都市地區極端暴雨淹水境況模擬之研究：總計畫暨子計畫：極端暴雨情境分析與降雨：逕流模擬之研究(I)

Owing to its special geographical, territorial, and climatical endowments, plus recent global warming and climate change effects, Taiwan is prone to suffer frequent climate abnormality and larger-than-normal extreme storm events. Should these extreme events happen in Taipei Municipal Area, drainage facilities designed to cover normal events might be dysfunctional, which in turn cause serious social and economic problems as Hurricane Katrina did in New Orleans. Enhancing non-engineering warning methods and emergency response capabilities for extreme storm events have been a key issue in disaster preventing technology development. Mainly targeted in Taipei Municipal Area, this project simulates various compound inundations situations. Compound inundation are caused by both levy overflow in the upstream areas, such as in Tamsui River, Keelong River, and JinMai River bottleneck sectors, and draining failures in the downstream areas when it suffers short-duration, high intensity storm attacks. This integrated research project intends to accomplish extreme storm event simulation models, extreme storm events mathematical models by employing rainfall-runoff, storm discharge computation, and overland flow and drainage computation model, compound disaster simulation when Taipei Municipal Areas is suffering extreme events, and finally the display system for extreme storm events for disaster preventing and emergency response purposes.