KAJIAN SISTEM MITIGASI BENCANA BANJIR
SUNGAI DELI DAN PERCUT
UNTUK PENGENDALIAN BANJIR KOTA MEDAN

Sinar Irwansyah
9827/PS/MPBA/02

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ABSTRACT

Flood disaster represents the common problems that happened in Indonesian region, especially in densely populated area as Medan City. Therefore, it is required to pay attention to the causing floods so that it can be anticipated to minimize the losses. Medan flood controls have been focusing the in-stream only and have not touched the watershed management (off-stream) yet. The increasing of resident requires the wider farmland. The effect of this land use change will modify the watershed characteristics.

One of efforts to control the floods is floodway. It is planning as 3.820 m to connect the Deli River and the Percut River. This plan is expecting to overcome the floods from Deli River. In this research, the study of floods mitigation is conducted by the simulation. First simulation is by the land use change, second simulation is by the infiltration well, third simulation is by the dam, fourth simulation is by joining the land use change and infiltration well and fifth simulation is by joining land use change, infiltration well, and dam. By conducting the simulation, it can be found the change of peak discharge and compared to the condition of before and after development of floodways.

Reductions of the water level are simulated by the HEC-RAS mathematical model. The study shows that the Deli-Percut Floodway is reducing the water level at Deli River 11.24% until 11.85% relative to existing condition flood. While bythe land use management the water level of floods reduces 11.39% until 13.32% relative to existing condition in various simulations.

Keyword : Floods, mitigation, floodway and simulation of management watershed.