

## SECTION 7

### SOLID WASTES

#### 7.1 INTRODUCTION

This section of the report will discuss the current proposals for Solid Waste Management in Edson as described in the report "Jasper-Edson Regional Waste Management Study" prepared by Dillon Consulting Engineers in association with Bissel and Associates for Alberta Environment.

#### 7.2 ASSESSMENT OF PROPOSED WASTE MANAGEMENT SCHEME

The March 1981 Jasper-Edson Regional Waste Management Study prepared by Dillon Consulting Engineers and their associate Bissel and Associates has identified the need for improved solid waste disposal facilities for the Jasper Edson corridor. The present disposal site in Edson has been described in this report as being near capacity and not an ideal operation. Problems occurring at the Edson site are related to site drainage, a high water table, and a continued operation as a modified landfill where wastes are covered only monthly.

With the 1980 population of Edson being in the order of 5650 a site was needed to dispose of approximately 3100 tonnes per year. The regional component adds 825 tonnes per year is added to the site disposal requirements. The Dillon report projected for the year 2000, an average need for disposal by Edson and Regional users of 6,965 tonnes annually.

The Dillon report has also recommended (Alternative 12) as a solution to the Regional disposal requirements the construction of a regional landfill site in the Hinton area with the Edson regional wastes being hauled by transfer vehicle approximately 104 kilometers to the regional site. This recommendation was based on an economic

**TABLE 7.1**  
**EXCERPT TABLE 13 DILLON REPORT**

Description	Capital Cost	Rank	20 Year Oper- ating Cost	Rank	Total Cost	Rank
<b>Alternative 3</b>						
Hinton Haul to disposal site at Edson	\$1,408,000	1.44	\$7,728,000	1.19	\$9,136,000	1.19
<b>Alternative 7</b>						
Hinton and Edson both develop disposal sites	980,000	1.00	7,613,000	1.17	9,593,000	1.12
<b>Alternative 12</b>						
Edson Haul to disposal site at Hinton	1,203,000	1.23	6,484,000	1.00	7,687,000	1.00

review of both capital and operating costs for 14 alternatives. The report also detailed two alternatives as being close to Alternative 12. An excerpt from the report's table 13 page 79 summarizes these three alternatives.

From Table 1 there is an approximately 12% advantage in the total regional costs in having Edson transfer wastes to Hinton rather than own and operate their own sanitary landfill. This difference on a regional basis can be considered significant and does in fact support the report's recommendations.

When considering the effect on Edson as a portion of the Regional operation several questions become apparent. The first is that the economic analysis is performed on a regional basis but does not address the costs to individual communities. Presumably, with the establishment of the regional authority, all centres will be charged the same service rate. For example Table 14 page 80 identifies the regional capitalized operational cost as \$19.28/tonne for Alternative 12 and \$21.55/tonne for Alternative 3. If all communities were charged the \$19.28 then there would be substantial subsidization of Edson's costs.

Table D-7 in Appendix C-3 of the Dillon report identified an operating cost for Edson alone of \$3,624,000 and a capital cost of \$449,000 for the same twenty year period. Calculations based on Table 9 page 20 indicate that the total tonnage placed into an Edson landfill site from the region for the twenty year period would be 108,900 tonnes. Using these costs the comparative cost for Edson to build and operate their own landfill (Alternative 7) is \$4,074,000 or \$33.28/tonne.

From table D-12 for Alternative 12 in Appendix C-3 of the Dillon report they have identified the transfer operating cost for Edson alone of 1,840,000 and disposal operating costs of 1,268,000. They have also identified capital costs for transfer of 662,000 and for landfill \$148,000. Using these costs the comparative cost to build and operate a transfer scheme to Hinton (Alternative 12) is \$3,918,000 or \$35.98/tonne.

Thus the difference between Alternate 7 and 12 is \$2.70/tonne in total operating and capital costs. This represents a cost increase of 8% for the Town of Edson to run its own landfill.



Undertaking the same analysis on operating costs only Alternate 12 would have operating costs of \$3,108,000 or \$28.54/tonne while Alternative 7 would have operating costs of \$3,624,000 or \$33.27/tonne. This represents a cost increase of \$4.73/tonne or 17% for the Town of Edson to run its own landfill.

From this analysis of the Dillon report the following observations are evident.

1. The cost of operating a solid waste system over the 20 year period is very large compared to the initial capital costs.

	<u>Operating %</u>	<u>Capital %</u>
Alternative 7	92.5	07.5
Alternative 12	85.8	14.2

2. The operating costs of \$16.90/tonne for transfer and \$11.64 for disposal for Alternative 12 represent a subsidization by others to Edson. When compared to the reported regional operating cost of \$16.26/tonne, the regional group is subsidizing Edson by \$12.28/tonne. This subsidization represents 72% of Edson's transfer operating costs.
3. Based on 20 tonne loads the year 1980 requirement would be one trip a day whereas the year 2000 requirement would be two trips a day. A round trip, assuming an 80 kilometer/hour speed and a 1 hour dumping and hookup period would take 3.6 hours. An estimate of operating costs for this type of unit is \$1.04 kilometre<sup>1</sup>. Thus the yearly costs in 1980 based on 250 trips at \$260 trip is \$65,000. The same costs in the year 2000 based on 500 trips at \$260 trip is \$130,000. This is substantially more than the \$72,000 estimated in the Dillon report.

The effect of this cost could represent an increase of \$510,000 in haul costs over the 20 year period or \$4.68 tonne. This when compared to the \$4.73/tonne stated difference between alternative 7 and 12 could make these alternatives equal.

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1 1980 Management Report City of Edmonton

The observation to be reached from this exercise is that haulage costs vary directly with the volume hauled.

4. Normal operations of a landfill to serve a community such as Edson require the use of one tracked vehicle. Under Alternative 12 the disposal system requires approximately  $\frac{1}{4}$  of a tracked vehicle plus one transfer vehicle full time. The inflation on energy costs for  $1\frac{1}{4}$  vehicles over 1 vehicle could be considerable in future years.

### 7.3 CONCLUSIONS

From the foregoing review and analyse the following conclusions can be reached.

- a) If the regional authority equalizes charges to all users then there is a strong economic advantage for Edson to enter the authority and haul their solid wastes to a regional site at Hinton.
- b) If the regional authority does not equalize charges to all users, then there may not be large economic advantage and there may be a significant disadvantage to using the regional facility.
- c) The operating costs for either a landfill located in the Edson area or a transfer scheme to Hinton represent approximately 90% of the total system costs.
- d) the effect of inflation on energy costs for a landfill located in the Edson area would probably be less than that of entering a regional scheme.
- e) The transfer scheme to Hinton would not handle all of the Edson area solid wastes. Large items such as car bodies debris and rubble would still require a dry disposal site in the Edson area.

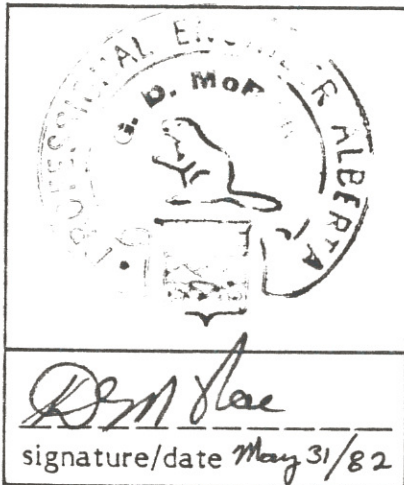


CORPORATE AUTHORIZATION

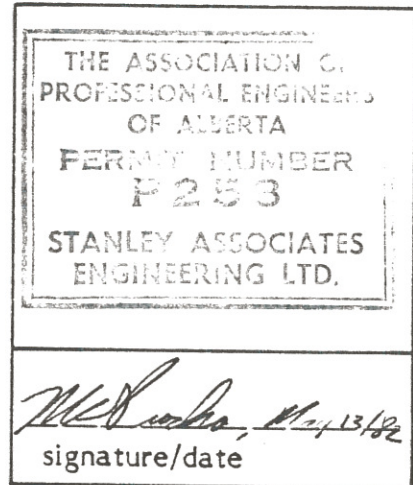
This document entitled Town of Edson

General Engineering Study - 1982

was prepared by Stanley Associates Engineering Ltd.



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