

TRAFFIC IMPACT ANALYSIS OF PALM OIL FACTORY CONSTRUCTION (Case Study: PT. Delta Palm Prima, Dumai City, Riau Province)

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ABSTRACT

The construction of the PT Delta Palm Prima Palm Oil Mill in Dumai City is expected to generate additional vehicle movements and potentially affect traffic performance on roads surrounding the development area. This issue needs to be analyzed to determine the existing traffic conditions, the magnitude of trip generation and attraction, and the resulting impacts on road performance. This study aims to analyze existing traffic conditions, estimate trip generation and attraction resulting from the development, and determine changes in the performance of Soekarno-Hatta Road, Simpang Panam Road, and Jalan Baru. The research method involved traffic surveys, road geometric data collection, and the collection of development plan data. Road performance was analyzed using the Indonesian Road Capacity Guidelines (PKJI) 2023, while trip generation and attraction were analyzed based on building area by referring to the ITE Trip Generation Manual. The results show that under existing conditions, Soekarno-Hatta Road has a traffic volume of 653–831 pcu/hour, a degree of saturation of 0.26–0.34, and a Level of Service (LOS) of B. Simpang Panam Road has a degree of saturation of 0.12 with LOS A, while Jalan Baru has a degree of saturation of 0.04 with LOS A. The estimated trip generation is 29 pcu/hour, while trip attraction is 78 pcu/hour. The projection results indicate an increase in the degree of saturation, with the greatest impact occurring on Soekarno-Hatta Road, reaching 0.80 with LOS D in the 10-year projection. Traffic impact mitigation is directed through vehicle circulation management and the installation of traffic control devices.

Keywords: *Traffic impact analysis, Trip generation and attraction, Traffic performance, PKJI 2023, PT Delta Palm Prima.*