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DRONES USE EXPERTISE FROM SURFSIDE TO ASSIST WITH 2021 WESTERN KENTUCKY TORNADO RESPONSE

TALLAHSSEE, FLORIDA, January 5, 2021 – The Center for Disaster Risk Policy (CDRP) at Florida State University was requested by Graves County Emergency Management to assist in remote sensing and damage assessment efforts in response to the EF4 tornado that impacted the City of Mayfield, Kentucky and surrounding areas on December 10, 2022. The CDRP team was deployed from December 12 through December 17 to assist the Kentucky Division of Emergency Management as well as Graves County in assessing catastrophic damage and creating imagery and mapping products to support response and recovery efforts. The CDRP UAS team worked with the FEMA Incident Support Team and Urban Search and Rescue (US&R) Task Forces to identify areas of interest, monitor search efforts, document damage and search areas, and assist in the search of collapsed structures throughout the county. The FSU team brought the lessons being learned from the Surfside collapse (NSF CMMI 2140451: RAPID: COLLABORATIVE RESEARCH: Robot Data Collection at Champlain Towers South Collapse) and applied them for conducting structural assessments of public infrastructure and to rapidly map damage in over 1800 acres in the heart of Mayfield, KY, in less than 4 hours. Techniques and workflows developed at the Surfside collapse were easily integrated into wide area search planning and monitoring. Utilizing small commercial off the shelf drones, both multirotor and fixed-wing, the team created two dimensional map products and three dimensional models that assisted in search planning, damage assessment, and situational awareness. As US&R efforts wound down in Graves County, the team shifted east and flew multiple sorties to help search 155 acres for a missing child outside Bowling Green, Kentucky. The NSF supported effort advanced the scientific knowledge about more effective flight protocols for conducting structural surveys, the trade space between fixed-wing and multirotor drones, and volumetric measurements of debris for cleanup and removal.

The Center for Disaster Risk Policy (CDRP) is an applied research center in the College of Social Science and Public Policy. Founded in 1976, CDRP focuses on creating best practices and applied solutions to a variety of public policy issues. Since 1997 the center has focused exclusively on disaster management and homeland security, and currently includes eight associated faculty and eight staff. CDRP provides solutions related to planning, training and exercising, public outreach and crisis communication, disaster intelligence, and remote sensing. The center can be found on the web at http://cdrp.net.

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