



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION
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CEMVD-PDP

6 September 2024

MEMORANDUM FOR Director, Hydrologic Engineering Center, (*name redacted*),
CEIWR-HEC-WR

SUBJECT: National Certification of Hydrologic Engineering Center's Ecosystem
Functions Model (HEC-EFM) and HEC-GeoEFM

1. References:

- a. Engineer Circular 1105-2-412: Assuring Quality of Planning Models, 31 March 2011.
 - b. US Army Corps of Engineers. Assuring Quality of Planning Models - Model Certification/Approval Process: Standard Operating Procedures. Feb 2012.
 - c. Memorandum to Directors of National Planning Centers of Expertise – Subject: Modification of the Model Certification Process and Delegation of Model Approval for Use, 04 December 2017.
 - d. Memorandum from the Director of Civil Works to MSC Commanders – Subject: Delegation of Model Certification, 11 May 2018.
 - e. Memorandum to Director of the Ecosystem Restoration Planning Center of Expertise - Subject: Recommend National Certification of Hydrologic Engineering Center's Ecosystem Functions Model (HEC-EFM) and HEC-GeoEFM, 21 August 2024.
2. The Ecosystem Restoration Planning Center of Expertise evaluated the subject model. The model was found to be technically sound, computationally correct, usable for Civil Works planning, and policy compliant.
 3. HEC-EFM and HEC-GeoEFM are certified for national use. Independent technical review is complete and the models meet the criteria contained in References 1.a. and 1.b. There are no unresolved issues stemming from the review.
 4. Appropriate Use and Quality Control. The appropriateness of the model and its variables must be checked by experienced modeler(s) and biologist(s) before each application of the model. The application of the model will also be described in the Review Plan for studies or similar decision-making efforts. The Review Plan will identify District Quality Control and technical review requirements for the model and its application, per current review guidance. Regarding the individuals who apply the model, Districts are entrusted to confirm that the modeler(s) who are using the model have the experience needed to apply the model correctly and interpret the

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model outputs. In addition, if modeler(s) have any uncertainties with the application and/or interpretation of the model, then he/she should engage the ECO-PCX and/or HEC.

5. It is the position of the ECO-PCX that the continuous, rigorous, standardized software development protocol employed by HEC to update and release new versions of HEC-EFM and HEC-GeoEFM meets the intent of the model review processes to determine technical quality, system quality, and usability required by EC 1105-2-412. Accordingly, the ECO-PCX recommends national certification of current and future versions of HEC-EFM and HEC-GeoEFM that follow the HEC software development protocol. Should protocols change or user feedback dictate otherwise, this recommendation would be revisited.

Signed (name redacted)

Chief, MVD Planning and Policy and
Director, Ecosystem Restoration
Planning Center of Expertise

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CEMVD-PDP (names redacted)

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