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INTEGRATION OF THE FLOOD MODELLING PROCESS WITH A GEOGRAPHIC INFORMATION SYSTEM

Abstract:

The demand for the development of flood prone land, particularly in coastal tourist oriented regions, is increasing significantly. The local and regional authorities responsible for urban and regional planning are under constant pressures to effectively manage these areas.

This paper reports on a pilot study undertaken by WBM Pty Ltd Engineers and the Queensland Department of Lands, which integrates hydrologic and hydraulic engineering software with a geographic information system (GIS). A digital elevation model (DEM) derived using photogrammetric techniques formed the basis for the analysis.

The production of topographic data in a form suitable for use in a computer has traditionally been the most time consuming and therefore costly component of flood modelling for engineers. The use of digital elevation data acquired by photogrammetric techniques and the associated costs compared to traditional engineering methods are discussed. The ability of a GIS to provide improved analysis and display of results by incorporating other data sets and the re-usability of data for other urban planning issues enhances the viability of this method. Possible future links with flood warning systems and cost sharing for data acquisition are other topics discussed.