

ABSTRACT

SITE SUITABILITY ASSESSMENT FOR METRO MANILA'S SANITARY LANDFILL

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With the increasing population and economic activities in the Metro Manila, the magnitude of waste being generated daily (approximately 0.5 to 0.7 kg/person/day) is expected to increase. In Metro Manila alone, it was estimated that solid waste being generated amounts to 7200 tons per day (TPD). Without proper segregation and recovery of biodegradable or compostable wastes and recyclable items prior to disposal, the current waste disposal facilities of the Metropolis would be filled in 3 to 5 years. Given the limited number of sanitary landfills serving Metro Manila, and with the mandatory closure and rehabilitation of all controlled dumps such as Payatas after the February 16, 2006 deadline set by the Ecological Solid Waste Management Act, Metro Manila would be soon running out of waste disposal facility. Hence, immediate identification of potential sanitary landfill sites should be pursued the soonest possible time in order to avoid another garbage crisis that the Metropolis had experienced during the closure of Carmona and San Mateo Sanitary Landfills. This study was done to identify and assess existing and possible sanitary landfill sites for Metro Manila's residual wastes in 2010 and to ensure that the proposed site is environmentally acceptable and technically feasible. Knowing that the current method of site feasibility evaluation is done qualitatively or without point system for the criteria being used, this site suitability assessment and selection method with a corresponding rating system was devised. Exclusion criteria is also devised to initially screen unsuitable sites based on hydrogeology and environmental parameters governing major environmental impacts that cannot be modified by current or locally available engineering or geological interventions. Any proposed site that is found to be non-compliant to any of these criteria will be referred as environmental restriction areas or no built areas for sanitary landfill projects. Five potential sanitary landfill sites were evaluated using this technique. Upon evaluation, it was found out that all sites considered are feasible but with different mitigation measures to be applied in order to minimize if not totally eradicate the environmental and health impacts associated to the operation of the facility. A site suitability assessment with a corresponding rating system or point system and exclusion criteria are indeed a vital tool in the evaluation and selection of the best site for a sanitary landfill projects. Since this type of project is environmentally critical, it is only appropriate that decision makers should be able to compare options both qualitatively and quantitatively. In the case of Metro Manila, wherein the issue of waste disposal is very high and susceptible to public criticism, the rating system would serve as strong basis by decision makers involved in site assessment and selection.