

**PERENCANAAN CHECK DAM JEMBATAN MERAH UNTUK MENGATASI
SEDIMENTASI DAS GARANG**
(Studi Kasus: Daerah Aliran Sungai Garang)

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Abstrak

Perubahan tata guna lahan yang terjadi pada DAS Garang akibat perkembangan kota Semarang menyebabkan laju erosi dan sedimentasi semakin meningkat tiap tahunnya. Oleh sebab itu, upaya dalam mengurangi tingkat erosi dan sedimentasi DAS Garang ini harus segera dilakukan. Salah satu upaya yang dapat dilakukan adalah dengan membangun bangunan pengendali berupa *check dam*.

Dalam merencanakan *check dam* memerlukan analisis hidrologi untuk memperoleh nilai curah hujan rancangan, debit banjir rancangan (metode *Nakayasu*), serta analisis sedimentasi (metode *USLE*) yang digunakan untuk memprediksi besarnya laju sedimentasi pada DAS Garang, detail desain, serta rencana anggaran biaya. Rencana lokasi bangunan *check dam* berada di Daerah Jembatan Merah, Kelurahan Tinjomoyo, Kecamatan Banyumanik, Kota Semarang.

Berdasarkan hasil analisis dalam merencanakan bangunan *check dam* Jembatan Merah dapat ditentukan curah hujan rancangan hujan efektif tiap kala ulang tertentu, debit banjir rancangan $Q_{50Th} = 433,726 \text{ m}^3/\text{detik}$, laju sedimentasi = 1,5 ton/Ha/tahun, lebar bangunan *check dam* = 58,51m, tinggi mercu = 3,32m, lebar/tebal mercu = 2,51m, Apron dengan panjang = 8m dan lebar = 1m, panjang pelindung dasar sungai = 3,77m, kedalaman koperan = 2,5m, rekapitulasi rencana anggaran biaya sebesar Rp 3.201.274.000,- .

Kata Kunci : analisis hidrologi, sedimentasi, *check dam*.

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**JEMBATAN MERAH CHECK DAM PLANNING TO OVERCOME
SEDIMENTATION IN THE CATCHMENT AREA OF GARANG**
(Case Study: watershed of Garang)

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Abstract

Land use changes that occur in the watershed of Garang, due to the development of Semarang cause erosion and sedimentation rate increasing every year. Therefore, efforts to reduce the rate of erosion and sedimentation watershed a of Garang must be done immediately. One effort that can be done is to build a check dam control building.

In planning check dams require hydrologic analysis to obtain, the value of design rainfall, the value of the design flood discharge (Nakayasu analysis), and sedimentation analysis (USLE analysis) is used to predict the magnitude of the rate of sedimentation in the watershed of Garang, check dam detailed design, and budget plan. Plan the location of the building check dams located in the Jembatan Merah Area, Village Tinjomoyo, Banyumanik Subdistrict, Semarang.

Based on the analysis in Jembatan Merah check dam build planning can be determined design rainfall the rain effective every time certain repeated, discharge flood design $Q_{50Th} = 433,726 \text{ m}^3/\text{second}$, the sediment = 1,5 tons / ha / year, wide building check dam = 58,51m, high mercu = 3,32m, wide / thick mercu = 2,51m, apron with long = 8m and broad = 1m, long of the protective = 3,77m, the depth of koperan = 2,5m, recapitulation the budget cost Rp. 3.201.274.000, -

Key words: sedimentation, hydrologic analysis, check dam.

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