**RECORD VERSION**

**STATEMENT BY**

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**BEFORE THE**

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Chairman Heinrich, Ranking Member Boozman, and Members of the Subcommittee: on behalf of the Soldiers, Families, and Civilians of the United States Army, thank you for the opportunity to discuss how the Army is preparing for the challenges ahead by working to increase the climate resilience of our infrastructure through adaptation, mitigation, and innovation. My name is Jack Surash, and I am currently the Senior Official Performing the Duties of the Assistant Secretary of the Army for Installations, Energy and Environment. Previously, I served as the Deputy Assistant Secretary of the Army for Energy & Sustainability.

## Introduction

The Army's efforts to maintain or increase the resilience of our installations infrastructure is embedded into our policies and programs. Energy and water resilience, or uninterrupted access to energy and water, is essential for Army readiness and ensuring the Total Army can deploy, fight, and win. In line with the Secretary of Defense's direction, the Army is prioritizing climate change considerations in our missions, plans, resources, and capabilities. As our mitigation and adaptation efforts mature, the Army's commitment to climate change does not change the Army's priorities of People, Readiness, and Modernization. Our installation infrastructure, to include energy and water resources, supports critical missions and must be able to withstand the impacts of climate change.

## Strategy

In September 2020, the Army issued Army Directive 2020-08 (Army Installation Policy to Address Threats Caused by Changing Climate and Extreme Weather) that requires installation commanders to address climate and extreme weather threats in all infrastructure-related plans, policies, and procedures.

The *Army Installations Strategy (AIS)*, published in December 2020, is the foundational document that drives the Army's goal for resilient installations. The AIS represents a pivot from an Industrial-Age paradigm characterized by rigidity and purpose-built specialization to a data-rich, reconfigurable Information Age construct. As

indicated in the AIS, Army installations support Total Army operations to mobilize and project forces and capabilities anywhere in the world, at any time. Resilience advances the capability of systems, installations, personnel, and units to respond to unforeseen disruptions to quickly recover critical missions.

Climate change is a direct threat to our Army. To combat that threat, the Army is proactively taking steps to address the cause and impacts of climate change and extreme weather. Recent and ongoing activities include:

- Army Climate Assessment Tool (ACAT), deployed July 2020: This web-based tool enables installation planners to identify local climate threat scenarios, to inform master planning and resilience analysis.
- Army Climate Resilience Handbook, published August 2020: A companion to the ACAT and a guide for garrisons to develop climate adaptation measures.
- Army Climate Change Working Group, established March 2021: Supports the identification of key tasks to immediately synchronize and direct Army activities to address implications at the policy, planning, and implementation levels and the development of the Army Climate Action Plan.

These efforts to address climate change risks to Army missions will help strengthen Army resilience in support of global operations. Some effects of climate change may be unavoidable, but with improved infrastructure and resilient installations, we can minimize operational impacts and maintain Army readiness.

**Installation Master Planning**

Per the FY20 NDAA, 10 USC 2864 now requires the master plans for major military installations to address “military installation resilience” and to include the “consideration of… energy and climate resiliency efforts.”

We gain valuable insights into our existing infrastructure condition and capability gaps, resource access, and system operations and plans through planning and condition assessments. Army Installation Energy and Water Plans (IEWPs) outline critical mission needs, characterize energy and water baseline conditions, and propose prioritized projects and operational activities to increase energy and water resilience.

IEWPs have begun to identify a wide range of deficiencies that will require mitigation. The challenge is resourcing projects and operational changes to address the highest risk energy and water deficiencies to critical missions amidst pressure to fund other Army priorities. The Army has 30 IEWPs at or near-completion; all remaining installations are scheduled to be completed by the end of FY 2022. IEWPs will be updated on a recurring basis and results will be incorporated into installation master plans.

**Energy and Water Efficiency and Resilience**

The Army is the largest consumer of installation energy in the Department of Defense, spending more than $1 billion per year on facility energy and water. Our installations rely, with few exceptions, on commercial energy and water sources to accomplish critical missions. The vulnerabilities in the interdependent electric grids, natural gas pipelines, and water resources supporting our installations jeopardize Army missions, installation infrastructure and security, and the Army's ability to project power.

The *Army Installation Energy and Water Strategic Plan*, issued in December 2020, sets the vision, "Army installation energy and water infrastructure supporting critical missions in the Strategic Support Area is resilient, efficient, and affordable." It established goals, strategic objectives, and targets to further efforts to build long-term resilience, efficiency, and affordability. Building and measuring resilience enables Army readiness by improving the ability to prevent and recover from disruptions to vital energy and water utility services. We are leveraging all approaches to address energy and water resilience.

Comprehensive Energy and Water Evaluations (CEWEs) and Black Start Exercises (BSEs) are two of the methods we use to identify gaps and opportunities. Their results inform our IEWPs and project prioritization. CEWEs are directed to be accomplished by the National Energy Conservation Policy; they report energy and water efficiency opportunities on a four-year cycle. Black Start Exercises lead to the detection of resilience needs, and have the added benefit of resulting in improved communications and collaboration between the Army, local communities, and utility companies that service an installation. We have conducted BSEs at Fort Stewart, GA,

Fort Greely, AK, Fort Bragg, NC, Fort Knox, KY, and Fort Irwin, CA, and we are planning exercises at Fort Hood, TX, Fort Leavenworth, KS, and Rock Island Arsenal, IL. These exercises revealed challenges including lack of defined critical building loads; critical building loads and communications systems not connected to backup generation; and backup generator failures due to lack of maintenance or insufficient loading. We are developing a BSE schedule to support the FY21 NDAA requirement for a minimum of five exercises per year starting in FY23.

In FY 2020, the Army's energy use per square foot (energy use intensity or EUI) was 82.1 thousand BTUs per square foot. Compared to the FY03 baseline, the Army decreased EUI by 15.6%. Army installation energy efficiency and conservation efforts include reducing overall energy use, maximizing efficiency, implementing energy recovery and cogeneration opportunities, and striving to offset remaining demand with onsite energy generation. The Army's FY20 water use per square foot (water use intensity or WUI) was 38.6 gallons per square foot. Compared to the FY07 baseline, the Army decreased WUI by 28.2%. In addition to reducing overall water use and maximizing efficiency, water efficiency and conservation efforts include recycling and reusing water by shifting to alternative sources, recharging aquifers, and striving to offset remaining demand with onsite water sources. By reducing the demand for energy and water, the Army lowers its reliance on external sources, creating flexibility and resilience to meet mission requirements and reduce greenhouse gas emissions.

The Office of Energy Initiatives (OEI) is the Army's central program management office that develops, implements, and oversees privately financed, large-scale energy projects. Energy generation, storage, and control capabilities are favored; when combined, these capabilities create an "island" effect—enabling critical mission sustainment during an electrical grid outage. Their work has results in 11 operational projects with 325 MW of energy production capacity, securing $627 million of private sector investment, and anticipated life-cycle operations and maintenance values of $603 million.

The Army also leverages private sector expertise and partnership through Energy Savings Performance Contracts and Utility Energy Service Contracts to improve

efficiency and contribute to resilience. While these projects target the reduction of energy and water consumption, they also enable Army to address maintenance and repair backlogs sooner than if we rely solely on constrained appropriated funds.

The Energy Resilience and Conservation Investment Program (ERCIP) is the DoD's only direct-funded program targeted for energy resilience. The Army has been focusing on ERCIP projects to incorporate resilience attributes, conserve energy and water, reduce reliance on the grid, and construct on-site power generation and associated infrastructure. In FY21, the Army received $35.1 million for two ERCIP projects that add energy and water resilience capabilities.

The Army's utility systems, both government owned and privatized, must be resilient, reliable and efficient. By investing in energy infrastructure and modernizing utility systems with current technology, we will enhance our installations' overall resilience. The Army's Utilities Privatization Program conveys utility systems to a non-government entity, usually a utility company, through a utility services contract. These contracts allow the Army to access private sector financing for up to 50 years to modernize and recapitalize utilities infrastructure. We have privatized 147 systems at 98 U.S. installations. This includes systems at 17 of 34 installations that are Power Projection Platforms, Mobilization Force Generation Installations, or both.

The need to be resilient is now. We are advancing the development and use of climate adaptation and mitigation tools, renewable energy, energy efficiency and consumption, and water usage initiatives to enable Army operations. The Army will continue to collaborate with Congress, DoD, the other Services, private industry, utilities, and local communities to enhance installation resilience, efficiency and affordability in support of Army readiness. We will also continue participating in industry events, such as Department of Energy's Energy Exchange, to communicate, share lessons learned, and remain up-to-date with industry best practices.

## Conclusion

Army Readiness begins on our installations. We need ready and resilient installations to ensure our Soldiers are able to properly train and can deploy anywhere

in the world in order to fight and win our Nation's wars. Through adaptation, mitigation, and innovation, the Army will work to secure the readiness and resilience of forces, functions, and facilities.

Your continued advocacy helps to ensure we will remain an attractive option for current and future generations who want to serve their Nation and retain the current force by meeting the expectations of an all-volunteer Army with capable, high-quality, and modernized installations. Thank you for the opportunity to present this testimony and for your continued support of our Soldiers, Civilians and Families.