



Northern Virginia Regional Commission Military Installation Resilience Review (MIRR)

Chris Landgraf
May 2023



The NVRC MIRR Process

Who we are

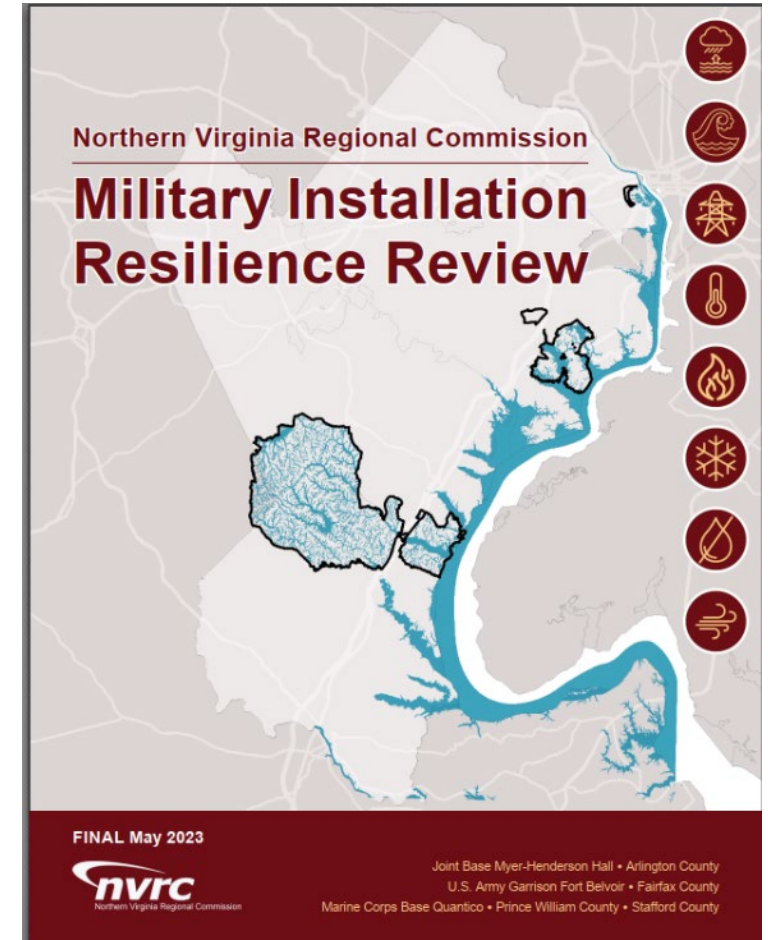
The Northern Virginia Regional Commission (NVRC) is a regional council of thirteen-member local governments in the Northern Virginia suburbs of Washington DC. NVRC is a political subdivision (a government agency) within the Commonwealth.

How we got here

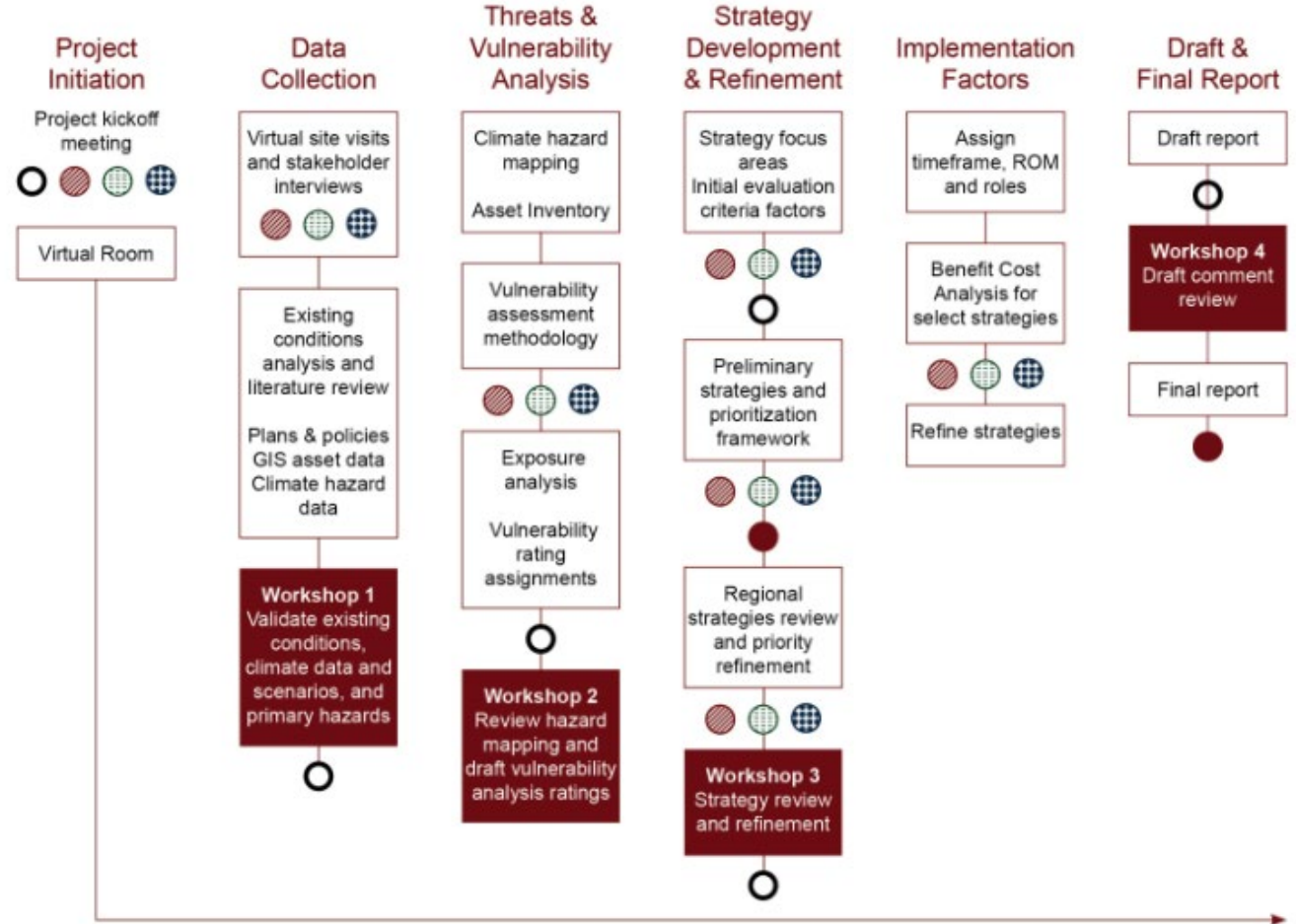
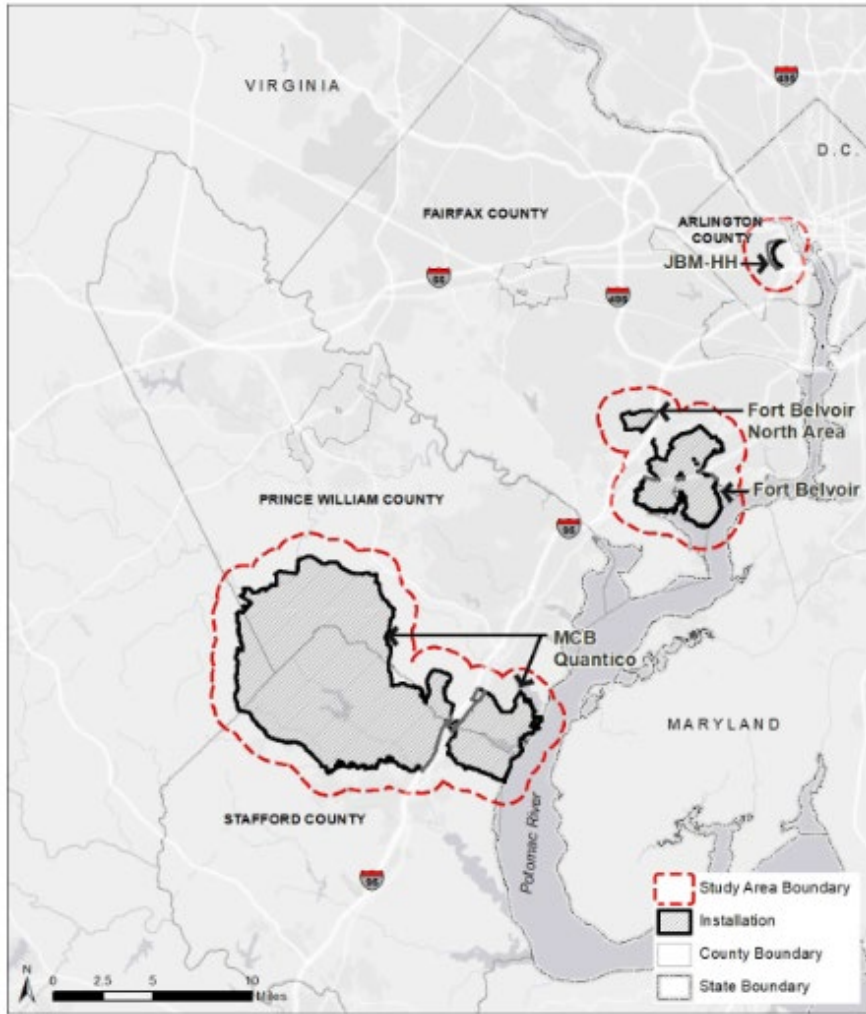
NVRC applied for and received a Military Installation Resilience Review (MIRR) grant from the **Office of Local Defense Community Cooperation (OLDCC)**. During the MIRR process projects benefitting the communities and the installations were identified. A summary of the MIRR Projects follows.

Timeline

Final MIRR report is anticipated to be accepted by the NVRC Commission in May 2023.







The NVRC MIRR Process



- Policy Committee Meeting
- 🌐 JBM-HH / Arlington County Technical Review Committee Meeting
- 🌐 Fort Belvoir / Fairfax County Technical Review Committee Meeting
- 🌐 MCB Quantico / Prince William County and Stafford County Technical Review Committee Meeting
- NVRC Commission Briefing

Climate Hazards

High Priority Hazards

-  High Temperatures
-  Energy Demand
-  Coastal/Tidal Flooding
-  Pluvial Flooding
Fluvial/Inland Flooding

Medium Priority Hazards

-  Wind
-  Winter Weather

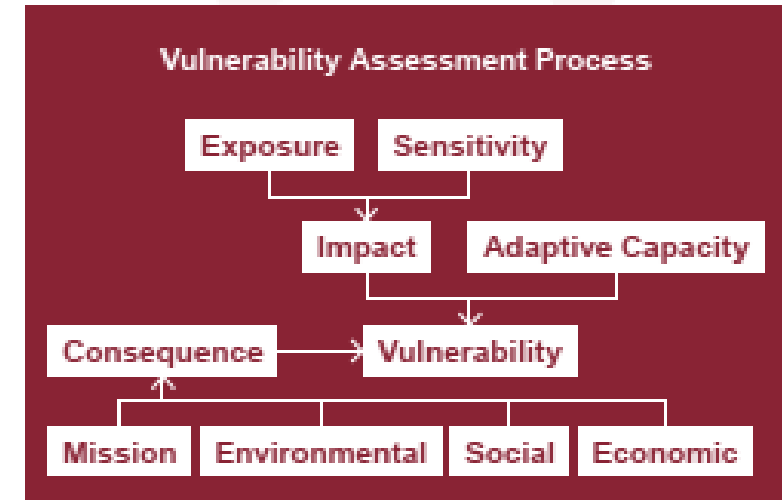
Low Priority Hazards

-  Drought
-  Wildfire

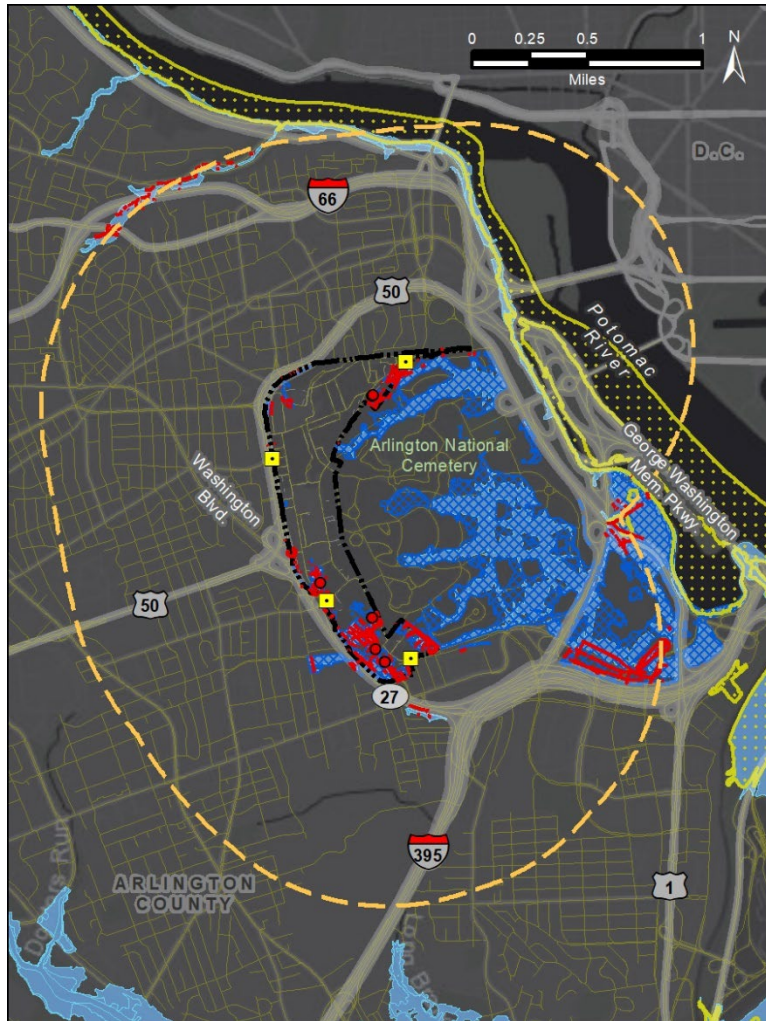
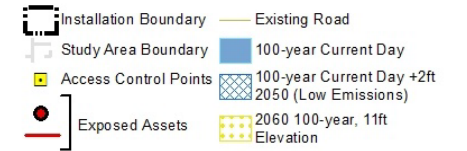
Asset Inventory and Vulnerability Analysis

100,000
assets across
11 asset
categories

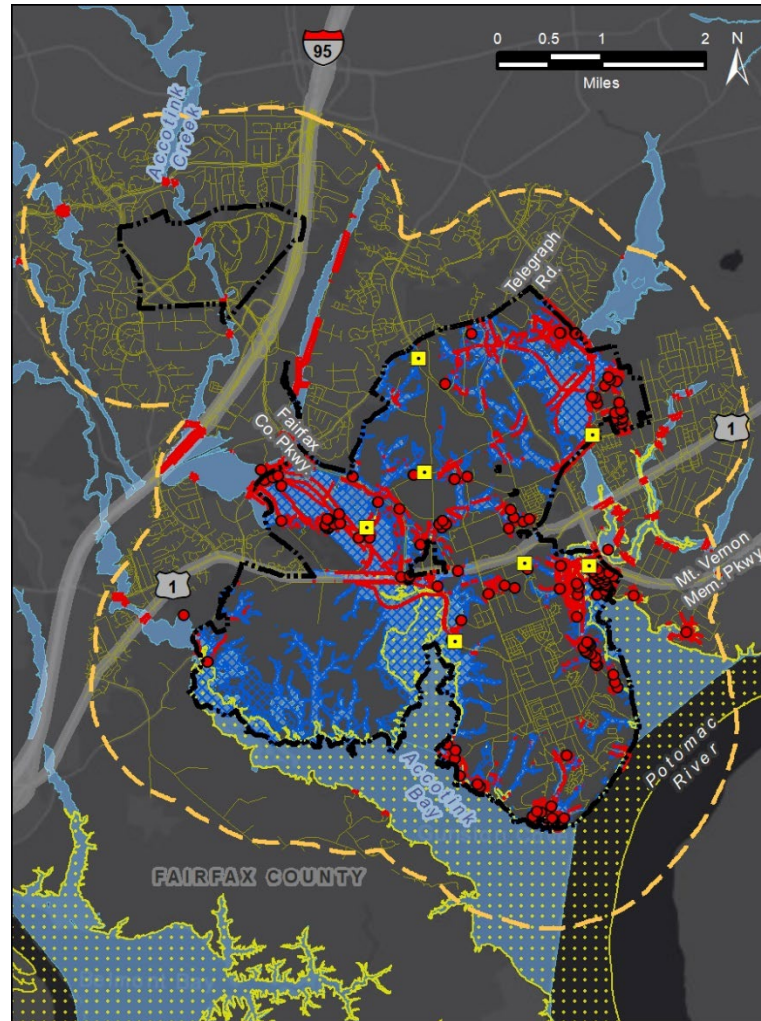
Building Assets
Stormwater Systems
Wastewater Systems
Water Supply Systems
Electrical Systems
Natural Gas Systems
Fuel Systems
Communications Systems
Transportation Systems
Natural Areas and Parks
Hazardous Materials Storage



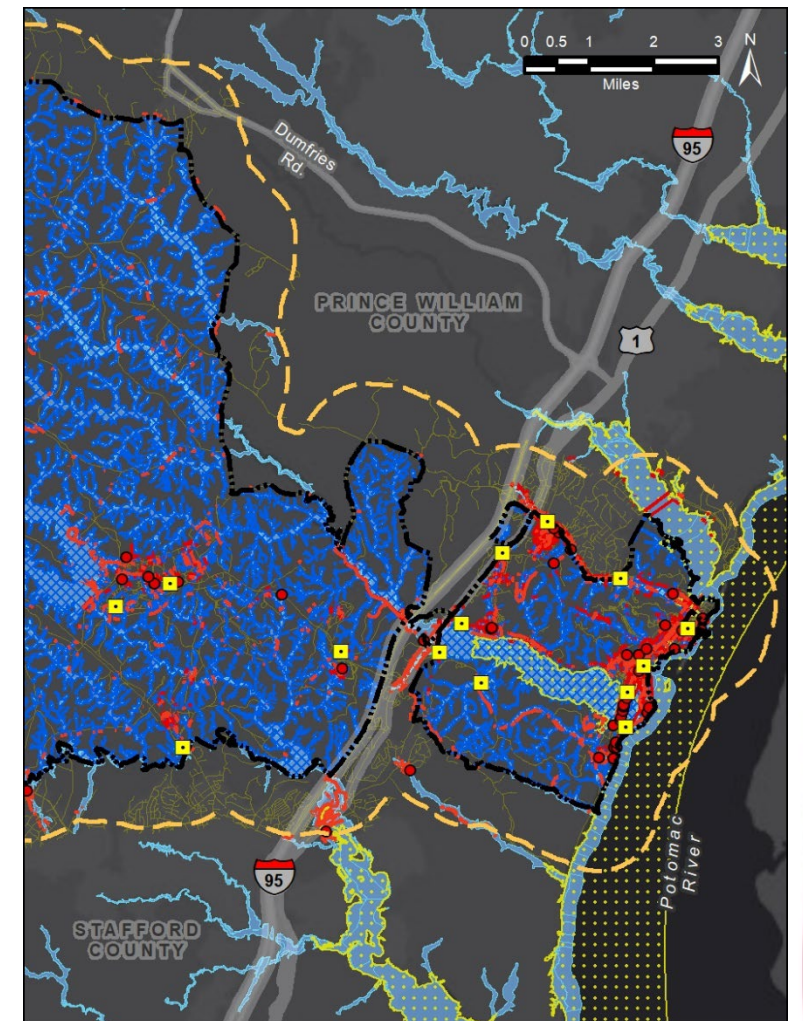
Exposed Networks



Joint Base Myer-Henderson Hall / Arlington County

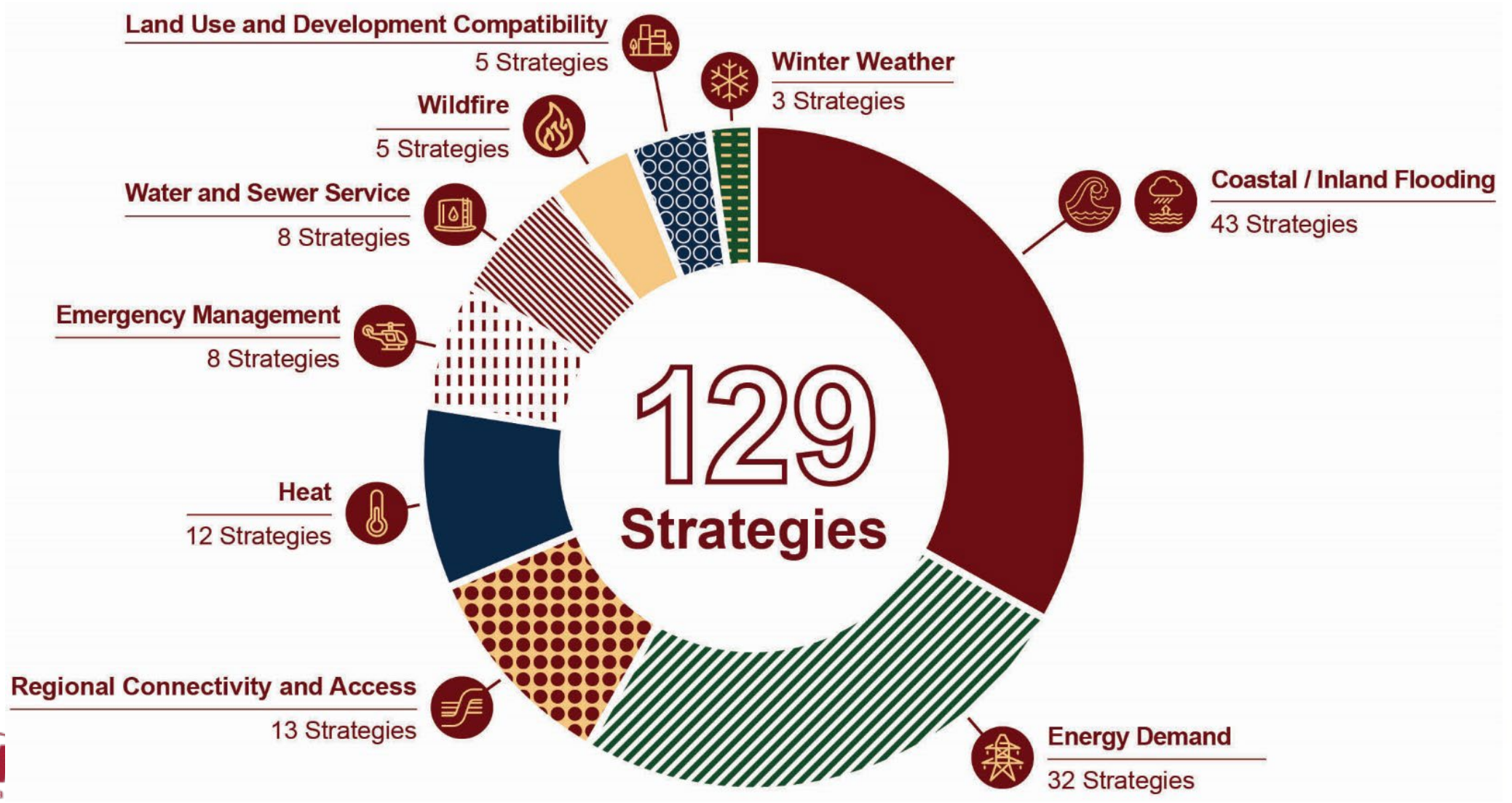


Fort Belvoir / Fairfax County



MCB Quantico / Prince William County and Stafford County

Breakdown of Strategies by Hazard or Topic



Prioritization Criteria

15 criteria were used to qualitatively rank strategies

Most criteria are rated on a scale of negative, neutral, or positive (-1, 0, 1)

Mission criteria have higher impact on score than other categories

Project execution and funding scores were excluded from total scores in order not to penalize strategies that are difficult or complex

Category	Criteria
Mission	Installation System Redundancy and Robustness
	Alignment with Existing Policies and Priorities
	Connectivity and Access
	Regional Resilience
	Life Safety
Environmental	Environmental Goals, Standards, and Guidelines
	Habitat and Biodiversity
Social	Community Assets
	Access to Essential Services
Economic	Avoided Loss
	Infrastructure Modernization
Implementation	Hazard Reduction
	Adaptability
	Project Execution Complexity
	Funding

no

Tier	JBM-HH / Arlington County	Fort Belvoir / Fairfax County	MCB Quantico / Prince William County and Stafford County	Regional	Total (Regional + Installation / County)
High	8	11	12	14	45
Mid	6	13	11	21	51
Low	7	8	7	11	33
Total	21	32	30	46	129

8



Military Installation Resilience Review (MIRR) Overview

- Hazards Identified
 - High Priority Hazards (Extreme Heat, Energy Demand, Coastal Flooding, Inland Flooding)
 - Medium Priority Hazards (Wind, Winter Weather)
 - Low Priority Hazards (Drought, Wildfire)
- Threats and Vulnerabilities Analysis Completed
 - Hazard Exposure
 - Sensitivity
 - Adaptive Capacity
 - Consequence
- Business Case Analysis Completed
- 129 Regional and Installation/County Specific Strategies Identified and Classified
 - Low-Tier
 - Mid-Tier
 - High-Tier
- Funding Sources Identified
- Industry Days Held in Sep 2022 and Mar 2023
- Final MIRR Report Presented to the Policy Committee 18 May

Solar Projects

1 Megawatt (MW) Floating Solar Array for Water Treatment Plant	\$3.5M
Battery back-up for the 1 MW Floating Solar Array	\$3M
Transmission lines for the 1 MW Solar Array	\$2M
Battery back-up for the Landfill Solar Array (built by others)	\$15M
Solar Panels for Fort Belvoir Elementary School	\$2.4M
Solar Panels for Woodlawn Elementary School	\$1.8M
2 MW Floating Solar at Quantico's Lunga Reservoir	\$7M
2 MW Battery back-up for Lunga Reservoir Solar	\$6M
Transmission Lines for Lunga Reservoir Solar	\$4M
1 MW Floating Solar at Smith Reservoir	\$3.5M
1 MW Battery back-up for Smith Reservoir	\$3M
Transmission Lines for Smith Reservoir Solar	\$4M
Floating Breakwater Protection for Smith Reservoir Solar	\$3M
10 Solar EV Charging Stations at each Installation	\$9M
Total	\$67.2M

Regional Energy Grid Projects

New Substation at Fort Belvoir	\$100M
2 MW Battery back-up for the Community (at the new substation)	\$6M
Micro-grid at the New Fort Belvoir Substation	\$50M
Micro-grid at the Existing Fort Belvoir Substation	\$50M
2 MW Battery back-up for the Community (at the existing substation)	\$5M
Transmission Line Improvements for FB Switching Gear	\$5M
Switch Gear for Fairfax County Covanta Plant	\$5M
Switch Gear for Arlington/Alexandria Covanta Plant	\$5M
Transmission Lines Improvements for A/A Switch Gear	\$5M
Micro-grid at Existing JBM-HH Substation	\$10M
Total	\$241M

Flooding/Shoreline Projects

Planning Effort for Little Creek and Quantico Shoreline	\$0.9M
Natural Infrastructure Improvements for Little Creek	\$35M
Shoreline Improvements at Quantico/Prince William County	\$4M
Total	\$39.9M

Utility Projects

Gas Line Connections at JBM-HH	\$0.7M
Town of Quantico Water and Wastewater Upgrades	\$10M
Total	\$10.7M

Next Steps

- Finalize the MIRR report with the Northern Virginia Regional Commission (25 May 2023)
- Identify funding sources for project planning
 - REPI Challenge Funds
 - MIRR Implementation Funds
 - IJJA Funds
 - State Programs
- Identify funding sources for project construction
 - DCIP Funds
 - DOE Funds
 - FEMA BRIC Funds
 - State Programs

MIRR POC and Questions

Chris Landgraf
NVRC Program Manager
Military Installation Resilience
(703) 642-4641

