

Our Position

Professional engineers' involvement in solid waste management is critical to finding solid waste management solutions throughout Ontario. Engineers offer their technical expertise in a trustworthy accurate and unbiased manner for the purpose of informing the public and policy-makers about the scientific and engineering methods appropriate to our solid waste management problems.

The Issue: Professional engineers' involvement in solid waste management

Solid waste is the term used to describe refuse from domestic, industrial, commercial or institutional sources, produced as a result of human activity. In general use it excludes wastes that are hazardous, radioactive or liquid.

Solid waste management is concerned with the creation, avoidance, reduction, collection, transport, processing and/or disposal of waste materials. Properly done, it will ensure that: there are minimal negative effects on human health; any effect on the environment is manageable; natural resources are maintained; and, the aesthetic and socio-economic values of affected communities are not degraded.

The Ontario Society of Professional Engineers believes that the following hierarchy for the management of solid wastes be used. The residual waste still remaining following each stage of the hierarchy would be considered for treatment in the next or succeeding stage.

1. *Prevent* waste generation where possible;
2. *Reuse* waste for other purposes;
3. *Recycle* waste through the creation of other useful products;
4. *Compost* the organic fraction of the waste stream and use the resulting composting material;
5. *Anaerobically bio-degrade* the organic fraction of the waste stream to recover methane for energy and use the resulting biodegraded material;
6. *Incinerate*, change the form, and reduce the volume of the combustible fraction of the waste stream and recover the energy while safely disposing or using the products of combustion;
7. *Landfill* waste in a safe location and utilize methane and other gases as a source of energy

Why Professional Engineers Need to be Involved

Professional engineers have a thorough understanding of solid waste management issues as demonstrated through the design and development of innovative solutions to solid waste management challenges. Professional engineers have been at the forefront of promoting elimination of waste generation, reuse of waste materials, recycling of waste materials into secondary products, use of thermal technologies (such as energy-from-waste) for disposal of solid waste, engineered landfill technologies, and advanced organics processing.

In order to determine the most appropriate solution, professional engineers follow a process that begins with defining the solid waste management challenge to be resolved, identifying regulatory and other compliance requirements, and then evaluating the technical feasibility, costs, and potential environmental and socio-economic impacts of appropriate options to assist decision-makers to determine the preferred alternative.

Professional engineers have a clearly defined legal duty to society, to complete their work with full regard for the public's safety. Further, professional engineers have a legal and moral requirement to perform only those services they are competent to provide. Ontario Regulation 941 cites the requirements with which professional engineers practicing in Ontario must comply. These requirements provide all stakeholders – including decision-makers and the public – with the assurance that solid waste management proposals put forward by professional engineers, are based on sound technical, environmental and economic realities of the situation, so that his/her evaluations are made on an objective merit basis.

Solid Waste Management Challenges

Although professional engineers have consistently demonstrated that they have the expertise to find and propose technically-feasible, cost-effective solutions that minimize environmental impacts, their proposals are often debated in an atmosphere where decision-makers are constrained by political and community viewpoints. The reason for this constraint can include simply the desire of elected officials to avoid the wrath of angry voters on contentious solid waste management issues, a lack of accurate information about fiscally viable, environmentally-appropriate solutions, or by focusing too soon on a course of action without the full investigation of all reasonable options. To overcome these constraints, Professional engineers must effectively engage the public and decision-makers and to persuade them of the merits of the science and engineering underpinning their proposed solid waste management solutions.

Government can assist this process by providing greater certainty in the environmental assessment and approval process, which dictates the approach to identification, screening and selection, construction, and operation of a range of reasonable solid waste management alternatives. The ability of professional engineers, decision-makers and the public to resolve solid waste management issues would benefit from a more definitive, rule-based process that is accepted and respected by all stakeholders.

OSPE's Contribution

OSPE supports relying upon safe and affordable solutions to Ontario's solid waste management challenges. OSPE believes that decisions about solid waste management that do not conform to a due process cannot provide the same level of safety and dependability as decisions based on thorough analysis of technical, economic, and environmental considerations.

Professional engineers offer decision-makers and the public the best source of technical expertise about solid waste management, and are in the best position, based on their skills and experience, to identify a range of appropriate solutions that take advantage of the benefits of technology and minimize environmental and socio-economic impacts.

As the voice of Ontario's engineers, OSPE believes that professional engineers have the skills, ability, and legal mandate to take one of the leading roles in the management of Ontario's solid waste.

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