

Thunyaporn Yaibunditt 2014: The Study of Flood Simulation and Flood Management of Middle Mun River Basin. Master of Engineering (Water Resources Engineering), Major Field: Water Resources Engineering, Department of Water Resources Engineering. Thesis Advisor: Miss Wandee Thaisiam, Ph.D. 136 pages.

Flood problems usually occur in the Middle Mun River Basin every year, especially in the city area along the Mun river. For example, Amphoe Satuk in Burerum Province Amphoe Thatum in Surin Province and Amphoe Rasisalai in Srisaket Province are frequently affected by overbank flood annually. In this work, we investigate flood mitigation methods in order to reduce flood damage in the Middle Mun River Basin by using the mathematical model (Mike 11). The region of interest covers 28,497 km² of the Middle Mun River Basin. The hydrologic and hydrodynamic behaviors of the area are simulated. The upstream boundary of the simulated model starts from M.104 (Amphoe Kumeang in Burirum Province) and ends at M.5 (Amphoe Rasisalai in Srisaket Province). Two flood protection alternatives, diversion channel and flood dike, are recommended for lessening flood problems in two major cities, Amphoe Satuk in Burerum Province and Amphoe Thatum in Surin Province, along the Mun river. The simulated results of 5-year return period flood provide that the flood diversion channel in Amphoe Satuk, Burerum Province can reduce 34-centimeter of peak flood level and 19-day of overbank flood period. In Amphoe Thatum Surin Province, the flood diversion channel can reduce 20-centimeter of peak flood level and 12-day of overbank flood period. On the other hand, the simulated results of flood dike protection alternative illustrate that the level of flood dike is set to +133.00 m.MSL in Amphoe Satuk, Burerum Province. For Amphoe Thatum in Surin Province, the level of flood dike is set to +127.00 m.MSL.

Student's signature

Thesis Advisor's signature