

# **STUDI OPTIMASI TEKNIS OPERASIONAL PENGUMPULAN DAN PENGANGKUTAN SAMPAH DENGAN MODEL DINAMIS POWERSIM (Studi Kasus Kota Magelang Tahun 2006-2023)**

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## **ABSTRACT**

*Collecting and transporting waste are waste management problems on Magelang, thus optimalization and efficiency of waste collecting and transporting management needed to increase service community. Powersim is window based computer software created dynamic system model by design simulation. Simulation model of waste collecting and transporting in Magelang is drafting by determining interaction and dependence element which have a role in waste collecting and transporting. Formed concept is analyzed as model in formula or picture. Input data for waste collecting are waste volume and waste collecting equipment, input data for waste transporting are waste volume in temporary waste collecting and waste transport equipment. Simulation result show that condition of collecting and transporting solid waste system in Magelang is not optimal yet, shown from amount of untransported waste (waste residue). Recommendation of collecting process are increase all garbage wagon rotation become two rotations/day with variation of its amount and : (1) at 2006-2008, 7 garbage cars 4,5 m<sup>3</sup> one rotation daily operation; (2) at 2009-2023, 7 garbage cars 4,5 m<sup>3</sup> one rotation with 6 days operation and asumed that 50% citizen throw their garbage directly to container. Recommendation of trasporting process are : (1) at 2006-2008, 7 dump truck and road garbage transport vehicle with daily operation; (2) at 2009-2023, arm roll truck, market garbage transport vehicles (2 pick up, 1 arm roll truck) and road garbage transport vehicle with daily operation.*

*Key words : waste, collecting and transporting, Powersim.*