

## ABSTRACT

### ***Flood Control Analysis Using Retention Pond and Flood Pump (Case Study on Pondok Aren-Serpong Toll Road KM. 8+600)***

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*Floods that happened in urban areas can cause community activities to be disrupted. One of the examples is a flood that happened in urban areas are flooded on Pondok Aren-Serpong Toll Road KM. 8+600 in South Tangerang City. The flood happened because Cibenda River overflowed and couldn't accommodate the water discharge that fell when it's pouring. The solution that can be done is to build a retention pond and flood pump. From the results of processing rainfall data, rainfall intensity analysis can be done by using the mononobe equation. The planned flood discharge obtained in this analysis is using a 20 year return period (Q20) with a value of 80.409 m<sup>3</sup>/second. After that, a simulation of the existing drainage was carried out using the EPA SWMM 5.1 application to determine whether the water channel was able to accommodate the flow of water. The drainage channel discharge is 1,34 m<sup>3</sup>/second. From the results of the planning of the retention pond, the volume needed is 109,764 m<sup>3</sup> and an area of 36,588 m<sup>2</sup>. The flood pump is set on automatically when the water level in Cibenda River elevation reached 3 m and will automatically turn off when the elevation reached 2.5 m.*

**Keywords:** *EPA SWMM 5.1, Flood, Flood Pump, Hydrological Analysis, Retention Pond, Toll Road*

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