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**NET ZERO WATER FOR U.S. ARMY INSTALLATIONS**

Elisabeth Jenicek\*, Laura Curvey

**ABSTRACT:** The U.S. Army is vulnerable to the same issues of water supply and demand that jeopardize water security globally. Providing the required amount of clean fresh water in the location where it is needed is increasingly difficult. The conditions that exacerbate water availability are the aging condition of water infrastructure, generalized population growth especially in regions containing key Army installations, increased water demands for energy, and uncertain but generally agreed upon regional impacts of global climate change. The complexity of water compacts, treaties, and agreements is another challenge for Army installations. In the coming years, the impacts of water scarcity will be more severe in certain locations and this will be reflected in increasing costs. These global drivers of water security have driven increasing interest in preserving this finite resource. On the Federal level, legislation and executive orders with increasingly rigorous water conservation requirements have emerged over the last decade. The Army has promulgated these requirements through policy and regulation and taken it a step further in establishing challenging targets for installations to achieve net zero water. Net zero water is an emerging sustainable buildings concept that is analogous to net zero energy. The Army's Net Zero Water Installation Vision states: "A Net Zero Water installation limits the consumption of freshwater resources and returns water back to the same watershed so not to deplete the groundwater and surface water resources of that region in quantity or quality." Army installations are located in regions that encompass a broad spectrum of conditions that affect water security, cost, and applicability of water efficient technologies. Large reductions in water use will require taking a holistic approach that includes policy, technology, education, partnering with others, and strong command emphasis. Using a suite of technologies including aggressive conservation, rainwater harvesting, and water recycling/reuse, buildings can achieve independence from the water "grid." A Net Zero Water program on the installation should be unique and tailored to the characteristics above. Some policies, programs, and technologies will be applicable Army-wide and others are unique to region, facility, or system.

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\* Senior Research Engineer, USACE, Engineer Research and Development Center, P.O. Box 9005, Champaign, IL 61826-9005 USA, Phone: 217-373-7238, Email: [elisabeth.m.jenicek@usace.army.mil](mailto:elisabeth.m.jenicek@usace.army.mil)