Washington, DC Silver Jackets

**DC Silver Jackets Team:**
Working together to manage flood risk in our Nation’s Capital

**2017 ANNUAL REPORT**

Above Image: December 7, 2017 Team Meeting at the Kennedy Center for the Performing Arts
(Source: Sarah Gross, USACE)

Side Image: 1985 Election Day Flood – Hains Point, Washington, DC
(Source: Library of Congress)
Flood Resilience Leadership

About Silver Jackets

The Silver Jackets program is sponsored by the U.S. Army Corps of Engineers (USACE). Silver Jackets interagency teams are established at the state level to improve the management of flood risks nationwide. No single agency has all the answers; however, multiple areas of expertise and programs can be leveraged to provide a cohesive solution to reduce flood risks. The name “Silver Jackets” is symbolic and showcases the common mission of diverse agencies during flood-disaster response, as agencies generally wear different colored jackets while responding.

More information about the Silver Jackets program can be found at http://silverjackets.nfrmp.us/

About the Washington, DC Silver Jackets

The Washington, DC Silver Jackets’ vision is to establish and strengthen intergovernmental federal and District of Columbia partnerships and serve as a catalyst to develop and implement comprehensive, resilient, and sustainable solutions to the District’s many flood-hazard challenges. The team collaborates before, during, and after a flood to provide flood risk evaluation, assist in project implementation, and educate stakeholders and residents about flood risk.

The DC Silver Jackets website can be found at http://silverjackets.nfrmp.us/State-Teams/Washington-DC

Current Participating Agencies

District of Columbia Agencies: Department of Energy and Environment‡-routing; D.C. Homeland Security and Emergency Management Agency*; D.C Office of Planning*; Deputy Mayor for Public Safety and Justice*; Department of Public Works; Department of Consumer and Regulatory Affairs; District Department of Transportation; and Department of Insurance, Securities and Banking


Other Regional Agencies/Organizations: District of Columbia Water and Sewer Authority *; Washington Metropolitan Area Transit Authority (WMATA); Metropolitan Washington Council of Governments; University of the District of Columbia; University of Maryland; and Georgetown University

# Co-Leader Agency  * Signatory Agency
2017 Highlights

DC Interior Flooding Map

The DC Silver Jackets’ Interior Flooding Task Group developed the first-of-its-kind flood heat map that shows areas that have experienced interior flooding in the District. The map was published with a brief report that documents agencies’ data and production methods. It can be used to prioritize funding and project areas. Members of the Task Group include WMATA, NCPC, DOEE, the DC Homeland Security and Emergency Management Agency, the District Department of Transportation, and DC Water.

Flood Risk Management Planning Resources for Washington, DC

The National Capital Planning Commission, in coordination with the DC Silver Jackets, developed a comprehensive flood risk management planning resource guide to help federal and local government planners and facility managers understand the different flood risk planning resources available so they can make targeted, informed decisions when developing projects or protecting assets. The guide is a compilation of previously published studies and information for the District. It includes a short summary of key flood risks in the National Capital Region, an overview of 11 studies and tools that address current and future flood risks in the region, and brief descriptions on how these studies can be used to manage flood risk.

The DC Silver Jackets and NCPC jointly released the guide on January 26, 2018. It is available through the DC Silver Jackets webpage.

DC Flood Awareness Activities and National News

National Building Museum Event: Is DC Ready for a 500-Year Storm Event? On October 18, 2017, the DC Silver Jackets supported the National Building Museum to host and participate in a panel discussion on how the District is planning for the possibility of a 500-year storm similar to Hurricane Harvey in Houston, Texas.

Congresswoman Eleanor Holmes-Norton’s DC Flood Risk Roundtable. On October 24, 2017, the DC Silver Jackets participated and attended a DC Flood Risk Roundtable hosted by Congresswoman Norton (D-DC) in the Rayburn House Office Building. Following the 2016 DC Flood Summit, Congresswoman Norton introduced a bill to make DC eligible for federal flood mitigation and prevention funding through the amendment of the Coastal Zone Management Act of 1972 (CZMA) by including DC in the definition of a coastal state.

Rolling Stone Article: What Happens When a Superstorm Hits DC. Several members of the DC Silver Jackets were interviewed for the Rolling Stone magazine article What Happens if a Superstorm Hits D.C. The article documents the complex hydrologic,
infrastructure, and political challenges of addressing major flood risks to our nation’s capital. With input from DC Silver Jackets members, the article is accurate and thorough and helps raise flood awareness and the need for improvement of DC’s levee systems.

**Bloomberg Article: Ground Zero for Flooding: Trump’s International Hotel.** This article states that the District is the area of greatest flood risk to federal buildings in the nation. “The U.S. federal civilian buildings most exposed to floods are concentrated in the capital. The numbers—and the potential cost to taxpayers—are staggering.”

The article lists Federal Triangle buildings within the 1:100 chance-per-year floodplain including the U.S. Environmental Protection Agency, Old Post Office (Trump International Hotel), U.S. Department of Commerce, Internal Revenue Service, and U.S. Department of Justice.

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![Map of Federal Buildings at Risk](image-url)
2017 Coordination and Collaboration

DC Silver Jackets Meetings

DC Silver Jackets meetings were held on January 31, 2017 (hosted by the Georgetown Climate Center), May 11, 2017 (hosted by the DC Department of Energy and Environment (DOEE)), August 15, 2017 (hosted by the National Museum of African American History and Culture), and December 7, 2017 (hosted by the Kennedy Center). Attendance at each meeting increased from 20 participants in 2014 to more than 30 in 2017. The meetings included members’ presentations of their programs, flood related presentations from guest speakers, progress reports from DC Silver Jackets’ Task Groups, and open discussion and announcements on ongoing and upcoming topics.

Key presentations provided during the meetings include:
- Adaptation Clearinghouse by Melissa Deas, Georgetown Climate Center
- Flood Risk Mitigation Challenges, Innovative Solutions and Funding Strategies by Arcadis
- District Flood Risk Management Program by Phetmano Phannavong, DOEE
- Level 2 HAZUS Flood Analysis by Bill Lescure, Homeland Security and Emergency Management Agency (HSEMA)
- Copenhagen’s Cloudburst Management Plan and Projects by City of Copenhagen and Ramboll
- Smithsonian, Climate Mitigation Plan and Emergency Management Planning by Jane Passman, Ann Trowbridge, and Eric Gentry, Smithsonian
- Flood Barrier Comparison by Mark Baker, National Park Service (NPS)
- Kennedy Center’s Flood Risk Management Plans and Procedures by Kevin Greene and Tom Whitaker, Kennedy Center
- Non-US Levee Review Program by Christine Lewis-Coker, USACE
- Georgetown C&O Canal Flood Response Plan by Elena Sossenkina, NPS

DC Silver Jackets Task Groups

The DC Silver Jackets form multiple Task Groups that work together throughout the year to focus on specific flood related activities. The following are accomplishments by the Task Groups in 2017:

Communications Task Group: The Communications Task Group wrote articles for various outlets, kept the DC Silver Jackets website current, promoted work via social media, and facilitated media inquiries and interviews regarding various press releases.

Levee Task Group: The Levee Task Group coordinated issues related to the DC and Vicinity Flood Risk Management Project constructed by USACE and operated and maintained by the NPS. The 17th Street Closure was successfully test-installed on
October 20, 2017. It must be test installed annually. The team continues to coordinate efforts to make the project meet the federally authorized level.

**Interior Flooding Task Group:** The Interior Flooding Task Group compiled information on interior flooding within the District and developed an interior flooding heat map (see the highlight on Page 2 for more information).

**Flood Emergency Planning Task Group:** In the past, this group helped provide input to the DC Flood Emergency Manual. USACE does not have the authority to update the Flood Emergency Manual. NPS owns, operates, and maintains the levee that protects the Monumental Core of the city; many NPS parks are in the floodplain. Because of this, the NPS will fund and lead the effort to update the manual.

**Flood Tour Task Group:** A few times each year various agencies are requested to provide special interest groups with a tour of the flood protection infrastructure and flooding problem areas in the District. The Flood Tour Task Group is developing materials and consistent messaging to support flood tours and is reaching out to existing tour group service providers. The intent is to have people trained and ready to provide a flood tour when requested. Members of the Flood Tour Task Group provided multiple tours in 2017.

On May 10, 2017, Phetmano Phannavong (DOEE), Nick Bonard (NCPC), Mark Baker (NPS), Chris Nolta (USACE), and Nancy Bechtol (Smithsonian) provided an overview of District flood risk management at the National Museum of African American History and Culture and a site tour of the Potomac Park Levee system to members of the United Kingdom’s Flood and Coastal Risk Management directorate.

**Watts Branch Task Group:** The Watts Branch Task Group was established in January, 2017 to coordinate partners to complete the Watts Branch Flood Risk Management Study. The study is the third DC Silver Jackets interagency project that started in the fall of 2016 and is led by USACE and DOEE. In 2017, USACE and the United States Geological Survey (USGS) completed field surveys and hydrologic and hydraulic modeling and mapping. The Georgetown University provided a report detailing the land use and socioeconomics of the Watts Branch neighborhoods. A site visit of Watts Branch hosted by the Georgetown Climate Center occurred with DC Silver Jackets members and others in attendance, including a community advisory council member.

**Interagency Silver Jackets Projects**

Under the Silver Jackets program, state Silver Jackets teams submit one or more interagency project proposals each year to compete nationwide for funding to support the USACE task. The interagency projects provide an opportunity for each team to leverage in-kind and financial resources from other federal, state, and local agencies to reduce states’ flood risks.

In 2017, the DC Silver Jackets successfully obtained funding through the Silver Jackets program and member agencies for two interagency projects, the Watts Branch Flood
Risk Management Study (Phase II) and the Federal Triangle Interior Flooding Strategy and Planning.

**Watts Branch Flood Risk Management Study:** The neighborhoods of Watts Branch in the northeast corner of the District are in a special flood-hazard area within the 1:100 chance-per-year floodplain. The area consists of high-density residential and non-residential structures and critical infrastructure with vulnerable populations. With funding from USACE and in-kind services from other DC Silver Jackets agencies, the team conducting a flood risk management study of Watts Branch neighborhoods.

The DC Silver Jackets team submitted an interagency proposal in 2017 for Phase II of the Watts Branch project and received approval and funding. Phase II will develop concept plans and costs for various flood risk management alternatives.

**Federal Triangle Interior Flooding Strategy and Planning:** The DC Silver Jackets submitted a proposal to host two workshops related to the Federal Triangle interior flooding problem in 2017 and received approval. Federal Triangle, comprised of federal and district buildings, experienced severe flooding and millions of dollars in damages in the June 2006 flood. Some flood studies have been completed since the flooding, however, the recommended solutions are costly and no agencies have moved forward with a comprehensive project. The intent of this project is to bring the myriad of stakeholders together to understand the flood risk, strategize potential innovative solutions, and determine a path forward for further study and design.
Actions by Member Agencies

The DC Silver Jackets’ accomplishments in 2017 extend beyond our meetings, phone calls, and collaborations. Member agencies continue raising flood awareness and working to reduce flood risks in the District through their programs, plans, and projects, as well as their professional networks.

C40 Connecting Delta Cities Network by DOEE

Representing the District at the Connecting Delta Cities network, DOEE continues engaging world cities in flood risk management through sharing knowledge, innovative ideas, and best practices. The DC Silver Jackets’ coordination and collaboration are instrumental in raising DC’s flood awareness and sharing flood risk governance and leadership examples with other cities. Through this engagement, the DC Silver Jackets have learned innovative approaches in flood risk reduction, and have enhanced member participation. In January, 2017, Phetmano Phannavong, DOEE showcased the DC Silver Jackets’ governance structure and successfully delivered interagency projects including the online flood inundation mapping tool at the network meeting during the C40 Adaptation Conference in Dubai, the United Arab Emirates.

Washington Navy Yard’s Flood Risk Management Study by USACE

USACE completed a Flood Risk Management Study for the Washington Navy Yard. The study developed a general menu of flood risk management options for Navy facilities, assessed the current and future flood risk at Washington Navy Yard, and evaluated and compared various flood risk management alternatives including floodwalls and flood proofing of individual buildings.

NPS Works with Georgetown on Canal Flood Readiness

The NPS Chesapeake & Ohio Canal National Historical Park (CHOH) worked with the Georgetown Business Improvement District on a plan to respond to floods that can occur on the CHOH canal in the Georgetown area. Planning included a workshop to discuss several types of flood scenario responses. The flood response plan is part of a larger system-wide canal flood plan.

DC Flood Governance Review and Recommendations by DOEE

The Department of Energy and Environment, in coordination with the DC Silver Jackets, finalized a study to support development of an effective flood risk management program. The team comprehensively reviewed and summarized current flood risk governance in the District and provided recommendations for enhancing coordination of flood risk management among Federal and District Government. More than 50 current plans and policy documents were reviewed and documented, and more than 40 Federal, District, and regional agencies were involved in the DC flood risk management assessment and stakeholder engagement. It was recommended that communication protocols with federal stakeholders be formalized through NCPC. Therefore, as the District’s floodplain manager, DOEE became an official member of NCPC’s Coordinating Committee in February 2017. Established in 1952, the Committee’s purpose is to ensure interagency federal and District coordination and identify required reviews or processes.
Flood Mitigation Projects Funded by FEMA and Implemented by DC Water

FEMA recognized worthy DC mitigation efforts and awarded FEMA’s Hazard Mitigation Grant Program to DC Water to implement seven (7) flood mitigation projects. Each of these projects will result in reduced flood risk and impacts to metropolitan DC. The projects will harden waste water treatment plant and critical pump stations, and provide emergency back-up generators. Examples of projects underway include:

DC Water’s Main Pumping Station flood-proofing project was awarded by FEMA on September 20, 2016. The Main Pumping Station currently serves an estimated 960,000 people. It conveys wastewater and storm water in a combined system away from the service population located in the southeastern quadrant of the District, and provides a critical service during both normal and emergency situations. The actions taken to flood-proof the facility will mitigate the impacts of power outages and severe flooding. The total project cost is $1,698,569.00 with a federal cost share of $1,273,926.75.

The Blue Plains Advanced Wastewater Treatment Plant (AWTP) Floodwall Project was awarded by FEMA on September 2, 2017. The Blue Plains AWTP is a critical facility that serves over two million people in the District and portions of Maryland and Virginia. DC Water proposed the construction of a 600-linear foot floodwall at the Blue Plains AWTP. The floodwall will start at the southeast corner of Solids Processing Building and run east along the shoreline to the north end of the Filtration and Disinfection Facility. The floodwall will provide an effective level of protection for the entire plant at 12 feet DC Datum (100-year plus approximately two feet freeboard). The total project cost is $3,194,383.00 with a federal cost share of $2,395,787.25.

Updates to Submission Guidelines by NCPC

Agencies subject to NCPC’s review must submit development proposals to the Commission by following the Submission Guidelines. The guidelines detail submission content requirements, submission stages, and the coordination and review process. NCPC staff worked with federal and local agencies to substantially revise the guidelines in 2017 including all sections relevant to flooding. The new guidelines ask applicants (often from Silver Jackets member agencies) for information on the flood risks of projects and how they will be minimized. The new guidelines became effective in October, 2017.

Chain Bridge during 1942 Potomac River Flood of Record (Source: Washington Star Photo Courtesy of the MLK Library)
2018 DC Silver Jackets Proposed Activities

Team-Wide
- Initiate, develop, and conduct workshops to explore solutions to Federal Triangle interior flood risks.
- Explore innovative flood risk reduction solutions by engaging with partners nationally and internationally.
- Coordinate with USACE to raise the Potomac Park levee system to the full 700,000 cubic-feet-per-second Congressionally-authorized risk reduction level.
- Promote the role of the DC Silver Jackets in flood risk management and build flood resilience in Washington, DC.
- Support the Joint Bolling-Anacostia Base (JBAB) to improve the Anacostia levee system.
- Look for funding opportunities to support team activities and efforts, including funding for integrated models of interior flooding.
- Support the District’s comprehensive flood risk management program.
- Promote the Flood Risk Management Planning Resources for Washington, DC.
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- Support the development of Resilient DC Strategies and update the DC All-Hazard Mitigation Plan by incorporating roles and efforts of DC Silver Jackets.
- Engage with local communities and take action to reduce flood risks. Begin to consider a project for the USACE and FEMA High Water Mark Initiative.

Communications Task Group
- Promote DC Silver Jackets’ flood risk management initiatives and raise District flood awareness through social media.
- Support the release of the USACE levee risk screening to the public.
- Create a DC Silver Jackets flood awareness video.

Flood Emergency Planning Task Group
- Update the Washington, DC Potomac River Flood Emergency Manual. NPS will lead the project with support from other team members.

Levee Task Group
- Work closely with USACE to roll-out the Washington, DC Levee Safety Action Classification.
- Increase work with JBAB and NPS National Capital Parks East to manage levee risks.
- Continue Quarterly meetings with JBAB.
- Procure materials for a contingency raise of the Potomac Park Levee.

Flood Tour Task Group
- Develop a Washington, DC Flood Tour Program, materials and identification of personnel, and consider a boat tour.

Watts Branch Task Group
- Identify flood risk reduction solutions and develop concept plans and costs (structural, non-structural, blue and green infrastructure, land use policies).
- Hold a charrette in February 2018.
- Support community outreach efforts with resilient DC initiatives.
Pennsylvania Avenue NW in 1889
(Source: Library of Congress)

Navy Yard in 1936
(Source: Library of Congress)

Constitution Avenue NW in 2006
(Source: GSA)

Bloomingdale in 2012
(Source: Bloomingdale Neighborhood Blog)