

SWANA NLC Waste Management Workshop

Regulatory Requirements for Waste
Disposal Grounds

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Overview

- Landfill Design Requirements
- Landfill Closure Requirements
- Investing in Canada Infrastructure Program (ICIP) Landfill Closure Program

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Compliant Landfill Design



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Landfill Design

Site Suitability:

The site suitability report should describe the siting of the facility and the results of the technical investigation. The technical investigation is used to fully characterize the site-specific design requirement and protect the environment.

The report should include:

- a) A site plan that details the topography and surface water hydrology within 1000 meters of the proposed site.
- b) A statement or document describing the geological and hydrogeological conditions.

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Landfill Design Plan

The report should be prepared by a person who possesses the core skills and competencies and include a design that meets the applicable best practices and should:

- a) Identify the location and the relationship with host site and surrounding community.
- b) Identify the activity proposed including volumes, types of waste and anticipated waste tonnage to be disposed of each year and the design life.
- c) Considering the results of the technical investigation include construction QAQC procedures and incorporate environmental protection through:
 - Seepage barrier system
 - Surface water management
 - Groundwater Monitoring
 - Leachate collection
 - Final cover system
 - Landfill gas management

Landfill Design Plan

- The report should be prepared by a person who possesses the core skills and competencies and include a design that meets the applicable best practices and should:
- d) Include a site plan showing:
 - legal site boundary
 - geographical location of site access, roads, earth works, buildings, buffer zones, and infrastructure
 - hydrologic information, land use and other environmental information
 - areas designated for different waste types

Waste Disposal Grounds Closure

Formal Closure

- Inform the ministry 90 days prior to closure
- Post a notice at the entrance
- Apply interim (daily cover) to landfill

Next Steps

- The ministry works with stakeholders on the time required to complete the next steps such as site assessment and applying final cover. Typically two to five years, depending on the site.
- **Closure report** including, but not limited to:
 - Site plan
 - Landfill cover design
 - Removal of infrastructure or other material such as metals pile
 - Site grading if required
 - Contaminating lifespan of landfill, may include groundwater monitoring program going forward

Landfill Cover Design

The Standards for Landfills in Alberta Section 6 establish a minimum requirement for design as:

- i. A drawing that shows the proposed geometry of the final cover, which shall have a slope at a minimum of 5 per cent and a maximum of 30 per cent;
- ii. A final cover system consisting of three layers constructed in the following order from bottom to top:
 - a) 0.60 metres barrier layer with a maximum hydraulic conductivity of 1×10^{-7} metres per second;
 - b) Subsoil; and
 - c) 0.20 metres of topsoil.
- iii. Subsoil depth in (ii)b. shall be:
 - a) 0.35 metres for pasture or recreational uses; or
 - b) 0.80 metres for cultivated land use or forestry;
- iv. Vegetation establishment as per the intended land use;
- v. **Alternate final cover systems may be authorized.**

Environmental Site Assessment

A requirement of an ESA is trigger by:

- Permit condition that is used to establish groundwater monitoring at an operating site
- The closure of a landfill

The ESA needs to follow the Site Assessment Code Chapter. ESA scope for small municipal landfills should be developed based on the potential risk for offsite impact and to potential receptors.

- If a phase I review indicates that there is low risk of the landfill leachate impacting potential receptors such as existing potable water wells or fish bearing water then groundwater monitoring may not be required.
- Long term groundwater monitoring is based on the recommendation of a QP and should only be recommended where warranted.

Investing in Canada Infrastructure Funding

- Canada and Saskatchewan signed the bilateral agreement for the Investing in Canada Infrastructure Program (ICIP) in October 2018.
- The program will provide more than \$896 million in federal funding for all types of Saskatchewan infrastructure projects over the next 10 years until 2028.
- There are four funding streams including
 - Public Transportation;
 - Green Infrastructure;
 - Community, Culture and Recreation Infrastructure, and;
 - Rural and Northern Communities Infrastructure

Investing in Canada Infrastructure Funding

Landfill Closure Program

- Saskatchewan has allocated \$50Million from the ICIP program to landfill closure.
- This includes Federal contribution of \$20M (40%), Provincial contribution of \$16.7M (33.33%) and a municipal contribution of \$13.3M (26.67%).
- Costs that can be included are Environmental Assessment and physical closure costs.
- The program runs until 2023-24 or until the money is allocated.
- Applications for landfill closure to the spring 2020 intake are included in this program.
- The next intake for applications is expected to be in September 2020.

Information

- Waste Management Guidance Documents:
<https://publications.saskatchewan.ca/#/categories/33>
- More information on the Investing in Canada Infrastructure Program (ICIP):
<https://www.saskatchewan.ca/government/municipal-administration/funding-finances-and-asset-management/funding/investing-in-canada-infrastructure-program>

Questions?

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