

SOLID WASTE LANDFILL SITE SELECTION USING GEOGRAPHIC INFORMATION SYSTEM AND MULTI-CRITERIA ANALYSIS: A CASE STUDY IN SAKON NAKHON MUNICIPAL

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Abstract

Solid waste management is now become a necessary issue in fast-growing city. With the complexity of such management system, especially for solid waste landfill site selection, a geographic information system (GIS) couple with Multi-Criteria Analysis (MCA) was used in this study as a decision support tool in the search for such complicate task. A set of criteria was used in the method of landfill site selection including watershed area, ground water, land use, geology, soil, water body, airport area, archeological site, topography and road. The overlay analysis resulted in suitability map which show 4 different scale of suitability. Finally, 4 possible sites meeting the size of the landfill site requirement in the next 10 years of Sakon Nakhon was presented in details.

Keywords: Solid waste, Landfill, GIS, Multicriteria analysis, Site selection