ANALYZING THE IMPACTS OF WEATHER EVENTS ON DOD INSTALLATIONS

OBJECTIVE

The Department of Defense (DoD) ESTCP Program seeks evaluations that assess the impacts of past weather events on DoD installations to inform mitigation strategies, emergency preparedness, recovery plans and rebuilding designs. More frequent and stronger natural disasters pose greater threats to the stability of the built and natural infrastructure on military installations. Extreme weather events can lead to long duration utility outages and/or failure of infrastructure, increasing the potential for disruption in other mission critical operations.

Phase I evaluations should perform analyses on the impacts of past weather events such as hurricanes, heat waves, ice storms, high-intensity rainfall, and droughts on DoD installations. ESTCP is interested in innovative approaches to conducting these retrospective evaluations with particular interest in the following elements:

- Incorporating findings into installation master planning efforts.
- Identifying failure modes of infrastructure or systems that resulted in loss of function or irreparable damage and preventative measures that worked and didn’t work.
- Assessment of baseline conditions and consideration of building vintage, construction materials and techniques.
- Pricing the cost and economic losses from damage that was done by individual weather events, or seasonal weather events and associated recovery costs.
- Assessment of mission impact either from direct input from mission owners or through analysis of critical systems performance (electric, water, back-up power).

If Phase I analysis results in recommendations that include technological solutions that address above elements, successful projects may be invited to submit Phase II proposals for demonstration projects following the completion of the Phase I efforts. Pre-proposals requested under this call for proposals are for Phase I efforts only.

BENEFITS

A forensic analysis from these evaluations of past weather events and their impact on DoD installations and lessons learned, will help identify vulnerabilities and inform future investments to build efficient, climate ready installations. Analyses from the evaluations on mitigation alternatives will assist installations in their assessments of installation resilience and development of Installation Master Plans.

BACKGROUND

2020 marked the tenth consecutive year with eight or more billion-dollar weather-related disasters and the sixth consecutive year with ten or more billion-dollar disasters that directly affected the...
United States. While any one weather disaster cannot be directly attributed to climate change, it is the understanding of the scientific community that climate change contributes to the increased frequency and intensity of extreme weather events. These events often lead to sudden, severe, costly damage to Department of Defense (DoD) installations. On January 27, 2021 President Biden issued Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad, which requires climate considerations to be an integral component of all DoD strategy, planning, and programming activities. Following the issuance of Executive Order 14008, Secretary of Defense Austin released a statement that enforces the need for DoD to prioritize climate change considerations in DoD actions to mitigate insecurity.

Pre-proposals shall follow the general instructions provided on the ESTCP website and should consider the following information:

- In the Technology Description section, proposers should provide information that generally describes their approach to examine the technical aspects of impacts of severe or extreme weather events on DoD installations to include how severe or extreme weather events impact the built and natural infrastructure as well as the continuity of mission operations over time.
- In the Technical Approach section, proposers should provide sufficient detail that the technical approach can be clearly understood by the reader. No demonstration plan will be required for Phase I efforts.
- In the Expected Benefits section, a qualitative and semi-quantitative description of the expected benefit of the resultant analysis should be included.
- The Technology Transfer section should discuss activities to engage with key stakeholders involved with potential Phase II development for military installations to facilitate information exchange and explore collaboration for a potential Phase II demonstration.

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For pre-proposal submission due dates, instructions, and additional solicitation information, visit the ESTCP website.