

Rapid Response Data Collection Using An Unmanned Aerial System During the February 2017 Flood of the Pemigewasset River, Plymouth, New Hampshire

Ice Dam Release and Flooding

On February 26-27, 2017, the formation of an ice dam on the Pemigewasset River caused major flooding near the towns of Plymouth and Holderness, New Hampshire. In response to this flood, the U.S. Geological Survey (USGS) New England Geospatial Liaison and the New Hampshire Department of Environmental Services requested rapid delivery of high-resolution data that were crucial for emergency response activities to support any before and after flooding of the river as the ice dam released. The need for immediate high-resolution data required the use of an unmanned aerial system (UAS) to acquire low-altitude high resolution imagery of the ice dam and resulting flooding along the 4-mile stretch of the river.



Rapid Response Using Unmanned Aerial System

The USGS National UAS Project Office used an existing contract with a local UAS operator to rapidly respond to the flooding. Media Wing LLC, AirShark from Montpelier, Vermont, was able to start collecting the requested high-resolution data within 4 hours of the release of the ice dam on February 26 and deliver the collected data and a mosaic of the images of the river by late afternoon of the same day.

Data processing of the imagery, which covered the 4-mile stretch of the Pemigewasset River, resulted in the georeferenced, 3-centimeter resolution mosaic image shown to the left. The collected and processed data products were delivered to the New Hampshire State Department of Environmental Conservation and the Cold Regions Research and Engineering Laboratory (CRREL) in Hanover, New Hampshire, for briefings to the New Hampshire Governor, emergency first responders from the affected area, and State news outlets on February 27.

For further information, contact:

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