

# **ANALISA EFISIENSI PEMASANGAN PENERANGAN JALAN UMUM BERDASARKAN VOLUME KEPADATAN LALU LINTAS DI JALAN KALIURANG – JALAN MAGELANG KECAMATAN TURI KABUPATEN SLEMAN**

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## **ABSTRACT**

*In essence, an area will continue to experience an increase in the technology sector and its population's activities. Increased population growth or activities are often not matched by improvements in inadequate facilities and infrastructure and infrastructure services. Problems that support the increase include road infrastructure facilities or Public Street Lighting (LPJU) with appropriate and efficient specifications or systems. The alternative road connects Kaliurang road to Magelang road, namely Jalan Pakem-Turi and Jalan Tempel-Turi with a total length of 13400m primary collector road. On this road, the LPJU system provided is still lacking. In terms of safety, the lights that are installed are still relatively few or uneven. From an economic point of view, the installed lights are still not efficient, so they do not save energy. The solution used in this research is to use an LED (Light Emitting Diode). The LED lights technology effectively saves energy and is also environmentally friendly technology compared to other lamps. With calculations based on SNI 7391: 2008, the use of 90 Watt LED lamps using a 9m high pole can produce an illumination of 5.22 lux, where the standard of the primary collector road class is between 3-7 lux. The system implemented in LPJU is the timer switch method. The timer setting is based on the volume of traffic density, e.g. from 6:00 p.m. to 06:00. Next will use the lighting settings that are alternated from 24.00-06.00 hours. The result of this efficiency system's application is to save energy in one month of 5,672.7 kWh, where if the lights are on continuously without using alternating intervals, it can use energy in a month of 8,974.8 kWh. So if the percentage is 36.79%, this efficiency also saves costs one year reaching IDR 57,246,526.44.*

**Keywords:** Kaliurang-Magelang Road, Efficiency, LED Lighting, SNI 739: 2008, Density Volume.