



Capacity Building Workshop

DESIGN FLOOD ESTIMATION IN MUNICIPAL AREAS IN SOUTH AFRICA

The requirements for design flood estimation in urban areas are changing largely as a result of the pressure placed on flood prone land by rapidly expanding urban populations. To address the facts that there were no design standards for urban flood estimation and risk assessment in South Africa, along with a decline in expertise in this regard at local municipality levels, it was proposed to extend the recent National Flood Studies Programme (NFSP) to focus on urban requirements and to develop a Best Practice Guideline specific to urban applications. The need for such a guideline was championed by the IMESA EXCO who then agreed a jointly funded project with the Water Research Commission (WRC). The team that undertook the project comprised specialists from the Universities of KwaZulu-Natal, Stellenbosch, and the Witwatersrand, as well as the Central University of Technology, Free State and private practitioners.

The document offers different approaches to flood estimation and differentiates between probabilistic methods, deterministic event-based methods, deterministic continuous simulation modelling and empirical methods. Guidance is given for the selection of the appropriate method for design flood determination. It is recognised that the range of uncertainty is great and advises that multiple methods of calculation be used.

The program for the workshop appears on the next page.

ECSA CPD Service Provider: SP_021/2025

ECSA CPD: 1.0 point

FEE PER DELEGATE:

IMESA Member: R1380 (incl VAT)

Non-Member: R2300 (incl VAT)

To register, visit: <https://www.imesa.org.za/courses/> or email: technical@imesa.org.za

Please note that *registration is essential*. Attendance without a registration number will not be allowed.



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Workshop Program

Time	Topic
08:00 – 08:30	Registration
08:30 – 10:45	Introduction to Risks and Disaster Management in LAs and DFE Road Map
	Legal & Regulatory Requirements
	Flood estimation principles
10:45 – 11:00	Tea
11:00 – 13:05	Data Sources & Catchment Characteristics
	Probabilistic Rainfall & Flood Frequency
	Event based DFE 1
13:05 – 13:50	Lunch
13:50 – 15:20	Event based DFE 2
	Computers & Continuous Simulation
15:20 - 15:35	Tea & evaluation questionnaire
15:35 – 17:00	Uncertainty & Calibration
	Flood Hydraulics
	Closure & final questions