The objective of hydraulic performance study of Mae Nam Noi by MIKE 11 mathematical model is to test for appropriate adjustment of the in-line vertical gates along the river in order to regulate the required water diverting into the main canal of each irrigation project. The model calibration used daily water level and flow data of year 2005 during 1 January to 31 December. The analysis for gate adjustment was tested for 6-weeks irrigation period during the dry season. Various scenarios were tested in this study. The simulation results could be as a guide for regulating the in-line vertical gates of each irrigation project instead of current operation without direction.

The results of hydraulic performance study found the values of flow coefficient (C) through Borommathat, Bangrachan, Yangmanee, and Pakhai regulating gates were 0.90, 0.55, 0.65, and 0.63, respectively. The values of roughness coefficient (M) of downstream canal bed slope of Borommathat, Bangrachan, Yangmanee, and Pakhai were 25, 27, 18, and 25, respectively. As the simulation results by 6 studied cases for different water demand of each week, the relationships of appropriate gate opening with the upstream and downstream water levels as well as with flows through the main canals and through regulating gate of each irrigation project were appropriately obtained.

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Student's signature	Thesis Advisor's signature	