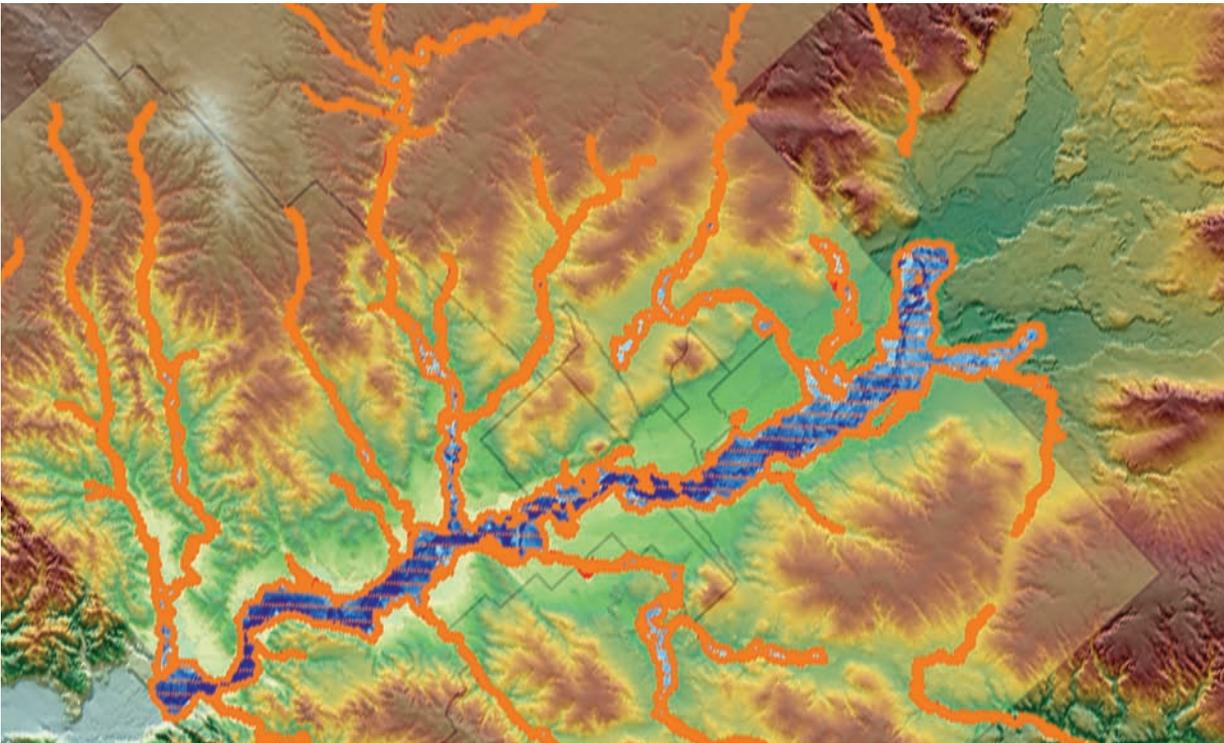




Hazards Risk Assessment Program / Hazus®



Hazus® is a geographic information system (GIS)-based software program that estimates the consequences of a natural disaster before it happens. The National Institute of Building Sciences produced the Hazus Earthquake Model for the Federal Emergency Management Agency (FEMA) in 1997, and added models for riverine flooding and hurricane wind hazards in 2004. A coastal storm surge model was added in 2011. The program is available from FEMA for free. With this information, community decision makers, emergency managers, police and fire officials, and government administrators can better ready a region for disaster events.

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Hazards Risk Assessment Program / Hazus®

Hazus-MH has become a nationally applicable software program that estimates potential building and infrastructure losses from earthquakes, riverine and coastal floods, storm surge and hurricane winds. Hazus-MH loss estimates reflect state-of-the-art scientific and engineering knowledge and can be used to inform decision-making at all levels of government by providing a reasonable basis for developing mitigation, emergency preparedness, and response and recovery plans and policies. Hazus-MH employs the Comprehensive Data Management System (CDMS) that facilitates the updating of statewide datasets used in a Hazus-MH analysis. Hazus-MH and CDMS can be ordered from the FEMA website.

The National Institute of Building Sciences completed the development of the first nine versions of Hazus-MH for FEMA. The Institute now provides counsel to FEMA on independent validation and verification (IV&V) for Hazus-MH. IV&V has been conducted for the last three versions of Hazus-MH.

Independent Verification and Validation (IV&V)

IV&V efforts establish baseline accuracy for Hazus-MH, maximize the quality and functionality, and reduce costs associated with maintaining and enhancing Hazus-MH.

In conducting these efforts, the Institute evaluates:

- Hazus-MH methodology, software and graphic user interface development for the flood, earthquake, hurricane and coastal storm surge models;
- Hazus-MH's auxiliary programs including the CDMS, FIT (Flood Information Tool) and AEBM (Advanced Engineering Building Module);
- Underlying supporting software (including ArcGIS, Windows and other Microsoft products); and
- Hazus-MH technical and user manuals.

Methodology Development

The Institute directs oversight committees to assist FEMA in evaluating the development of the Hazus-MH flood, earthquake, hurricane and coastal storm surge model loss estimation tools. The committees consist of nationally recognized public and private sector experts in natural disasters, architecture and engineering, and social consequences of disasters. They evaluate the efforts and output of Hazus developers and their consultants. Recently Institute committees were convened to conduct oversight of methodology development for a Tsunami Model and to develop a Hazus open source program. ■



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