Flood is one of the natural phenomena that cause huge losses. Population growth led to the need or increased settlements and land use changes. Rain water infiltration is reduced not only causing floods but also droughts. Therefore, it is necessary to do environmental insightful flood control, such as retention pond. This research aims to plan and analyze the effect of making retention pond for flood control.

This research was conducted in Duana Street, Palapa Urban Village, Tanjung Karang Pusat District which is flowed by Way Simpur River. In this research, the hydrological analysis made of rainfall data PH 001 Pahoman Station from 1995 to 2009. After having planned rain discharge, hydraulics analysis was executed to analyze the discharge capacity of the existing and plan volume of the storage pond. Calculations of infiltration rate were performed to calculate the absorbed discharge. Furthermore, storage pond design plan and budget plan were made.

In the analysis made, the value of planned rain discharge for 5 years return period is 5.0617 m³/sec. Total capacity of the storage pond is 12,074.1058 m³. The time needed by pool from vacant until full is 29.0202 minutes. Budget plan required in making this retention pond is Rp 1,838,436,742.69. Based on the analysis performed, it was concluded that the retention pond is effective enough to be used as one of the alternative flood control measures in urban areas.

Keywords: flood, retention pond, flood control.