

## INTISARI

Pada kawasan pemukiman Komplek Perumahan Gunung Simping Pertamina Refinery Unit IV Cilacap, terjadi genangan air di beberapa zona. Selain menyebabkan estetika kawasan dan aktivitas penduduk pemukiman terganggu, hal ini juga dapat menyebabkan kerusakan pada infrastruktur pemukiman mulai dari jalan lingkungan perumahan, hingga jaringan saluran drainase itu sendiri akibat sedimentasi yang menumpuk. Untuk itu diperlukan evaluasi kapasitas saluran drainase.

Evaluasi kapasitas saluran drainase dilakukan dengan bantuan software SWMM dengan masukan data berupa distribusi hujan rancangan 5 tahunan. Distribusi hujan rancangan didasarkan pada hasil analisis hujan jam-jam data hujan berbasis satelit GSMaP. Besarnya kehilangan air hujan dihitung dengan pendekatan SCS-CN yang merupakan fungsi dari jenis tanah dan tutupan lahan di Kawasan perumahan. Dimensi saluran drainase dan luasan setiap Kawasan didasarkan apada kondisi eksisting.

Hasil analisis menunjukkan bawa terdapat 2 (dua) ruas saluran yang mengalami banjir, sehingga perlu diubah dimensi salurannya. Perubahan dimensi saluran dengan tipe U-ditch menunjukkan bahwa saluran drainase dapat mengalirkan debit aliran dengan kala ulang 5 tahunan.

## ABSTRACT

In the residential area of the Gunung Simping Pertamina Refinery Unit IV Cilacap Residential Complex, waterlogging occurred in several zones. In addition to disrupting the aesthetics of the area and the activities of residents in settlements, this can also cause damage to residential infrastructure, starting from residential roads to the drainage network itself due to accumulated sediment. For this reason, it is necessary to evaluate the capacity of the drainage channel.

Evaluation of drainage channel capacity is carried out with the help of SWMM software with input data in the form of a 5-year design rainfall. The design rainfall distribution is based on the results of hourly rain analysis of GSMaP satellite-based rainfall data. The amount of volume runoff is calculated using the SCS-CN approach which is a function of the type of soil and land cover in residential areas. The dimensions of the drainage channels and the area of each drainage area are based on existing conditions.

The results of the analysis show that there are 2 (two) channel segments that experience flooding, so the channel dimensions need to be changed. Changes in the dimensions of the channel with the U-ditch type show that the drainage channel can carry flow discharge with a return period of 5 years.