

ABSTRACT

Changes in Flood Characteristics Due to the Countermeasures for Pesanggrahan River in Cipulir Area (Case Study of Ciledug Raya Street, Cipulir)

Teuku Haekel Azrian Asrul ¹⁾, Tri Nugraha Adikesuma ²⁾, Eddy Yusuf ²⁾

¹⁾ Mahasiswa Program Studi Teknik Sipil, Universitas Pembangunan Jaya

²⁾ Dosen Program Studi Teknik Sipil, Universitas Pembangunan Jaya

One of the sites of Cipulir Village that frequently floods in Jakarta as a result of river overflows is Ciledug Raya Street. Responding to the situation is vital because the flooding undoubtedly interferes with local inhabitants' daily routines. Two mitigation strategies 1 m and 1.5 m mitigation are used in this study's mitigation. The Nakayasu Synthetic Unit Hydrograph (HSS) flood discharge analysis method is used in this study, and the flow analysis data is entered using the HEC-RAS linked method 1D-2D application. The findings of the study demonstrate that the Pesanggrahan River flood control has changed the flood area, depth, and shape, among other flood characteristics. The ratios of the changes in flood area between the conditions with and without embankments of 1 m and 1.5 m during the course of a 10-year return period are 0.87 and 0.80, respectively. The comparison of the change in flood area in the condition without an embankment with the addition of 1 m and 1.5 m embankments is 0.70 and 0.53 over the 25-year return period. The ratios of the changes in flood area that occurred over the course of the 50-year return period in the presence and absence of embankments, respectively, were 0.61 and 0.54.

Keywords: *Flood, Mitigation, Pesanggrahan River, HEC-RAS Application, Changes in Flood Characteristics.*

Libraries : 31

Publication Years : 2002-2022