

# **STUDY OF NORMALIZATION OF AWANG MAHMUDA RIVER FOR FLOOD MANAGEMENT IN THE KUALA ALAM SETTLEMENT AREA, BENGKALIS DISTRICT**

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## **ABSTRACT**

Kuala Alam Village is one of the villages in Bengkalis District, Bengkalis Regency, Riau, Kuala Alam Village, there is a river dividing residential areas close to the sea. The river is one of the economic accesses for the residents of Kuala Alam Village. The access point for the entry and exit of fishing boats that go to sea and the place where fishing boats rest. during the rainy season, it often experiences expansion which results in flooding in residents' settlements. Therefore, normalization was carried out in order to plan the dimensions of the river channel on Jalan Awang Mahmuda, Kuala Alam Village.

The method used in analyzing rainfall uses the Gumbel distribution and the mononobe method with rainfall data obtained from the peer system, stations that are in the new strait for five years from 2014 to 2018. Meanwhile, to analyze the rainfall discharge and existing river channel discharge using the Rational method. Calculations are made based on data obtained from the field, including measurement data of river profiles, measurement of flow velocity and measurement of existing river water levels.

The calculation results obtained that the existing capacity on the river Jalan Awang Mahmuda, Kuala Alam Village, Bengkalis District at high tide, the total discharge is 32.6298 m<sup>3</sup> / second, while at low tide it is 8,9188 m<sup>3</sup> / second. Calculation of the discharge of rainfall and discharge of the plan for the upstream part of the water is 0.8125 m<sup>3</sup> / second, and the normalization plan for the wet circumference (P) is 13.66 m, wet cross-sectional area (A) 22 m<sup>2</sup>, flow velocity (V) 3,857m<sup>3</sup> , radius (R) 1.61, guard height (W) 1m, Design discharge (Qs) 84.843 m<sup>3</sup> / s.

Keywords : Normalization, River, Discharge, Dimension