

ABSTRACT

Miftahul Huda Islamic Boarding School is one of the Islamic boarding schools in Tasikmalaya Regency, West Java. The conversion of land to support accelerated development in Islamic boarding school areas causes flooding during the rainy season every year. The flood on July 6 2023 was one of the worst floods in the area. This research aims to determine the magnitude of the flood discharge along with the intensity of the rain that causes the flood. The first thing to do was a morphometric analysis of the water catchment area (DTA) using a geographic information system (GIS) to determine the characteristics and parameters of the catchment area needed for flood discharge analysis designed by the Nakayasu synthetic unit hydrograph (HSS) method. From the field survey data was obtained on the hydrological characteristics of the flood inundation area and then hydraulic modeling analysis was carried out using the help of the HEC-RAS program. The results of the HEC-RAS flood inundation area modeling carried out a discharge search simulation method trial and error resulting in flood discharge. The analysis results show that the flood discharge for the 2 year return period is 44,675 m³/s equal to the flood discharge occurring with the help of the HEC-RAS program of 45 m³/s. The intensity of rain that causes flooding is the intensity of rain for a 2 year return period of 110,453 mm.

Keyword : Catchment Area, Flood, Flood Discharge, HEC-RAS 6.4.1, Rain Intensity.