ABSTRAK

Perkembangan sarana transportasi yang tidak seimbang dibandingkan dengan laju pertambahan kepemilikan kendaraan bermotor merupakan salah satu faktor penyebab menurunnya kinerja suatu ruas jalan dan simpang. Penelitian ini dilakukan pada simpang empat Jl SM. Raja Jl. Pelangi dan Jl. Turi, Kecamatan Medan Kota. Penelitian pada simpang empat bersinyal ini dilakukan hari rabu 14 Juli 2021, dalam pengumpulan data lalu lintas dilakukan dalam 3 priode yaitu pada pagi jam (07.00 – 09.00), siang jam (11.00 – 13.00), dan sore jam (16.00 – 18.00). Pengambilan data lalu lintas dilakukan dengan mencatat jumlah kendaraan yang melewati simpang empat Jl. SM Raja, Jl.Pelangi, Jl.Turi bersinyal tiap 15 menit selama 2 jam. Hasil pengumpulan data primer berupa arus lalu lintas pada jam jam puncak, geometrik ruas jalan dan persimpangan empat bersinyal, kecepatan sesaat, dan hambatan samping. Data sekunder berupa data jumlah penduduk. Analisis dilakukan berdasarkan Manual Kapasitas Jalan Indonesia (MKJI) 1997. Berdasarkan perhitungan kinerja untuk kondisi simpang empat bersinyal pada keadaan sekarang, didapat waktu sibuk pada simpang empat bersinyal diambil pada hari rabu 14 Juli 2021 dan jam puncak pukul 16.00-18.00. Hasil perhitungan didapat jumlah arus total (Q) 6069 smp/jam, nilai kapasitas (C) 7344 smp/jam dan derajat kejenuhan (DS) 0,83 melebihi batas kejenuhan yang disarankan oleh MKJI yaitu >0,75.

Kata kunci : MKJI 1997, Kapasitas, Analisa Kinerja Simpang Empat Bersinyal

ABSTRACT

The development of transportation facilities that is not balanced compared to the rate of increase in ownership of motorized vehicles is one of the factors causing the declining performance of a road section and intersection. This research was conducted at the intersection of Jl SM. King Jl. Pelangi and Jl. Turi, Medan City District. The research at this signalized intersection was conducted on Wednesday July 14, 2021, the traffic data collection was carried out in 3 periods, namely in the morning (07.00 – 09.00), afternoon (11.00 – 13.00), and afternoon (16.00 – 18.00). Traffic data retrieval is done by recording the number of vehicles that pass the intersection of Jl. SM Raja, Jl.Pelangi, Jl.Turi has a signal every 15 minutes for 2 hours. The results of primary data collection in the form of traffic flow at peak hours, geometric roads and intersections with four signals, instantaneous speed, and side barriers. Secondary data in the form of population data. The analysis was carried out based on the 1997 Indonesian Road Capacity Manual (MKJI). Based on the performance calculation for the current condition of the signalized intersection, it was found that the busy time at the signalized intersection was taken on Wednesday, July 14, 2021 and the peak hour was 16.00-18.00. The calculation results obtained that the total current (Q) is 6069 pcu/hour, the capacity value (C) is 7344 pcu/hour and the degree of saturation (DS) is 0.83 exceeding the saturation limit suggested by MKJI, which is >0.75.

Keywords : MKJI 1997, Capacity, Performance Analysis of Signalized Intersection