

PERFORMANCE ANALYSIS OF THE PLOSO - BABAT ROAD SEGMENT FROM BAWANGAN INTERSECTION TO KABUH INTERSECTION DUE TO INDUSTRIAL GROWTH IN JOMBANG CITY

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ABSTRACT

Population growth and the development of the manufacturing industry in Jombang Regency, particularly along the Ploso–Babat corridor from Simpang Bawangan to Simpang Pasar Kabuh, have had a significant impact on the transportation system and road infrastructure. This road segment plays a vital role as a distribution route for industrial products and for inter-regional mobility. The increase in the number of vehicles, especially heavy vehicles, raises concerns about traffic performance along this segment. This study aims to analyze the performance of the Ploso–Babat road segment between Simpang Bawangan and Simpang Pasar Kabuh due to the growth of surrounding industrial activities. The method used refers to the Indonesian Highway Capacity Guidelines (PKJI) 2023, through the collection of primary data such as geometric surveys, traffic volume, and side friction, as well as secondary data from relevant agencies. The analysis results show a road capacity of 2,543 pcu/hour with a peak volume of 1,515 pcu/hour, resulting in a degree of saturation of 0.60, which is considered smooth-flowing. The average travel time for light vehicles is approximately 8.6 minutes over a 5.3 km segment, with a low category of side friction. Although the road currently supports industrial activities, the potential for increased traffic volume in the future is a serious concern, as the degree of saturation is expected to rise and could exceed the minimum capacity, ultimately degrading the level of service significantly. Strategic measures are needed, such as road widening, surface quality improvement, and proper management of entry and exit access for heavy vehicles from industrial areas. Therefore, infrastructure enhancement is crucial to anticipate future industrial growth.

Keywords: road performance, industrial growth, traffic volume, degree of saturation, side friction, PKJI 2023.

ANALISIS KINERJA RUAS JALAN PLOSO - BABAT SEGMENT SIMPANG BAWANGAN – SIMPANG KABUH AKIBAT PERTUMBUHAN INDUSTRI KOTA JOMBANG

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ABSTRAK

Pertumbuhan penduduk dan perkembangan industri manufaktur di Kabupaten Jombang, khususnya di koridor Ploso–Babat segment Simpang Bawangan hingga Simpang Pasar Kabuh, memberikan dampak signifikan terhadap sistem transportasi dan infrastruktur jalan. Ruas jalan ini memiliki peranan penting sebagai jalur distribusi hasil industri dan mobilitas antarwilayah. Peningkatan jumlah kendaraan, terutama kendaraan berat, menimbulkan kekhawatiran terhadap kinerja lalu lintas di ruas tersebut. Penelitian ini bertujuan untuk menganalisis kinerja ruas jalan Ploso–Babat segment Simpang Bawangan–Simpang Pasar Kabuh akibat pertumbuhan aktivitas industri di sekitarnya. Metode yang digunakan mengacu pada Pedoman Kapasitas Jalan Indonesia (PKJI) 2023, melalui pengumpulan data primer berupa survei geometrik, volume lalu lintas, dan hambatan samping, serta data sekunder dari instansi terkait. Hasil analisis menunjukkan bahwa kapasitas jalan sebesar 2.543 smp/jam dengan volume puncak 1.515 smp/jam, menghasilkan derajat kejenuhan sebesar 0,60 yang tergolong lancar. Waktu tempuh rata-rata kendaraan ringan adalah $\pm 8,6$ menit pada ruas sepanjang 5,3 km, dengan hambatan samping kategori rendah. Meskipun saat ini jalan masih mampu mendukung aktivitas industri, potensi peningkatan volume lalu lintas pada masa mendatang menjadi hal yang perlu diantisipasi secara serius derajat kejenuhan diperkirakan akan terus meningkat bisa melebihi kapasitas minimum, yang pada akhirnya dapat menurunkan tingkat pelayanan jalan secara signifikan. diperlukan langkah-langkah strategis seperti pelebaran jalan, peningkatan kualitas permukaan jalan, serta penataan akses keluar-masuk kendaraan berat dari kawasan industri. Maka peningkatan infrastruktur sangat dibutuhkan untuk mengantisipasi pertumbuhan industri di masa mendatang.

Kata Kunci: *kinerja jalan, pertumbuhan industri, volume lalu lintas, derajat kejenuhan, hambatan samping, PKJI 2023.*