## *ABSTRACT*

# ANALYSIS AND EVALUATION OF THE CAPACITY OF THE DRAINAGE SYSTEM TO OVERCOME FLOODING IN SARUA MAKMUR HOUSING

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*Floods are natural disasters that often occur in the rainy season, both in urban and rural areas. One of the flood disasters that occurred was in Sarua Makmur Housing with a height of up to 60 cm. The flood is caused by overflow of water from the primary channel. Related to this, the solution that can be done in overcoming the flood is by improving the existing drainage system in Sarua Makmur Housing. In its stages, hydrological analysis was found to find the maximum rainfall magnitude of the planned year of 146,42 mm with a 5-year anniversary to find a hyeptograph diagram as rainfall data in the SWMM 5.0 application. In the SWMM 5.0 model, there are channels whose flow discharge exceeds the channel capacity including channels C10, C15, C16, C18, C20, and C25. Efforts were made to overcome this by repairing the canal with the use of U-ditch, then re-simulating it with SWMM 5.0 so that there were no more overflows which resulted in flooding of the Sarua Makmur Housing Complex.*

***Keywords**: Rainfall, Runoff, SWMM 5.0 Simulation, Residential Drainage System Sarua Makmur*

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