

Project under Hydrology & Cryosphere

Title	PI	Institute	Sanction Order and Date	Duration	Status	Major Equipment
Near-Real-Time Urban Flood Forecasting System	Dr. Subhankar Karmakar	Centre for Environmental Science and Engineering, IIT, Bombay	MoES/PAMC/H&C/36/2013-PC-II 25 September 2014	3 Years	On-going	MIKE FLOOD (including basin module) software Workstation PC

Abstract:

Urban flood modeling and planning is a high priority challenge with the alarming increase in the occurrences of urban flooding in recent periods with huge losses. Challenges are more in coastal metro city like Mumbai; because of the existence of creeks, high intensity of rainfall, negligible infiltration and flood management involving multi-dimensional stakeholders. With increasing urbanization and climate change, the problem associated with urban flooding in Mumbai, is becoming increasingly serious and hence design of suitable real-time (at least near-real-time) flood forecasting system is of high priority challenge. The proposed work aims to meet a research challenge by developing a stand-alone flood forecasting system through collaborations between weather forecast research scientists and hydrologists. The system will use sensors for real-time flood information collection, numerical weather model with urban canopy model for real-time weather forecasting, numerical tidal model for predicting tidal flood, integrated flash & tidal flood model for a near-real-time flood inundation map generation. The case study selected for this proposed work is the Mithi river catchment of Mumbai, which is one of the worst flood affected areas in India due to both tidal effect and high intensity rainfall and almost zero infiltration because of high impervious surface area.