Promote public, private, and non-profit efforts to minimize the risk of extreme heat on residents, visitors and workers in the District. This includes mapping urban heat islands in the District and supporting educational efforts to increase risk awareness and encourage preventative measures that will reduce heat-related impacts on human health, particularly for the District's most vulnerable populations including older and low-income residents. It also includes supporting strategies or activities that reduce the urban heat island effect, such as increasing urban tree cover, green roofs, and use of other shading techniques or cooling materials such as porous pavements and cool roofs.	Policy	Community Services & Facilities

[1] Source: https://www.phe.gov/Preparedness/planning/abc/Pages/community-resilience.aspx

Policy R-2.2.6: Behavioral Health & Resilience Identify and integrate factors that influence behavioral health into the District's efforts to build community resilience. This includes strengthening the ability of all individuals, households, and neighborhoods to be prepared for and bounce back from potential emergencies and disasters, and particularly continuing the support of programs and activities that promote the well-being of District residents by preventing or intervening in mental illness, depression or anxiety, and substance abuse or other addictions.	Policy	Community Services & Facilities
R-2.2 Community Engagement Community engagement that is inclusive and empowering is foundational to effective and equitable resilience planning. Inclusive community engagement is especially important because the District's most vulnerable populations are also most at risk for shocks, stresses and climate change impacts. Collaborating with the most vulnerable communities creates the opportunity to address some of the contributing causes to the inequities that ultimately leave these communities more at risk in the first place.	Narrative	Implementation
Policy R-3.1.: Civic Engagement and Volunteerism Strengthen and encourage active participation in community-based organizations and expand opportunities for civic engagement and volunteerism for a more self-sufficient and a resilient community.	Policy	Community Services & Facilities
Action R-3.: Small Business & Non-Profit Disaster Insurance Coverage Develop an education and outreach program to promote adequate insurance coverage for faith-based institutions, non-profit organizations, local small businesses, and other community groups to provide financial protection for their facilities in the event of potential disaster events. Include information on low-cost or subsidized insurance to nonprofit and community-based organizations that serve vulnerable populations.	Action	Community Services & Facilities

Action R-2.3.E: Community Resilience Hubs Explore establishing community resilience hubs to strengthen community capacity and connectivity which lead to greater resilience. Community resilience hubs are a collaboration of organizations and agencies that bring their services and products together to serve the unique resilience needs of the community or neighborhood including reliable networks for food, social and health services, safety, and disaster recovery. Resilience hubs for the District could also locate emergency preparedness and response supplies and training in resilient community facilities, be they privately or publicly owned.	Action	Community Services & Facilities
Action R-3.3.D: Neighbor-to-Neighbor Disaster Assistance Offer training programs that educates and empowers residents to help respond and assist their neighbors in the event of a disaster event and supplement the District's emergency response efforts. The goal of the program will be to allow for quicker, more efficient response and recovery in the event of a man-made or natural disaster. This can enhance resilience at the neighborhood level by training a core of community residents who can reach out to their neighbors quickly in the event of a disaster. In implementing this action, the District should leverage and expand on its success with Community Emergency Response Team (CERT) and related programs.	Action	Community Services & Facilities
R-2.3 Economy and Resilience This section includes policies and actions that impact the relationship between the local economy and resilience. More specifically, this section addresses the fact that lower income communities are less able to withstand and recover from disasters. It includes policies and actions that improve access to economic opportunity, increased job training, and working with the business community to plan for and recover from adverse events.	Narrative	Economic Development

Policy R-3.1.F: Small and Local Business Continuity Planning Promote the development of business continuity plans to assess and build the capacity of local and particularly small, businesses to prepare for, withstand, and recover from identified hazardous threats and risks. The intent of business continuity plans is to implement safeguards and procedures that minimize disruptions during and after disasters and to eliminate threats that can jeopardize the financial solvency of the small business. Prioritize services that include educational initiatives to promote risk awareness and information on actionable preparedness and risk reduction strategies for small and local businesses.	Policy	Economic Development
The District maintains advanced capabilities to implement resilience through knowledgeable and mission-oriented staff. Through the identified actions, the District seeks to embed resilience principles into some of its routine operations while improving efficiency through increased multi-disciplinary and multi-agency collaboration. It also aims to increase transparency, access, and collaboration on resilience-driven planning and decision making through more purposeful and equitable engagement with the community at large.	Narrative	Implementation

Policy R-4.1.2: Funding of Resilient Capital Projects Leverage available l financing mechanisms, including the capital budget, to support the inclusion of innovative design and other features to promote the resilience of District-controlled facilities and infrastructure against current and projected natural and climate hazards. Encourage public private partnerships and alignment of multiple District funding sources to facilitate financing of resilience interventions.	Policy	Implementation
Action R-4.1.A: New Funding Sources for Resilience Explore and develop new financing tools to help the District government invest in the development and implementation of resilience projects for District-owned or controlled properties and infrastructure. These tools could include climate bonds (an extension of green bonds), and "resilience bonds" – an emerging insurance product that systematically links existing catastrophe bonds with traditional project finance to support the completion of large-scale resilient infrastructure projects.	Action	Implementation

Central Washington Area Element	Narrative	Central Washington
The Central Washington Planning Area includes the District's downtown area centered near the Federal Triangle neighborhood, which is identified as a priority area for resilience planning in the Vulnerability & Risk Assessment of *Climate Ready DC,* due to flood risk. This area is already at risk of riverine, coastal and interior flooding which will be exacerbated by 2080. There is a significant concentration of built infrastructure, including a large concentration of federal buildings, professional businesses, cultural resources including the Smithsonian and National Mall, as well as Metrorail stations and other community resources, such as the District government's John A. Wilson Building, and other District agency headquarters. The roadway and transit systems in this vicinity also serve the District's transient population of commuters and tourists. Actions have already been taken to better protect this area from riverine flooding, including the completion of a post and panel system at 17th Street and Constitution Avenue and other flood protection measures as part of the Potomac Park levee system, as well as flood proofing at some federal facilities. Central Washington, particularly the Federal Triangle area, will, however, remain at risk to interior flooding, and by 2080, there will be an increased risk from riverine and coastal flooding due to rising sea level.		
Policy LU-R.1: Neighborhood Climate Resilience Leverage the District's ongoing climate preparedness and adaptation work to encourage the implementation of neighborhood-scale and site-specific solutions for. This includes the development of actionable policies and projects that decrease the vulnerability of people, places, and systems to climate risks despite changing or uncertain future conditions.	Policy	Land Use

Central Washington Area Element ***Policy CW-R.1: Interagency Flood Risk Management*** Coordinate with the District-federal DC Silver Jackets and the National Capital Planning Commission and to enhance flood risk reduction and stormwater management efforts in Federal Triangle, and to ensure that federal, District and regional agencies use protective design measures to guard against future flood risks for new construction, renovations and infrastructure improvements in other known flood-prone areas. .	Policy	Central Washington
Central Washington Area Element ***Policy CW-R.2: Transportation Infrastructure Flood Protection*** Work closely with DDOT and WMATA to protect transportation infrastructure located within Central Washington from the risk of increasing failures caused by existing flood risks and future climate conditions. This includes addressing the vulnerabilities of the key transportation assets already determined to be at-risk to extreme heat and riverine, coastal, and interior flooding through capital improvements and stronger, more climate-adaptive design standards that are based on projected future conditions. Improvements and upgrades should consider the criticality of each transportation asset and its vulnerability to failures that would result in major impacts for the Central Washington Planning Area and the entire region.	Policy	Central Washington

Far Northeast & Southeast Area Element The watershed of Watts Branch, a tributary to the Anacostia River, was identified as a priority area for resilience planning in the Vulnerability & Risk Assessment of *Climate Ready DC.* The Watts Branch watershed includes multiple neighborhoods and a significant concentration of community resources at risk in this vicinity, including a number of public and community-serving facilities as well as affordable and public housing units. This area is currently at risk of flooding and is projected to be at increased risk as early as 2020.	Narrative	Far Northeast & Southeast
Far Northeast & Southeast Area Element ***Policy FNS-R.1: Watts Branch Neighborhood Flood Resilience*** Leverage the District's ongoing climate adaptation and flood risk reduction efforts, in partnership with federal and other partners, to implement neighborhood-scale and site-specific solutions for flood resilience in the neighborhoods within the Watts Branch watershed. This includes the development of actionable strategies and projects that decrease the vulnerability of community members, housing and community facilities and local businesses and community-serving institutions not only from current flooding risks but also future risk due to climate change.	Policy	Far Northeast & Southeast

Far Northeast & Southeast Area Element ***Policy FNS-R.2: Flood Mitigation*** Identify and prioritize flood-prone properties along Watts Branch for flood hazard mitigation projects, including structural and non-structural interventions and, when feasible, the acquisition and/or relocation of repetitively damaged structures to eliminate future flooding and to facilitate the restoration of natural floodplain areas. Flood mitigation measures should address the reduction in current and future flood risk and the extent to which other neighborhood benefits are realized, including projects that improve parklands and trails, provide recreational features, and enhance water quality, natural habitat, and other ecological functions.	Policy	Far Northeast & Southeast
Far Northeast & Southeast Area Element ***Policy FNS-R.3: Critical Community Facilities Protection*** Protect critical community facilities that provide human services and other resources in the Far Northeast and Southeast Planning Area that are determined to be at-risk to current and future flooding conditions to minimize any disruption to critical human service functions during flood events. This includes conducting site-level vulnerability assessments for facilities near Watts Branch and identifying flood-proofing strategies that can be incorporated into capital improvement plans and future hazard mitigation grant applications.	Policy	Far Northeast & Southeast
Far Southeast & Southwest Area Element	Narrative	Far Southeast & Southwest
The Far Southeast/Southwest Planning Area includes neighborhoods along the Potomac River, which are at risk of flooding within 2020, 2050, and 2080 scenarios. This area was identified as a priority area for resilience planning in the Vulnerability & Risk Assessment of *Climate Ready DC*. This flood risk will impact existing communities in the area, , an electrical substation, the Blue Plains Advanced Wastewater Treatment Plant, and a military base, Joint Base Anacostia Bolling. DC Water is currently conducting a major construction project to build new seawall that will provide Blue Plains with flood protection beyond the 1 to 500-year standard with an additional three feet of elevation.		

Far Southeast & Southwest Area Element ***Policy FSS-R.1: Far Southeast and Southwest Neighborhood Climate Resilience*** Leverage the District's climate adaptation and flood risk reduction efforts implement neighborhood-scale and site-specific solutions for flood resilience in the Potomac River neighborhoods adjacent to Blue Plains and the Joint Base Anacostia Bolling. This includes the development of actionable strategies and projects that decrease the vulnerability of community members, housing and community facilities and local businesses and community-serving institutions not only from current flooding risks but also future risk due to climate change.	Policy	Far Southeast & Southwest
Policy H-R.1: Resilient Housing Encourage the use of climate resilient and energy efficient design practices for new residential developments, and especially in the construction of public or affordable housing units. These practices include cool and living roofs, solar shading, natural ventilation, and other passive cooling techniques that will reduce the impacts of extreme heat events on the area's most vulnerable residents. They also include the use of green infrastructure methods that can reduce the urban heat island effect and potential flooding risks by preserving or expanding green space, tree cover, and other natural features.	Policy	Housing
Far Southeast & Southwest Area Element ***Policy FSS-R.2: Resilient Public Facilities*** Identify and support greater investments to make the existing public facilities in Far Southeast and Southwest Planning Area more resilient to the anticipated effects of extreme heat, floods, and severe weather. This includes incorporating necessary upgrades or retrofits to the improvement or reconstruction of schools, libraries, child care centers, recreation centers, health clinics and other facilities that provide services to residents vulnerable to climate risks and social inequities.	Policy	Far Southeast & Southwest

Mid City Area Element The Mid City Planning Area includes the neighborhoods of Bloomingdale and LeDroit Park which have been identified as a priority area for resilience planning in the Vulnerability & Risk Assessment of *Climate Ready DC*. This area is at risk of interior flooding. Bloomingdale in particular experienced multiple storm events in 2012 that resulted in major flooding of neighborhood streets and residences. Following these floods, major infrastructure projects, such as DC Water's Northeast Boundary Tunnel were implemented to expand the limited capacity of the area's stormwater management systems. However, due to the projected increase in the frequency and severity of extreme precipitation due to climate change, this area remains at risk of flooding.	Narrative	Mid-City
Mid-City Area Element ***Policy MC-R.1: Bloomingdale and LeDroit Park Neighborhood Climate Resilience*** Leverage the District's ongoing climate adaptation and flood risk reduction efforts implement neighborhood-scale and site-specific solutions for flood resilience in the Bloomingdale and LeDroit Park neighborhoods. This includes the development of actionable strategies and projects that decrease the vulnerability of community members, housing and community facilities and local businesses and community-serving institutions not only from current flooding risks but also future risk due to climate change.	Policy	Mid-City

Mid City Area Element ***Policy MC-R.2: Stormwater Management for Interior Flooding*** Continue to build and expand the capacity of existing stormwater management systems to reduce the risk of interior flooding in the Mid-City Planning Area from extreme rainfall events, which are projected to increase in frequency and severity. This should include gray and green infrastructure measures that improve drainage and reduce impervious surface coverage, especially on the east side of the Planning Area for Bloomingdale and LeDroit Park. When feasible, stormwater projects should include expanding parks, green space, and recreational opportunities for the area.	Policy	Mid-City
Mid City Area Element ***Policy MC-R.3: Green Development Practices*** Encourage capital improvement or development projects in the Planning Area to eliminate or reduce surface water runoff from sites through green roofs, rain gardens, cisterns, pervious pavement, and other reuse or filtration methods. Support could include financial or other incentives. Projects could include green infrastructure methods that reduce potential flooding risks and the urban heat island effect for the area.	Policy	Mid-City