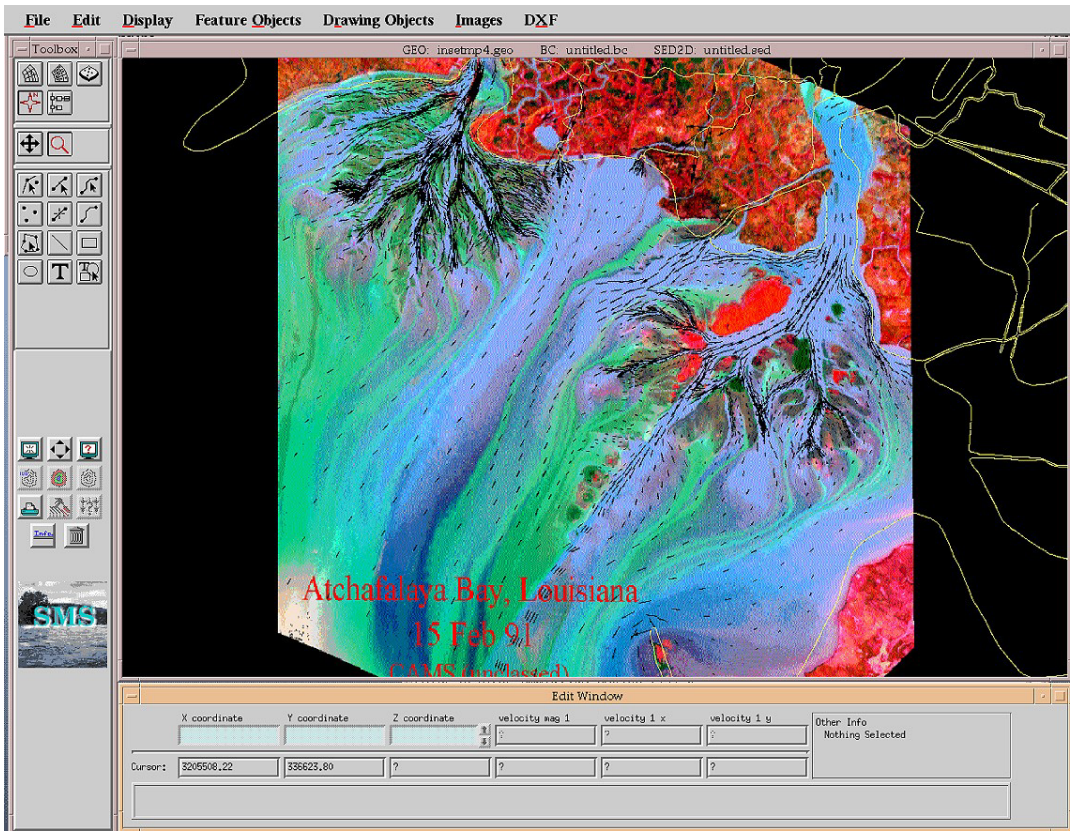
US Army Corps of Engineers®
Engineer Research and Development Center

The Surface-Water Modeling System, Version 8

Technology

The Department of Defense (DoD) Surface-Water Modeling System (SMS) is a comprehensive software package that facilitates the understanding and management of coastal and inland waterways and wetland areas. This graphical modeling environment incorporates a suite of numerical modeling programs that allow civil engineers and others involved in hydrodynamic modeling to visualize these waterways, evaluate design proposals and alternatives, and predict their effectiveness.

SMS provides tools for every phase of a hydraulic simulation including site characterization, model development, post-processing, calibration, and visualization. It provides an integrated graphical environment for performing surface flow, contaminant fate/transport, and project design evaluations. SMS, which was developed by the U.S. Army Corps of Engineers, is the most sophisticated riverine, wetland, coastal, and estuarine modeling environment available today.



Problem

Throughout its history of managing and maintaining navigation, coastal and inland waterways, and wetland areas, the U.S. Army Corps of Engineers has encountered environmental problems due to the unpredictable and complex conditions created by nature. Impact of flooding in terms of lives and property damage continues to escalate as modern

developments encroach on natural floodways and coastal zones and thereby changing general circulation patterns and water quality of the receiving water bodies.

Expected Cost To Implement

SMS is available at no cost to employees of the Department of Defense. Commercial use is available through Environmental Modeling Systems, Inc. SMS runs on Windows platforms.

Benefits/Savings

SMS integrates and simplifies the process of hydraulic and coastal modeling including circulation, wave transformation, and sediment transport by bringing together all of the tools needed to complete a successful study. SMS provides a comprehensive graphical environment for numerical modeling and tools for site characterization, model conceptualization, mesh and grid generation, and graphical visualization. Using SMS can save time and money, as much as 30 percent on overall project design costs.

Status

SMS is available for PC operating systems. It runs on Windows platforms which include Windows 98, NT, 2000, and XP. The current version of SMS provides a complete interface for the codes ADCIRC, STWAVE, CGWAVE, RMA2, RMA4, SED2D, RMA10-WES, FESWMS, HIVEL2D, and other generic models.

ERDC POC

Barbara Donnell, CEERD-HC-HG, e-mail: Barabara.P.Donnell@erdc.usace.army.mil
Phone: 601-634-2730

Distribution Sources

SMS is distributed via Internet download, which includes the full program tutorial files, documentation, and supported model executables. SMS is available at ERDC at no cost to employees of the Department of Defense. They may contact Barbara Parsons, SMS ERDC-CHL, 3909 Halls Ferry Road, Vicksburg, MS 39180. Phone: 601-634-2344; e-mail, SMS@erdc.usace.army.mil. Other interested parties may obtain SMS commercially from Environmental Modeling Systems, Inc. (EMS-I) or from one of their distributors, e-mail: info@ems-i.com

Available Documentation

SMS Program, Tutorial Documentation, and Numerical Model Documentation
http://chl.wes.army.mil/software/sms/docs.htp

SMS Supported Models Documentation
http://chl.wes.army.mil/software/sms/docs.htp

Available Training

ERDC conducts SMS training in conjunction with teaching numerical models. Inquiries can be directed to Barbara Donnell at 601-634-2730, FAX, 601-634-2823 or e-mail: SMS@erdc.usace.army.mil. Users outside the DoD can contact Environmental Modeling Systems, Inc. (EMS-I), which conducts SMS training courses on a continuing basis throughout the year. Inquiries can be directed to info@ems-i.com or call 801-302-1400.

Available Support

DoD users may direct questions to Barbara Parsons, ERDC-CHL, SMS Support, Coastal and Hydraulics Laboratory, Building 3200, U.S. Army Engineer Research and Development Center, Vicksburg, MS 39180. Voice: 601-634-2344; FAX, 601-634-2823; e-mail: SMS@erdc.usace.army.mil. More information is available at the CHL Home page: *http://chl.wes.army.mil/software/sms* All other users may direct questions to Environmental Modeling Systems, Inc. (EMS-I), 1204 W. South Jordan Parkway, Suite B, South Jordan, UT 84095-4600. Phone: 801-302-1400; FAX: 801-302-1160; e-mail: info@ems-i.com More information is available at the EMS Web site at *http://www.ems-i.com*