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SEDIMENT TRANSPORT THROUGH STORMWATER SYSTEMS - GAZA CITY AS CASE STUDY

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Summary. In order to design a stormwater system in Semi Arid Region there are many factors included in the design methods such as drainage area, rainfall intensity and a coefficient which reflects the combined effects of surface storage, infiltration and evaporation. In addition of previous factors the sediments characteristics are one of the most important factors that affect the hydraulic flow in the stormwater system. The sediment transport problem is not as simple as it appears in previous codes of minimum self cleansing velocity, because complete analysis contains a lot of hydraulic parameters.

This study is mainly concerned with sediment transport through pipes, especially storm system. Furthermore this paper studies the effect of sediment concentration on hydraulic flow through stormwater system for uniform flow.

Hydrodynamic forces that exist through stormwater systems have been derived using theoretical model. Experimental works have been done using experiment rig; constructed at the hydraulic laboratory. The experiment has been designed to perform a uniform flow and high velocity flow. The analysis of the results for high-speed velocity flow through storm system gave the design formula with several parameters.

According to proposed equation many relationships have been founded between grain diameter, velocity, diameter, concentration and hydraulic gradient.