KASANG 1 WEIR'S RE-PLANNING ANALYSIS PADANG PARIAMAN DISTRICT

Wisdom Zain, Zahrul Umar, Zuherna Mizwar
Department of Civil Engineering, Faculty of Civil Engineering and Planning,
Bung Hatta University, Padang

Abstract

Kasang 1 Weir is located in Nagari Kasang, Batang Anai District, Padang Pariaman Regency, West Sumatra Province. Now adays, the weir has been broke by age and has damaged the body of the weir and the olak pond. It causes the damage to the weir, the water in the Batang Kasang river does not flow into the irrigation channel. In this final project planning, several calculations are carried out such as hydrological analysis, hydraulic calculation of weirs, and weir stability. Supporting data are in the form of 1: 50,000 scale topographic maps and 10-year rainfall from 2008-2017. Hydrological analysis calculations, calculating the average rainfall using the Thiessen method. From the calculation, the cathment area is 3.24 km² wide, the flood discharge plan is 93.65 m³ / s, the effective width of the weir is 23.2 m, using a round type lighthouse with of 1.2 m on high. In the stabilty's calculation of the weir during normal water conditions, the safety figure against bolster is about 2.97 and sliding is about 4.24. When the water time is flooded are obtained the safety figures for bolster is about 2.29 and sliding is about 2.82. The water voltage in a normal condition 1.792 t / m² and during flood water obtained 0.829 t / m². Then a stable weir condition is obtained.

Keywords : Weir, Lighthouse, Flood Discharge, Effective Width, Stabilty's