
Landfill Permit to Operate Revisions

Recommendation

That the report of the General Manager, Transportation & Utilities Department dated September 10, 2018, be received as information.

Topic and Purpose

This report provides information as to how the Administration plans to implement and comply with recent regulatory changes mandated by the Saskatchewan Ministry of Environment through the City of Saskatoon's Permit to Operate a Waste Disposal Grounds.

Report Highlights

1. On April 2, 2018, the City of Saskatoon received a renewed Permit to Operate a Waste Disposal Grounds from the Saskatchewan Ministry of Environment. This new permit requires landfilled waste to be covered more frequently than the previous permit.
2. The Administration identified a waste cover solution which will have a lower operational cost and lower airspace consumption rate compared to other available options.
3. The Landfill Optimization project will be utilized for an estimated \$150,000 in capital funding required to specify and procure the waste cover solution. An increase in the Landfill's annual operating budget, due to this change, can be avoided and partially offset by continuous improvements implemented at the Landfill throughout 2017 and 2018.

Strategic Goal

This report supports the long-term strategy to eliminate the need for a new landfill under the Strategic Goal of Environmental Leadership.

Background

In 2011, City Council approved the Landfill Optimization project which included a capital budget to support improvements identified in the Integrated Landfill Management Plan. This included improving daily covering practices, along with minimizing leachate, litter, pests, and odours through the use of daily cover.

On May 29, 2018, City Council received a report on the Landfill Airspace Value, which highlighted the airspace remaining at the Landfill, along with its valuation.

Report

Permit to Operate a Waste Disposal Grounds

On April 2, 2018, the City's Permit to Operate a Waste Disposal Grounds, which governs a significant portion of the Saskatoon Regional Waste Management Centre's (Landfill's) operations, was renewed by the Saskatchewan Ministry of Environment, pursuant to *The Environmental Management and Protection Act* and the *Municipal Refuse Management Regulations*.

One key element of the permit is the requirement to cover waste. In addition to being a regulatory requirement, covering waste is considered industry best practice, as it helps to achieve the following results:

- Minimize nuisances (insects, rodents, odours, etc.);
- Minimize infiltration of moisture (reducing leachate production as moisture migrates through the waste);
- Prevent and control the spread of fires;
- Control wind-blown litter; and
- Improve site appearance.

Areas of the Landfill which are not active are covered with soil to meet the above objectives, as well as others. Active landfill areas also have requirements for waste coverage, which may involve soil or other materials. The practice of applying cover to an active area of a landfill is known in the solid waste management industry as "daily cover." The frequency with which an active landfill area must be covered is specified within the permit.

The City's previous permit specified a daily cover frequency of not less than three (3) times weekly, which equates to at least 156 times per year. This was achieved mainly by the use of soil (clean fill) and an existing alternative cover system which used a manufactured film to cover the waste.

The renewed permit increased the daily cover frequency to the following:

- One (1) time per day from May through November; and
- One (1) time per two (2) days from December through April.

This equates to at least 289 times per year; a frequency increase of approximately 85% annually.

Daily Cover Implications:

The changes in daily cover activities will work well to align the City's landfilling practices with industry best practice. However, an increase in operating expenditures is an obvious risk associated with this change. Continuing to utilize soil for daily cover activities will accelerate landfill airspace consumption, thereby reducing the overall lifespan of the Landfill.

Solution for Increase in Daily Cover:

The Administration undertook a detailed pre-feasibility and feasibility study to evaluate daily cover alternatives which are in-use within the solid waste management industry. The feasibility report is included in Attachment 1.

The preferred solution includes the use of:

- A tarp deployment system for daily cover in the summer, and on winter days which there is no snowfall; and
- The existing film deployment system for winter days on which snowfall occurs.

Soil (clean fill), remains a viable contingency plan, should the tarp or existing film systems be unavailable due to equipment maintenance.

Implementing this alternative daily cover solution will result in:

- Environmental regulatory compliance and alignment with industry best practice;
- The lowest annual operating cost compared to any other alternative (\$270,000 to \$290,000 lower than the next closest option); and
- The lowest landfill airspace consumption compared to any alternative. For comparison, it is estimated that up to seven years of landfill life could be lost if soil was solely used for daily cover instead of an alternative solution.

Public and/or Stakeholder Involvement

The Saskatchewan Ministry of Environment was contacted to ensure the alternative daily cover solution will comply with regulatory requirements. Industry experts and other municipalities were also consulted to validate the practicality and effectiveness of the recommendation.

Financial Implications

Funding of \$150,000 has been requested for 2019 through Capital Project #2051 – Landfill Optimization to specify and procure the tarp deployment system.

There is no expected annual increase required for the Landfill Operating Budget, as a result of implementing this daily cover option. Through 2017 and 2018, the Administration implemented changes to the Landfill's heavy equipment operation which both optimized waste compaction and minimized run-time. Early estimates have indicated \$40,000 in annual savings which will be used to account for the new requirements in the permit to operate.

Environmental Implications

Along with ensuring regulatory compliance, implementation of the daily cover solution will reduce airspace consumption compared to current daily cover practices, thereby extending the life of the Landfill. In order to fully maximize these savings, and quantify the impact, a city-wide strategy for clean fill management will need to be developed and implemented. Currently, the Landfill remains one of the only soil repositories in the region.

Other Considerations/Implications

There are no options, communications, policy, privacy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

Final specification and procurement of the recommended daily cover solution will occur into 2019.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Landfill Daily Cover Feasibility Report

Report Approval

Written by:	Mark Shaw, Environmental Operations Manager, Water & Waste Stream
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