

PERENCANAAN BANGUNAN PENGENDALI SEDIMEN DI KALI KREO

Andrey Suryanto, Thomas Resa Putra
Suripin, Salamun

Abstrak

Perubahan lahan pada daerah Sub-DAS Kreo berpotensi terjadinya peningkatan erosi dan mengakibatkan angkutan sedimen yang terbawa oleh aliran sungai meningkat. Peningkatan angkutan sedimen pada aliran sungai dapat mengganggu stabilitas morfologi sungai Kreo seperti penurunan dasar sungai (degradasi), perubahan geometri sungai arah vertikal dan horizontal, dan peninggian dasar sungai (agradasi). Untuk mengendalikan stabilitas morfologi sungai Kreo maka perlu dibangun bangunan pengendali sedimen (*check dam*). Perencanaan bangunan pengendali sedimen di kali Kreo ini berlokasi di Kelurahan Kali Pancur, Kecamatan Ngaliyan. Kali Kreo mempunyai luas DAS 65,58 km² dengan panjang sungai utama ± 30,60 km, lebar sungai rata-rata 14,6 m.

Berdasarkan perhitungan yang telah dilakukan baik analisa hidrologi, analisa hidrolika, perencanaan dimensi check dam, kontrol stabilitas main dam dan analisa daya tampung sedimen maka diperoleh debit sungai rencana sebesar 102 m³/s, lebar dasar pelimpah check dam 20,5 m, tinggi efektif main dam 2 m, kedalaman pondasi main dam 1,3 m, tebal mercu main dam 1,5 m, panjang lantai kolam olak 17 m, tebal kolam olak 0,6 m dan daya tampung sedimen sebesar 14.911.55 m³ dengan umur rencana 10,7 tahun. Rencana waktu pelaksanaan proyek adalah 20 minggu dengan rencana anggaran biaya Rp. 2.340.000.000,-

Kata Kunci: Erosi, Sedimen, Check Dam

THE DESIGN OF SEDIMENT CONTROL STRUCTURE IN KREO RIVER

Andrey Suryanto, Thomas Resa Putra
Suripin, Salamun

Abstract

The land use changes of Kreo sub-watershed area potentially lead to an increase in erosion and sediment transport by increases river flow. Increased sediment transport in river flow can destabilize the river morphology Kreo such as a decrease in the riverbed Kreo (degradation), changes in river geometry vertical and horizontal direction, and the elevation of the riverbed (agradation). To control the morphology of the river Kreo stability it need to be built sediment control structure (check dam). The design of sedimen control at Kreo river is located in the Village of Kali Pancur, District Ngaliyan. Kreo river have watershed area 65.58 km² the length of the main river ± 30.60 km, the average river width of 14.6 m.

Based on the calculations have been done either hydrological analysis, hydraulics analysis, planning dimensions check dams, control stability of main dam, and capacity analysis of sediment the river discharge plan obtained by 102 m³/s, check dam spillway base width of 20.5m, effective height of the main dam 2 m, foundation depth of main dam, thick of mercu main dam 1.5 m, length of basin whirl 17 m, thick of basin whirl 0,6 m and sediment capacity is 14.911.55 m³ with the design life of 10.7 years. This project implementation is scheduled for 20 weeks with a budget plan of Rp. 2.340.000.000, -

Keywords: Erosion, Sediment, Check Dam