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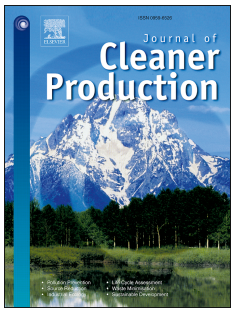

A Feasibility Study for the Locations of Waste Transfer Stations in Urban Centers: A Case Study on the City of Nashik, India

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PII: S0959-6526(16)30077-4

DOI: 10.1016/j.jclepro.2016.03.017

Reference: JCLP 6866

To appear in: *Journal of Cleaner Production*

Received Date: 12 August 2015

Revised Date: 3 January 2016

Accepted Date: 3 March 2016

Please cite this article as: Yadav V, Karmakar S, Dikshit AK, Vanjari S, A Feasibility Study for the Locations of Waste Transfer Stations in Urban Centers: A Case Study on the City of Nashik, India, *Journal of Cleaner Production* (2016), doi: 10.1016/j.jclepro.2016.03.017.

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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