

Storm Water Analysis and Management Using GIS

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SUMMARY

Urbanization and improved area of imperviousness are the major contributors that makes the existing drainage network insufficient while inadequate maintenance and haphazardly throwing rubbish on the road and drain are other issues. The population density of the study area is increasing day to day which is advocated by recent upgradation of the city from sub-metropolitan city to metropolitan city. The pervious area of the study catchment is decreasing rapidly with the increase in population which ultimately producing greater surface runoff and demanding well designed side drains. Frequent flooding over the road surface during small rain events are the major issue to be considered for the safety and aesthetics point of view of the area.

The major objective of the study is to analyze existing drainage network and assess functional capability of the same using GIS and SWMM. The total area of the catchment under study is 30.799 hectare and the topography is extended from 28°13'25" N, 83°59'6" E to 28°14'4" N, 83°59'31" E covering major drainage network of the Palikhe Chowk area.

The catchment area is delineated using ArcMap taking consideration of DEM map, field data. The LULC map of the area under study is primed with the help of remote sensing data and ArcGIS. Hydraulic analysis of the area obtained was performed with recorded data using SWMM tools.