

Solid Waste Management

Environmental risks and liabilities for local governments



Introduction

Over the last thirty years, federal and state regulations addressing the management of municipal solid waste (MSW), including the federal Resource Conservation and Recovery Act (RCRA), have both defined and reduced the environmental risks and liabilities associated with MSW systems. However, even at the start of the twenty-first century, areas of environmental risk still exist that must be addressed by local government solid waste managers. This fact sheet provides an overview of current environmental risks and liabilities associated with solid waste management systems, including:

- Worker health and safety.
- The environmental risks associated with the use of recovered products or materials.
- The long-term risks associated with landfill disposal following the thirty-year post-closure monitoring period.
- The environmental risks associated with the disposal of construction and demolition (C&D) wastes.
- The ongoing risks associated with the environmental impacts of pre-Subtitle D landfills.



Environmental risks and liability in solid waste management

A solid waste management system generally involves the conduct of one or more of the following activities:

- Solid waste collection
- Solid waste processing
- Solid waste disposal.

The environmental risks and liabilities associated with each of these activities differ significantly, as discussed below.

Solid Waste Collection

The environmental risks associated with solid waste collection generally concern the health



and safety of the persons providing the collection services. Historically, solid waste collection has been one of the most dangerous occupations in the United States. Collection workers are typically exposed to health hazards associated with lifting, punctures or lacerations, and traffic accidents.

Solid Waste Processing

Solid waste processing facilities include materials recovery facilities (MRFs), composting facilities, and waste-to-energy facilities.

- **Materials recovery facilities**—Materials recovery facilities are facilities where recyclables are processed for recovery and sale. Risks associated with MRFs are generally concerned with worker health and safety, especially in the case of “dirty MRFs,” where workers sort the recyclables by hand from the waste stream. An area of potential liability involves the sale of recovered materials to a third party who ultimately becomes the subject of a cleanup mandated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In such a case, the MRF owner and operator may be deemed a “principal responsible party” and may be held liable for cleanup costs.
- **Compost facilities**—Composting involves the biological decomposition, under aerobic conditions, of the organic fraction of the solid waste stream. Environmental risks associated with compost facilities are generally concerned with worker health and safety. Another area of potential liability involves the possible contamination of land application sites (i.e., land parcels to which the compost is applied) due to the

overuse or misuse of the compost. (Currently there are no federal standards on the use or classification of compost from MSW.)

- **Waste-to-energy facilities**—“Waste-to-energy” facilities are facilities at which solid waste is combusted and energy is recovered in the form of electricity and/or steam. Because the regulations associated with waste-to-



energy facilities are so extensive, the associated environmental risks are fairly small. One area of risk involves the reuse of ash from waste-to-energy facilities. Current ash reuse alternatives include using ash as an aggregate in the construction of roads or the production of concrete. When ash is used in these applications, however, there is some concern about the potential for pollutants to leach from the ash and affect local groundwater resources.

Solid Waste Disposal

Federal regulations for the disposal of solid waste, including RCRA, have greatly reduced the environmental liabilities associated with such disposal in the United States. These regulations—referred to as Subtitle D regulations of RCRA—address all aspects of landfill disposal, including siting, design, operation, closure, and post-closure

care. With respect to environmental risks, the regulations require the implementation of systems to protect both the air and groundwater from significant negative environmental impacts associated with landfill activities.

Despite these regulations, however, there are three areas of lingering concern with respect to environmental risk:

- **Long-term potential for Subtitle D landfill liner failures**—There is a valid concern about the potential failures of Subtitle D landfill liners after the end of the liners’ design life, typically on the order of fifty years; and about the potential negative environmental impacts that may result from such failures. This concern has led to a new method of landfill operation—referred to as the bioreactor landfill method—which involves the accelerated decomposition of the waste stream.

This method is used partly to stabilize the waste before there is any significant risk of liner system failure.

- **Environmental impacts of construction and demolition landfills**—The landfilling of C&D waste is not regulated at the federal level. State regulations of C&D landfills vary from requiring disposal in lined facilities to requiring disposal in unlined facilities with cover material applied weekly.

A growing concern involves the environmental impacts associated with the disposal of pressure-treated lumber in unlined C&D landfills. This lumber has been treated with the pesticide chromated copper arsenate (CCA), which has the potential to leach into the groundwater and become a source of arsenic pollution. Studies are currently under way to determine the degree of risk associated with this group of materials.

- **Risks associated with pre-Subtitle D landfills**—The U.S. Environmental Protection Agency (EPA) promulgated the Subtitle D landfill regulations in 1991. At that time states were required to develop state landfill regulations based on the federal regulations and to implement them by the mid-1990s. However, many local governments are responsible for the management and care of closed MSW landfills that were constructed and operated under pre-Subtitle D standards. The environmental risks associated with these landfills are well documented and in fact formed the basis for the federal Subtitle D standards. MSW landfills constitute a major portion of the sites identified as needing cleanup under the federal Superfund program.

Common areas of environmental impact include groundwater pollution, gas explosion and asphyxiation risks, air pollution, and global warming. Many local governments are still responsible for the management and care of closed pre-Subtitle D landfills and continue to bear the risks associated with the environmental

impacts and potential remediation costs associated with these sites.

More information on the federal statutes that affect local governments and on the various categories of environmental liability that can be incurred under specific statutes and common law theories, and a brief outline of strategies for minimizing exposure to environmental liability, are available in *The Primer for Local Governments on Environmental Liability* at <http://www.lgean.org/documents/primer.pdf>

Resources

Air & Waste Management

Association: <http://www.awma.org>

Landfills: Hazardous to the

Environment: <http://zerowasteamerica.org/Landfills.htm>

Local Government Environmental Assistance Network (LGEAN):

<http://www.lgean.org>

Resource Conservation and Recovery

Act: <http://www4.law.cornell.edu/uscode/42/ch82.html>

Solid Waste Association of North

America: <http://www.swana.org>

U.S. EPA – *Catalog of Hazardous and Solid Waste Publications:* <http://www.epa.gov/epaoswer/osw/catalog.htm>

U.S. EPA – *A Collection of Solid Waste Resources on CD-ROM:* Available at <http://www.epa.gov/epaoswer/osw/cdoswpub.htm>

U.S. EPA Office of Solid Waste: <http://www.epa.gov/osw>

U.S. EPA – RCRA Online: <http://www.epa.gov/rcraonline>

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