

Clarification of National Flood Insurance Program Criteria for Certification of Costal, Hydrologic and Hydraulic Models

In accordance with Title 44 of the Code of Federal Regulations (44 CFR), Subparagraph 65.6(a)(6)(i) of the National Flood Insurance Program (NFIP) regulations, any computer program used to perform hydrologic and hydraulic analyses in support of a map revision must meet the following criteria:

- The model must have been reviewed and accepted by a governmental agency responsible for the implementation of programs for flood control and/or the regulation of flood plain lands.
- For computer programs adopted by non-Federal agencies, certification by a responsible agency official must be provided which states that the program has been reviewed, tested, and accepted by that agency for purposes of design of flood control structures or flood plain land use regulations.

This document provides guidance on the certification of computer programs for performing hydrologic and hydraulic analyses for map revisions and other NFIP purposes.

Hydrologic and hydraulic models developed by Federal agencies responsible for the implementation of flood control programs, floodplain regulation, and/or flood hazard analysis clearly meet the criteria stated in Paragraph 65.6(a)(6)(i). Models developed by non-Federal agencies or private entities must be certified by a governmental agency responsible for the implementation of programs for flood control and/or regulation of floodplain lands. The certifying agency can be a Federal agency or non-Federal agency, such as a state water conservation board or regional flood control district. If the certifying agency is not a Federal agency, the certifying agency must review, test, and accept the model. The requirements for certification, listed below, are more rigorous than simply applying the model for a given project.

- The certifying agency must review the model in sufficient detail to conclude that the model is scientifically correct and technically sound. The model must be based on sound hydrodynamic, hydrologic or hydraulic principles. For this review, the certifying agency may rely on published technical papers by authors other than the model developers that demonstrate the model is technically sound. FEMA may request the certifying agency to provide the list of reviewed technical references.
- The certifying agency must test the model with measured data or compare the model to other similar models on FEMA's list of "Numerical Models Accepted for Use in the NFIP" (http://www.fema.gov/fhm/en_modl.shtm) to determine whether the model can adequately reproduce the measured data or provide results comparable to other models accepted by FEMA. A summary of the testing methods and results should be provided to FEMA.
- The certifying agency must accept the model for its use in administering programs for the design of flood control structures and/or the regulation of floodplain lands.
- With the request for approval of the model submitted to FEMA, the certifying agency must cite and describe specific examples of using the model to demonstrate the applicability of the model to the NFIP for purpose of the design of flood control structures and/or the regulation of floodplain lands.

- If necessary, FEMA may request the certifying agency to provide assistance, such as providing answers to technical questions, relative to the use of the certified model for Flood Insurance Studies and appeals in the NFIP.
- The certification must be provided by a responsible agency official who has the authority to certify the model on behalf of the agency.

If these and the criteria outlined in 44 CFR Subparagraphs 65.6(a)(6)(ii) and (iii) are met, FEMA will accept the model and included it on the list of “Numerical Models Accepted for Use in the NFIP,” which is posted on the FEMA Flood Hazard Mapping website at http://www.fema.gov/fhm/en_modl.shtm. The area of applicability of the model will be consistent with the area of responsibility of the certifying agency (i.e., local, regional or national).