PLANNING VEGETATION AT THE GREEN LINE STREET AS THE PUBLIC GREEN OPEN SPACE (GOS) TO ABSORB CARBON MONOXIDE (CO) EMISSIONS OF MOTOR VEHICLES IN SUB-DISTRICT GENTENG SURABAYA

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ABSTRACT

Denseness activity in various sectors in Sub-District Genteng, can not be separated from the activities of transport using motor vehicles. Along with the use of motor vehicles that continues increasing and the emissions of carbon monoxide (CO) generated also increases from year to year. Green open space (GOS) street green line in Sub-District Genteng is designed with consideration sufficiency widely based on the regulation. Based on it needed planning vegetation GOS street green line in absorbing CO emissions to the next 10 years with 3 scenarios.

The necessary data on planning this is primary data and secondary data. The method of collecting primary data is by observation survey and documentation. The method of collecting secondary data is by adoption of data from various relevant government or study of literature. There are 3 scenarios, scenario I based on CO emissions in year 2024 without tram. While scenario II based on CO emissions in year 2024 by tram, and scenario III based on the availability of land. The numbers of vehicles are known, then calculated the amount of CO emissions and projected for 10 years future use geometric method. Carbon monoxide emissions existing and CO emissions in year 2024 (scenario I and II) converted into the CO₂ emissions. Capability
of absorptiveness CO₂ emissions from vegetation of GOS street green line existing is counted and obtained the rest of CO₂ emissions.

In 2024 remaining of CO₂ emissions, average 2,048 tons/year, in the year 2024 with a condition without tram 75,024 tons/year and with the condition of tram operating remaining 49,567 tons/year in Sub-District Genteng. The total area of used land for scenario I is 29,061,654 m² and need land area additional 29,031,118 m². Scenario II used land area 16,810,854 m² and need land area additional 16,780,318 m². Both of these scenarios absorb all of CO₂ emissions that is so there was no CO₂ emissions left. While scenario III does not need land area addition, however, this scenario only being able to absorb the total CO₂ emissions by 590 tons/year.

Keywords: Planning, Green Open Space, Green Line Street, Vegetation, Emission, Carbon Monoxide, Carbon Dioxide