

# **PENGELOLAAN BANJIR KALI BERINGIN**

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Telah dipertahankan di depan Dewan Penguji  
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## **ABSTRACT**

Beringin River with drainage basin area of 31.2 Km<sup>2</sup> is located in district Ngalian, Tugu and Mijen, Semarang town. The stream flow of river pass through from Ungaran mountain in South to North and entering to Java sea, have been change of land use in upstream. Its have been change raised the design flood and sediment high enough, so that the design flood cannot accommodated and more of the river capacities. Finally , river of overflow and the flood generating loss of society.

This research is conducted to analyse the influence of land use changes to flood hydrograph. The analysis all based on land use the year 2003 and plan detail of the planology of year town 2010. Evaluate the capacities accommodated this condition of existing and design by including the same of return period but condition of different land use is year 2003 and 2010. Comparing both of condition hence will be conducted the structural and non structural planning.

The results show that change peak of discharge is 53,6% and volume of flow is 52,88% for return period of 2 years. In case of 5 years return period, change peak discharge is 41,53% and volume of flow is 47% while for return period of 10 years also raised peak of discharges is 36,51% and volume flow is 44,26% in year of range 2003-2010. This changes is caused by changes of land function which of forest area, field and rice field become the industrial area/factory and also settlement. One of the recommended efforts to protect overflow is constructing levee along 5,2 km with height 1,33 m on downstream. Simulation results show that limiting maximum development 25% for factory/industrial and settlement decrease the peak of discharge is 28,14% and volume of flow for return period of 2 years is 28,79%. In order to reduce flood risk in the future, land use implementation in the catchment area of Beringin river need to be restructured.

**Keyword** : Flood disaster, Changes of Land Use and Countermeasures.