

EVALUASI KINERJA JARINGAN DRAINSE KAWASAN PELABUHAN SEI-SELARI

Student Name : Gabriel F. Sinaga
Student ID Number : 4204221506
Academic Advisor : Armada, S. T., M. T

ABSTRACT

This study aims to evaluate the performance of the drainage network in the Sei-Selari Port Area, Bengkalis Regency, and to develop a more effective drainage network redesign based on existing field conditions. The main problems identified include sediment accumulation, waste blockage, water ponding, vegetation growth, and an unintegrated drainage network configuration that reduces flow efficiency. The research was conducted through field surveys to obtain primary data and rainfall data collection as secondary data. Hydrological analysis was carried out using the Rational Method to determine runoff discharge, while hydraulic analysis employed Manning's Equation to evaluate channel capacity. The results indicate that the existing drainage channels are hydraulically capable of conveying the design runoff discharge. However, the drainage system has not operated optimally due to the unintegrated network configuration, sediment deposits, waste blockage, and the presence of unlined earth channels. Therefore, a drainage network redesign was proposed by reorganizing the flow direction, outlet system, and adjusting channel dimensions at specific locations to improve drainage performance. In addition, a Cost Estimate (Bill of Quantities) was prepared to estimate the required construction cost. The findings of this study are expected to serve as a reference for improving the drainage system performance in the Sei-Selari Port Area.

Keywords: *cost estimate, drainage network, drainage redesign, performance evaluation, runoff discharge.*