

KAJIAN ALTERNATIF PENGENDALIAN BANJIR SUNGAI JEROHAN KABUPATEN NGAWI

Pipit Dwi Herlina
09/293906/PTK/6371

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 3 Mei 2011

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ABSTRACT

Jerohan River is one of rivers in East Java that flow across Madiun District and end at Madiun River, village of Banget. The problem is inundation occurred every rainy season in areas around the Jerohan River, but causes of flooding are theoretically have never been known exactly. The research aimed to study the factor causes flooding (flooding on December 26, 2007) and flood control alternatives.

Analysis of the causes of floods include the highest rainfall influence factor or high outlier, bank full capacity influence and landuse change. Simulation of flood control alternatives in Jerohan River is done by performing hydrologic and hydraulic methods approach using the application program HEC-RAS 4. Simulation performed on the current river conditions and flood control alternatives to reduce overflow.

The result shows that rainfall on December 25, 2007 raising discharge of 9.2% of normal rainfall discharge. Limited bankfull capacity causes overflow at 44% of river station, land use changes to provide increased contributions by 20% discharge, so that necessary to establish flood control alternatives such as normalization, retention pond and river embankment. Normalization reduce water level significantly in Jerohan River, levees does not affect the water level and retention pond performance is more dominant in the downstream. Combination of normalization and retention pond show the best performance to reduce overflow because reducing water level at all segment of rivers and reducing water level of the average up to 29 % about 1.7 m compared to before treatment.

Keywords : *flooding, normalization, retention pond.*