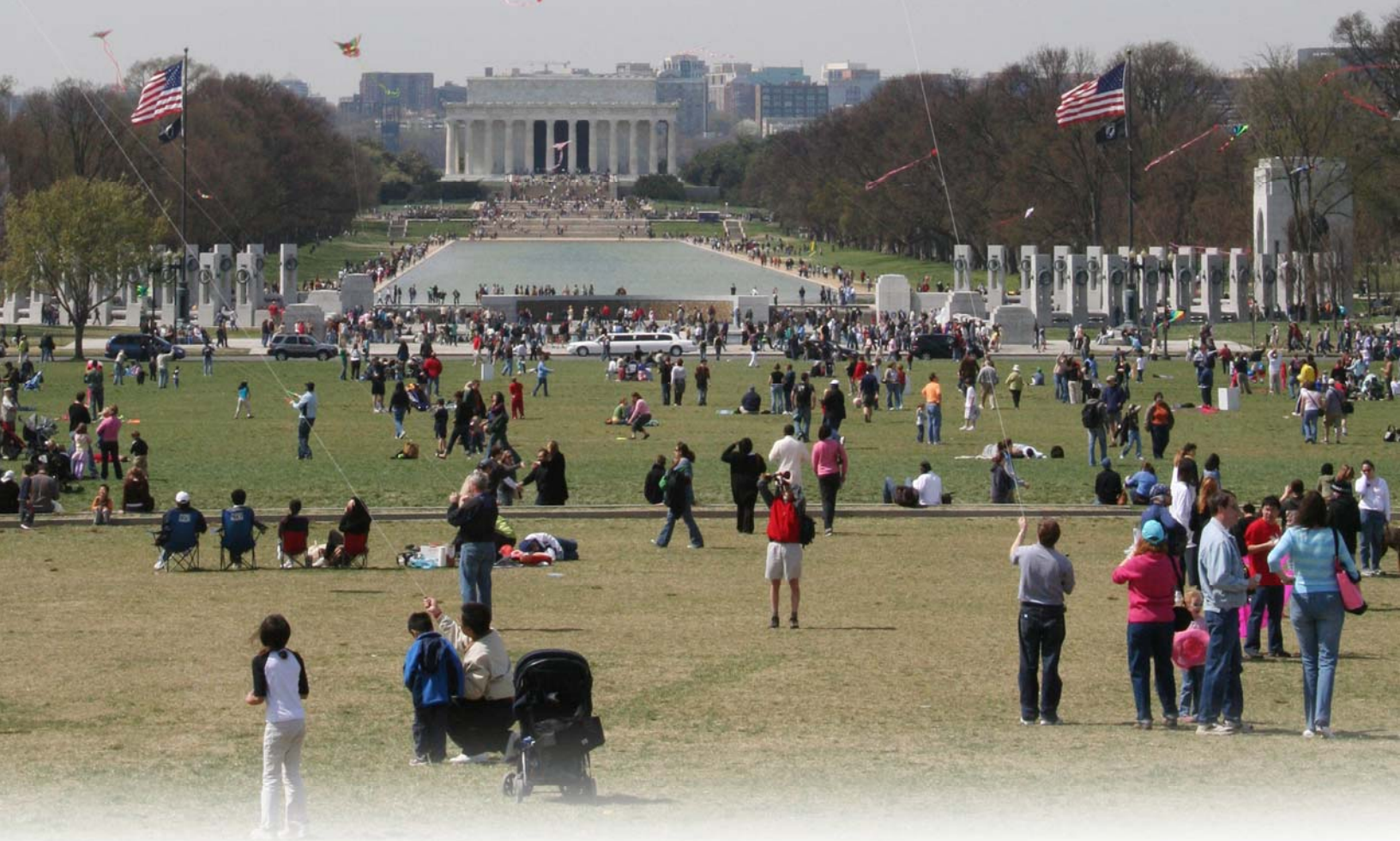
Building a Climate Resilient National Capital Region

Federal and community agencies working together on climate preparedness and resilience.

Summary of Climate Change Vulnerability and Adaptation Workshop Results
Built Systems: September – December 2013
Workforce, Community and Natural Systems: February - April 2014



METROPOLITAN WASHINGTON Council of Governments

NASA

National Capital Planning Commission

United States Global Change Research Program

GSA

Organizations invited / participating in the workshops and webinars

Federal

Architect of the Capitol
Department of Agriculture
Department of Defense, Washington Headquarter Services
Department of Health and Human Services
Department of the Interior
Department of Justice
Department of Transportation
Department of the Treasury
Environmental Protection Agency
Federal Aviation Administration (Dept. of Transportation)
Federal Emergency Management Agency (Dept. of Homeland Security)
General Services Administration
Internal Revenue Service (Dept. of the Treasury)
National Aeronautics and Space Administration
National Archives and Records Administration
National Capital Planning Commission
National Park Service (Dept. of the Interior)
Naval Facilities Engineering Command (Department of Defense)
U.S. Global Change Research Program

Regional/State

Metropolitan Washington Council of Governments
University of Michigan (AAA Fellow)
Washington Metropolitan Area Transit Authority

Utility Companies

Alexandria Renew Enterprises
District of Columbia Water and Sewer Authority
PEPCO

Local/City

Arlington County
City of Alexandria
District of Columbia
- Department of the Environment
- Department of General Services
- Office of Planning
- Department of Consumer and Regulatory Affairs
- Homeland Security and Emergency Management Agency

Non-Governmental Organizations

Center for Clean Air Policy
DowntownDC Business Improvement District
Global Cool Cities Alliance
Greater Washington Board of Trade
National Geographic Society - D.C. Climate & Urban Systems Partnership
National Wildlife Federation
Smithsonian Institution

Front page photo credit: Kite Festival, Washington, DC (NCPC).

Building a Climate Resilient National Capital Region

Executive Summary

The National Capital Region is already experiencing the effects of climate change -- more frequent extreme weather events, rising temperatures, and recurring flooding. Climate scientists project that these changes will continue and anticipate more frequent and more intense impacts. People, property, and natural resources will be affected, changing and potentially disrupting the way we live and work in the National Capital Region. As the seat of the federal government and the nation's capital, the region has an unmatched concentration of federal buildings and operations, irreplaceable cultural and historic treasures, nationally significant monuments and landscapes, and diverse communities. The region's primary employment centers, infrastructure systems, and major rivers all converge within the monumental core[1].

> ***So the question now is not whether we need to act… [it] is whether we will have the courage to act before it's too late. And how we answer will have a profound impact on the world that we leave behind not just to you, but to your children and grandchildren.***
>
> President Barack Obama, June 25, 2013

Stewardship of the region's resources requires coordinating policy, tools, information, and expertise with others. Many federal, regional, and local agencies and organizations are individually exploring climate adaptation[2] strategies. Recognizing that no single entity can address all of its climate change risks working alone, these agencies are coming together to build capacity, networks, and partnerships that will build on work already underway.

Building a Climate Resilient National Capital Region was a series of webinars and workshops in 2013-4 that provided stakeholders a first look at the region's climate change risk, guided by the following:

VISION: A climate-resilient National Mall and National Capital Region for future generations, built upon science-informed planning and decision making and sound risk management.

OBJECTIVES: Build capacity, capability and confidence; create networks and partnerships; encourage proactive adaptation planning.

[1] Monumental core: the National Mall and nearby downtown District of Columbia neighborhoods, Alexandria, and eastern portions of Arlington, VA.

[2] Climate adaptation: actions to cope with or ameliorate current climate change impacts and plan for future changes. Immediate greenhouse gas emissions mitigation is a critical part of reducing future risks from climate change, but some climate change effects will continue to occur for a time regardless of emissions reductions due to greenhouse gases' atmospheric lifespan.

These webinars and workshops were conducted to share information and develop ideas to encourage proactive, collaborative adaptation planning for built systems, the workforce, community, and natural systems. This initiative:

- Brought together knowledgeable, interested people responsible for public facilities, operations and services in the National Capital Region.
- Provided them with useful, relevant information about climate risks, including localized climate data.
- Asked them to brainstorm and discuss climate adaptation strategies they might do individually or together.

The National Aeronautics and Space Administration (NASA), General Services Administration (GSA), US Global Change Research Program (USGCRP), National Capital Planning Commission (NCPC), Smithsonian Institution (Smithsonian), and the Metropolitan Washington Council of Governments (MWCOG) sponsored this initiative. Senior management support (particularly the federal government's senior sustainability officers) advanced this effort by enabling staff participation.

After 10 consecutive extreme heat days this track kink derailed a Metrorail train, July 2012 (no injuries reported) (WMATA).

Based upon regional climate change projections generated by NASA climate scientists, many agencies identified severe events including heavy precipitation, heat waves and sea level rise combined with storm surge as top climate-related threats. The consensus from the workshops/webinar participants is that:

Climate change poses a serious threat to the systems upon which the government and economy of the National Capital Region relies.

Understanding our shared vulnerabilities and coordinating our adaptation strategies help us leverage our limited resources for the most effective near term and long term actions.

Flood damages the U.S. Department of Justice lobby in June 2006 (DOJ).

The webinars and workshops drew upon NASA's experiences in using climate science expertise, coupled with an informed perspective on institutional stewardship, to develop relevant, actionable policies and adaptation strategies for NASA installations across the nation. NASA scientists provided localized climate

data, particularly helpful since our region does not fall neatly into the National Climate Assessment's climate regions.

More than 30 agencies participated in a series of workshops and webinars in fall 2013 focusing on built systems in light of a changing climate. Vulnerable built systems include transportation, wastewater, buildings, IT/Telecom, electrical grid, and others. Participants observed that some strategies could be implemented on an agency level and other strategies would benefit from inter-agency coordination.

Approximately 40 people from 20 agencies participated in a second group of webinars and workshops in early spring 2014 addressing the region's workforce, community, and natural systems. Vulnerable systems include workforce commuting, workforce and family health, working conditions, urban forests and managed landscapes, work load (and other factors affecting productivity), water quality, and drinking water supply.

Breakout groups developed topic-specific potential adaptation strategies and proposed specific implementation actions. These discussions considered key stakeholders, funding sources, partnerships and timeframes. They are intended as a framework for continuing discussion and coordination rather than as adopted strategy by any agency.

BUILT SYSTEMS	ADAPTATION STRATEGY
Transportation	Create and implement a Regional Climate Transportation Resiliency Action Plan, guided by a regional advisory body.
Energy/IT/Telecom	Ensure a Reliable Overarching Electrical Grid/Supply System Across the NCR in Response to a Changing Climate
Stormwater/ Wastewater	By 2030, implement a wastewater and stormwater management program to accommodate anticipated precipitation events in 2080 to protect people and infrastructure
Geographic/ Historic Areas	Flood Resilience in the Monumental Core
Governance	A. Develop joint funding for large-scale, cross boundary, multi-jurisdictional adaptation strategies B. Create an interagency body to address climate adaptation activities

WORKFORCE,	ADAPTATION STRATEGY

COMMUNITY & NATURAL SYSTEMS	
Terrestrial – managed landscapes, including forested areas	Protect and increase green systems in the NCR
Community Vitality	Enhance community vitality and heat resiliency with multi-purpose indoor/outdoor centers of activity and cooling
Aquatic Systems	Coordinate and integrate public engagement for stormwater management and Low Impact Development
Workforce Productivity	Achieve optimal worker productivity (maintaining/increasing worker productivity) in the face of more frequent extreme heat events

Outcomes

Through the Building a Climate Resilient Region webinars and workshops, participants:

- **Increased their awareness** of the growing threats of extreme weather events to the local economy and the region's long-term economic resiliency
- **Learned how to communicate and gain support** for their climate adaptation work with decision-makers within their agencies
- Participated in a **consistent vulnerability assessment process**, ensuring analyses were based on the same climate risk data and considering the sectors that had been collectively determined as most important
- Coordinated within their agencies to complete their homework, providing a **comprehensive look at their agency's vulnerability to climate risks**
- Learned about the vulnerabilities of peer organizations, **improving awareness of interdependencies and synergies** that can help or hamper adaptation efforts

Conclusions

Although the challenges are formidable, workshop participants noted that the threat is real, and the stakes are high. Hence, the National Capital Region must continue working together towards climate-preparedness.

Participants concluded that in order for the National Capital Region to become climate resilient, we must:

- Educate and inform our leaders and communities about the risks of climate change to the National Capital Region;
- Coordinate our individual adaptation efforts to maximize the benefits and minimize unintended negative impacts. The interdependencies among built systems with the socio-economic and natural systems imply that failure of one system will lead to a cascading failure of other systems;
- Agree on our collective risks and commit to a shared set of priority actions;
- Integrate adaptation strategies into existing policies, capital planning, and operations. Use a 'risk management' model to address climate risks;
- Fund system-wide adaptation actions through innovative partnerships; and
- Encourage grassroots initiatives alongside government actions.

What's next?

This effort helped agencies move forward on climate resilience, but there is much more to be done given the magnitude of the problem and the vital services, resources, and communities of the National Capital Region. First, representatives from the participating agencies will bring these ideas back to their respective agencies for further discussion and exploration. In addition, the sponsoring agencies will share the information and outcomes from the webinars and workshops with a broader audience, including climate adaptation practitioners, senior leadership within federal agencies and local government, and the general public. These steps will start to address the key barriers to climate resilience identified in the workshop to help the NCR move from exploration to action.

About the sponsor organizations

Metropolitan Washington Council of Governments (MWCOG) has been a leader in research and policy development in climate adaptation planning in the region since 2008. An independent, nonprofit association that brings leaders together to address regional issues, COG's membership is comprised of 300 elected officials from 22 local governments, the Maryland and Virginia state legislatures and the U.S. Congress. The region is seeing increasing climate risks to buildings and infrastructure, workforce, natural systems, and the wider community. COG will continue its coordinating role, but the support and dedication of regional partners is essential. Together we can create a more prosperous, accessible, livable, and sustainable region.

The National Aeronautics and Space Administration (NASA) didn't wait for external direction to recognize that climate risks could interfere with its success. Leveraging its considerable expertise in climate science, NASA scientists and stewards partnered with surrounding communities to develop a local adaptation process for its worksites across the nation. Headquartered in Washington DC, NASA was well-positioned to share this process with other stakeholders in the National Capital region. Consistent with its mission, NASA provided climate projections specific to the region.

The National Capital Planning Commission (NCPC) develops long range plans and collaborative initiatives to guide the development of the nation's capital, reflecting the region's concentration of national treasures, and federal assets and operations. NCPC is promoting wise stewardship of our nation's capital by partnering with regional stakeholders on federal, regional and local climate adaptation efforts to address the impacts of extreme weather and promote sustainable development.

US General Services Administration (GSA): As the landlord and caretaker for federal properties, GSA owns or leases 9,624 assets (sites and facilities), maintains an inventory of more than 370 million rentable square feet of workspace, and preserves more than 481 historic properties. GSA also has an annual business volume of over $60 billion, manages over 200,000 fleet vehicles, assists tens of thousands of federal travelers through GSA's electronic travel system, and serves as the focal point for data, information and services offered by the federal government to its citizens. Climate change poses threats to the facilities and supply chains GSA manages, but it also presents an opportunity to prepare today for a resilient future that reduces the federal government's exposure to climate risks and their associated costs.

US Global Change Research Program (USGCRP): As the Third National Climate Assessment and other authoritative sources confirm, climate change is happening now. The United States and the world are getting warmer, sea level is rising, and some extreme events like heat waves and floods are becoming more frequent and more severe. As part of its mission to empower the nation with global change science, the U.S. Global Change Research Program provides reliable scientific information about current and future changes, impacts, and effective response options at multiple scales that can be of use to the National Capital Region.