

• Enhancing Community Resilience Through Comprehensive Planning

- Overview of Washington DC's Comprehensive Plan and Resilience Planning
- NPC198049
- Josh Ghaffari – DC Office of Planning
- Tanya Stern – Montgomery County Planning Department
- Darrin Punchard – Punchard Consulting



American Planning Association

Creating Great Communities for All



DC Overview & Comp Plan 101



Washington
Monument

US Capitol

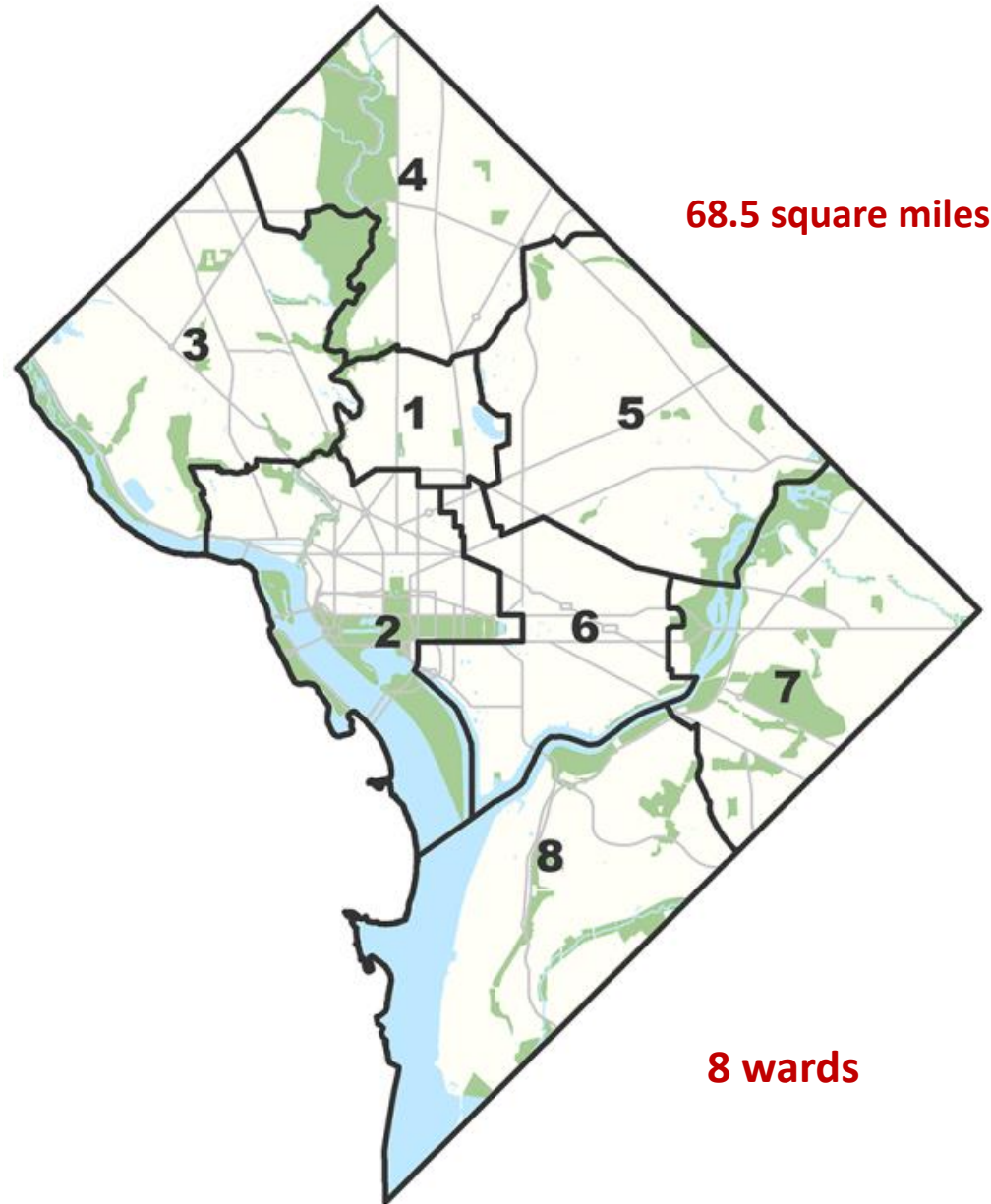
Potomac River

Buzzard Point

Anacostia River

Washington, DC – The Nation's Capital & A Local Home

- Not just a government town
- A world class city with a strong business environment, resilient economy & diverse population
- Functions as a city, county & state
- A sustainability leader among cities

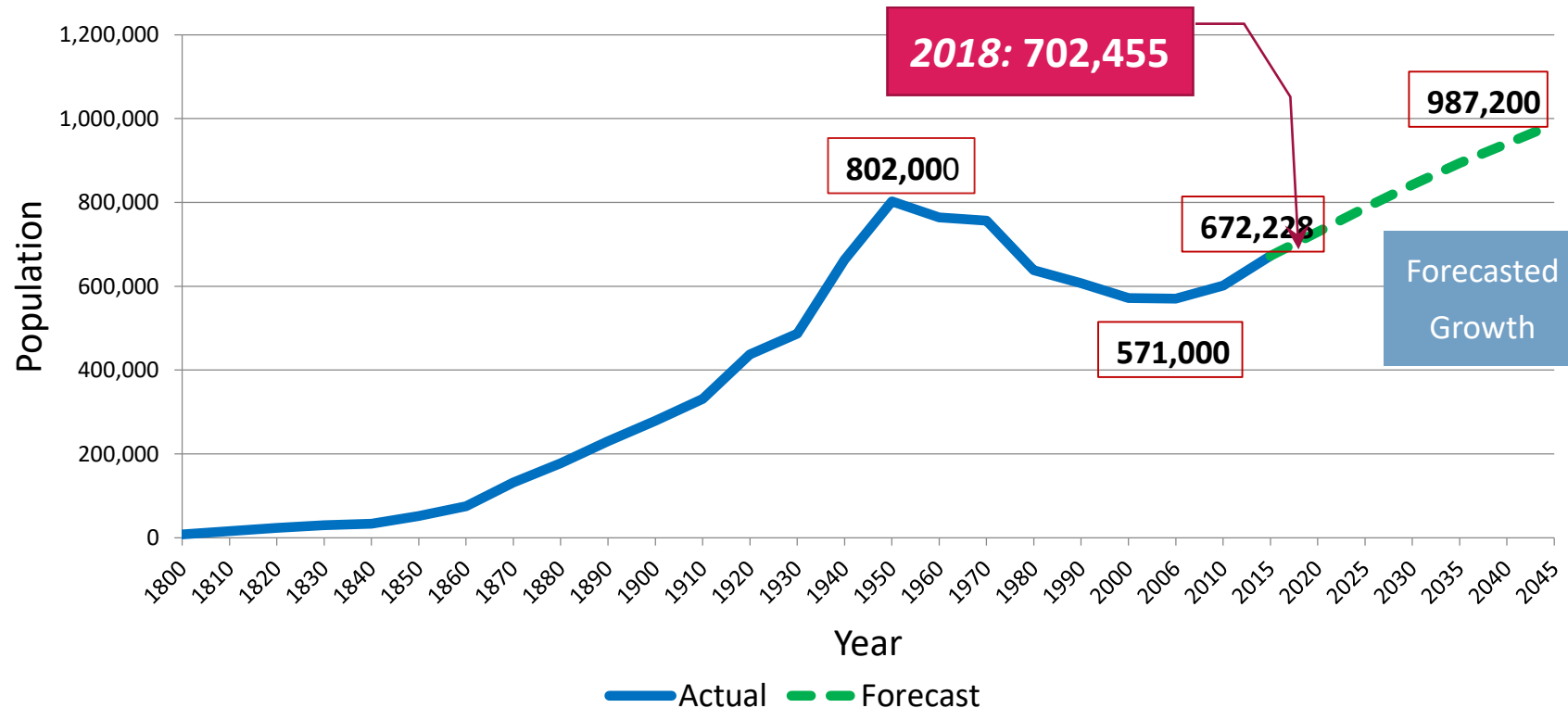


DC's Population is Growing

Between 2006 & 2016 **Washington, DC** added **110,000** residents.

Over the next 10 years we expect to add **115,000**.

DC Population Growth: 1800 – 2015 & to 2045



Source: U.S. Census Bureau Censuses 1800-2010 & Population Estimates 2006 and 2015; DC Office of Planning Population Forecast 2020-2045

DC Office of Planning

Mission: OP guides development of the District of Columbia, including the **preservation & revitalization of our distinctive neighborhoods**, by informing decisions, advancing strategic goals, encouraging the highest quality outcomes, and engaging all communities.

Neighborhood
Planning

Design

Development
Review

Historic
Preservation
Office

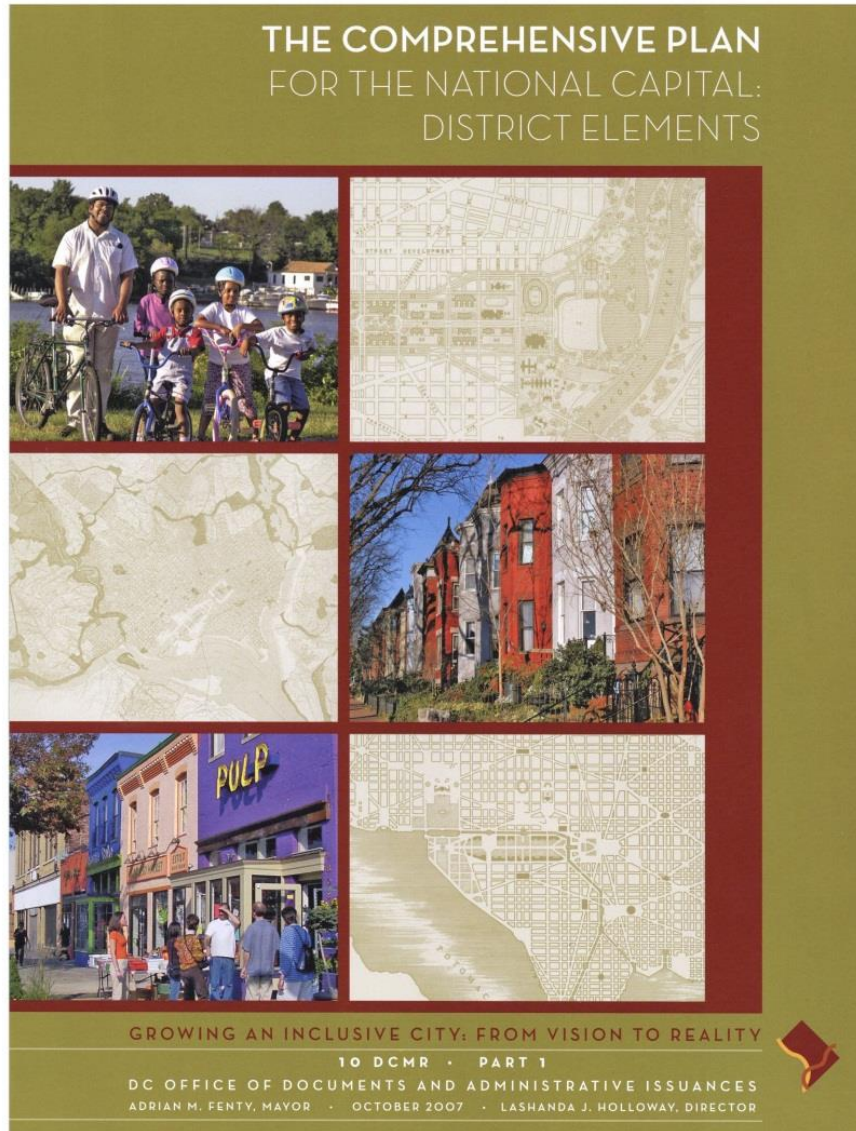
Citywide
Planning

State Data
Center

IT/Geographic
Information
Systems

[PLAN]DC

THE DC OFFICE OF PLANNING



The Comprehensive Plan: District Elements

20-Year Vision—“Planning an Inclusive City”

Policies in **Text & 2 Maps**

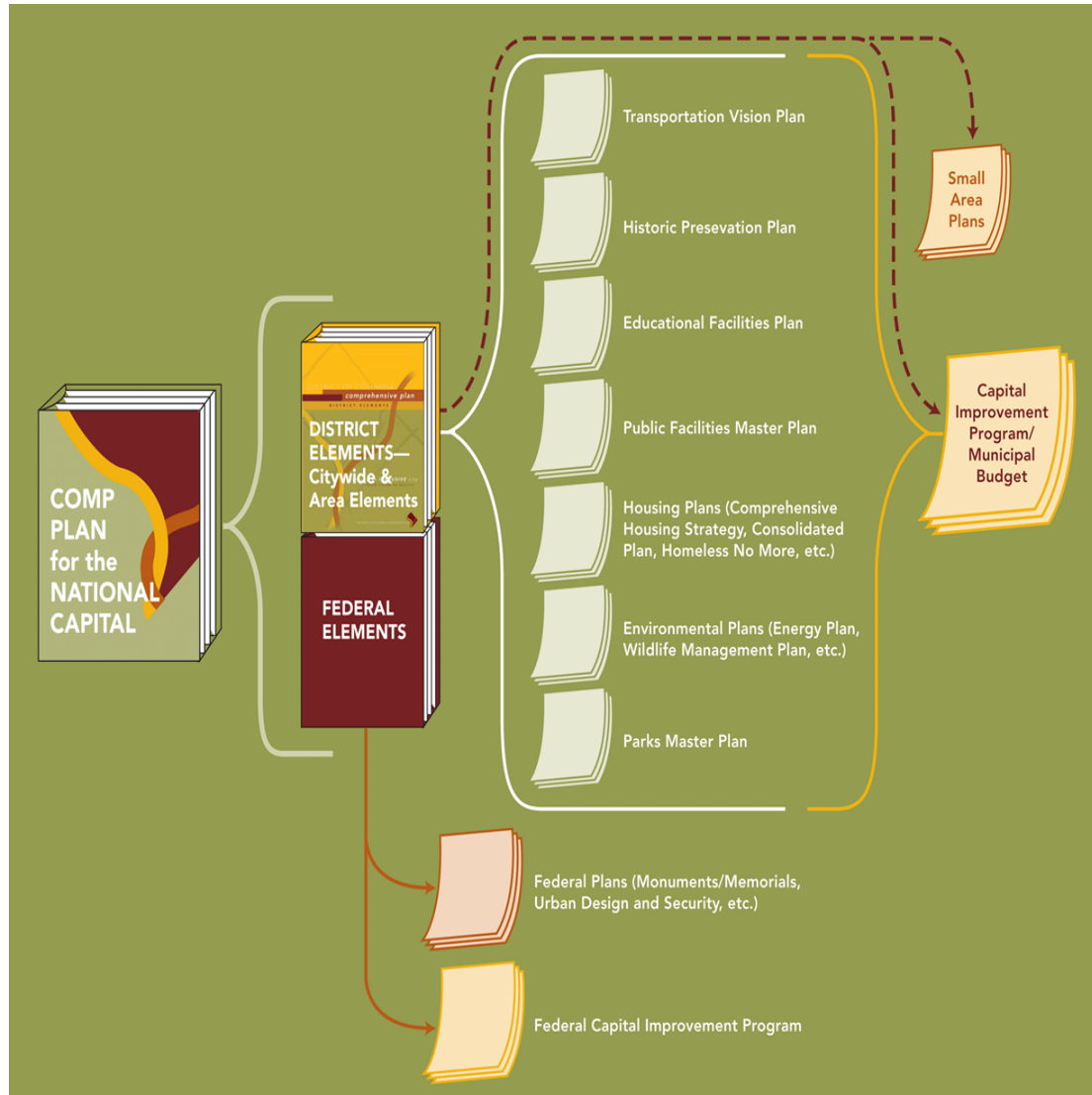
Adopted as **legislation** in **2006**

First amended in **2011**

Second amendment cycle launched in 2016

PlanDC.dc.gov

Setting the Stage for Planning



The “Family” of Plans

The Vision: Planning An Inclusive City

“Growing inclusively means that individuals and families are not confined to particular economic and geographic boundaries but are able to make important choices – choices about where they live, how and where they earn a living, how they get around the city, and where their children go to school. Growing inclusively also means that every resident can make these choices – regardless of whether they have lived here for generations or moved here last week, and regardless of their race, income, or age.”

- A VISION FOR GROWING AN INCLUSIVE CITY, 2004

*From 2006 Comprehensive Plan—District Elements,
Introduction, p.1-1*

How DC's Comp Plan Shapes Development

Shapes character & design of **neighborhoods**

Shapes **policy framework** for multiple issues (e.g., housing)

Guides **urban design character** of the District

Provides the **framework for zoning**

Dictates use & density of sites through **land use designations**

Promotes **infrastructure** improvements

Area Elements

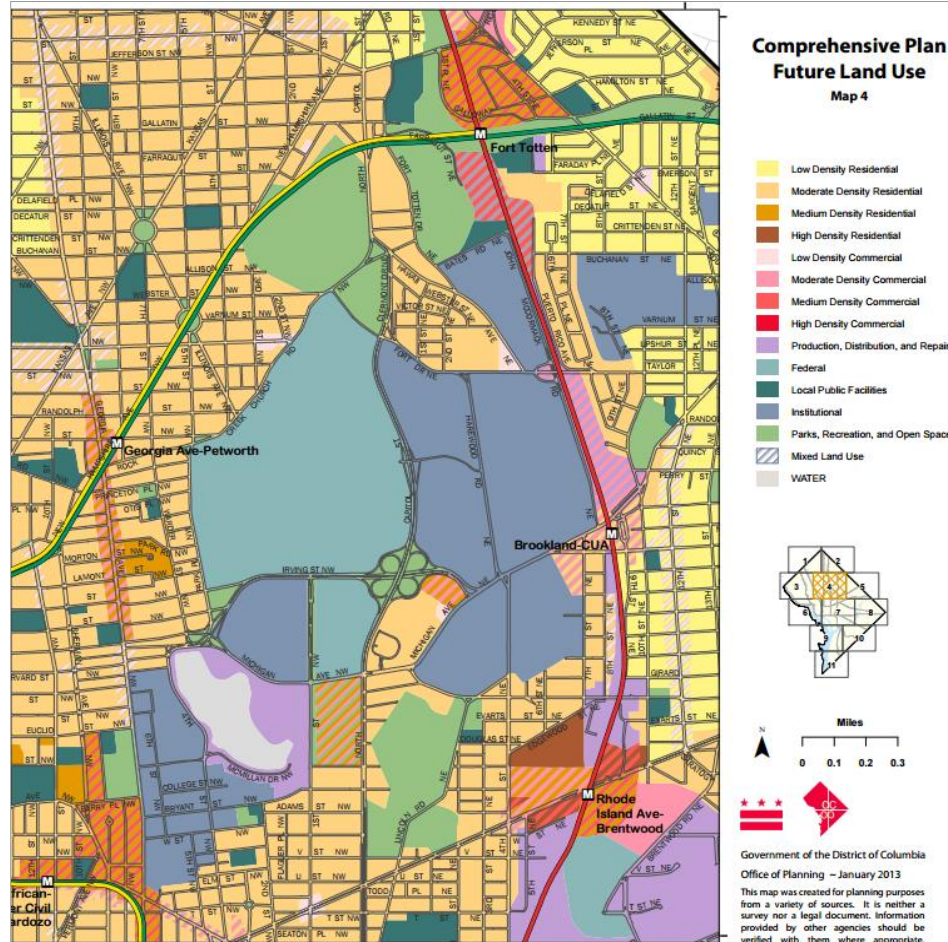
Citywide Elements

Capitol Hill
Central Washington
Far Northeast & Southeast
Far Southeast/Southwest
Lower Anacostia
Waterfront/Near Southwest
Mid-City
Near Northwest
Rock Creek East
Rock Creek West
Upper Northeast

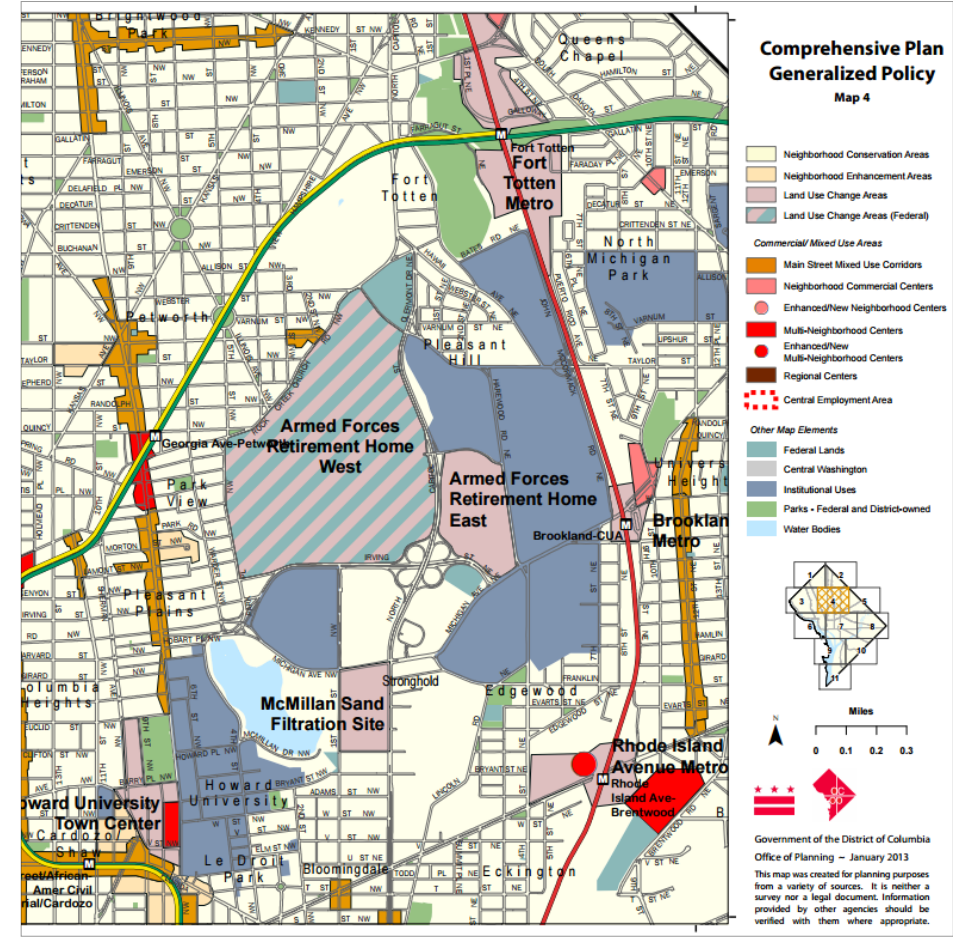
Framework Element		
Land Use	Economic Development	Housing
Environmental Protection	Transportation	Community Services & Facilities
Urban Design	Historic Preservation	Infrastructure
Parks, Recreation & Open Space	Educational Facilities	Arts & Culture

Comprehensive Plan Maps

Future Land Use Map



Generalized Policy Map



Comprehensive Plan Amendment Goals



[PLAN]DC

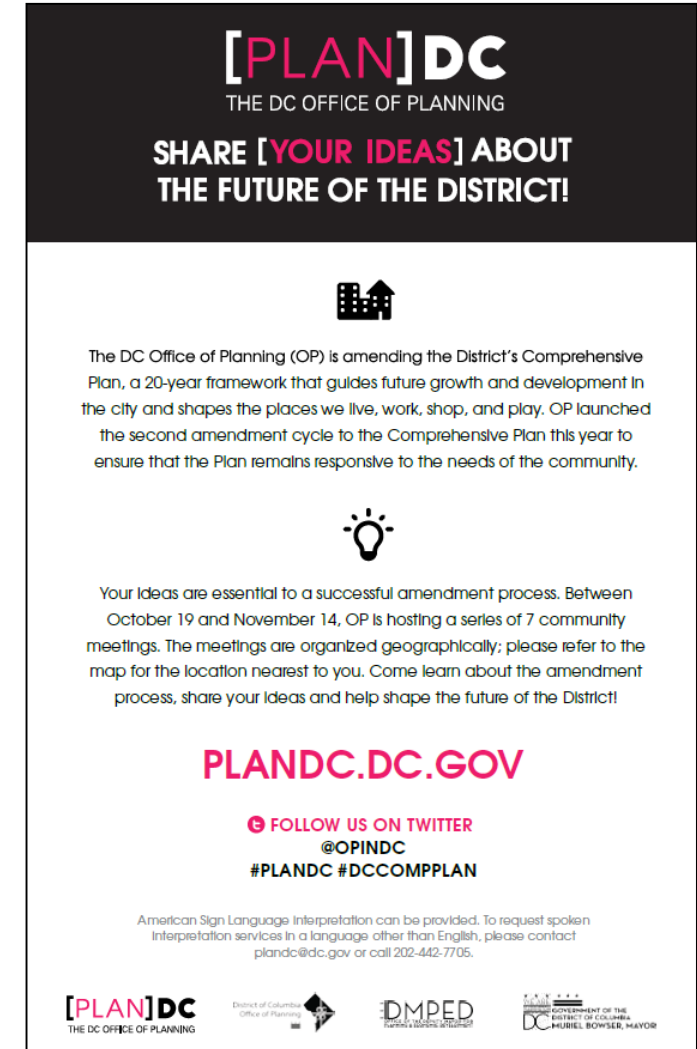
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Project Brochure

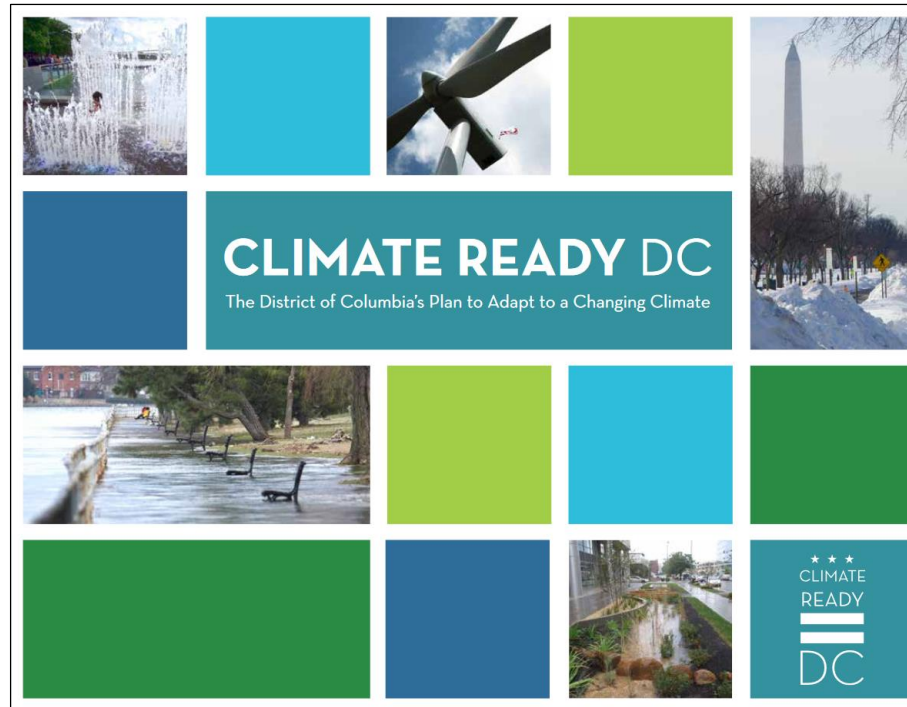
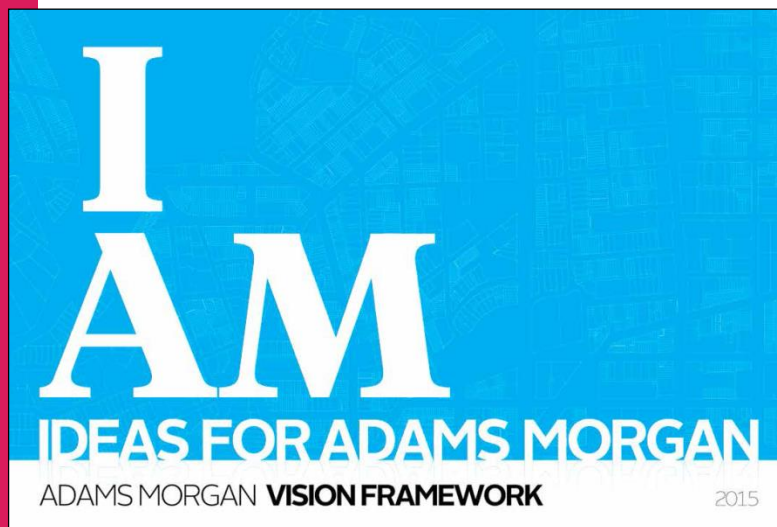


Metrorail Platform Ad



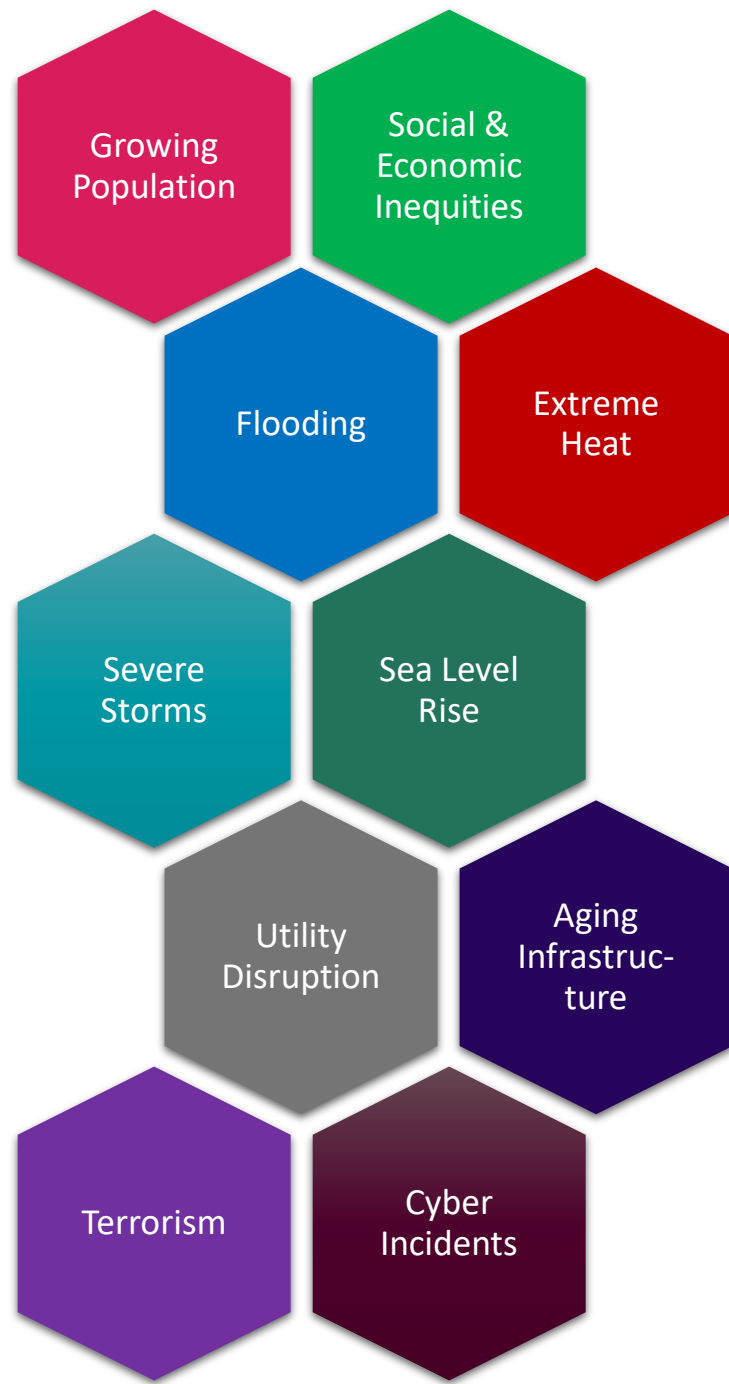
Meeting Flyer

Integrating Recent Plans & Emerging Issues





Resilience Overview



Resilience:

A New Comprehensive Plan Framework

*Examples of DC's
Shocks & Stresses*

Context for DC's Resilience



Flooding— A Major Hazard in DC



Pennsylvania Ave & 7th St NW (1889)



Constitution Avenue in
Federal Triangle (2006)

Types of flooding in DC:

- Riverine
- Tidal/Coastal storm surge
- Interior



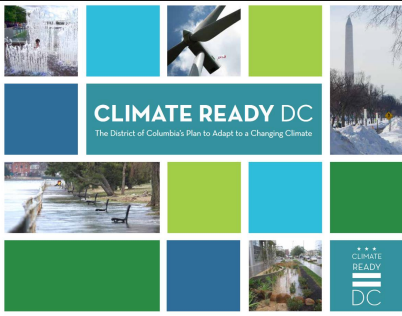
Bloomingdale (2012)



Cleveland Park Metrorail Station (2016)



Climate Change Also Driving Flood Risks in DC

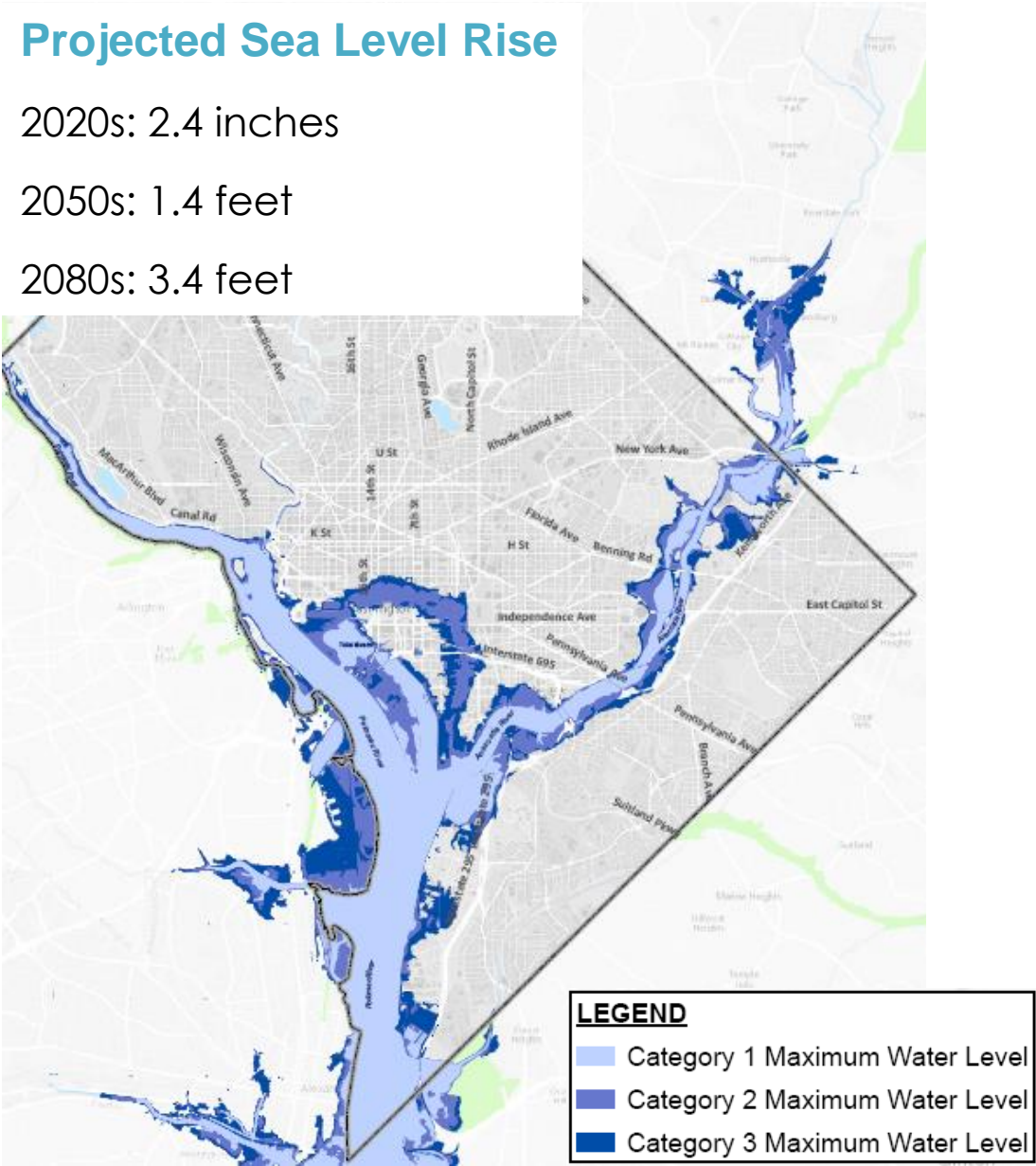


Projected Sea Level Rise

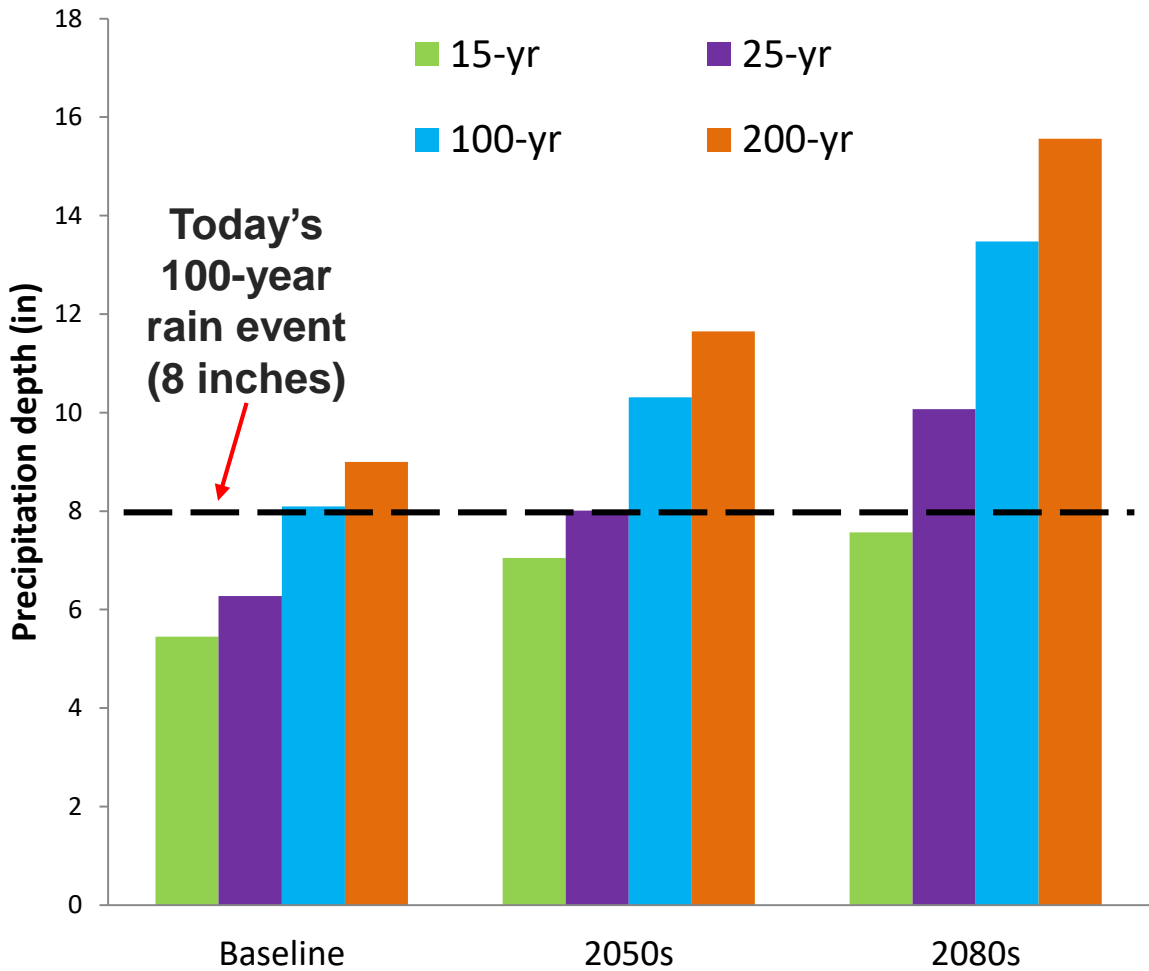
2020s: 2.4 inches

2050s: 1.4 feet

2080s: 3.4 feet

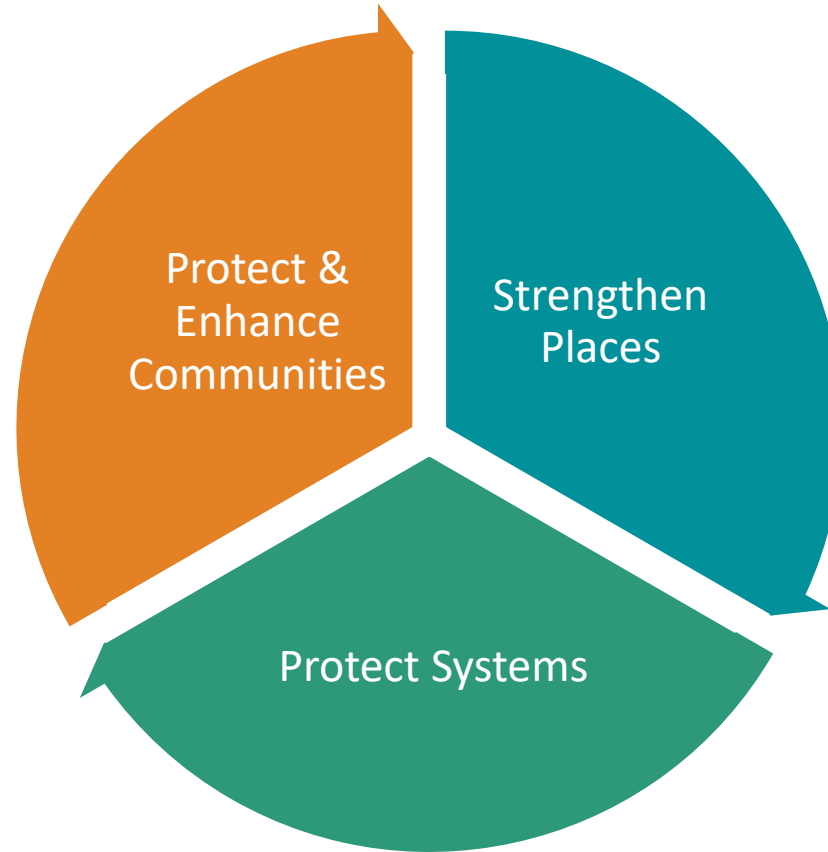


Extreme precipitation events will become **more frequent & more intense.**



Why We Integrated Resilience Into DC's Comp Plan?

- Leverage **Comp Plan's policy focus** on **multiple citywide topics & neighborhoods**
- Enhance **resilience of DC's residents**
- Promote **resilient land use planning & development**
- Leverage existing **interagency plans & collaboration** to support resilience



- Protect DC's historic **identity**, environmental **landscapes** & regional **infrastructure**
- Protect **public & private investments** in built environment for long-term community benefit
- Support **reliable systems** to support a growing city
- Recognize & maximize **co-benefits** of resilience solutions

What Else Has DC Done to Promote Resilience?

A few examples:

DC Silver Jackets (*District & federal agency flood management coordination*)

National Disaster Resilience Competition
(*DC Homeland Security & Emergency Management Agency + others*)

Climate Change Adaptation Plan
(*District Department of Transportation*)

District Mitigation & Recovery Plans
(*DC Homeland Security & Emergency Management Agency*)

Sustainable DC
(*Department of Energy & Environment + others*)

Climate Ready DC (*Department of Energy & Environment*)

Hazard Vulnerability Assessment
(*DC Homeland Security & Emergency Management Agency*)

Resilient DC (100 Resilient Cities)

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100 RESILIENT CITIES



Our 4 "Shocks"

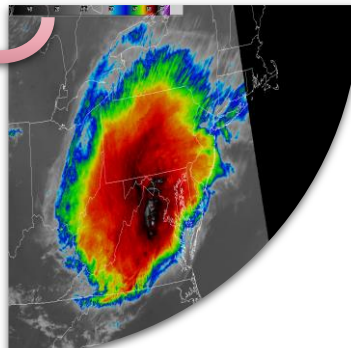
Terrorism



Flooding

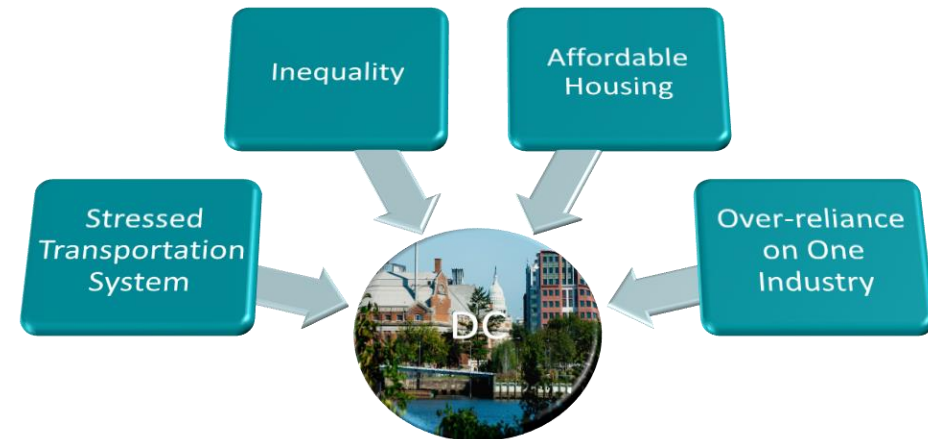


Infrastructure
Failure



Extreme Heat

Our 4 "Stresses"



DC's Resilience Strategy will be released later this month.

BUZZARD POINT

Vision Framework + Design Review Guide

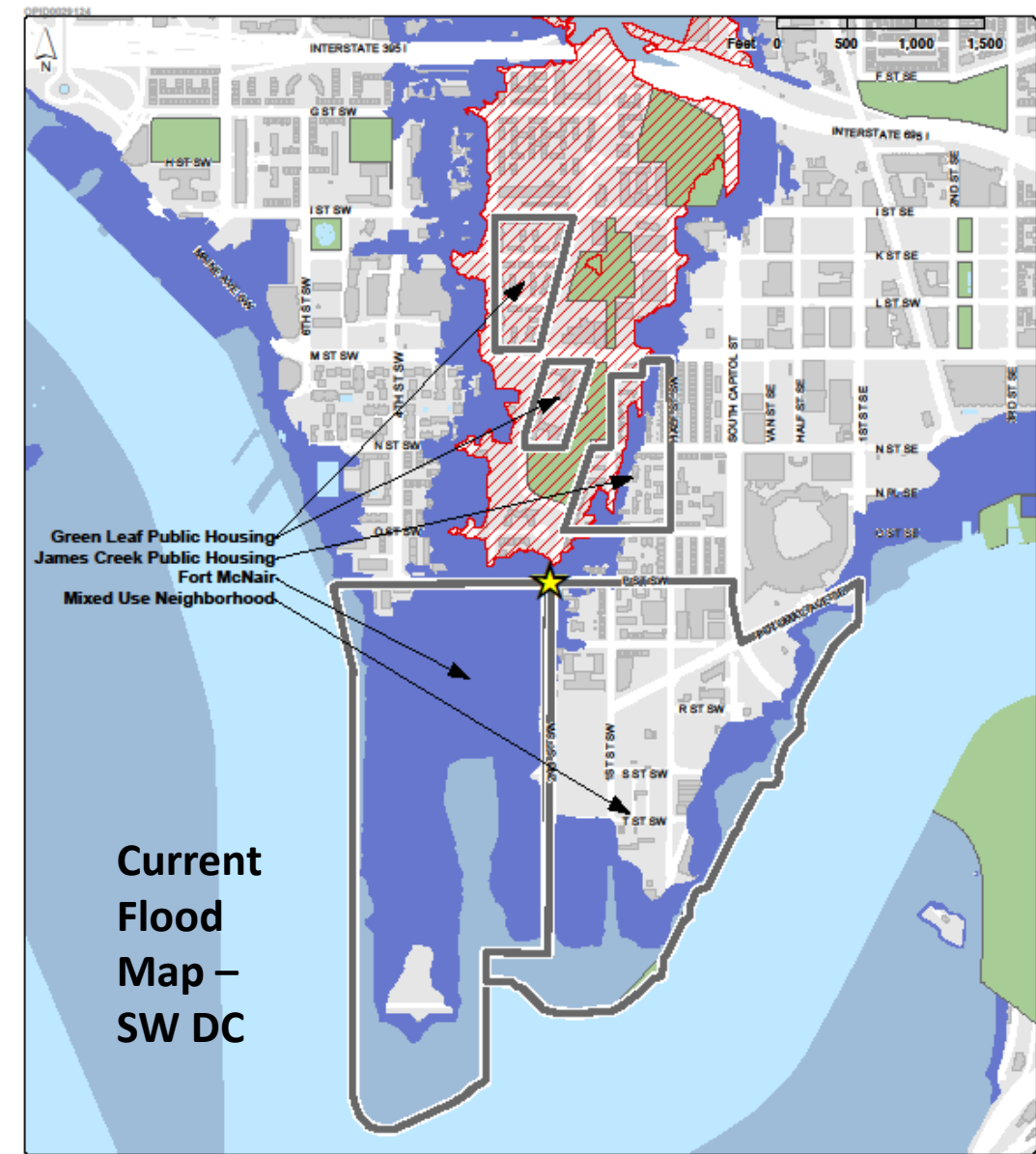
NOVEMBER 2017



Buzzard Point—Waterfront Design for Resilience

Buzzard Point is Vulnerable to Current & Future Flooding

Risk of future flooding from **projected** sea level rise due to climate change



Current
Flood
Map –
SW DC

The District of Columbia



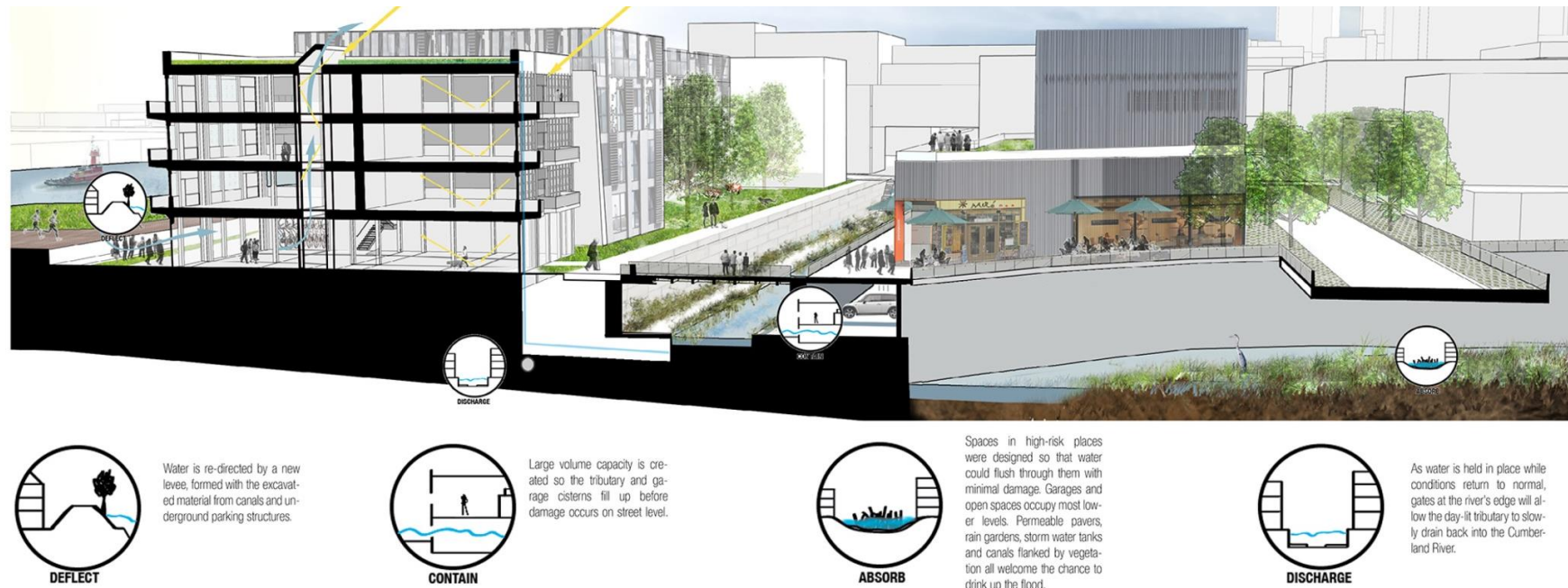
Office of Planning – July 30, 2018
Government of the District of Columbia
This map was created for planning purposes from a variety of sources. It is neither a survey nor a legal document. Information provided by other agencies should be verified with them where appropriate.

Focus Areas
Reduced Flood Risk Due to Levee
100 Year Zone

500 Year Zone
Parks
Water
P Street Levee

Buzzard Point—Resilient Infrastructure, Buildings & Public Space

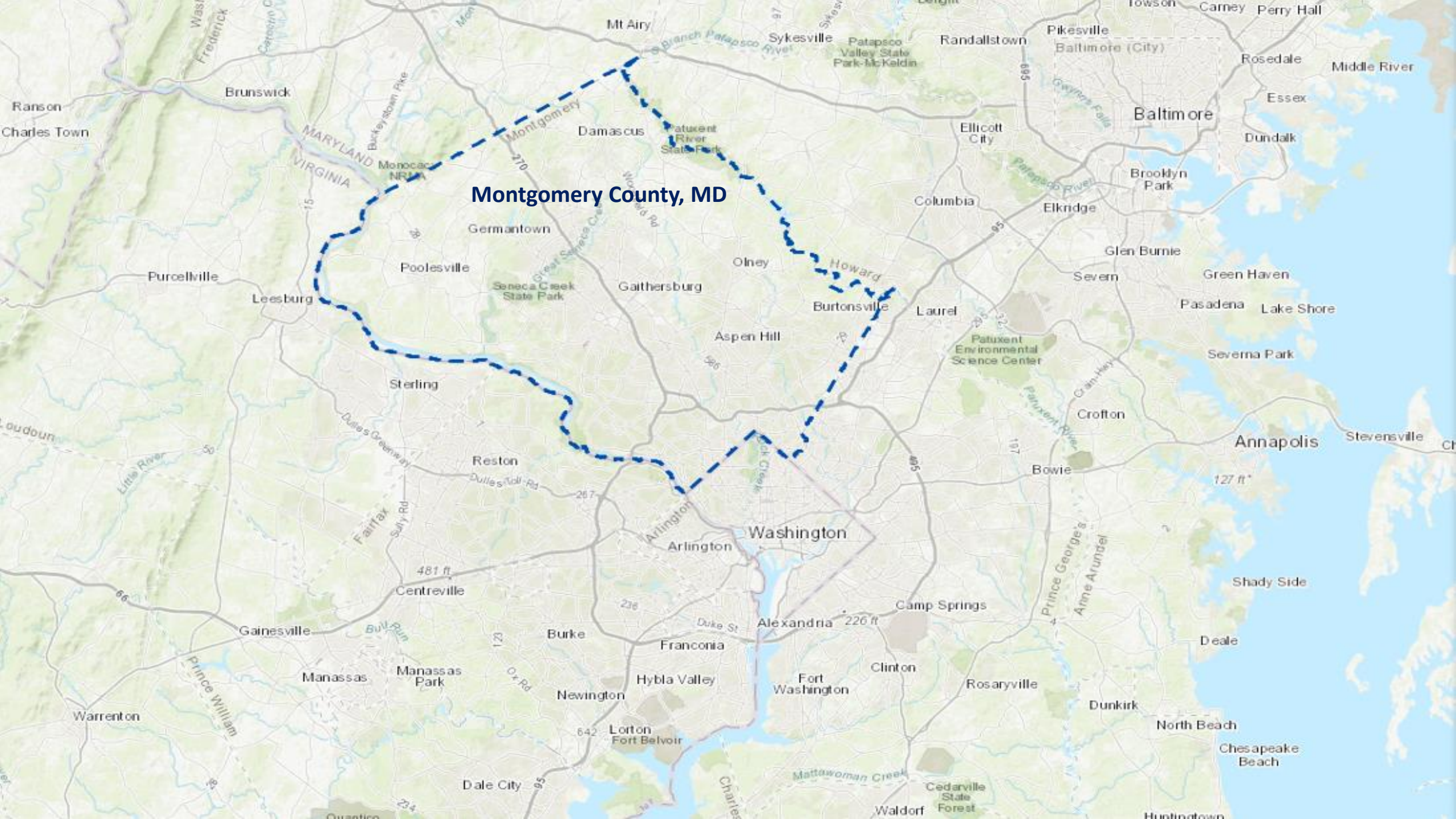
- Store rainwater & include green roofs & parks/bio swales
- Create floodable areas in new parks & retrofit existing parklands
- Ensure that bio swales & berms can be used as parks, paths, amphitheaters, etc.
- Design garages to flood/store floodwaters
- Consider breakaway walls & wind resistant windows in new construction to reduce storm damage
- Include green infrastructure techniques in public space & private development



Coming Soon: Montgomery County (MD) General Plan Update

Plan Framework





Montgomery County, MD

Resilience Process & Policy Development

Process

Three Key Elements:

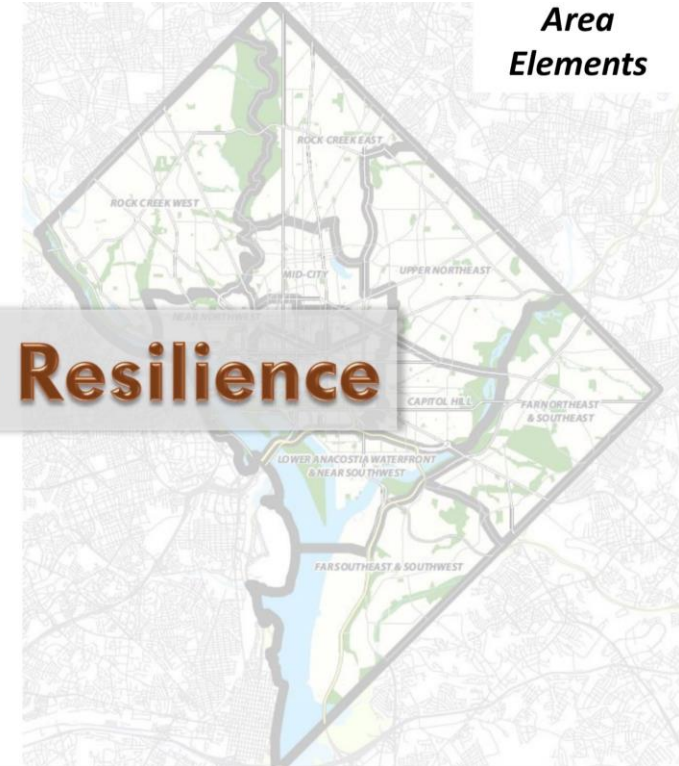
1. Literature review
2. Stakeholder engagement
 - Resilience Advisory Group
 - Stakeholder interviews
 - Public meetings
3. Content development
 - Resilience framework
 - Resilience policies and actions

Citywide Elements

+ New Resilience Element

- Land Use
- Economic Development
- Housing
- Environmental Protection
- Transportation
- Community Services & Facilities
- Urban Design
- Historic Preservation
- Infrastructure
- Parks, Recreation & Open Space
- Educational Facilities
- Arts and Culture

Integrate Resilience



Literature Review



Local Documents



Guidance & Best Practices



Example Plans & Strategies

Literature Review

DOCUMENT TITLE	SOURCE / AUTHOR	DESCRIPTION	NOTES	KEY FINDINGS / TAKEAWAYS
Copenhagen Cloudburst Management Plan	City of Copenhagen, Denmark	Plan to help prepare the city for extreme rainfall and associated flooding. Contains ~300 site-specific projects. Adaptation measures include developing structures that allow rainwater to be led out to sea such as roads, canals, and tunnels; developing storage for surface runoff such as emergency flood channels; and building of blue-green infrastructure throughout the city.	<i>Recommended by DOEE</i>	Plan discussed the need to define an acceptable water level during floods resulting from an extreme rainfall event since Copenhagen government officials recognize that it is too costly to protect the city from extreme flood events. Contains ~300 site-specific projects. Adaptation measures include developing structures that allow rainwater to be led out to sea such as roads, canals, and tunnels; developing storage for surface runoff such as emergency flood channels; and building of blue-green infrastructure throughout the city.
Colorado Resiliency Framework	State of Colorado	Plan developed to represent Colorado's long-term investment and commitment to a more resilient future following the natural disasters that have impacted the state. The Framework was created through the engagement of thousands of Coloradans, identification and analysis of risks and vulnerabilities from hazards and changing conditions, and the identification of action items for state implementation.	<p>The Framework was designed to address all hazards whether natural or man-made. It initiates a dialogue on how to overcome hazard challenges and strengthen systems that support Colorado's continued growth, recreation, beauty and quality of life.</p> <p>Although more applicable to statewide policies and plans for fostering resilience, some of the approaches to organizing the framework in addition to the topics and strategies proposed can be relevant for DC.</p>	<p>Defines Resiliency as "The ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges – including disasters and climate change – and maintain quality of life, healthy growth, durable systems and conservation of resources for present and future generations."</p> <p>Five Framework Resiliency Goals:</p> <ul style="list-style-type: none"> - Risk. Reduce risk to Colorado communities. - Planning. Enhance resiliency planning capacity in Colorado communities. - Policy. Develop, align, and streamline policies to empower resiliency. - Culture. Create a culture that fosters resiliency, instilling an inherent sense of responsibility among all. - Investment. Ingrain resiliency into investments in Colorado. <p>Six Core Resiliency Sectors: Community, Economic, Health and Social, Housing, Infrastructure, and Watersheds and Natural Resources.</p> <p><i>* See opening sentence for each sector description to learn what it means for each to be "resilient."</i></p> <p><i>* Resiliency Prioritization Criteria on page 5-5 is also worth considering in terms of a model for decision-making support.</i></p>
Baltimore Combined All Hazards Mitigation and Climate Adaptation Plan	City of Baltimore	Updated HMP designed to better help the city plan for existing hazards while also preparing for future climate change impacts. It considers climate impacts across four sectors (infrastructure, buildings, natural systems and public services) , outlines 50 strategies, and recommends 231 actions to protect and prepare the city for changes that are underway.	Chapter 5 of the Baltimore Disaster Preparedness and Planning Project addresses hazard mitigation and climate adaptation strategies and actions. It is a very thorough, comprehensive report that can be extremely valuable resource in providing ideas regarding resilience in each element of the DC Comprehensive Plan. In addition, due to the two cities close proximity, strategies and actions in Baltimore are very relevant to DC.	<p>In the Baltimore plan, strategies are divided into sectors and sub-sectors. Sectors are divided into four categories: infrastructure, buildings, natural systems and public services.</p> <ul style="list-style-type: none"> - The Infrastructure sector is sub-divided into sub-sections addressing: energy, liquid fuels, communications, transportation, wastewater, stormwater, and solid waste. This sector also includes a sub-section on policy and government decision-making which addresses ways to encourage integration of climate change into private and State planning documents, systems, operations, and maintenance. An interesting strategy is "Ensure hazard scenarios, utilized vulnerability assessments, are at a minimum 25% greater intensity and impact than historical record events to date." - The Building sector section addresses city codes and design guidelines. The guidelines range from enhancing building codes within a floodplain or near the waterfront, strengthening zoning to floodplain

Local Applicable Documents

Guidance & Best Practices

Example Plans & Strategies

Online Resources



Resilience Advisory Group

- **Intergovernmental Representation**
 - District/federal/regional agencies
- **Advance Survey**
 - Helped ID key resilience issues/topics and other relevant/ongoing activities
- **Group & Individual Agency Meetings**
 - Provided critical expertise, knowledge, and input throughout process
 - Helped define **Resilience** for DC



Resilience Issues/Topics



Resilience Issues/Topics

Key Themes

- Population growth, social equity, development pressure in natural areas, impacts to air and water quality
- Extreme weather events (e.g., heat, heavy snow, precipitation), nuisance flooding, sea level rise
- Aging/deteriorating infrastructure, service disruptions (utilities, transportation, social services, etc.)
- Emergency response/recovery, protection of historic/cultural assets
- Behavioral concerns – psychological trauma following disaster event, neighbor to neighbor connections & strong social networks

Resilience Issues/Topics

Chronic Stresses	Acute Shocks
Aging Infrastructure	Coastal Storm
Crime and Violence	Cyber Incident
Economic Inequality	Earthquake
Economic Shifts	Extreme Temperatures
Environmental Degradation	Flood
Financial Capacity	Government Shutdown
Homelessness	Hazardous Material Release
Insufficient Access to Healthy Foods	Infrastructure Collapse/Failure
Insufficient Access to Affordable Healthcare	IT System Failure
Insufficient Access to Parks and Open Space	Severe Weather
Insufficient Access to Quality Education	Terrorism
Lack of Affordable Housing	Transportation Incident
Lack of Strong Social Networks / Cohesion	Urban Fire
Unreliable Transportation System	Utility Failure
Sea Level Rise	Winter Storm
Social Inequity	
Unemployment	

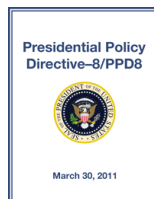
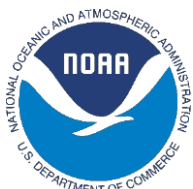
Defining **Resilience** for the District

- **Examples/Models for Urban Resilience**

- 100 Resilient Cities (100RC)
- Case studies from other US cities

- **Existing Definitions**

- Helped identify key components / themes



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100



CITIES



Stakeholder Interviews

- **Deep Dive with Key Agencies**

- Connect with existing resilience initiatives for the District
- Identify specific ways the Comprehensive Plan can help

- **Learn From the Experts**

- Local thought leaders
- Resilience champions from other cities



Public Meetings



[What is Resilience?]

Draft Definition

Resilience for the District of Columbia is the capacity of individuals, neighborhoods, institutions, businesses, and systems to thrive in an inclusive manner amidst challenging conditions and to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.

Why now?

- ◆ District is vulnerable to natural & man-made hazards, including flooding, extreme heat, sea level rise, and terrorism.
- ◆ Hazards pose threats to residents' safety, health and quality of life and to District's region-serving economy and infrastructure
- ◆ Multiple recent District government efforts to address these issues and to help DC become more resilient
- ◆ Washington, DC is now part of 100 Resilience Cities global initiative

What will we produce?

New Resilience Element and amendments to integrate resilience into existing Citywide and Area Elements.

Context for Resilience



Draft Guiding Principles

- 1 Address the diversity of stresses and shocks
- 2 Recognize and maximize the co-benefits of resilience solutions
- 3 Be flexible and opportunistic
- 4 Address and promote equity
- 5 Empower the community to be resilient
- 6 Address current and potential future impacts
- 7 Protect cultural and historic structure and landscapes
- 8 Address social and economic infrastructure
- 9 Create redundant and reliable systems
- 10 Promote effective governance and leadership

Examples of Stresses & Shocks Facing the District that Affect the City's Resilience



Guiding Principles for Policy Development

1. Address the diversity of stresses and shocks.
2. Recognize and maximize the co-benefits of resilience policies and actions.
3. Be flexible and opportunistic.
4. Address and promote equity.
5. Empower the community to be resilient to identified hazard threats.
6. Address current and potential future impacts from a changing climate.
7. Protect cultural and historic assets and landscapes.
8. Address social and economic infrastructure.
9. Create redundant and reliable systems.
10. Expand partnerships to address complex problems and resolve interconnected issues.

Content Development

- Resilience introduced as key theme in ***Framework Element***
- 81 resilience policies and actions drafted for integration throughout existing Citywide Elements
- 20 policies and actions drafted for integration throughout existing Area Elements
- No stand-alone Resilience Element

Resilience in Framework Element

- ***Resilience in the District is defined as the capacity to thrive amidst challenging conditions by preparing and planning to absorb, recover and more successfully adapt to adverse events.***
- The District will leverage policies and target specific actions to reduce the immediate impact of shocks and stresses and facilitate long-term recovery in the establishment of resilience for all residents across the city.
- 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.
- Resilience in the District is dependent upon an active and collaborative group of stakeholders beyond government.

Resilience Policies & Actions

- **Built & Natural Environment**

- Housing
- Infrastructure
- Transportation
- Natural environment
- Historic and cultural resources

- **Community Resilience**

- Health and equity
- Community engagement
- Economy

- **Leadership & Strategy**

- Governance
- Stakeholder collaboration and public-private partnerships



What We Learned

- The overall concept of resilience for the District must be kept **broad** and **inclusive**
- Need to create a clear **framework** that helps guide new resilience content for the Comprehensive Plan
- Need to be specific on the **key topics** for resilience (identify “what’s in and what’s out”)
- Need to develop a **clear** approach for resilience integration (throughout existing chapters vs. separate new chapter)
- Leverage existing resilience initiatives and promote **consistency** and **collaboration** across agencies
- Resilience is not just about what government can do. It takes a **whole community** to become a resilient city

Josh Ghaffari

DC Office of Planning
Comprehensive Plan Program Manager
joshua.ghaffari@dc.gov
202.442.7705
plandc.dc.gov

Tanya Stern

Montgomery County Planning Department
Deputy Planning Director
tanya.stern@montgomeryplanning.org
301.495.4508

Darrin Punchard

Punchard Consulting
Principal
darrin@punchardconsulting.com
617.777.2001



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