

# Landfills and Disaster Waste Management

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## Abstract

Disasters can generate large volumes of waste and debris (EPA 2008). In some cases, many years worth of waste can be generated in a single event – often overwhelming local solid waste management facilities and personnel, refer Figure 1. The availability and suitability of disposal sites can affect the efficiency of a disaster waste management programme and overall disaster recovery effort.

Disaster waste impacts almost every aspect of an emergency response and recovery effort. Debris can impede rescuers and emergency services reaching survivors; inhibit provision of lifeline support; pose a public and environmental health hazard; and hinder the social and economic recovery of the affected area (Johnston, Dolan et al. 2009). Poor management of a clean-up effort can exacerbate these problems, and can result in a slow and costly recovery which is potentially risky to public and environmental health in both the short and long term.

Landfills are an integral part of any disaster waste management strategy. Landfills are an efficient and, if constructed and operated appropriately, effective means of managing disaster waste. However, available airspace in existing landfills is often limited so disaster waste managers must consider 1) expanding existing facilities (in terms of size and waste acceptance) (Luther 2008), 2) constructing new facilities, or 3) reducing waste to landfill by recycling and reuse. Landfill operators may also change health and safety management procedures to facilitate faster management of the waste. All these options has social, environmental and economic impacts, and their consideration is an integral part of both the emergency response/recovery and solid waste management systems. Figure 2 shows the conceptual framework used by the New Zealand Ministry of Civil Defence and Emergency Management for all recovery works of which debris will be managed within.

So what are the decisions facing landfill and disaster waste managers? What is the best way to manage a landfill in a disaster situation? Is it appropriate to reduce environmental and health and safety standards to increase landfill capacity? How do you appropriately site a new landfill without time to assess the environmental impact? What are the acceptable risks in a disaster situation and who carries the liability (Luther 2008)?

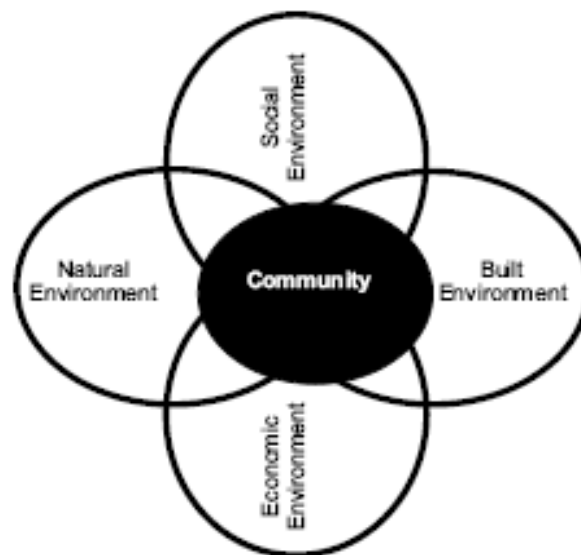
In the poster the challenge of landfill and disaster waste managers will be introduced. An overview of the social, environmental and economic issues facing landfill managers is presented and we ask the question - if you were in charge – what would you do?

## References

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**Figure 1** Phi Phi Island, Thailand, one month after the Indian Ocean, Boxing Day Tsunami, 26 December 2004 (Photo credit: Erica Seville, University of Canterbury)



**Figure 2** New Zealand Ministry of Civil Defence and Emergency Management integrated framework for recovery (CDEM 2005)