

ABSTRACT

Traffic Impact Analysis is a study of the traffic impact caused by changes in traffic patterns due to construction or development in a particular area. Traffic Impact Analysis is necessary to anticipate significant traffic impacts. The proposed construction of the Panyabungan Regional General Hospital by the Panyabungan Regional General Hospital in Mandailing Natal District is expected to generate traffic that could affect the performance of roads in the surrounding area. Therefore, to calculate the magnitude of the impact of the proposed construction plan on existing roads, a Traffic Impact Analysis must be conducted. The method used in this study is based on the Road Capacity Manual (MKJI) 1997. The steps for conducting this study involve conducting a traffic survey on the road section between the Payaloting Government Office and the Panyabungan Regional General Hospital. Under current road performance conditions, based on analysis and calculations, the road saturation degree (DS_R) is 0.16 vehicles per hour, with traffic delay (DT_{TOT}) of 258.18 seconds per hour and average roundabout traffic delay (DT_R) of 0.717 seconds per vehicle. Meanwhile, the average roundabout delay (D_R) is 4.7 seconds/vehicle, and the average roundabout queue probability (QP_R) is 1.96%. Overall, the roundabout service level or level of service at the roundabout indicator is "A." From the calculation results, it is known that the capacity of the unsignalized intersection is 2,304.30 vehicles per hour and the traffic volume is 103.8 vehicles per hour, resulting in a degree of saturation (DS) of 0.05 with traffic delay (DT_I) of 0.46 seconds per vehicle, intersection delay (D) of 3.50 seconds/vehicle, and the probability of queuing at the intersection ranging from 0.45% to 2.10%. The calculation of pedestrian space in the RSUD area shows a sidewalk width of 1m to 1.5m. The available parking spaces on the hospital premises are 160 SRP for four-wheeled vehicles and 150 SRP for two-wheeled vehicles. Based on the consultant's calculations, according to the Director General of Transportation, the minimum parking space requirement is approximately 42–273 SRP. Considering this parking space requirement, the facilities provided are sufficient.

Keywords: Road Network Performance, Traffic, Generation and Attraction, Degree of Saturation, Level Of Service (LOS).