

**DESIGN OF FLOOD DISASTER RISK CONTROL IN BUNDER
VILLAGE, BUNDER VILLAGE, PATUK SUB-DISTRICT,
GUNUNGKIDUL REGENCY, DAERAH ISTIMEWA
YOGYAKARTA PROVINCE**

By:
Maulidina Inayah
114150001

ABSTRACT

Bunder Village, Bunder Village, Patuk Subdistrict, Gunungkidul Regency, Yogyakarta Special Region Province is included in the area traverse by the Oyo River. The condition of the area which is on the lower plains than other areas, causing Bunder village often experiences flooding when the overflow happen of Oyo River, especially during the rainy season. However, the occurrence of a major flood on 28 November 2017 with a flood height reaching 4 meters was the first to occur in Bunder Village. The impact of Cempaka Tropical Cyclone causes extreme weather changes that occur simultaneously with changes in rainfall at that time, causing damage and also great losses on residential settlements, agriculture and other infrastructure facilities. This research intend to examine the characteristics of flood affected areas to conduct an analysis of the risk level that can be determined in the direction of flood disaster mitigation.

The method used in data collection is the survei method and field mapping. The results of the data obtained from the survei activities and then analyzed by several other methods. Hydrological analysis uses the Gumbel Method for calculating rain plans and the Mononobe Method for calculating Rain Intensity. Then, the analysis related to discharge is done using the Nakayasu Method to find out the discharge plan.

The results of the research show the study area is at a low topography in the form of floodplains and alluvial plains with loamy soil texture, that is the capacity of inundation water is quite good and is composed of carbonatan sandstone units and clastic limestone and geological structures in the form of faults affecting the pattern river flow. The level of disaster risk is at low classification. The result of the calculation of the plan discharge is 1957,261 m³/sec which is then used to determine the volume of retention ponds and the surjan system as a management direction in aspects of the technological approach.

Keywords: Cempaka Tropical Cyclone, Flood, Hydrological Analysis, Nakayasu Methods, Retention Pools, Surjan System.