DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

REPLY TO ATTENTION OF

CECW-P
MEMORANDUM FOR Director, National Flood Risk Management Planning Center of Expertise (FRM-PCX)

SUBJECT: Hydrologic Engineering Center Flood Impact Analysis (HEC-FIA) Version 2.2 Model Certification

1. HEC-FIA is a deterministic, event-based, GIS-enabled software package that can be used to analyze the consequences from a flood event by calculating damages to structures and contents, losses to agriculture, and estimates the potential for life loss. HEC-FIA can generate required economic and population data for a study area from readily available data sets and use the data to compute urban and agricultural economic flood damage, area inundated, number of structures inundated, population at risk, and loss of life. These results can be used to inform risk assessments within the dam and levee safety programs as well as the Corps traditional planning process. HEC-FIA can also be used to determine project performance and damages reduced for projects that are currently in place. The life loss compute contained in HEC-FIA includes consideration of the effectiveness of warning systems, community responses to alert, and evacuation of large populations.

2. Adequate technical reviews have been accomplished and the model meets the certification criteria contained in EC 1105-2-412. This certification is based on the decision of the HQUSACE Model Certification Panel which considered the FRM-PCX assessment of Version 2.2 of the model.

3. In order to meet the requirements of risk and uncertainty set forth in ER 1105-2-101, multiple iterations of the model would have to be run for each event to calculate the range of possible impacts, and would then require post processing to define the distribution of economic and life loss results. While this certification pertains to HEC-FIA 2.2, future versions should include uncertainty component for elements such as structures value, population, and crops thus allowing for full compliance with ER 1105-2-101.

4. The FRM-PCX must monitor future developments to keep the model current with the state of the art and coordinate significant modifications that could affect this certification with HQUSACE. The FRM-PCX must ensure that project delivery teams are utilizing the most recent version of the model. This Memorandum will be distributed to the Planning Community of Practice (CoP) and posted on the the Planning CoP internet site. It must also be posted on the FRM-PCX internet site and the internet site of the model proponent (HEC).

EXPIRES: 30 August 2023

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Directorate of Civil Works

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