

ABSTRACT

Enhancement Reservoir Capacity of Universitas Pembangunan Jaya to Reduce Flood Threats in Ciputat District

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Flood is an event that occurs almost every rainy season with quite an impact on mobility and has the potential to damage the environment. Ciputat District, which is located in the middle of South Tangerang City, has a land area of 1,838 hectares, with an altitude of 44 meters above sea level. This study aims to evaluate the existing reservoir capacity as an effort to reduce the formation of flood area downstream of the Universitas Pembangunan Jaya reservoir. The location of the reservoir which is located downstream of the Serua River, there is a situation after the heavy rain on Jalan Bakti Karya experienced a flood that could disrupt community activities. The analytical method used in this study is the design flood hydrograph discharge data using the HSS Nakayasu method and then entered into the unsteady flow analysis data using the 1D-2D HEC-RAS coupling technique. The output of this research is to produce an adequate reservoir redesign from the existing capacity to the capacity to reduce the base elevation of 1 meter with a difference in flood depth of 0.5 meters and the capacity to reduce the base elevation to 2 meters with a difference in flood depth of 1.09 meters using the HEC-RAS software as well as knowing the maximum capacity that can be accommodated against the planned flood discharge of the HSS Nakayasu method on return periods of 2 years, 5 years, 10 years, 25 years, and 50 years.

Keywords : *Flood, Reservoir, Serua River, Unsteady Flow Analysis, HEC-RAS software.*

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