

ABSTRAK

Masalah tahunan yang sering terjadi di Kota Kendari adalah banjir. Salah satu faktor dominan yang memicu banjir adalah curah hujan ekstrem sebesar 120-180 mm dalam sehari. Selama musim hujan, banjir terjadi di beberapa lokasi, terutama di Kecamatan Poasia, yang disebabkan oleh beberapa masalah, termasuk saluran drainase yang belum terintegrasi dengan saluran hilir, sehingga air tidak dapat mengalir ke muara. Kondisi ini diperburuk oleh pengaruh kenaikan permukaan air laut, yang pada 15 Juli 2013 mencapai ketinggian 1,93 meter di atas permukaan laut, bersamaan dengan intensitas hujan maksimum sebesar 205 mm selama 18 jam, menyebabkan banjir di jalan utama (Jalan Bunggasi) dengan kedalaman 30-50 cm. Penelitian ini bertujuan untuk menganalisis genangan air di Kecamatan Poasia menggunakan perangkat lunak *Personal Computer Storm Water Management Model* (PCSWMM). Analisis pengendalian banjir dilakukan dengan membandingkan kondisi eksisting dengan skenario *Low Impact Development* (LID), khususnya melalui penerapan *Rain Garden* dengan periode ulang 5 tahun. Hasil simulasi menunjukkan bahwa beberapa titik pertemuan mengalami banjir, termasuk di Jalan Bunggasi, Jalan Belimbing, dan Saluran Pengalih. Penerapan LID dengan *Rain Garden* berhasil mengurangi debit puncak sebesar 0,08% hingga 10,44%, sehingga membantu mengurangi genangan, terutama selama hujan lebat dan kondisi pasang air laut.

KATA KUNCI: Drainase, tinggi muka air, Low Impact Development, PCSWMM.

ABSTRACT

A common annual problem that frequently occurs in Kendari city is flooding. One of the most dominant factors that trigger flooding is extreme rainfall of 120-180 mm in a day. During the rainy season, flooding occurred in several places, especially in Poasia District, which is caused by several problems, including drainage channels that have not been integrated with downstream channels so that water cannot flow to the outfall. This condition was worsened by sea water level effect, which on July 15, 2013, reached a height of 1.93 meters above sea level, along with a maximum rainfall intensity of 205 mm over 18 hours, causing flooding on the main road (Bunggasi Street) with a depth of 30-50 cm. This study aimed to analyze water inundation in the Poasia District using the Personal Computer Storm Water Management Model (PCSWMM) software. Flood control analysis was conducted by comparing existing condition with a Low Impact Development (LID) scenario, specifically through the application of a Rain Garden with a 5-year return period. The simulation results showed that several junctions experienced flooding, including Bunggasi Street, Belimbing Street, and Diversion Ditch. The implementation of LID with Rain Garden successfully reduced peak flow by 0.08% to 10.44%, helping to reduce inundation, particularly during heavy rainfall and high tide conditions.

KEYWORDS: Drainage, Sea Water Level, Low Impact Development, PCSWMM.