

# ***ANALYSIS OF FREIGHT TRANSPORT AND HEAVY VEHICLE ROUTE RELOCATION IN DUMAI CITY***

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## ***ABSTRACT***

*Dumai City is one of the industrial and port cities in Riau Province with a high level of freight distribution activities, resulting in freight transport and heavy vehicles frequently traveling along Putri Tujuh Road and Datuk Laksamana Road. This condition has encouraged the Dumai City Government to implement a heavy vehicle route relocation policy to reduce heavy vehicle movements in urban areas, improve traffic flow, and minimize potential traffic conflicts with other road users. This study aims to analyze the existing traffic performance, develop a heavy vehicle route relocation scenario, and evaluate changes in road performance based on the Degree of Saturation (DS) and Level of Service (LOS). The analysis was conducted using the Indonesian Highway Capacity Guidelines (PKJI 2023) based on traffic volume, vehicle speed, side friction, and road geometric data, while network modeling and traffic assignment were carried out using PTV Visum. The results indicate that, under existing conditions, Putri Tujuh Road had a DS value of 0.40 (LOS B), while Datuk Laksamana Road had a DS value of 0.11 (LOS A). Following the implementation of the route relocation scenario, the DS values on both roads decreased, indicating improved traffic performance. Meanwhile, the alternative routes, namely Tuanku Tambusai Road and Wan Amir Road, were still capable of accommodating the additional traffic volume, with DS values remaining below 0.85 throughout the 10-year projection period. In contrast, Gatot Subroto Road experienced an increase in the DS value to 0.89 (LOS E) in the 10-year projection, indicating that the road had approached its capacity due to the increased traffic volume resulting from the route diversion. Overall, the proposed route relocation scenario is considered effective in improving traffic performance on the main urban roads. However, periodic monitoring and evaluation of the alternative routes, particularly Gatot Subroto Road, are recommended if the policy is implemented over the long term.*

**Keywords:** *Freight Transport, Road Performance, Route Relocation, PKJI 2023, Level of Service.*