



Flood Loss Estimation Model

HAZUS is a nationally applicable standardized methodology and software program for estimating potential losses from earthquakes, floods, and wind. **HAZUS** is being developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS). **HAZUS** now has the capability to estimate earthquake losses, with flood and wind models under development. NIBS maintains a committee of flood and engineering experts to provide technical oversight and guidance to the project. ABS Consulting (formerly EQE International) and Michael Baker Jr. Corporation are the technical subcontractors developing the flood model.

Flood Model

The **HAZUS** Flood Model is being developed for release at the end of 2002. The model will be capable of assessing riverine and coastal flooding. It will estimate potential damages to all classes of buildings, essential facilities, transportation lifelines, and utility lifelines, and agricultural areas. The model will address debris generation and shelter requirements. Direct losses will be estimated based on physical damage to structures, contents, and building interiors. The effects of flood warning will be taken into account, as will flow velocity effects, casualties, fire following and beneficial effects.

The model will use geographic information system software to map and display flood hazard data, and the results of damage and loss estimates for buildings and infrastructure. It will also allow users to estimate the impacts of flooding to populations.

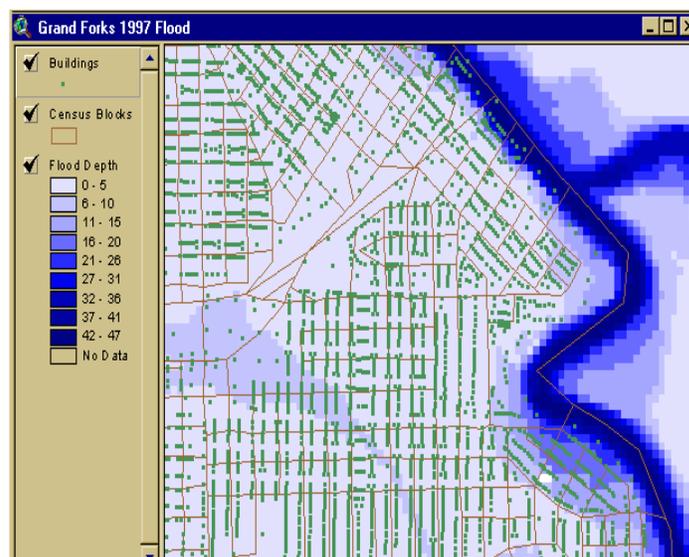
The model will operate at Level 1, utilizing existing national inventory and hazard data sets, and at Level 2 with user-supplied local data for more refined results. Level 3 analysis will allow users to supply their own techniques to analyze special conditions and to improve the national inventory data sets.

Flood Information Tool

A Flood Information Tool (FIT) will be released in 2002 ahead of the Flood Model to allow users to begin collecting and sorting local flood hazard data, as well as other pertinent data, for the Level 2 analysis. Guidance for use of the FIT will be provided in a users manual.

Multihazard InCAST

The **HAZUS** InCAST inventory collection tool will be released in 2002 with expanded capabilities for multihazard data collection. InCAST will assist users with collecting and managing local building data for more refined analyses than are possible with the national level data sets that come with **HAZUS**.



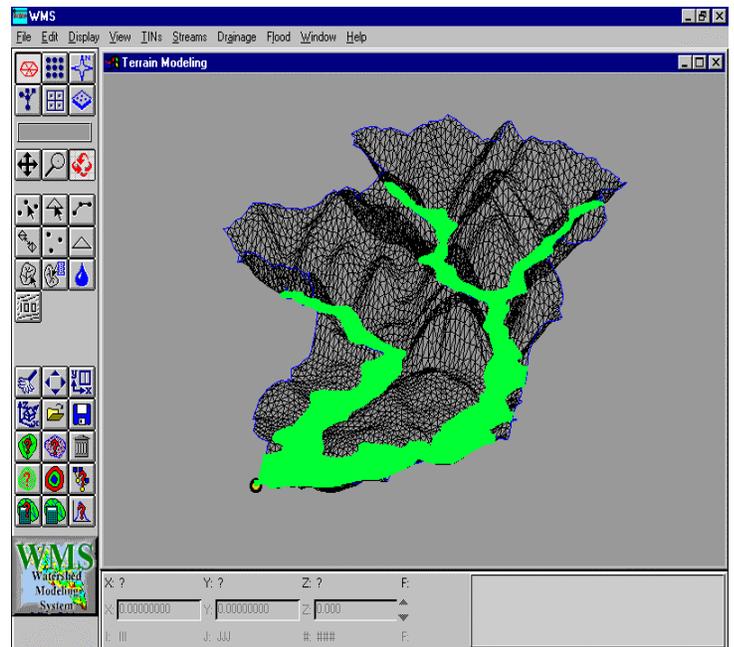
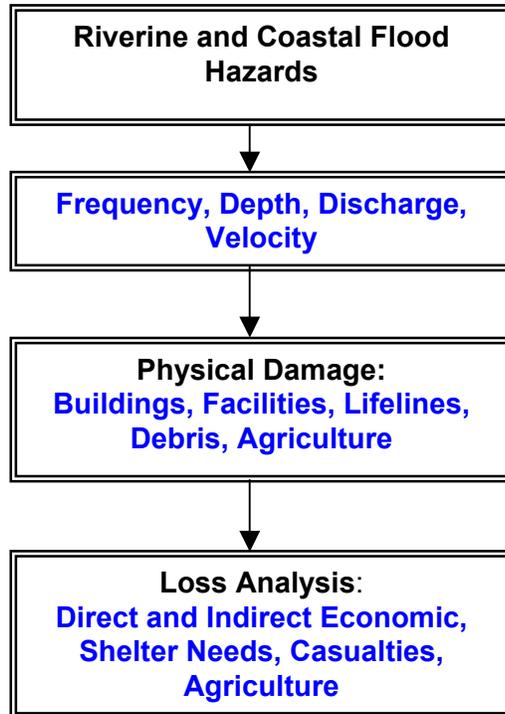
Inventory data overlain on flood depths to assign an inundation depth to each structure

Flood Loss Estimation

Substantial progress has been made since the development of the flood model began in 1998, including a comprehensive review of existing flood loss estimation studies, models, and data. Based on that review, a flood loss estimation methodology concept was developed and tested in six communities with various flooding conditions.

The project is now focusing on completing the methodology, database design and development, and software development and testing.

The figure below shows the various elements of the Flood Model.



Summary

The Flood Model will allow users to

- formulate and evaluate policy and develop general mitigation strategies programs to reduce flood losses;
- estimate required resources for disaster relief;
- improve emergency response planning through scenario analysis;
- plan response and recovery efforts during floods;
- plan for debris removal and assistance following floods;
- estimate displaced households and shelter requirements; and
- provide for multiple levels of analysis with national level data sets as well as user and expert supplied data.

Receive More Information

Visit the **HAZUS** website at www.fema.gov/hazus or contact:

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