FLOOD INVESTIGATION ON LOWLANDS OF ALA RIVER UPSTREAM WATERSHED

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ABSTRACT

The residential areas in the lowlands of Ala river upstream watershed are seasonally inundated with flood waters. Estimating the magnitude of peak discharge and the geometry of flood flow is important for safety of life and property. The peak discharges were simulated for the outlet of the upstream watershed using 25 and 100 years return period storm. Hydrologic Engineering Center-Hydrologic Modeling System was used in simulating 25 and 100-years return period storms. The flood geometry would be simulated with Hydrological Engineer Center – River Analysis System. The runoff curve number parameter was extracted using land use description obtained from land use and land cover classification of the watershed. The classification was performed with supervised classification method. Peak discharge for 25 and 100-years return period storm were 142.3 m^3/s and 229.8 m^3/s respectively Maximum flood height for 25 and 100 years return period flood was simulated as 4.46 m and 5.02 m respectively. The maximum offset from stream bank for 25 and 100 years return period flood was simulated as 31.07 m and 37.25 m respectively.

Keywords: Watershed, flood, peak discharge, return period, and land use and land cover.