

ABSTRACT

The annual growth in the number of motorized vehicles in Indonesia has led to increasing traffic congestion, particularly on urban road segments with high traffic intensity. One such case is HZ. Mustofa Street in Tasikmalaya City, which has U-turn facilities with considerable activity that potentially reduce road performance. This study aims to analyze the impact of U-turn activity on road performance based on the 2023 Indonesian Highway Capacity Manual (PKJI 2023) and to formulate alternative measures that can improve traffic flow.

The research method employed is a quantitative approach through traffic surveys and field observations. Data collected include road geometry, traffic volume, U-turn vehicle volume, side friction, queue length, and demographic information. The analysis was carried out by calculating road capacity, degree of saturation, travel speed, delay, and level of service (LoS).

The results of the analysis indicate that U-turn activity at the two study locations caused a decrease in average vehicle speed, an increase in queue length, and a reduction in the level of service from category C to E and D during peak hours. This condition shows that HZ. Mustofa Street has reached a high level of saturation. Simulated alternative treatments, such as relocating or partially closing U-turns, were found to improve road performance by reducing delays and increasing average vehicle speed, thereby improving the LoS to category D. In conclusion, U-turn activity has a significant impact on the performance of HZ. Mustofa Street in Tasikmalaya City. Reorganizing U-turn locations and controlling roadside parking are recommended as improvement measures to enhance traffic efficiency and flow.

Keywords: U-turn, road performance, PKJI 2023, level of service, Tasikmalaya