

ABSTRACT

PERFORMANCE ANALYSIS OF DRAINAGE SYSTEM IN PAMULANG PERMAI 2 HOUSING ESTATE

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Flooding is a problem that often occurs in urban areas, including residential areas, which can be caused by water that cannot be channeled properly by the drainage system. This research aims to analyze the performance of the drainage system in Pamulang Permai 2 Housing and evaluate efforts to improve the performance of the drainage system to overcome inundation that occurs. Analysis of the performance of the drainage system carried out using EPA SWMM 5.2 modeling resulted in an assessment of the performance of the Pamulang Permai 2 Housing drainage system of 90.8%, although the performance of the drainage system was very good, but problems with the water drainage channel that connected the tertiary channel with the secondary channel that backflow was occurring. or back flow which causes obstruction of the drainage flow in the drainage system resulting in a peak puddle discharge of $0.7\text{m}^3/\text{sec}$. Based on these problems, it is planned to create a retention pond with a volume of 650m^3 of water with the help of a pump with a capacity of $0.5\text{m}^3/\text{sec}$ as a form of effort to overcome puddles and become a disposal container. temporary water during effective rain that occurs. This form of effort to deal with inundation is considered quite effective in overcoming the problem of inundation and is able to increase the performance of the drainage system to 100%.

Keywords: *SWMM 5.2, Pamulang Permai 2 Residential Drainage System, Inundation, Mitigation*

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