



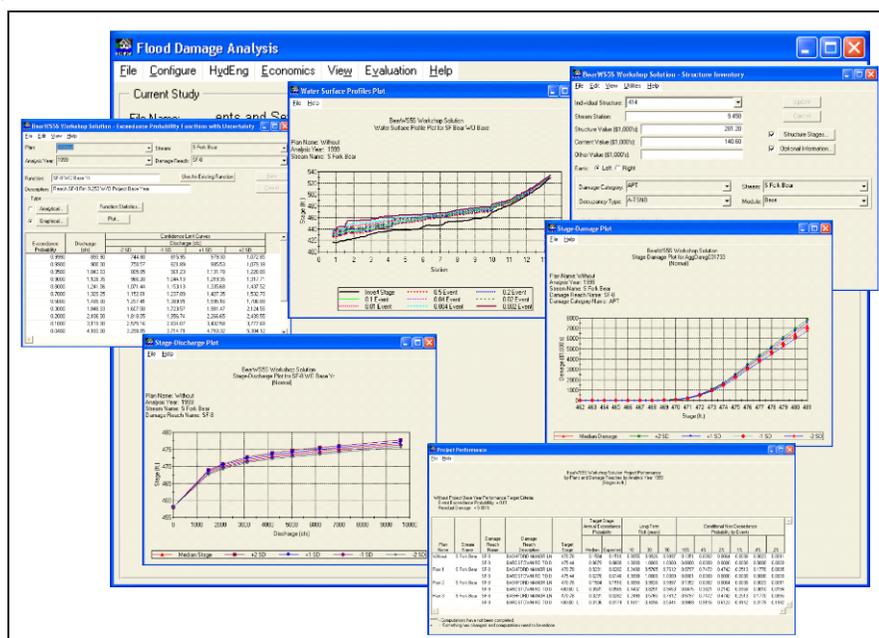
US Army Corps  
of Engineers®

## Flood & Coastal Storm Damage Reduction R&D Program

# HEC-FDA

### Description

The Hydrologic Engineering Center's Flood Damage Analysis (HEC-FDA) computer program is designed to assist Corps of Engineers study team members in using risk analysis methods for flood damage reduction studies as required by the Corps (EM 1110-2-1419 and EM 1110-2-1619). The approach explicitly incorporates descriptions of uncertainty of key parameters and functions into project benefit and performance analyses.



**Status** HEC-FDA 1.2 was released in March of 2000; Version 1.2.4 was released in November 2008 as an update. This version provided several fixes to the previous version which included increasing the number of damage categories to twenty, greater accuracy in the calculation of the median and mean annual exceedance probabilities, for Log Pearson Type III discharge-probability functions confidence limits are now computed for the 25 and 75 percent limits, and other changes which addressed some of the concerns expressed by the National Research Council (NRC). Version 1.2.4 was certified by the Model Certification Headquarters Panel in March 2009.

Version 1.4 of the HEC-FDA software is planned for release in 2010. The most significant change in the new version is the method for calculating uncertainty about the graphical (non-analytical) probability function. It will affect the calculation of expected annual damage and project performance including the determination of certified levee heights. Other changes include additional output to a HEC-DSS data file that allows the user to compare functions between plans (both input and output) and view replicates from the Monte-Carlo simulations. There are numerous changes that correct errors and make the calculations more accurate.

HEC-FDA 2.0 is also under development. The HEC-FDA Version 2.0 package will be a significant advancement over the earlier versions of HEC-FDA. HEC-FDA 2.0 will use the same computational engine as Version 1.4, but it will have a new graphical user interface, that allows the user to more readily view and organize their study data. The new interface will contain geographic information system (GIS) components that will greatly enhance the applicability of HEC-FDA for flood damage reduction studies. It will also contain features for evaluating and comparing non-structural measures within a flood damage reduction study.

**Distribution Source(s)** HEC-FDA 1.2.4 is obtainable the following location:  
<http://www.hec.usace.army.mil/software/hec-fda/downloads.html>

**Available Documentation** Documentation for HEC-FDA currently consists of a User's Manual (Version 1.2.4), release notes, and the certification report. These items are obtainable from the following location: <http://www.hec.usace.army.mil/software/hec-fda/documentation.html>

**Available Training** Training for HEC-FDA is available as part of the "Risk Analysis for Flood Damage Reduction Studies" class offered at HEC. To find out more about this class, and when it is offered, visit the HEC Web site. In addition, training is provided at field locations when requested and funded by Corps' Districts and Divisions.

**Available Support** Support for HEC-FDA is available to all Corps employees. Corps users can either e-mail or call HEC with questions and/or comments.

**Application** HEC-FDA is the primary tool used by Corps Districts to perform plan analysis for flood damage reduction studies.

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