

KAJIAN SISTEM MITIGASI BENCANA BANJIR KALI BEKASI

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ABSTRACT

Flood disaster that often occurs in Bekasi is caused by low flowing capacity of Bekasi River that is not able to channel flood water, especially in rainy season. Flood occurring in February 2002 lead to some settlement area along Bekasi River flooded with over 2 meters depth and give serious impact in form of death, and material and non material loss.

This research aimed to investigate maximum elevation of water surface occurring in Bekasi river due to flood in 25 year and 50 year periodic occurrences and identify flooded areas along river side and formulated alternative plans for coping with the problem in some scenarios simulated with HEC-RAS version 3.1 application. With the simulation, decrease in water surface in various scenarios can be known. Scenario formulated consists of (1) existing condition by considering Bekasi dam as fixed dam, (2) optimization of dam gate operation, (3) combination of optimal gate operation and improvement of river longitudinal section/normalization, and (4) change in dam construction.

Result of scenario 1 simulation indicated locations tending to be disturbed by flood including Perumahan Pekayon II, Perumahan Delta Pekayon, Perumahan Kemang Pramata and Wilayah Rawa Panjang with maximum flood depth in RS66, RS51, RS45 and RS39 are 0.48 m, 1.20 m, 1.48 m and 1.22 m, respectively.

Comparison of simulation results of some scenarios for coping with flood as follow. Scenario 2 resulted in decrease in flood water surface over existing condition of 0.26 m to 0.94 m in Q25 designed flow rate and 0.24 m to 0.84 m in Q50 designed flow rate. Scenario 3 indicated very significant decrease in flood water surface so the area along the river side are free from flood either for Q25 or Q50 design, with water surface decrease of 0,95 m to 1.06 m in Q25 designed flow rate and 0.75 m to 1.06 m in Q50. Scenario 4 showed decrease in flood water surface over existing condition of 0.26 m to 0.93 m in Q25 designed flow rate and 0.213 m to 0.8 m in Q50 designed flow rate with consequence of disturbed water supply to Jakarta.

Keywords: *flood, gate control, coping with.*