

# Community and Infrastructure Resilience Program



Science and Technology

## THE COST OF DISASTERS

Natural disasters have cost the United States over \$1.79 trillion since 1980. The inevitability of natural disasters will impact the American population, infrastructure, and our first responders. To better predict and help minimize future impacts and expedite recovery, the Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) requires new innovative technologies to support their response and recovery efforts and help create a more resilient future.

## ADVANCING COMMUNITY AND INFRASTRUCTURE RESILIENCE

The DHS Science and Technology Directorate's (S&T) Community and Infrastructure Resilience (C&IR) Program comprises projects and activities related to the protection of life and property through research in new and emerging technologies, the development of standards and best practices, and the enabling of improved information sharing capabilities. In direct support to FEMA, the program aims to provide solutions addressing the complex problems related to natural disasters and man-made events and an approach to technology deployments that takes into account all hazards. The program is empowering all levels of government to detect and monitor key threats and improve the ability to synthesize and share critical information across their communities. The program accomplishes its goal through six distinct project areas: Disaster Recovery, Next Generation Disaster Proofing, Community Resilience Testbeds, Flood, Climate Adaptation and Resilience, and Critical Infrastructure Resilience.

## PROGRAM IMPACT

- The C&IR Program works to mitigate disaster impacts, aid recovery operations, and support efforts to bolster resiliency across communities and individuals
- This program applies research to reduce future losses of life and property and build resilience across our communities

## ACCOMPLISHMENTS

- Deployed and tested low-cost, high-accuracy flood sensors

- Deployed [First Aid for Severe Trauma \(FAST\)](#) training program for high school students
- Developed Team Awareness Kit (TAK) training video for wildland firefighters
- Developed [Integrated Public Alert & Warning System \(IPAWS\)](#) Program Planning toolkit
- Advanced info-sharing capabilities in collaboration with the Central United States Earthquake Consortium for Exercise Shaken Fury
- Electromagnetic Pulse (EMP) Mitigation Best Practices for Critical Infrastructure Owners guidance published
- Delivered Positioning, Navigation, and Timing (PNT) Best Practices outlining processes for responsible use of PNT systems, and guidance for CI owners/operators to optimize PNT use
- Developed and demonstrated [hydrogen fuel cell powered emergency relief vehicle prototype \(H2Rescue\)](#)

## UPCOMING MILESTONES

- Develop [Community Lifeline Status System](#) (CLSS) lifeline status reporting construct for emergency managers (Q1 FY24)
- Urban Search and Rescue Innovation research by NAPSG Foundation to define Urban Search & Rescue requirements and barriers to develop and refine Search and Rescue Common Operating Picture V9 (Q1 FY24)
- Wildland Urban Interface demonstration to test emergency alerting through vehicle infotainment centers (Q3 FY23)
- Sandia National Labs (SNL) to submit EMP/Geomagnetic Disturbance Environmental Assessment (Q4 FY23)
- GPS Equipment Testing for Critical Infrastructure (GET-CI) '25 live-sky test environment (Q4 FY23)

## PERFORMERS/PARTNERS

Accelera by Cummins; G&H International; NAPSG Foundation; Corner Alliance; Electric Power Research Institute; SNL; Homeland Security Systems Engineering and Development Institute™; University of New Hampshire; U.S. Army Corp of Engineers; SUNY Albany.

