ANALISIS SISTEM DRAINASE JALAN RAYA

(STUDI KASUS: JALAN TEGAL-PURWOKERTO, PRUPUK UTARA, KECAMATAN MARGASARI, KABUPATEN TEGAL)

Gefry Galuh Prasetio[1], Ratna Septi Hendrasari[2]

Mahasiswa Program Studi Teknik Sipil, Fakultas Sains dan Teknologi, Universitas Teknologi Yogyakarta

E-mail : gefrygaluh388@gmail.com Email: ratnasepti.h@gmail.com

ABSTRAK

Banjir dan genangan di jalan Nasional Tegal-Purwokerto telah menjadi permasalahan yang serius dan hampir setiap tahun terjadi. Pada hal ini untuk pengendalian atau evaluasi banjir dan genangan di Jalan Tegal, Kecamatan Margasari, Kabupaten Tegal, yang meliputi kondisi eksisting saluran drainase. Kapasitas tampang saluran tidak mampu menampung air hujan sehingga menyebabkan banjir yang menganggu aktifitas masyarakat serta arus lalu lintas. Tujuan dari penelitian ini adalah untuk menganalisis kinerja sistem drainase di Jalan Tegal, Kecamatan Margasari, Kabupaten Tegal. Dalam analisis digunakan metode rasional untuk menghitung intensitas curah hujan dengan kala ulang 5 tahun. Curah hujan rancangan dihitung dengan metode *log person lll* dan Normal. Berdasarkan perhitungan dan kondisi eksisting di lapangan diperoleh hasil bahwa saluran drainase sisi timur tidak mampu menampung debit banjir,pada sisi barat saluran masih mampu menampung debit banjir rencana. Untuk bak penampung dari drainase sisi timur tidak mampu menampung debit banjir meski sudah ada pompa air yang berada di lokasi lapangan. Untuk hasil evaluasi saluran drainase yang dilakukan berdasarkan debit banjir rencana, sehingga didapat saluran rencana Q sisi timur sebesar 0,10 m^3/detik dan Q sisi barat 16,52 m^3/detik. Dari hasil analisa yang dilakukan maka dapat disimpulkan saluran sisi timur tidak dapat menampung debit banjir rancangan periode 5 tahun yaitu sebesar 1,16 m^3/detik.

Kata kunci: Sistem drainase, debit banjir rancangan, metode rasional.

ANALYSIS OF THE HIGHWAY DRAINAGE SYSTEM

(CASE STUDY: TEGAL-PURWOKERTO ROAD, PRUPUK UTARA, MARGASARI DISTRICT, TEGAL DISTRICT)

Gefry Galuh Prasetio[1], Ratna Septi Hendrasari[2]

Student of the Civil Engineering Study Program, Faculty of Science and Technology, University of Technology Yogyakarta

E-mail: gefrygaluh388@gmail.com Email: ratnasepti.h@gmail.com

ABSTRACT

Floods and puddles on the Tegal-Purwokerto National Road have become a serious problem and occur almost every year. This is for controlling or evaluating floods and inundation on Jalan Tegal, Margasari District, Tegal Regency, which includes the existing condition of the drainage canal. The channel section capacity is unable to accommodate rainwater, causing flooding which disrupts community activities and traffic flow. The purpose of this study was to analyze the performance of the drainage system on Tegal Street, Margasari District, Tegal Regency. In the analysis used rational method to calculate the intensity of rainfall with a return period of 5 years. The design rainfall was calculated using the log person III and normal methods. Based on calculations and existing conditions in the field, the result is that the east side of the drainage canal is unable to accommodate flood discharge while the west side of the channel is still able to accommodate the planned flood discharge. For the reservoir from the east side drainage is not able to accommodate the flood discharge even though there is already a water pump in the field location. The results of the evaluation of the drainage channel are based on the design flood discharge, so that the planned channel Q on the east side is 0.10 m³/second and Q on the west side is 16.52 m³/second. From the results of the analysis carried out, it can be concluded that the east side canal cannot accommodate the designed flood discharge for a period of 5 years, namely 1.16 m³/second.

Keywords: Drainage system, design flood discharge, rational method.