



Flood Modeling Needs & Products: Questions & Answers

This Emergency Management (EM) Geo Forum was conducted virtually on March 26, 2020, and focused on the needs and uses for flood models in incident management. The following questions and answers were addressed during the session.

Question: When validating depth grids with remote sensing, how do you get images at the height of flooding and how deep of water can you measure from imagery?

Answer: It is more of a question of whether can we get images. Visual imagery may or may not be useful because of cloud cover. But FEMA's Response Geospatial Office (RGO) is excited about the potential of search and rescue (SAR) imagery; however, urban environments will continue to be a challenge. At this stage, the RGO is only validating flood extent with imagery and not depth.

Question: For the pre-event scenarios, are you familiar with the National Water Center's (NWC's) developing work using the Height Above Nearest Drainage (HAND) Flood Inundation Mapping (FIM) technique and its integration with the National Water Model (NWM) forecasts for predictive mapping? Follow up: Can you foresee using those depth grids in your workflow ahead of an event, particularly in basins underserved by gauging?

Answer: FEMA is familiar and excited to work with the NWC. HAND has not been explored for pre-event scenarios but there is certainly a lot of potential there, especially in data-poor areas. There is interest in integrating the NWM output into the FEMA workflows.

Question: For building footprints, where do you need your first floor elevation to begin? From ground or from the structures front door?

Answer: I think we want to get to the structure's front door. We know that this can be elevated significantly where flood mitigation has already occurred, so we want to make sure that is accounted for and does not cause strong over-estimation of damage.

Additional resources from this virtual seminar may be accessed at

<https://www.napsgfoundation.org/resources/em-geo-forum-flood-modeling-needs-products>.

