

Mathematical Modelling of Wastewater Collection System in Cha-Am Municipality Using PCSWMM

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Abstract : This study aimed at modelling the wastewater collection system in Cha-Am Municipality using PCSWMM to investigate the quantity of combined sewage delivered to the aeration lagoon treatment system (ALTS). Cha-Am is a small sea resort town in Petchaburi Province located about 175 km southwest of Bangkok and is facing increasing development so it is important to understand current system performance and plan for future build out. PCSWMM was calibrated using observed ALTS inflow data for the period 15 June to 20 July 2015. The model was validated using observed ALTS inflow data for the periods 19 July to 20 October 2015 and 1 October to 31 December 2015, respectively. The 1:1 lines between modeled and observed peak flow and event volume for the calibration events qualitatively showed good correspondence. The r^2 values between modeled and observed peak flow (99%) and event volume (89%) also were strong.

Keywords : combined sewer system, mathematical modelling, PCSWMM, wastewater collection system

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