

# **KAJIAN HIDROLOGI DAN HIDRAULIKA BANJIR SUNGAI CODE KOTA YOGYAKARTA TANGGAL 23 FEBRUARI 2005**

**Cipto Widiyanto**  
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Telah dipertahankan di depan Dewan Penguji  
Pada tanggal 2007

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## **ABSTRACT**

Flood problems will arise if channel was unable to flow a quantity of discharge so that cause overtopping and bring about many problems for the inhabitants along the river. When the rainy season on 23 rd February 2005, was happened a big flood in Code River. Flood with the same quantity has happened before, in 1984. The impact of flood in 2005 less than the impact of flood in 1984 because after year 1984 has been done river improvement like build a dike and bank protection at some river path. Due to this reason, it is important to study quantity of flood which happened on 23 rd February 2005 and its bankfull discharge.

Hydrology study was done to know return period of flood on 23 rd February 2005 using frequency analysis. Hydraulics study was done to know quantity of flood discharge along the river which causing flood and bankfull discharge of Code River using HEC-RAS software Version 3.1.2.

Simulation result indicates that maximum discharge at upstream of Code river (Pogung river station) is  $130 \text{ m}^3/\text{s}$  ( Q85) and at downstream of river (Karangkajen bridge) is  $119,9 \text{ m}^3/\text{s}$  ( Q70). Compared with bankfull discharge calculation as  $120 \text{ m}^3/\text{s}$ , showing that channel can flow that quantity of flood discharge. Based on simulation result with input hydrograph on 23 rd Februari 2005, it can be found that Kampong Surokarsan and Prawirodirjan around Mergangsan Dam, area from Jagalan Bridge to Tungkak Bridge and area around Karangkajen Bridge are flood area. Flood management efforts are maintenance of hydraulic structure, governing of building in river side, governing arranges land use by paying attention to level of water infiltration and awareness problem of public around river in case of throwing away raffle.

**Keyword :** *Flood, bankfull discharge, flood management.*