

ABSTRACT

Flooding is a natural disaster that often occurs in many cities in Indonesian. When the flood disaster occurred, many people lost property, even causing casualties. Especially floods can occur in the lowlands. Kali Yasa River located in Cilacap district which stretched from Kesugihan district to South Cilacap subdistrict which has a length of ± 10 km. The condition of the river is influenced by tide that occur in the lower reaches of the rivers and the upper reaches of water entering the Kali Yasa River through the Muara Kali Sabuk. Because of the topographic condition of rivers that are located in the lower zone area or flat area and towards the estuary of the beach and in the rainy season flood occurs in which the water overflows into the area of rice fields and settlements. This research aims to determine the high of the floods and the prevention of Kali Yasa rivers by using HEC-RAS.

This research will be started by collecting secondary data which then will be followed by Hydrology calculation, then Flood Analysis using HEC-RAS V5.0.3 software. The results of this research are the flood water level at the time of 100 and the height of the embankment plan on Kali Yasa rivers.

The Result and calculation of rain distribution pattern for Kali Yasa River Basin of Gumbel rainfall pattern, the method used in Kali Yasa is Snyder method with value $Q1 = 33,92 \text{ m}^3 / \text{s}$ approaching measurement of $27,8 \text{ m}^3 / \text{s}$ and calculation result, $Q25 = 69,52 \text{ m}^3 / \text{s}$, $Q50 = 74,82 \text{ m}^3 / \text{s}$, $Q100 = 80,08 \text{ m}^3 / \text{s}$. Kali Yasa experience peak Flood during $Q100$ at 4th hour Meet Highest tides in the 4th hour and Yasa seen that time can not hold water such that it make 75% Kali Yasa flooded. Alternatives exist for flood control, one way to cope with floods Kali Yasa is to create a flood dike on each riverbank were flooded..

Keywords : flood, HEC-RAS, Tidal River