

ROAD PERFORMANCE EVALUATION FOR FREIGHT TRANSPORT ROUTES TO THE DUMAI AND SELINSING INDUSTRIAL AREA

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ABSTRACT

The development of the Dumai and Selinsing industrial areas has led to an increase in freight traffic, impacting the performance of roads serving logistics distribution activities. The high volume of heavy vehicles on Jalan Arifin Ahmad has the potential to reduce the level of road service, necessitating an evaluation of the planned rerouting of freight transport to Jalan Abdul Naim as an alternative route. The research methods used were traffic surveys, vehicle speed surveys, road geometric data collection, and road performance analysis based on the 2023 Indonesian Road Capacity Guidelines (PKJI). The parameters analyzed included traffic volume, road capacity, degree of saturation (DJ), free flow speed, travel time, and level of service (Level of Service/LOS). The analysis was conducted on existing conditions, after the rerouting, and projected traffic growth for the 5- and 10-year periods. The research results show that under existing conditions, Jalan Arifin Ahmad has a capacity of 2,318 SMP/hour, a traffic volume of 679 SMP/hour, and a saturation level of 0.29 with a service level of B. After heavy vehicles were transferred to the alternative route, traffic volume decreased to 637 SMP/hour with a saturation level of 0.27, remaining at LOS B. In the 5th year projection, the saturation level increased to 0.53 (LOS C) and in the 10th year to 0.64 (LOS C). Meanwhile, Jalan Abdul Naim, as an alternative route, demonstrated excellent performance with a saturation level ranging from 0.16–0.24 and a service level of A–B. The research results indicate that the rerouting of freight transport can reduce traffic load on Jalan Arifin Ahmad without reducing the performance of Jalan Abdul Naim, making this alternative route suitable for supporting smooth distribution to the Dumai and Selinsing industrial areas..

Keywords: Freight transport, degree of saturation, road performance, route switching, level of service.