US Army Corps
of Engineers
Hydrologic Engineering Center

HEC-FDA
Flood Damage Reduction Analysis

User's Manual

Version 1.0
January 1998

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Foreword

The Hydrologic Engineering Center Flood Damage Analysis (HEC-FDA) computer program provides state-of-the-art analysis for formulating and evaluating flood damage reduction plans using risk-based analysis methods. It is one of HEC's "Next Generation" (NexGen) of hydrologic engineering and water resources planning software. The NexGen project encompasses: rainfall-runoff analysis (HEC-HMS), river hydraulics (HEC-RAS), reservoir system analysis (HEC-RSS), flood damage analysis (HEC-FDA), and real-time river forecasting for reservoir operations. The NexGen software has WINDOWS style user interfaces and operates on multiple platforms including Windows NT, Windows 95, and UNIX-based platforms.

The HEC-FDA program replaces HEC's previous PC version Flood Damage Analysis package containing programs SID, SIDEDT, FDA2PO and EAD (April 1994). The new HEC-FDA program contains enhanced versions of all their features plus risk-based analysis procedures for formulating and evaluating flood damage reduction measures.

Acknowledgments

Design and development of the Hydrologic Engineering Center Flood Damage Analysis (HEC-FDA) computer program was a team effort. Several members of the Planning Analysis Division played significant roles. Harry Dotson primarily designed and tested the hydrologic engineering portions of the program. Bob Carl wrote and tested the complex code for the economics procedures. Penni Baker was responsible for much of the technical coordination of debugging the code and testing the program as well as being instrumental in the overall design. David Goldman, Research Division, developed the complex algorithms and code for the Monte Carlo simulation, the primary computations required for risk-based analysis. Judy Cheng, Planning Analysis Division, performed the word processing tasks associated with preparation of the final document.

Several people outside of HEC contributed to the program development. David Moser from the Corps' Institute for Water Resources contributed significantly to the economics part of HEC-FDA. Wayne Haythorn, private consultant, designed and coded the database aspects of HEC-FDA and provided general consultations on the overall program design. Richard Rachiele and John DeGeorge of Resources Management Associates, developed the graphical user interface and assisted with debugging and the overall design.

Michael Burnham, Chief, Planning Analysis Division, provided general direction in the program development. Darryl Davis was the HEC Director during the development of HEC-FDA.