

APPENDIX I

CAPITAL COST RECOVERY

HALIBURTON - MUNICIPALITY OF DYSART ET AL  
SEWAGE TREATMENT PLANT EXPANSION  
CAPITAL COST RECOVERY

1. SUMMARY OF FINDINGS

The objective of this report is to recommend how the capital cost of the proposed Sewage Treatment Plant Expansion and Kashagawigamog Sewer Extension can be recovered. A financial analysis has been carried out covering the period 1989 to 2008. Financial and customer information have been projected based on "Haliburton Sewage Treatment Plant Expansion for the Municipality of Dysart et al. Class Environmental Assessment Phases 1 and 2 Report" (April, 1989) by Totten Sims Hubicki Associates and on discussions with Dysart staff.

The following is a summary of the findings discussed in more detail in Sections 2 to 5, below:

- 1) The Kashagawigamog Sewer Extension capital costs should be completely recovered up front from benefitting properties. This is already Dysart policy and has been agreed by all properties already allocated capacity. Currently 593 Equivalent Residential Units (ERU) of capacity have been allocated out of a total of 777 ERU capacity provided. Reserve capacity is available for development (184 ERU) and should also be charged up front as new requests for capacity are granted. The estimated charge is \$2,694/ERU (based on current cost estimates, and 15 year debentures at 11% interest) plus the cost of private works needed by each customer.
- 2) This method of charging benefitting customers directly for the cost of the Kashagawigamog Sewer Extension works is similar to the frontage and connection charges in the existing Haliburton system.
- 3) All remaining costs, including operating and maintenance costs plus the Sewage Treatment Plant (STP) capital costs are currently recovered from User Rates paid by each customer plus a 2 mill property tax charge. It is proposed that this method be continued for new systems.
- 4) The current flat rate is \$100 per Billing Unit. A projection of customer and financial data (\$ current) indicates that a 5% increase in charges applied against both new and old customers should be sufficient to recover the projected operating, maintenance and STP capital costs.

5) Debt for the existing system will not be repaid for 25 years. The annual principal plus interest payment for the existing debt is \$40,000. It is noted that an increase in the annual payment by about \$8,000 would allow the debt to be repaid in 15 years, that is ten years sooner. This would be equivalent to about \$2/Billing Unit annually once the new customers are connected.

## 2. EXISTING CAPITAL COSTS

Several methods are being utilized to recover the original sewer system capital costs. The charges included:

Frontage Charges annually @ \$0.40/foot for 40 years  
(1988 Revenue 2,401,823 ft. x \$0.40/ft. = \$9,607)

Connection Charges annually @ \$32.71 for 40 years  
(1988 Revenue 287 x \$32.71 = \$9,388)

User Rate (Now \$100/Billing Unit/year)

Mill Rate of 2 mills (First imposed this year)

Although details of the calculations establishing these rates are not available, the frontage and connection charges would normally recover local sewer system capital costs and the user rate/mill rate would recover treatment costs and perhaps some major sewer costs.

Originally the debt was part of a Provincial financing scheme. After approximately ten years, Dysart took over the debt and it was refinanced with 30-year repayment at 10% interest. The debt will be fully repaid in 25 years in the year 2014. Annual payments are about \$40,000, and the debt now outstanding totals \$367,000.

Dysart may wish to accelerate these payments. Based on the same 10% interest rate, the following annual payments would be required:

<u>Year Repaid</u>	<u>Period Remaining</u>	<u>Annual Payment</u>
2014	Current - 25 Years	\$40,000
2009	20 Years	43,000
2004	15 Years	48,000

Thus, by increasing the debt payment by approximately \$8,000 per year, the repayment period could be decreased by ten years from year 2014 to 2004.

### 3. KASHAGAWIGAMOG SEWER EXTENSION

#### 3.1 Kashagawigamog Sewer Extension Capital Cost Allocation

The Kashagawigamog Sewer Extension includes a sewer/forcemain and pumping stations. It runs westerly from the Sewage Treatment Plant. It follows Highway 121 and includes capacity for a number of specific properties, as well as extra capacity which the Township has reserved for additional development (i.e. "Dysart Reserve"). All properties connecting to the sewer will be allocated a specific portion of the sewer capacity and must pay up front for the capital cost of their capacity.

The agreed capacities and current cost allocation are as follows, based on Fall 1990 prices:

#### Kashagawigamog Sewer Extension

	<u>Equivalent Residential Units</u>	<u>Current Cost*</u> <u>Allocation (%)</u>	<u>Estimated Cost</u> <u>(\$)</u>
<u>Preallocated</u>			
Commercial Block	9	4.72%	\$215,712
Deer Lodge	100	4.88	223,215
Hyd1 Hills	50	1.99	91,072
Lakeview Motel	18	0.87	39,979
Langdon Apts.	20	0.68	30,966
Locarno Resort	46	3.91	178,725
Maple Hill	50	1.35	61,503
PineStone Inn	100	2.83	129,458
Silver Beach	36	1.10	50,060
Slipper Property	50	1.40	64,142
Wigamog	100	6.33	289,546
Willow Beach	15	2.26	103,447
	—	—	—
	593	32.33%	1,477,824
Dysart Reserve	184	4.95	226,329
	—	—	—
Total	777	37.28	1,704,153
	====	=====	=====
MOE Subsidy (75% of Shared Works & 0% of Private Works)		62.72%	2,867,247
		—	—
Total	100%	\$4,571,400	
	====	=====	=====

\*Includes shared and private works. Final cost allocation will depend on contract costs.

It should be noted that there are both private and shared costs. The Equivalent Residential Units (ERU) relate only to the capacity each customer requires in the shared works. The MOE grant level for the shared costs is 75%. There is no grant for private works. The average grant level is currently 62.72%. Details of the cost allocation are provided in Table 1.

The sewer is sufficient for 777 ERU's and a population of 2,331 based on three persons per ERU.

### 3.2 Kashagawigamog Sewer Extension Cost Recovery

It is a precondition that all properties with preallocated capacity pay their share of the Kashagawigamog Sewer costs up front. Each property's estimated share of the costs, covering 593 of the 777 ERU's provided, is shown above.

The remaining 184 ERU's will be held in reserve by Dysart. The estimated cost for this capacity is \$226,329.

Including borrowing costs, the charge per ERU would be approximately \$2,694:

Construction Cost	\$226,329
Annual Debenture Payment (11% interest, 15 years, plus 5% interim financing)	\$ 33,048
Total payment - principal & interest	\$495,723
Equivalent Residential Units	184
Charge per ERU	\$2,694/ERU

The \$2,694/ERU includes only shared system costs. Private works for connecting each customer to the sewer would be extra.

The recovery of this cost would be kept separate from the user rates with receipts put aside in a reserve and used to repay the debenture. Current connection projections show all 184 ERU's committed by 1999. This is before the last debenture payment in year 2005. Thus receipts should be sufficient to repay the Dysart Reserve capital costs without utilizing the user rates. Additional connection receipts, beyond those needed to meet the annual debt payment obligation, should be set aside and drawn down as required to pay the debt. The projected financing in Table 3 shows only enough Kashagawigamog Reserve Receipts being applied each year to meet the \$33,048 in annual debt payments.

#### 4. USER RATES AND RECOVERY OF SEWAGE TREATMENT PLANT CAPITAL COSTS

##### 4.1 User Rates Continue to Recover STP Costs

The recovery of the original capital cost of the STP is included in the user rates. It is proposed that the cost of the STP expansion be recovered in the same manner.

##### STP Expansion Estimated Capital Cost

User Rates	\$ 418,110
MOE	1,891,890
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Total	2,310,000
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The total cost to be recovered by Dysart from the User Rates is \$418,110 or \$61,052 annually (11% interest, 15 year debenture, plus 5% for temporary financing - Fall 1990 prices).

##### 4.2 STP Capacity

The capacity of the existing sewage treatment plant was originally set at 455 cubic metres/day and has been re-rated to 542 cu. m./day. The existing Haliburton population is estimated at 880. Based on 100 gal./capita/day, (0.454 cu.m./capita/day), the currently required STP capacity is 400 cu.m./day.

The projected year 2008 STP design requirements expressed in terms of population, ERU's and design flows are as follows:

##### 2008 Sewage Treatment Plant Flows

	<u>Equivalent Population</u>	<u>Equivalent Residential Units</u> ERU	<u>Design Flow</u> cu.m./day	<u>Flow Split</u> %
Haliburton	1,928	643	875	45.3%
Kashagawigamog Extension Resorts	1,779	593	808	41.8%
Dysart Reserve	552	184	251	13.0%
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Total	4,259	1,420	1,934	100.0%
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Haliburton's growth is projected at 4% annually from 880 now and reaching 1,928 in the year 2008.

#### 4.3 Customers and Equivalent Billing Units

There are currently 397 customers in Haliburton:

	<u>Customers</u>	<u>Equivalent Billing Units</u>
Metered	6	408
Flat Rate		
Commercial	105	325
Residential	286	380
	—	—
Total	397	1,113
	====	=====

Of the 397 customers, 287 are paying annual connection charges of \$32.71, perhaps 40 (estimate) have made lump-sum connection payments, and the remainder are tenants in multiple-unit properties which have one sewer service connection, but receive separate sewer bills.

The 1988 User Rate Revenue was as follows:

Metered	= 6,525,000 gal. x \$6.25/1,000 gal.	= \$ 40,750
Flat Rate	= 704.5 Units x \$100/unit	= 70,450
		—
		(1)
	Total User Rate Revenue	\$111,200
		=====

The total of 1,113 billing units has been calculated based on a rate of \$100/billing unit and the 1988 user rate revenue of \$111,200.

$$\begin{aligned}\text{Equivalent Billing Units} &= \$111,200 \div \$100/\text{billing unit} \\ &= 1,113 \text{ billing units}\end{aligned}$$

Flat-rate customers are assigned billing units in accordance with their expected water use, with 325 units billed to 105 customers classified as commercial and 380 units billed against 286 customers classified as residential. The customer classifications include some commercial properties considered residential and some multiple dwellings considered as commercial.

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(1) Total 1988 revenue was:

User Rates	\$111,200
Connection	287 x \$32.71
Frontage	2,401,823 ft. x \$0.40/ft. = 9,607
	Total
	\$130,195
	=====

The six metered customers are equivalent to 408 Equivalent Billing Units.

The number of Billing Units chargeable to customers on the Kashagawigamog sewer can be calculated based on the Haliburton billing information:

Serviced Haliburton Population	=	880
Equivalent Billing Units	=	1,113 EBU
EBU/capita = 1,113 ÷ 880	=	1.265 EBU/capita

Therefore the Kashagawigamog sewer Billing Units are as follows:

	<u>Equivalent Residential Units</u>	<u>Population @ 3/ERU</u>	<u>Billing Units @ 1.265/capita</u>
Resorts	593	1,779	2,249
- Preallocated			
Dysart Reserve	184	552	698
	—	—	—
Total	777	2,331	2,947
	====	=====	=====

The number of Billing Units has been projected annually from 1,113 in 1988 to 5,384 in 2008 (See Table 2). The Haliburton Billing Units have been increased by 4% annually. The 2,249 preallocated Resort units are first billed in 1991 after the new works are completed. It is projected that the Dysart Reserve units will be connected over the period 1991 to 1999, with 30 Equivalent Residential Units in 1991 and 20 more each year until all 184 units are connected by 1999.

#### 4.4 Projected Budget

The sewer system budget is projected in Table 3, based on current \$1989, including:

- Wages and benefits double when the new works come on stream in 1991.
- Variable operating costs are increased in proportion to the growth in usage.
- An additional \$20,000 is added in 1991 to cover pumping station power costs.
- Existing \$40,000 annual debt repayment remains unchanged until the year 2014.
- The new debt is based on 15 year repayment (by the year 2005).

- Direct recoveries include ongoing annual frontage and connection repayment plus the application of sufficient Kashagawigamog New Connections payments to meet the Dysart Reserve debt payments.
- The property tax collections are assumed to continue at 2 mills.

#### 4.5 Projected User Rates

Based on \$ current, the service rate is calculated to increase initially and then to decrease. With 3% inflation the rates are projected to increase to \$141 annually per billing unit in year 2008.

It should be noted that one ERU is equivalent to 3.8 billing units (i.e.  $3 \times 1.265$ ). For those customers rated in ERU's, the annual charge varies from \$380 ( $\$100 \times 3.8$ ) in 1988 to \$296 ( $3.8 \times \$78$ ) in year 2008.

The resultant revenues from Haliburton, the Resorts and the Dysart Reserve will be in proportion to their design flow.

The refinancing of the existing debt from 25 to 15 years is equivalent to an increase of about \$2/EBU annually after 1991.