

Landfill Design Plan

General

This fact sheet provides information required by the Ministry of Environment to complete the permitting process for designing a landfill. If you plan to establish a landfill, you must apply for a permit from the ministry.

Landfill owners may follow the landfill design best practices or best design practices of another jurisdiction. Landfills must adhere to design best practices, including proper lining, leachate collection and site-specific conditions. These measures protect groundwater from potential contamination from landfill operations. During the design stage, site suitability information is required. If information is unavailable, a site assessment following the Saskatchewan Environmental Code's Site Assessment Chapter is required, including for alterations of existing landfills. Additionally, waste management infrastructure (such as landfill cells and leachate ponds) must meet the setbacks specified in *The Municipal Refuse Management Regulations* (Section 8(2)).

Owners of proposed new landfills are required to have the project screened to determine whether it will be considered a development pursuant to *The Environmental Assessment Act* requiring an environmental impact assessment. For more information on this process, visit saskatchewan.ca/business/environmental-protection-and-sustainability/environmental-assessment.

If you are establishing a new landfill, you must engage with stakeholders. For existing landfills, expansion plans may need to be screened through the Environmental Assessment and Stewardship Branch and may also require stakeholder engagement. To determine if these activities apply to your facility, please contact the ministry.

Non-municipal (or private) owned landfills require financial assurance as required by *The Environmental Management and Protection (General) Regulations* (Sections 8(2)(o) and 9(1)).

Application to Establish, Construct and/or Operate

Landfill owners must submit an Establish, Construct and/or Operate a Waste Disposal Ground application through the ministry's [online business portal](https://saskatchewan.ca/business/environmental-protection-and-sustainability/environmental-assessment) to receive a permit. Landfill owners will receive an automated email receipt of the document submission. The ministry will review the application in detail over the next six to eight weeks. The application should include the following information:

1. **Site suitability report:** The site suitability report should describe the landfill's siting and the technical investigation results. The technical investigation fully characterizes the site-specific design requirements and protects the environment. This information will also be used for the operations plan. The report should include:
 - a) A site plan that details the topography and surface water hydrology, including wells, rivers, lakes, streams or other natural water bodies within 1,000 metres of the proposed site; and
 - b) A detailed description of the site's geologic and hydrogeological conditions.

- 2. Design plan:** The report should include a design that meets the best design practices and should:
- a) Indicate the best management practices being followed and provide scientific justification for any deviations.
 - b) Include the location and the surrounding land use, identifying appropriate setbacks as per *The Municipal Refuse Management Regulations* (Section 8(2)).
 - c) Identify the activities proposed, including volumes, types of waste and anticipated waste tonnage to be disposed of each year and during the design life.
 - d) Dangerous wildlife electric fence design (where applicable) as per the Dangerous Wildlife Electric Fence Design Plan guidance document.
 - e) Considering the results of the technical investigation, include the final sealed engineered drawings that consider construction quality control assurance procedures and incorporate environmental protection for the following:
 - Cells and ponds, including:
 - An indication of high groundwater level in relation to the base of the seepage barrier; and
 - Cross sections of the cell(s) and seepage barrier system(s).
 - Surface water management system;
 - Groundwater monitoring system;
 - Landfill gas management system;
 - Leachate collection and management system; and
 - Final cover system.
 - f) Construction quality control/quality assurance plan.
 - g) Include a site plan showing:
 - Legal site boundary;
 - Location of site access, roads, earthworks, buildings and infrastructure; and
 - Hydrologic information, land use and other environmental information.
- 3. Other Information:**
- a) Environmental assessment screening information.
 - b) Summary of stakeholder engagement and information about how the design addresses stakeholder concerns.

Construction Verification

After completing construction as per the approved design plan, the owner must notify the ministry before starting operations, as per permit requirements. The owner must abide by all conditions outlined in the Permit to Establish, Construct, and/or Operate a Waste Disposal Ground. Landfill design plans can be submitted through the Ministry of Environment's [online business portal](#).

Design Verification

The landfill design plan shall be prepared by a person with the core skills and competencies to design a landfill. The landfill owner shall build it in accordance with the design.

Landfill Decommissioning and Reclamation (Closure) Plan

Landfill owners must have a landfill decommissioning and reclamation closure plan in place no later than 60 days after completing landfill construction.

The plan must include information that addresses, but is not limited to:

- a) Physical closure steps (e.g. interim cover, litter cleanup, removal of temporary storage areas);
- b) Design and implementation of the decommissioning and reclamation plan;
- c) Post-closure care, including environmental monitoring and reporting; and
- d) Corrective action plan implementation (if necessary).

More information is in the ministry's [Landfill Closure Guidance Document](#).

Definitions

Alteration: Expansion (e.g. trenches, new cells, the addition of designated areas, etc.), process change, and other modifications based on site characteristics.

Best practice: A technique or methodology proven to be the best in a particular business or industry; usually described formally in regulations or guidelines.

Buffer zone: The area between the existing waste footprint and the landfill's compliance boundary.

Compliance boundary: The compliance boundary of a landfill is the property boundary as marked on the site plan or the property boundary limits of the existing landfill.

Design life: The period during which the landfill is designed to accept waste.

Design plan: Project planning for the construction of a new landfill or alteration of an existing landfill based on site characteristics.

Expansion: A horizontal increase outside of the existing waste footprint of a landfill or a volumetric increase in the estimated or designed waste disposal capacity of the existing waste footprint of a landfill.

Landfill: A waste disposal facility where solid waste is permanently disposed of by placing it above or below ground (also called a waste disposal ground).

Municipality: A municipality as defined in *The Interpretation Act, 1995*, including the Saskatchewan portion of the City of Lloydminster.

On-site: A substance on and completely contained within the boundaries of the property owned or occupied by the owner.

Owner of a landfill: A government agency, municipality or private owner.

Private owner of a landfill: A person other than a government agency or municipality that owns a landfill.

Waste footprint: The area within a landfill's compliance boundary designated or designed for waste disposal.

Waste storage area: The area within the compliance boundary of a transfer station that is designated or designed for the temporary storage of waste.

Contact and References

Saskatchewan Ministry of Environment

Tel: 1-800-567-4224 (toll-free in North America) or 306-787-2584

Email: Centre.Inquiry@gov.sk.ca

Ministry Business Portal: saskatchewan.ca/business/environmental-protection-and-sustainability/environmental-online-business-portal