

## ABSTRAK

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Program Studi : Teknik Sipil  
Judul Laporan Skripsi : ANALISIS SISTEM SALURAN DRAINASE  
AREA LANDAS PACU (*RUNWAY*) DI LAPANGAN TERBANG UNTUK  
PENANGANAN GENANGAN BANJIR  
Pembimbing : Dr. Acep Hidayat, S.T., M.T.

Kondisi drainase eksisting pada landas pacu (*runway*) lapangan terbang Bandara Halim Perdanakusuma mengalami penurunan dalam fungsi pelayanan disebabkan oleh kurangnya kapasitas saluran drainase sehingga tidak dapat menampung air hujan, hal ini menyebabkan air menggenangi landasan pacu Bandara Halim Perdanakusuma. Analisis sistem saluran drainase ini mengacu pada drainase *Runway*. Analisis hidrologi dilakukan untuk mendapatkan debit banjir rencana menggunakan *Software HEC-HMS*, Distribusi Normal, Distribusi Gumbel, Distribusi Log Normal dan Distribusi Log Pearson Tipe III. Analisis hidrolika dilakukan untuk menghitung kapasitas tampung saluran eksisting menggunakan *Software EPA-SWMM 5.1*. Kapasitas saluran drainase eksisting berdasarkan analisis menggunakan *Software EPA-SWMM 5.1* terdapat 5 saluran dari 11 saluran yang memiliki debit eksisting lebih kecil dari debit banjir rencana. Kelima saluran tersebut ialah C3, C4, C5, CD01 dan CD02. Alternatif sistem penanganan genangan banjir yang digunakan dalam permasalahan ini adalah kolam detensi dengan pompa. Dimensi kolam detensi yang direncanakan berukuran 120m x 114m x 3.5m beserta penggunaan pompa 2m<sup>3</sup>/detik memiliki kapasitas 47880 m<sup>3</sup>. Maka, volume banjir yang perlu ditampung < volume tampungan kolam (46199 m<sup>3</sup> < 47880 m<sup>3</sup>).

**Kata Kunci** : Drainase Bandara, Drainase, Genangan Banjir

## ABSTRACT

Name : Mutiara Novelina  
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Title Thesis : *ANALYSIS OF RUNWAY AREA DRAINAGE CHANNEL SYSTEM AT AIRFIELD FOR FLOOD INUNDATION HANDLING*  
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*The existing drainage conditions on the runway at Halim Perdanakusuma Airport have decreased in service function due to the lack of drainage channel capacity so that it cannot accommodate rainwater, this causes water to inundate the runway of Halim Perdanakusuma Airport. This drainage system analysis refers to Runway drainage. Hydrological analysis is carried out to obtain the planned flood discharge using HEC-HMS Software, Normal Distribution, Gumbel Distribution, Log Normal Distribution and Log Pearson Type III Distribution. Hydraulics analysis is carried out to calculate the capacity of existing channels using EPA-SWMM 5.1 Software. The capacity of existing drainage channels based on analysis using EPA-SWMM 5.1 Software there are 5 channels out of 11 channels that have an existing discharge smaller than the planned flood discharge. The five channels are C3, C4, C5, CD01 and CD02. The alternative flood inundation management system used in this problem is a detention pond with a pump. The dimensions of the planned detention pond measuring 120m x 114m x 3.5m along with the use of a 2m<sup>3</sup>/sec pump has a capacity of 47880 m<sup>3</sup>. Therefore, the flood volume that needs to be accommodated < the storage volume of the pond (46199 m<sup>3</sup> < 47880 m<sup>3</sup>).*

**Keywords :** *Airport Drainage, Drainage, Flood Puddle*