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# A Feasibility Study for the Locations of Waste Transfer Stations in Urban Centers: A Case Study on the City of Nashik, India

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## Abstract

Rapid population growth and high rate of urbanization make municipal solid waste management a challenging task for municipalities due to the inadequacy of infrastructural services. Taking this into consideration, this paper proposes an approach for finding economically optimal locations and feasibility demonstration of a municipal solid waste management infrastructure unit, i.e. waste transfer stations. This analytical approach consists of two basic elements: (i) a mathematical model to optimize overall cost for municipal solid waste management; and (ii) geographical information system tools to create a data inventory for the mathematical model. The novelty of the proposed model includes heterogeneity in data compilation, on-road measurements of distances and strategic allocation of transfer stations. Also, to assess waste load estimation more precisely, analyzing the impacts of heterogeneity in data and on-road distances on model, three distinct cases have been considered. Further, the developed approach has been demonstrated on the city of Nashik, India. The mathemat-

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