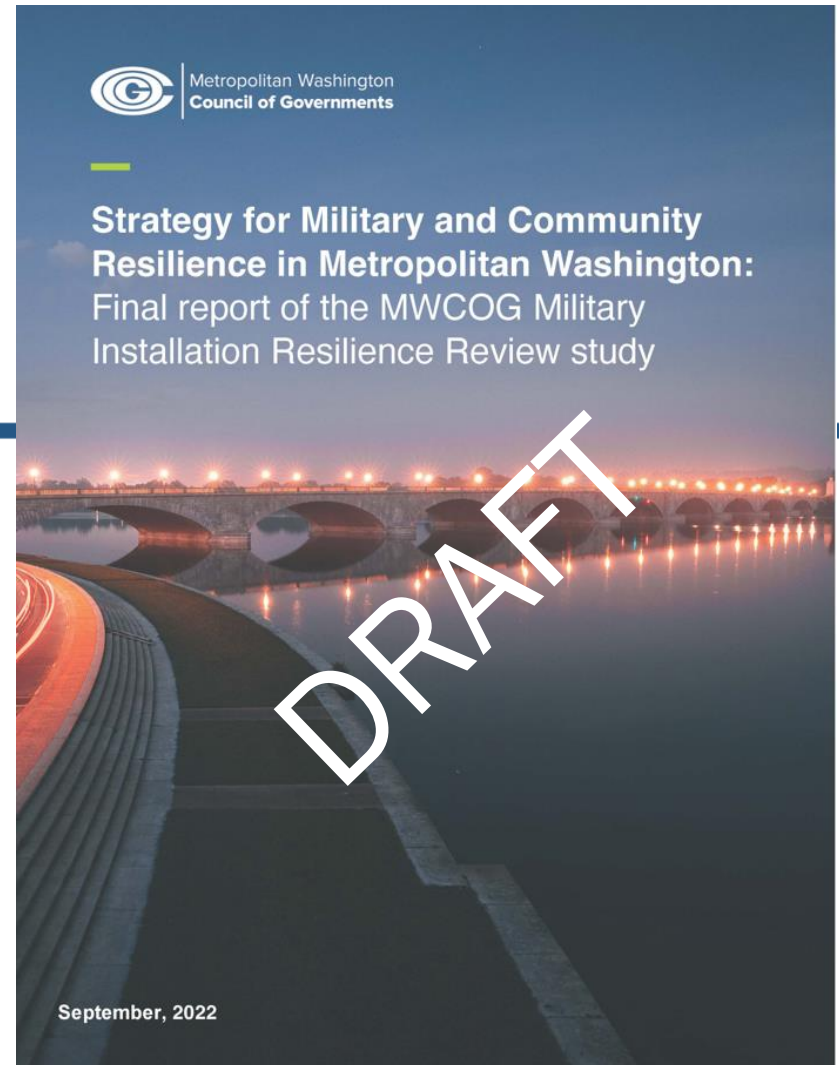


MWCOG MIRR

CEEPC
September 28, 2022



Note: All findings described herein are preliminary and are subject to change.

MWCOG MIRR At a Glance



Purpose

Identify key threats to resilience of military installations and outside-the-fence measures to build resilience for both the installations and surrounding communities



Focus Region

- Geographic area: Washington, D.C.
- Specific installations: Joint Base Anacostia-Bolling, Washington Navy Yard, Fort McNair, Naval Research Laboratory



Project Phases

- Establish priority sectors, hazards, and stressors
- Conduct vulnerability assessment
- Develop recommended resilience strategy, including priority measures'



Core Tenets

- Advance communication and coordination among stakeholders
- Enable implementation of recommendations post-project
- Integrate equity as a priority



Phase 1: Priority Hazards and Stressors

Selection criteria for hazards- filtered by:

- Critical infrastructure service sensitivity/exposure;
- Degree of impact on installation function (frequency, severity, extent)

Tier 1:

- ↑ • Flooding (incl. riverine, interior, and coastal)

Tier 2

- ↑ • Extreme heat
- Ice storm
- High wind
- ↑ • Population growth
- Land use, development, & encroachment

Tier 3:

- Drought
- Snow storm
- Extreme cold
- Noise & Vibration
- Hazardous Materials
- Earthquake
- Ecosystem change
- Other (e.g., electromagnetic storm)

Phase 1: Priority Sectors



Transportation and Transit



Energy



Telecommunications



Water and Wastewater

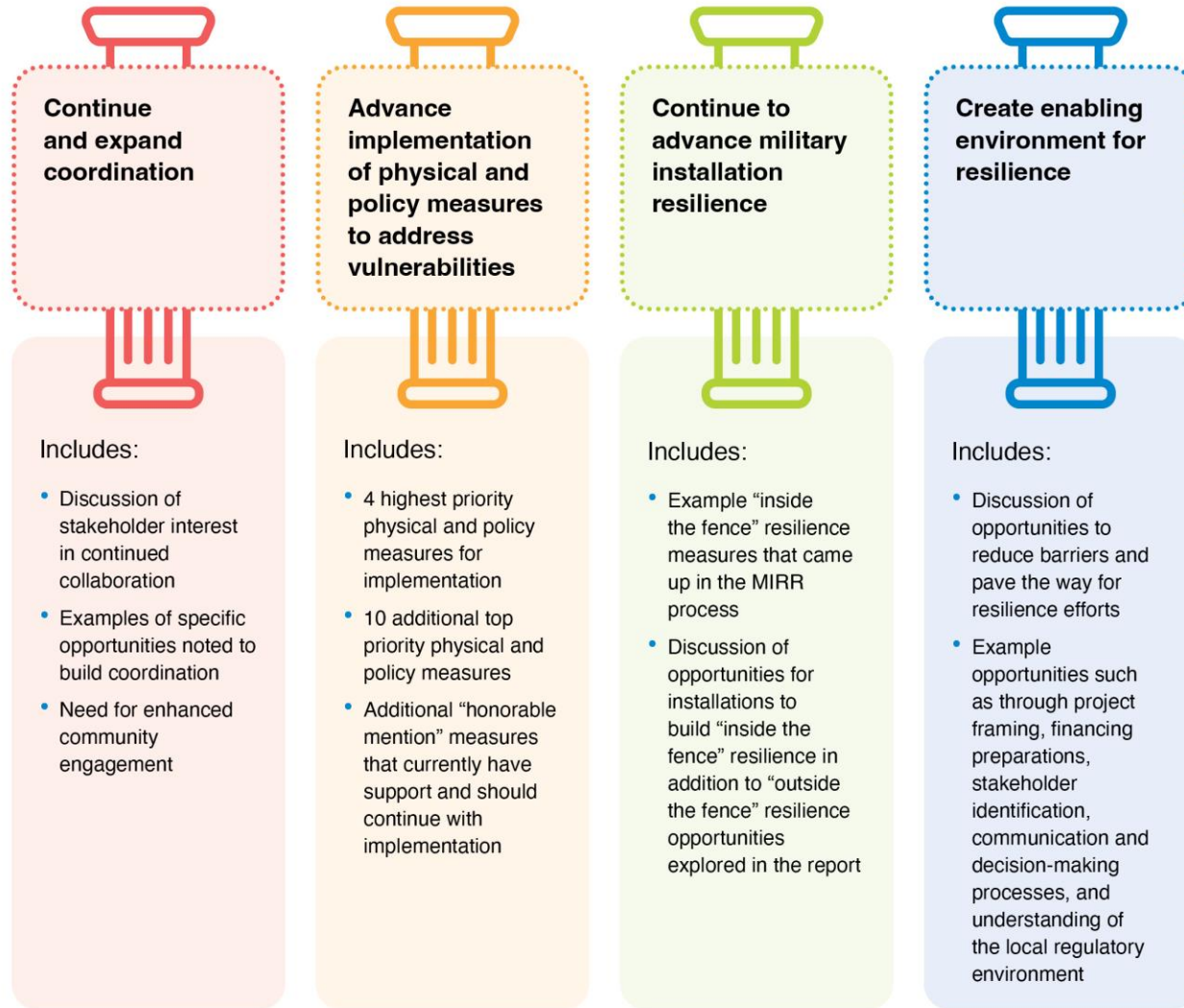
Phase 2: Priority Vulnerabilities

- Electricity distribution
- Critical telecommunications assets
- Specific areas and critical assets vulnerable to flooding
- Strain to regional water supply
- Stress on region's transportation
- Limited safe, reliable, and efficient mobility choices
- Regional petroleum fuel supply
- Encroachment
- Affordable workforce housing
- Workforce availability and retention
- Communication and coordination



Strategy for Enhancing Military and Community Resilience in Metropolitan Washington

Pillars of Resilience



Resilience Strategy Elements

Overarching Principles

- a. Think and act holistically
- b. Consider multiple timeframes
- c. Embrace flexible pathways
- d. Emphasize equity
- e. Make the case for resilience

3 STRATEGY FOR ENHANCING MILITARY AND COMMUNITY RESILIENCE

3.1 Introduction to the Strategy

Building resilience throughout a region and across installations, communities, governments, and private entities requires effective coordination across those actors and a sound strategy guiding their actions.

The development and implementation of such a strategy and coordination can be time- and resource-intensive, but the effort is worth it: successfully implementing an overarching resilience strategy should result in the avoidance of costly damages when natural hazards and threats arrive, saving human lives and improving health, and ensuring the ability to continue carrying out installation missions and ensuring a thriving community.

OVERARCHING PRINCIPLES

To implement a resilience strategy, actors should follow a set of overarching principles to ensure that the approach to enhancing resilience is thoughtful and sets everyone up for long-term success. The following is a summary of the principles we recommend.

Think and act holistically. The approach to resilience for the four installations should be undertaken holistically, since none operate in isolation from their surrounding communities or fellow installations. As noted in the coordination section below, it is critical that implementation of the measures identified in this report be undertaken in close coordination with the parties that are vital to the success of each measure and that may be affected by the measures' outcomes. A holistic approach not only avoids potential conflicts or mismatches in resilience efforts, but also helps to generate buy-in among actors and those affected, which can help drive the long-term success of resilience efforts. Further, intentional community involvement that incorporates equity will help address injustices and build stronger, more resilient communities—especially since disadvantaged communities are also those that face greater vulnerabilities to climate hazards and other threats.

Consider multiple timeframes. The resilience strategy should include both measures that create near-term successes as well as those that require more time and resources but have the potential to be transformative. Actors should explicitly plan around short, medium, and long-term time horizons to consider threats that currently exist and must be addressed immediately versus others whose importance may increase over time. Doing so can help build resilience in stages, both against key threats that need to be addressed soon, and eventually into the fabric of the region itself.

Embrace flexible pathways. Flexibility is paramount to a successful long-term effort. Multiple variables can change over time, including but not limited to military missions, the military infrastructure at the installations, the community structure, the community infrastructure, the environment, and the nature of the threats and vulnerabilities. A community- and installation-wide monitoring and evaluation approach can help actors understand what is working, what needs modification, and what should be abandoned due to failures or significant changes identified by the monitoring and evaluation system.

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Emphasize equity. The enhancement of community resilience—which can ultimately enhance installation resilience—depends in part on the extent to which the resilience of the most vulnerable people in a community is increased. If equity is not actively pursued, distrust amongst community actors can undermine the intended progress. Instead, efforts to increase community resilience present valuable opportunities to reduce vulnerability of those who tend to need it the most and have been historically underserved, including people of color, LGBTQ+, elderly, poor, socially isolated, and other categories of people that tend to be most at-risk in community-wide emergency situations. It is important that these populations be given meaningful voice in the development and implementation of resilience solutions. This requires dedicated and sustained effort. However, it is vital to the success of community resilience initiatives. As a starting point, equity was considered throughout this MIRR's vulnerability assessment and resilience measure development and prioritization processes (see text box for specific examples).

Make the case for resilience. Having leadership that prioritizes resilience is often a key factor in the successful funding and implementation of resilience measures. When presenting a potential measure, actors should describe all of the factors that make a particular initiative valuable—how it was prioritized, what vulnerability(ies) it addresses, why it would be cost-effective. Each of the top 14 resilience measures presented in this report in Pillar #2 below provide key details to help describe and make the case for the measure, including key actors, costs and potential options for funding, and the benefits of the measure.

KEY PILLARS

The recommended strategy for enhancing military and community resilience in Metropolitan Washington is summarized in Figure 20 below.

Processes used to advance equity in this MIRR included:

- Considered socioeconomic vulnerabilities in the Vulnerability Assessment
- Identified gaps for equitable solutions in developing extensive list of resilience measures
- Vetted resilience measures with a “do-no-harm” screening criterion (i.e., removing any non-equitable measures)
- Included potential equity impacts as a criterion in evaluating and prioritizing resilience measures
- Provided recommendations and considerations to ensure equity is a key component of the implementation process for each high-priority resilience measure (e.g., conduct community engagement)

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For Each Measure:

Implementation profile:

- Measure description
- Vulnerabilities addressed
- Benefits
- Social and equity considerations
- Costs and funding opportunities
- Key actors
- Next steps
- Additional details

Assess and Address Key Climate Risks to Telecommunications Systems

Measure Description

Government actors, nongovernmental organizations, and telecommunications providers operating in the area will work together to 1) identify key specific risks that climate hazards may pose to critical telecommunications assets and 2) ensure service providers and relevant government stakeholders have the resources needed to manage risks and build resilience to climate change.

First, HSEMA and DOE will share results from recent and ongoing asset vulnerability and climate risk studies (see Additional Details section below) with telecommunications providers in a format that telecommunications providers can use for risk management (e.g., geospatial hazard layers). Then, they may undertake additional analyses as needed, and synthesize findings to identify key risks. Roles of specific actors are described below in the Next Steps section.

If telecommunications providers are equipped with information about key climate hazards, they can make better-informed decisions about how to upgrade, design, or relocate existing facilities and where to site future infrastructure, which will ultimately result in more resilient communications systems.

Vulnerabilities Addressed

- Critical telecommunications assets (e.g., transmission towers; aboveground fiber optic and coaxial cables and associated facilities) vulnerabilities to hazards including ice storms and high winds

Other telecommunications assets may also be at future risk of flooding and/or power grid instability.

Benefits

- Installations: Installations use the civilian telecommunications system, with alternate, contingency, and emergency options to ensure service continuity. Addressing vulnerabilities to this system will increase the likelihood that installations can continue to communicate with their normal methods in emergencies.
- Community: Increased ability of support systems (e.g., first responders, service providers, community-based organizations, nonprofits) to continue communicating and coordinating to serve the community during events.
- Economy: Increased capacity of the local economy to continue operating during events.
- Environment: Potential for environmental benefits if nature-based resilience measures are applied (e.g., to manage flooding).

Social and Equity Considerations

Increasing communications resilience may particularly benefit populations that face higher risk or have less capacity to cope if communications systems go down.

Telecommunications service providers should also work with ANCs and BiDs to understand how outages and construction could impact different populations, and reflect community needs in resilience implementation plans and outage restoration plans.

Additionally, the quality of communications services and assets' resilience should be studied alongside wealth indicators to assess if the system is stronger in wealthier areas, and if it is, resilience investments should be prioritized to mitigate this inequity.

Costs and funding Opportunities

Potential costs associated with implementing this measure, and potential funding sources to support implementation, include:

Costs:

- Risk assessments to identify and inform the design or protection of critical equipment, buildings, and infrastructure may have a range of costs (\$25,000 – \$250,000+) depending on the level of detail needed and the scope of the study.
- Undergrounding wires may cost ~\$25,000 to \$1,500,000 per mile, recognizing the need to ensure against flooding risks for buried lines
- Additional equipment may be used to increase reliability and capacity

Funding:

- Department of Defense Office of Local Defense Community Cooperation (OLDDCC) grants to fund additional risk assessments as needed
- FEMA Building Resilient Infrastructure and Communities (BRIC) Program grants
- Homeland Security Grant Program (HSGP) grants
- National Telecommunications and Information Administration grants

Key Actors

- Leaders: HSEMA and telecommunications service providers
- Partners: Other government actors (MWCOG, National Labs, CISA, FEMA), electric service providers, Communications Sector Coordinating Council first responders, and other major users

Next Steps

Short-term (within 2 years)

- Public sector actors (e.g., governmental and NGOs) conduct R&D to develop climate risk data for telecommunications service providers
- HSEMA continues to investigate critical assets and vulnerabilities in local telecommunications system

Mid-term (2-6 years)

- Public sector actors make climate hazard data available to and easily accessible by telecommunications service providers
- Telecommunications providers integrate climate risk data into planning and decision-making processes

Long-term (7+ years)

- Telecommunications service providers coordinate as needed to build resilience and manage key climate risks
- Public sector continues to support service providers by providing updated high-quality climate data for risk management purposes
- Telecommunications service providers and public sector actors work together to target climate risks to telecommunications sector outside the scope of providers' capacity (e.g., improve flood resilience, harden the electric grid to increase its reliability)



Priority Physical and Policy Measures

Retrofit stormwater pump stations



Support Blue Plains floodwall construction



Ensure Lower Anacostia Waterfront development is resilient



Assess and address key climate risks to telecommunications systems

Provide financial support for Blue Plains microgrid

Advance fuel resilience opportunities identified in RRAP study to benefit installations and communities

Construct community electric vehicle charging stations

Expand connectivity to/from High-Capacity Transit Station Areas

Implement congestion relief and traffic control measures

Implement congestion relief and traffic control measures



Priority Physical and Policy Measures

Increase shade cover and green infrastructure



Invest in workforce development for in-demand skills

Invest in affordable housing

Develop suspicious activity & trespassing prevention plan

Honorable mention physical & policy measures

- Coordinate and advocate for funding for water supply alternatives.
- Continue to explore opportunities to add Potomac River Ferry stops near installations.
- Train workers to maintain green infrastructure and other capital projects.

