GIS as a framework for decision support and workflow management systems for watershed management

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Abstract. The use of a Geographic Information System, as a framework to manage water resources modeling information, to facilitate business processes and workflows relying on this information, and to integrate the models using object-oriented data modeling, programming, enterprise GIS database, and portal technologies are explained in the paper. The management of the model information has been accomplished through the Regional Watershed Modeling System (RWMS) which is built on enterprise GIS database and the Web portal technologies. The organizational business processes and workflows are accommodated through the versioning capabilities of the enterprise GIS database. The common base data model with the relevant extensions or modifications is used to integrate hydrologic, hydraulic and water quality models on GIS platform. The integration between the modeling systems is established through relationships established at the information exchange points on the stream network, and the object-oriented utility programs facilitating transfer of time series at these points.

Keywords: Enterprise GIS, HEC-RAS, HEC-HMS, Model Integration, Interface Data Model, Information Exchange, RWMS, Web Portal, Versioning

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