

ABSTRAK

Pertumbuhan jumlah kendaraan yang pesat di Kabupaten Bandung Barat berdampak pada meningkatnya kepadatan lalu lintas, khususnya di kawasan Simpang Rumah Sakit Karisma Cimareme yang belum memiliki sistem pengaturan lalu lintas. Salah satu lokasi yang terdampak adalah Simpang Rumah Sakit Cimareme, yang merupakan simpang tiga tak bersinyal dan sering mengalami kemacetan pada jam – jam sibuk. Penelitian ini bertujuan untuk menganalisis kinerja simpang tersebut menggunakan metode Pedoman Kapasitas Jalan Indonesia (PKJI 2023) serta memberikan rekomendasi perbaikan melalui beberapa skenario alternatif. Data diperoleh melalui survei primer (volume lalu lintas, geometri jalan, dan kondisi lingkungan) dan sekunder dari instansi terkait. Parameter yang dianalisis meliputi kapasitas, derajat kejenuhan (DS), tundaan, dan peluang antrian. Hasil analisis menunjukkan bahwa kerja simpang dalam kondisi eksisting memiliki tingkat kejenuhan yang tinggi dan tundaan yang signifikan. Skenario perbaikan berupa penerapan APILL (Alat Pemberi Isyarat Lalu Lintas) tiga fase menunjukkan peningkatan kinerja simpang secara signifikan, ditandai dengan penurunan nilai DS dan tundaan. Penelitian ini diharapkan dapat menjadi acuan bagi pemerintah daerah dalam merancang solusi penanganan kemacetan di simpang – simpang tak bersinyal serupa.

Kata Kunci: Simpang tak bersinyal, PKJI 2023, kapasitas derajat kejenuhan, tundaan, APILL

ABSTRACT

The rapid growth in the number of vehicles in West Bandung Regency has led to increased traffic congestion, particularly in the area of the Karisma Cimareme Hospital Intersection, which currently lacks a traffic control system. One of the affected locations is the Cimareme Hospital Intersection, a three-leg unsignalized intersection that frequently experiences traffic jams during peak hours. This study aims to analyze the performance of the intersection using the Indonesian Highway Capacity Guidelines (PKJI 2023) method and to provide improvement recommendation through several alternative scenarios. Data were obtained through primary surveys (traffic volume, road geometry, and environmental conditions) and secondary data from relevant agencies. The parameters analyzed include capacity, degree of saturation (DS), delay, and queue probability. The analysis results indicate that, under existing conditions, the intersection operates with a high level of saturation and significant delays. An improvement scenario involving the implementation of a three-phase traffic signal (APILL) demonstrated a substantial enhancement in intersection performance, as evidenced by reductions in DS and delays. This study is expected to serve as a reference for local government authorities in designing solutions to address congestion at similar unsignalized intersection.

Keywords : Unsignalized intersection, PKJI 2023, capacity, degree of saturation, delay, traffic signal.