SOCIO-ECONOMIC BENEFITS OF METEOROLOGICAL AND HYDROLOGICAL SERVICES

INVENTORY OF DECISION SUPPORT TOOLS

Urban Drainage Design

ITEM	DESCRIPTION
Sector	Water
Sub-sector	Urban Drainage Design
Tool Name	MUSIC
Tool Description	The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) is used to address inadequate information about the performance of stormwater treatment measures (eg. wetlands, bioretention systems, vegetated swales etc.
Weather, Climate or Water inputs	Climate and water data to model hydrological cycle.
Specific weather, climate, water data required	Rainfall data, Evaporation data, Flow data (modelled)
Spatial resolution	Point data
Temporal resolution	6min to 24 hours
Delivery methodology	Historical data sequences
Frequency of data requirement	Tool contains design data, but additional data can be input as required.
Other	Uses historical and/or stochastically generated data
Detailed Tool Description	MUSIC enables urban catchment managers to (a) determine the likely water quality emanating from specific catchments, (b) predict the performance of specific stormwater treatment measures in protecting receiving water quality, (c) design an integrated stormwater management plan for each catchment, and (d) evaluate the success of specific treatment measures, or the entire catchment plan, against a range of water quality standards.
Spatial resolution	0.01km^2 to over 100.0 km^2
Temporal resolution	6m to 24 hours
Delivery methodology	Plots of percentage reduction in mean annual loads of stormwater pollutants and cumulative probability curves for pollutant concentrations for different design options.
Frequency of provision	Different options can be modelled as required.
Other	
Benefits of tool application	The results of MUSIC simulations can be used to inform the decision making process associated with the economic risk analysis, prioritizing and staging of the stormwater quality management strategy for the catchment.
Possible future advances	Could possible evolve to a real time operational model for the urban stormwater system.
Comments	
URL	

http://www.iemss.org/iemss2002/proceedings/pdf/volume%20uno/358_wong.pdf	
Others	-