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COMMUNICATING RISK ASSOCIATED WITH A DYNAMIC COASTLINE

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Local officials, planners, lenders and the general public have had access to FEMA's Flood Insurance Rate Maps (FIRMs) since 1973. These maps, the result of detailed topographic and hydraulic studies, show flood hazard areas and their associated risks. Developments in the fields of automated cartography, desktop mapping, web-mapping and Geographic Information Systems (GIS) technology has allowed for the conversion of paper maps to digital datasets and products. The availability of this digital flood related data along with a wide range of other basemap data presents enormous opportunity to analyze and visualize flood events; past, present and future.

This paper/presentation will explore a range of applications, from professional to novice, that incorporate the currently available digital data for analysis and/or visualization via the Web or desktop computer. The overall goal is to reduce the loss of life and property due to flooding by communicating flood hazard areas and risk to various constituencies. This communication can be carried out by providing estimates of potential flood loss in the form of maps and reports and also by helping users visualize the affects of various hazards. FEMA's HAZUS-MH is a powerful risk assessment software program for analyzing potential losses from floods. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest GIS technology to produce estimates of hazard-related damage before, or after, a disaster occurs.

The HAZUS software is one valuable tool for local agencies and planners, but this work often fails to communicate to a larger public audience and thereby stimulate a deeper understanding of flood hazards and their associated risks. To bridge the gap between scientific understanding presented by HAZUS and public perception of flood hazards, tools have been developed that let individuals explore the hazards and risks as it relates to their location, such as a home or business.

An array of Web-based geovisualization and decision-support tools present integrated and scientifically informed views of flood hazards, risks and even the aftermath of significant flood events like Hurricane Katrina. Examples of these tools can be see in interactive websites like "Exploring the Aftermath of Hurricane Katrina" or the "Oregon Coastal Atlas". Other tools move beyond the existing 2D coastal change exhibits by creatively depicting coastal change between 1956 and 2000 - an interactive 3D animation illustrates the cycle of bluff erosion, showing both the complexity of the processes and the long time periods often unnoticed by the human eye.