



DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, U.S. ARMY CORPS OF ENGINEERS
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Post Office Box 36023
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SAN FRANCISCO, CALIFORNIA 94102

CESPD-PDP (FRM-PCX)

27 September 2019

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: HEC-LifeSim, Life Loss Estimation Software, Version 1.01, Model Certification (Life Loss Estimation Only)

1. References:

- a. Engineer Circular (EC) 1105-2-412, Assuring Quality of Planning Models, 31 March 2011
- b. Planning Bulletin (PB) 2013-03, Assuring Quality of Planning Models (EC 1104-2-412), 31 March 2013
- c. Memorandum, CECW-P, 11 May 2018, subject: Delegation of Model Certification
- d. Model Review Report, HEC-LifeSim version 1.01, 26 September 2019
- e. Memorandum for Record, CESPD-SPD (FRM-PCX), 26 September 2019, subject: Hydrologic Engineering Center Life Loss Estimation Tool (HEC-LifeSim) Certification Review Summary

2. The Flood Risk Management Planning Center of Expertise (FRM-PCX), in accordance with references 1.a and 1.c, has completed the certification process for the Hydrologic Engineering Center Life Loss Estimation (HEC-LifeSim) software version 1.01 for national use in planning studies for life loss estimation. The HEC-LifeSim software and supporting documentation are available on the HEC website: <https://www.hec.usace.army.mil/software/hec-lifesim/>.

3. The HEC-LifeSim software is a spatially-distributed dynamic simulation modeling system for estimating potential life loss from floods, as well as direct economic damages. HEC-LifeSim has been used extensively and successfully in the USACE Dam and Levee Safety Programs to inform program priorities and investment decisions. It is considered the state-of-the-art corporate tool for estimating life loss and has undergone significant technical reviews during development and implementation, as well as extensive informal reviews through real-world application of the model. The use of HEC-LifeSim to estimate life loss in USACE planning studies is anticipated to be consistent with its historic use in the Dam and Levee Safety Programs.

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4. The FRM-PCX reviewed the HEC-LifeSim software to assess its technical quality, system quality, and usability in accordance with the certification criteria contained in reference 1.a. Based on the historic use of the software in the Dam and Levee Safety Programs and the FRM-PCX review findings, the HEC-LifeSim software and supporting documentation meets the criteria required for certification.

5. This certification of HEC-LifeSim does not include use of the software to estimate economic damages in USACE planning studies. If it were deemed a worthwhile function to add, additional review would be required to support certification of the software for that purpose. The preferred, certified corporate planning model for estimating economic damages from floods is HEC-Flood Damage Reduction Analysis.

6. Certification of HEC-LifeSim version 1.01 applies to all prior and future application of the software for life loss estimation, subject to appropriate agency technical review (ATR). This certification expires after 7 years (27 September 2026).

7. The point of contact for HEC-LifeSim certification is Mr. Nicholas Applegate, FRM-PCX National Technical Specialist, 916-557-6711.



JOSEPHINE R. AXT, Ph.D.
Director, Flood Risk Management
Planning Center of Expertise

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