National Infrastructure Protection Plan
NIPP Challenge

Synchronization of Situational Awareness Between Critical Infrastructures and the Public Sector Using Unmanned Aerial Systems (UAS)

SITUATIONAL AWARENESS

Rapid damage assessment of critical infrastructure elements following a disruptive event, and the sharing of that information allows both public and private sectors to more quickly establish situational awareness and optimally deploy response resources. This project focused on the development of plans, procedures, processes, and mechanisms for using Unmanned Aerial Systems (UAS) to provide rapid situational awareness and for sharing that information between public and private partners. This information was transmitted to State Emergency Operations Centers (EOC) and was used to create a common operational map that can be shared with the federal government, other jurisdictional organizations, and the private sector during emergency response situations. As the use of private sector UAS increases, first responders have the ability to leverage these resources to rapidly gain situational awareness across a larger geographic region.

METHODOLOGY

The Pacific Northwest Economic Region (PNWER) project team collaborated with four states in the Pacific Northwest to develop state-specific concepts of operations (CONOPS) for the use of UAS to conduct critical infrastructure damage assessments. The four participating states included Idaho, Montana, Oregon, and Washington. The project team established a working group of interested public and private sector infrastructure owners and operators within each state and conducted stakeholder led workshops in each of the states.

During these workshops, stakeholders identified their needs and concerns relative to the use of UASs for conducting damage assessments of critical infrastructure. The workshop outcomes then became the initial formation of operational concepts for incorporating UASs into a CONOPS for disaster zone access and information-sharing for each state.

As part of this project, the project team needed to consider the process for how private sector CI owners would gain access into disaster zones. This process was built into the CONOPS for each state. The CONOPS also specified the communication channels and data file types needed for transmission.

Toward the end of the project cycle, the team conducted a demonstration drill of the Washington CONOPS. This drill utilized the new process for private CI owners to obtain access to a disaster zone, assessed a simulated damaged area with a UAS, and transmitted the information to the state Emergency Operations Center (EOC). The drill identified lessons learned and best practices for the CONOPS.

Source: FEMA Photo Library

RESULT

The project team partnered with the Washington National Guard to test the use of the CONOPS with the DAART system. The results of the Washington CONOPS demonstration resulted in lessons learned regarding the use of technology to transmit imagery and video through the DAART system and led to the development of partnerships between the PNWER and the National Guard to continue integration of the two systems. Additionally, Idaho, Montana, and Oregon all identified EOC stakeholders to lead the development of the CONOPS and are all currently working through gaining permissions for accessing disaster zones.

Source: FEMA Photo Library