

ANALISIS PENGARUH GERAK PUTAR BALIK (*U-TURN*) PADA BUKAAN MEDIAN TERHADAP KINERJA LALU LINTAS DI JALAN RAYA JAKARTA-BOGOR (STUDI KASUS: AREA PASAR CIBINONG)

Andika Arya Permana¹, Hendra², Mohammad Syarif³
Jurusan Teknik Sipil, Fakultas Teknik, Universitas Siliwangi
Jalan Siliwangi No.24 Tasikmalaya, Jawa Barat, Indonesia.
Email: 217011061@student.unsil.ac.id

ABSTRAK

Gerak putar balik (*U-Turn*) pada bukaan median merupakan salah satu fasilitas lalu lintas yang bertujuan meningkatkan aksesibilitas, namun pada ruas jalan dengan volume lalu lintas tinggi dapat menurunkan kinerja lalu lintas. Jalan Raya Jakarta–Bogor, khususnya di area Pasar Cibinong, merupakan jalan arteri primer dengan volume lalu lintas tinggi serta aktivitas samping yang padat, sehingga keberadaan fasilitas *U-Turn* berpotensi mengganggu kelancaran arus lalu lintas. Penelitian ini bertujuan untuk menganalisis karakteristik lalu lintas, mengkaji pengaruh gerak *U-Turn* terhadap kinerja lalu lintas, serta menganalisis jumlah kendaraan terhenti dan panjang antrean akibat aktivitas *U-Turn* pada bukaan median. Metode penelitian yang digunakan adalah survei lapangan dengan pengumpulan data primer berupa volume lalu lintas, kecepatan kendaraan, hambatan samping, jumlah kendaraan yang melakukan *U-Turn*, panjang antrean, dan waktu tempuh kendaraan. Analisis kinerja lalu lintas dilakukan berdasarkan Pedoman Kapasitas Jalan Indonesia (PKJI) 2023. Pengamatan dilakukan pada jam sibuk pagi, siang, dan sore dengan interval waktu 15 menit pada segmen jalan sepanjang 200 meter di sekitar lokasi *U-Turn*. Hasil penelitian menunjukkan bahwa aktivitas *U-Turn* pada bukaan median di area Pasar Cibinong menyebabkan penurunan kecepatan kendaraan, peningkatan panjang antrean, serta terjadinya tundaan lalu lintas, terutama pada periode jam puncak. Tingginya volume lalu lintas dan hambatan samping di sekitar lokasi memperbesar gangguan terhadap arus lalu lintas utama. Oleh karena itu, diperlukan penataan dan pengelolaan operasional bukaan median guna meningkatkan kinerja lalu lintas pada ruas Jalan Raya Jakarta–Bogor.

Kata Kunci : *U-Turn*, Bukaan Median, Kinerja Lalu Lintas, Jalan Arteri, PKJI 2023.

¹Mahasiswa Jurusan Teknik Sipil Fakultas Teknik Universitas Siliwangi.

²Dosen Pembimbing Tugas Akhir I, Dosen Teknik Sipil Universitas Siliwangi.

³Dosen Pembimbing Tugas Akhir II, Dosen Teknik Sipil Universitas Siliwangi.

ANALYSIS OF THE EFFECT OF U-TURNS ON MEDIAN OPENINGS ON TRAFFIC PERFORMANCE ON THE JAKARTA-BOGOR HIGHWAY (CASE STUDY: CIBINONG MARKET AREA)

Andika Arya Permana¹, Hendra², Mohammad Syarif³

Department of Civil Engineering, Faculty of Engineering, Siliwangi University
Siliwangi St No. 24 Tasikmalaya, West Jawa, Indonesia

Email: 217011061@student.unsil.ac.id

ABSTRACT

U-Turn movements at median openings are traffic facilities intended to improve accessibility; however, on road segments with high traffic volumes, they may reduce traffic performance. The Jakarta–Bogor Highway, particularly in the Cibinong Market area, is a primary arterial road with high traffic demand and intensive roadside activities, where the presence of U-Turn facilities has the potential to disrupt traffic flow. This study aims to analyze traffic characteristics, evaluate the impact of U-Turn movements on traffic performance, and assess the number of stopped vehicles and queue lengths caused by U-Turn activities at median openings. This research employed a field survey method, with primary data consisting of traffic volume, vehicle speed, side friction, number of U-Turning vehicles, queue length, and vehicle travel time. Traffic performance analysis was conducted based on the Indonesian Highway Capacity Guidelines (PKJI) 2023. Observations were carried out during morning, midday, and evening peak hours at 15-minute intervals along a 200-meter road segment surrounding the U-Turn location. The results indicate that U-Turn activities at the median opening in the Cibinong Market area lead to reduced vehicle speeds, increased queue lengths, and traffic delays, particularly during peak hours. High traffic volume combined with significant roadside friction intensifies the negative impact on the main traffic flow. Therefore, proper operational management of the median opening is required to improve traffic performance on the Jakarta–Bogor Highway.

Keywords: *U-Turn, Median Opening, Traffic Performance, Arterial Road, PKJI 2023..*

¹*Students of Civil Engineering Department, Faculty of Engineering, Siliwangi University.*

²*Final Project Supervisor I, Civil Engineering Lecturer at Siliwangi University.*

³*Final Project Supervisor II, Civil Engineering Lecturer at Siliwangi University.*