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**GIS BASED SOLID WASTE MANAGEMENT OF  
MATALE MUNICIPAL COUNCIL AREA**

A PROJECT REPORT PRESENTED BY

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to the Board of Study in Earth Sciences of the  
**POSTGRADUATE INSTITUTE OF SCIENCE**

*In partial fulfilment of the requirements  
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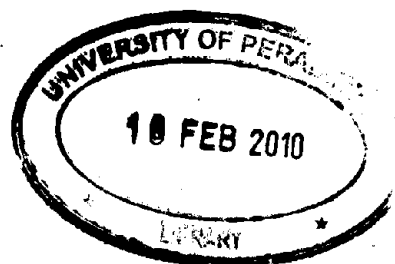
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### **ABSTRACT**

Solid waste management is one of the major problems faced by the municipal planners all over the world and, as the population grows, so does the buildup of waste. At present in many instances, solid wastes are collected in mixed state and being dumped in environmentally very sensitive places like road sides, marshy lands, low lying areas, public places, forest and wild life areas, water courses etc. causing numerous negative environmental impacts such as ground and surface water pollution, air pollution etc. Municipal planners are thus forced to consider alternate and available means of disposal especially by minimizing damage to the eco system and human population.

The problem is aggravated by the open dump nature of disposing waste, especially in the slum areas. Open dumps of solid wastes are ideal places for breeding of disease vectors like mosquitoes. Haphazard throw-away and dumping of solid waste reduce esthetic value and scenic beauty of the environment thereby creating negative visible impacts to human beings and badly affects tourism.

There is an increasing commercial, residential, and infrastructure development due to the population growth and this has negative impact on the environment. The rate of generation of solid waste in the society is increasing with the increase of population, technological development, and the changes of the life style of the people. It is being discussed the importance of waste avoidance, reduction, reuse, and recycling and final

disposal in an environmentally sound manner and still giving high priority for waste recycling over disposal and it is very important to separate wastes at the source of generation to different components to facilitate subsequent waste management practices, especially recycling.

There is a considerable amount of disposal of waste without proper segregation which has led to both economic and environmental sufferings. It is still practiced in many cities. There is a tremendous amount of loss in terms of environmental degradation, health hazards and economic descent due to direct disposal of waste. It is better to segregate the waste at the initial stages where it is generated, rather than going for a later option which is inconvenient and expensive. There has to be appropriate planning for proper waste management by means of analysis of the waste situation of the area.

Geographical Information System (GIS) can effectively help decision makers or municipal planners to make the right and reliable choice in order to select specific locations like waste bin locations and best possible sites for the sanitary landfills. This study is dealt with, how GIS can be used as a decision support tool for planning waste management. As the major outcome of this project, a proposal is made for the Matale Municipal Council for the purpose of planning waste management. The suggestions made there for amendments in the current system through GIS based proposal would reduce the waste management workload to a great extent and exhibit remedies for some of the solid waste management problems in the Matale Municipal Council area. The waste management issues are considered to solve some of the present situation problems like proper allocation and relocation of waste bins, check for suitability/unsuitability and proximity convenience of waste bins to the users, selecting a suitable dumping sites considering future developments.