SITE IDENTIFICATION FOR SOLID WASTE DISPOSAL
FOR THE CITY OF COLOMBO USING GIS TECHNIQUES

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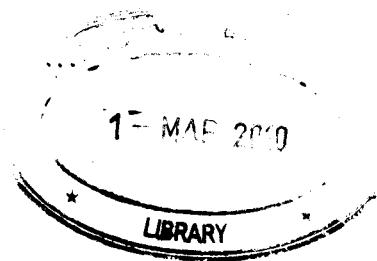
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ABSTRACT

The purpose of this research is to identify potential site for solid waste disposal for the city of Colombo using the techniques of Geographical Information System. Solid waste disposal is a serious issue in the City of Colombo, because presently it is disposed at the heart of the City. Finding a suitable site through traditional methods result ineffective solutions.

Literature related to GIS and Solid Waste Management has been reviewed in order to understand the theoretical background for the study. Spatial and Non Spatial Data required for suitability analysis were collected. Data were digitized and prepared for the analysis.

Spatial Analysis functionality in GIS was used to carry out the site identification task. Weighted Overlay techniques in Spatial Analysis were used to combine the data sets. A Model was built to process the data and to combine them.

The factors to determine the disposal site were considered in the site identification task. Land use, soil condition, distance from the schools and religious places, land values, population density, distance from the environmentally sensitive areas and slope were taken into account. All data were prepared to a compatible format to be processed and combined

in GIS environment. Data were reclassified to a common scale assigning suitability values to each cell. Depending on the importance of the factors to determine the site, weightage was assigned to each data set and overlaid.

Suitable sites were identified in the Kirulapone, Kirula and Pamankada wards. Larger plots with more than one hectare in extent were selected out of the identified sites. The conditions defined for the sites are favourable in the Southern part of the city. The sites were visited to verify the suitability and it was perceived those are suitable for waste disposal and it is realized that the application of GIS in the site selection task is reliable.