

UNJUK KERJA ALTERNATIF PENGENDALIAN BANJIR BATANG ANAI DAN BATANG KANDIS SUMATERA BARAT

Corri Eriza
18943/PS/MPBA/06

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 29 Februari 2008

Pembimbing Utama
Dr. Ir. Istiarto, M.Eng

Pembimbing Pendamping
Ir. Joko Sujono, M.Eng., Ph.D

Anggota Dewan Penguji Lain
Prof. Dr. Ir. Djoko Legono

ABSTRACT

Nearly every single year, flood is happening due to the fact of the floatation of Batang Anai and Batang Kandis. In the year of 2001 local authority made a plan to control the flood in both rivers, which was implemented in Anai -Kandis River Improvement with the alternatives of controlling flood by handling the river courses, such as improving and widening the river channel, and decreasing the peak of discharges by making dams or retarding basin.

Performance of flood control structures are made of three alternatives based on the information gathered. First alternatives suggest for repairing the river course and widening the river channel (with levee) in both rivers and floodway in Batang Kandis. Second alternative is similar with the first alternative except negation the levee in Batang Anai and replenishment of floodgate in Batang Kandis. Third alternative for Batang Anai is identical to the second alternative and also widening the river channel throughout Batang Kandis. The analysis includes the analysis of sufficiency of channel to drain the design discharge and sediment transport analysis for the alternative with the best performance, which both could be doing with auxiliaries of Software HEC-RAS version 4.0 betas .

As the result , controlling river by repairing the river course and widening the river channel throughout Batang Anai and Batang Kandis (3rd alternative) gives the best performance comparing to the others alternatives, due to the fact that it could be able to analyze the design discharge of Q50 (1417 m³ /s) in Batang Anai and Q25 (293 m³/s) in Batang Kandis. The simulation of transport sediment in Batang Anai with the 3rd alternatives implementation shows the biggest trend of erosion and deposition in a row, located next to National bridge downstream (RS 108) and precisely in downstream of RS 108 i.e., RS 107.

Key words : Flood control structures, Sufficiency of channel , Erosion and deposition