

# ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

## 1978



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TO HIS WORSHIP THE MAYOR & COUNCILLORS  
OF THE CITY OF FREDERICTON

Madam and Gentlemen:

I submit herewith this report which is a statement of work done in the various City Departments under the direct supervision of the City Engineer.

This report covers the period January 1, 1978 to December 31, 1978 and is written for the purpose of maintaining an accurate record on file of the activities and costs of the various departments.

During the year, along with regular maintenance, City crews and contractors constructed the following works:

Concrete Curb and Gutter .....	10.45 Miles
Concrete Sidewalk .....	2.19 Miles
New Street Construction .....	2.91 Miles
New Pavement (3/4" Dense Mix) .....	4.81 Miles
Recap (1/2" Minus) .....	6.57 Miles
Sealing City Streets (3/8" Minus) .....	5.88 Miles
Slurry Sealed City Streets .....	1.63 Miles
Armour Coated City Streets .....	0.52 Miles
Chip Sealed City Streets .....	2.23 Miles
4"-6"-8"-10" Force main - Domestic Sewer .....	0.19 Miles
8"-10"-12"-14"-16"-18"-20" Gravity - Domestic Sewer.	2.31 Miles
10"-12"-15"-18"-21"-24"-30"-36"-42"-48" Storm Sewer.	6.03 Miles
4"-6"-8"-10"-12"-14" Water Mains .....	3.09 Miles
Street Reconstruction .....	0.19 Miles

ALSO

- 236 Water Services Installed
- 223 Domestic Sewer Services Installed
- 4 Sprinklers Installed
- 14 Services Relayed (Water)
- 3 Services Relayed (Domestic Sewer)
- 600 Water Meters Installed
- 11 Extension of Existing Services

Contractors under contract with the Public Works Department of the City of Fredericton in 1978 constructed, completed construction or began construction, on the following projects:

- John Kilburn & Sons Ltd.      - To installation of services on MacPherson St. and Stafford Dr.
- Spade Construction Ltd.      - To installation of services on MacPherson St.
- Spade Construction Ltd.      - To installation of services on Birdie Ct. and Eagle Ct.
- Spade Construction Ltd.      - To installation of services on Ebony Dr.
- Spade Construction Ltd.      - To installation of storm sewer on Birch Crescent
- Spade Construction Ltd.      - To installation of watermain on Maple St.
- Spade Construction Ltd.      - To installation of storm sewer on Hachey Ave.

- John Kilburn & Sons Ltd.
- To installation of watermain on Rowan St.
- Multi-Ventures Ltd.
- To installation of services on Crocket St.
- Spade Construction Ltd.
- To installation of services on Fulton Ave., Cherry Ave., and Sierra Dr.
- Stan Cassidy Ltd.
- To supply and installation of traffic lights on Prospect St.
- Stan Cassidy Ltd.
- To supply and installation of traffic lights on Regent St. at Regent Mall Entrance
- Multi-Ventures Ltd.
- To installation of services on Wetmore Rd., Pugsley St., and Tweedie Ct.
- Frizzell Brothers Construction Ltd.
- To construction of concrete curb, gutter and sidewalk in the West Nashwaaksis Area.
- Frizzell Brothers Construction Ltd.
- To construction of concrete curb, gutter and sidewalk in the East Nashwaaksis Area.
- John Kilburn & Sons Ltd.
- To installation of storm sewer services and valve chamber construction in the East Nashwaaksis Area.
- Multi-Ventures Ltd.
- To installation of storm sewer services and watermain, valve chamber and hydrant construction on MacFarlane St., Cherry Ave., Gorham Dr., and Fraser Ave.
- Multi-Ventures Ltd.
- To installation of storm sewer services and valve chamber construction on Floral Ave., Edgewood Dr., and Ebony Dr.
- Multi-Ventures Ltd.
- To installation of Sewage Pumping Stations #16 and #17 in Barker's Point
- Frecon Ltd.
- To construction of retaining wall at the Flemming Road Reservoir
- Callaghan Contracting Ltd.
- To installation of Sewage Pumping Station #15 on Riverside Dr.
- John Kilburn & Sons Ltd.
- To installation of domestic sewer and watermain on Woodstock Rd.
- Callaghan Contracting Ltd.
- To installation of domestic sewer and watermain on Woodstock Rd.
- E. J. Ludford Line Construction Ltd.
- To installation of domestic sewer and watermain on Woodstock Road
- Multi-Ventures Ltd. for the Department of Regional and Economic Expansion
- To installation of services in the Vanier Industrial Park

Forbes & Sloat Ltd. - To supply and delivery of crushed rock  
 Diamond Construction (1961) Ltd. - To supply and delivery of crushed rock  
 Forbes & Sloat Ltd. - To supply and delivery of crushed gravel  
 Dunham's Contracting Ltd. - To supply and delivery of crushed gravel and pit run gravel  
 Gordon's Ready-Mix Ltd. - To supply and delivery of ready-mix concrete  
 Wendall Thomas Ltd. - To supply and delivery of topsoil  
 Wendall Thomas Ltd. - To supply and delivery of pipe bedding sand  
 Hawkins Trucking Ltd. - To supply and delivery of pipe bedding sand  
 Gulf Oil (Canada) Ltd. - To supply and delivery of diesel fuel  
 Shell (Canada) Ltd. - To supply and delivery of gasoline  
 Sandi-Co Ltd. - To supply and delivery of winter sand  
 Canadian Salt Co. Ltd. - To supply and delivery of highway salt  
 Callaghan Contracting Ltd. - To installation of services on Rosewood Dr. and Talisman Cres.  
 Grant-Mills Ltd. - To supply and placement of asphalt  
 Imperial Oil Ltd. - To supply and delivery of furnace oil  
 Flintkote Company of Canada Ltd. - To supply and placement of chip seal, armour coat and slurry seal  
 P. D. Moore Landscaping - To supply and delivery of cover material to Sanitary Landfill  
 Gerard Burns - Bulldozing Services - Sanitary Landfill  
 Shell (Canada) Ltd. - To supply and delivery of furnace oil

The current expenditures for the twelve-month period January 1, 1978 to December 31, 1978 appear as follows:

	Budget	Net Expenditures	Debit	Credit
Common Services	\$658,900.	\$ 771,680.71	\$112,780.71	\$ -
Road Transport (Adm.)	18,100.	10,112.86	-	7,987.14
Roads & Streets	311,200.	329,282.65	18,082.65	-
Sidewalk Repairs	9,700.	13,086.51	3,386.51	-
Ditches & Culverts	28,950.	28,844.71	-	105.29
Storm Sewer	29,760.	30,457.54	697.54	-
Street Cleaning	216,900.	208,362.35	-	8,537.65
Snow & Ice Removal	604,850.	486,516.29	-	118,333.71
Street Lighting	246,060.	284,417.82	38,357.82	-
Traffic Services	17,150.	15,635.17	-	1,514.83
Off-Street Parking	1,320.	96.61	-	1,223.39
Garbage Collection	254,200.	254,035.33	-	164.67

	Budget	Net Expenditures	Debit	Credit
Sanitary Landfill	\$ 155,450.	\$ 207,965.99	\$ 52,515.99	\$ -
Old Burial Ground	5,880.	4,953.76	-	926.24
Loyalist Burial Ground	205.	601.05	396.05	-
Wilmot Park	14,268.	15,373.28	1,105.28	-
Odell Park	19,809.	25,941.17	6,132.17	-
Carleton Park	10,770.	10,043.64	-	726.36
Development of Park Areas	3,650.	4,429.23	779.23	-
Other Parks	1,850.	2,378.33	528.33	-
Public Works	141,700.	126,504.62	-	15,195.38
TOTALS	\$2,750,672.	\$2,830,719.62	\$234,762.28	\$154,714.66

Overall Debit - \$ 80,047.62

On July 9, 1973, amalgamation took place between the former City of Fredericton and surrounding areas. The amalgamated City occupies a total of some 51 square miles with a population of 44,572, as determined from the 1976 Census Count.

Following is a table giving total mileages of municipal roads and streets, provincial routes, by-passes, and ramps divided with respect to types of surface on the various streets.

Location	Municipal Roads & Streets				Designated Routes			T.C.H., By-Passes & Ramps
	Asphalt	Gravel	Chip Seal	Total	Asphalt	Gravel	Total	
Fredericton South	52.743	5.462	2.287	60.492	12.737	1.605	14.342	11.752
Fredericton North	10.787	1.289	0.246	12.322	2.836	-	2.836	-
Nashwaaksis	10.875	1.311	14.229	26.415	5.077	-	5.077	-
Marysville	8.547	1.545	3.150	13.242	5.105	-	5.105	2.150
Barker's Point	0.810	0.245	3.170	4.225	2.751	-	2.751	0.926
Silverwood	2.156	0.360	0.286	2.802	-	-	-	1.713
Garden Creek	2.990	1.426	4.973	9.389	3.911	-	3.911	5.450
Douglas	-	0.580	2.428	3.008	1.587	-	1.587	-
Lincoln	-	1.465	1.809	3.274	-	-	-	0.836
Lower St. Marys	-	0.750	0.607	1.357	-	-	-	-
Killarney Rd.	0.206	-	-	0.206	2.629	-	2.629	-
TOTALS	89.114	14.433	33.185	136.732	36.633	1.605	38.238	22.827

TOTAL MILEAGE (MUNICIPAL AND DESIGNATED ROUTES) = 174.970

Following in the body of this report is a detailed statement of the work done, comparative expenditures and unit costs under the various departments. The detailed report of any particular department may be found by referring to the index.

Respectfully submitted,

W. L. BARRETT  
CITY ENGINEER

TOTAL YEARLY NET EXPENDITURE

The total yearly net expenditure under the direct supervision of the City Engineer in 1978 amounted to \$7,367,705.66, made up as follows:

Common Services .....	\$ 771,680.71
Road Transport .....	1,406,812.51

Environmental Health Services (Garbage & Waste Collection & Disposal) .....	462,001.32
Public Health Services (Cemeteries) .....	5,554.81
Cultural Services (Parks, Trees, Etc.) .....	184,670.27
Water Department .....	794,300.00
Domestic Sewer.....	766,893.23

Capital Accounts

(a) Domestic Sewer .....	16,048.91
(b) Surface Sewer ) .....	9,185.75
(c) Curb & Gutter ) ..Permanent .....	470,354.56
(d) Gravel Roads ) ..Streets.....	86,298.65
(e) Paving ) .....	477,502.96
(f) Water .....	41,959.16
(g) Traffic Lights .....	23,875.62
(h) Industrial Park .....	133,318.15
(i) Permanent Streets Reconstruction .....	78,957.63
(j) City Hall .....	608.56
(k) Recreation - Killarney Lake & Henry Park .....	2,007.82
(l) Tourism .....	504.35
(m) Fire and Police Station .....	819.21
(n) Fire Station (Royal Road) .....	345.35

Service Development Projects

(a) Water .....	213,948.69 CR.
(b) Domestic Sewer .....	28,326.54 CR.
(c) Storm Sewer .....	1,100,622.19
(d) Service Depot & Equipment .....	61,042.81
(e) New Equipment .....	56,368.95
(f) Solid Waste Disposal .....	30,220.05

Miscellaneous Accounts

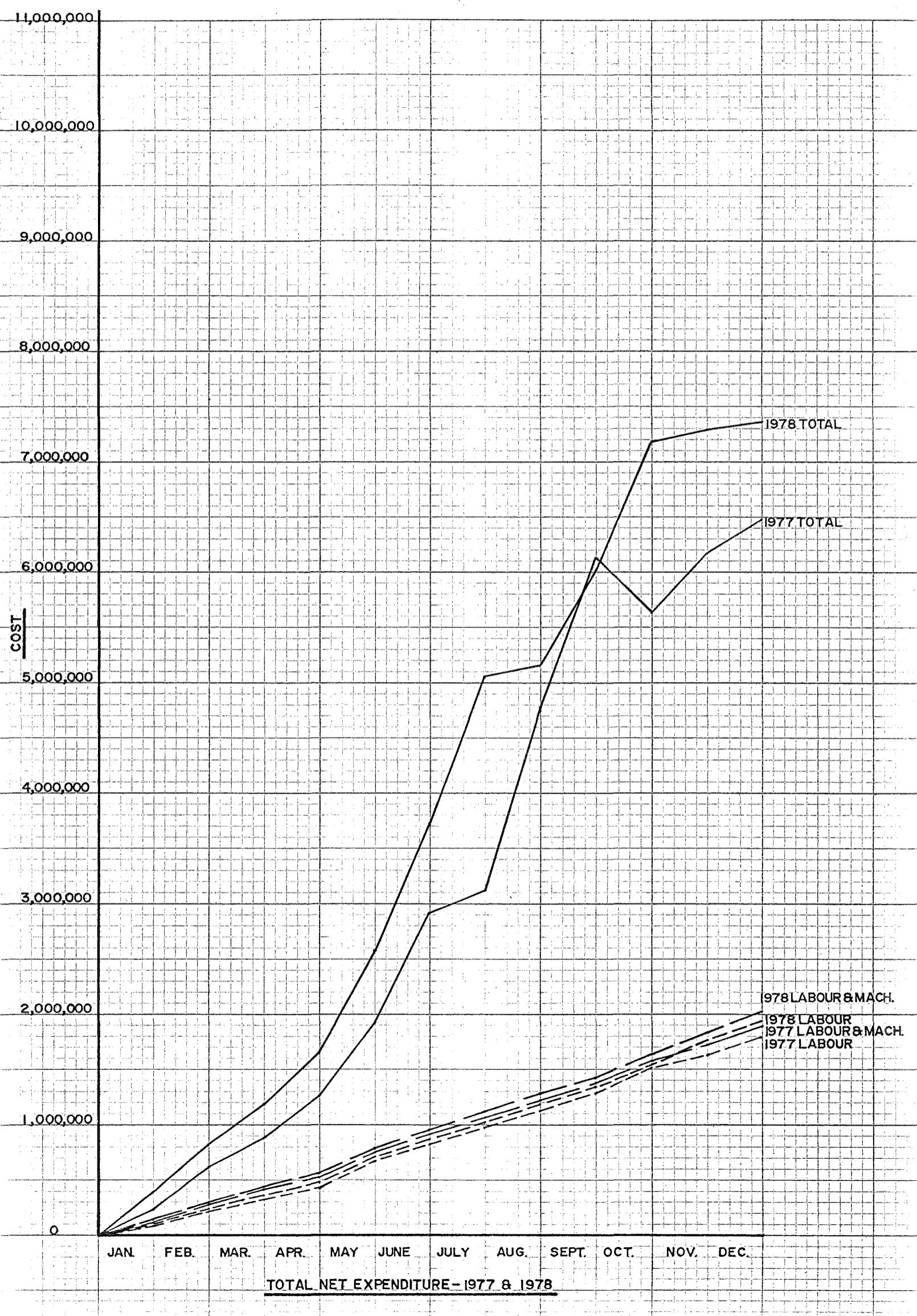
(a) Concrete Walks .....	47,431.75
(b) Charges to Other Departments (Recreation, Fire, Police, City Transit, Ambulance, Paint, Etc.) .....	544,185.66
(c) Arenas (Beaverbrook, Coliseum, York, Nashwaaksis) .....	614.60
(d) Buildings and Maintenance .....	460.00
(e) Industrial Park .....	12,414.66
(f) Public Library .....	31.05
(g) Campbell Street Parking Lots .....	6,072.30
(h) Other Parking Lots (Queen St., King St., Regent St. Wharf) .....	15,153.84
(i) City Hall .....	1,663.50
(j) Canada Works Program .....	12,201.20 CR.

TOTAL ..... \$7,367,705.66

A graphic comparison of expenditures for labour, labour and hired machinery and total net expenditure (including labour and hired machinery) are shown on the following graph.

The locations of new construction completed or commenced in 1978 are shown on maps inserted after Page 5 of this report.

Following the maps is a graph showing the distribution of the City of Fredericton Tax Dollar in 1978.



DISTRIBUTION OF THE 1978 TAX DOLLAR FOR THE CITY

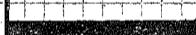
GENERAL GOVERNMENT SERVICES



PROTECTIVE SERVICES



TRANSPORTATION SERVICES



PUBLIC TRANSIT



ENVIRONMENTAL HEALTH SERVICES



ENVIRONMENTAL DEVELOPMENT SERVICES



RECREATION AND CULTURAL SERVICES



FISCAL SERVICES



0 10 20 30 40 50

PERCENTAGE

## TRANSPORTATION SERVICES

The expenditure under this heading is subdivided under two main headings:

- (1) Common Services
- (2) Road Transport

(1) COMMON SERVICES: The total net expenditure under this heading was \$771,680.71 and is made up as follows:

### GROSS EXPENDITURE:

Administration .....	\$ 28,219.35
Engineering Services .....	105,061.82
General Equipment .....	392,467.96
Workshops, Yards & Buildings .....	101,309.85
Research, Planning & Design .....	763.06
Other (Pensions, U.I.C., Workmen's Compensation, Etc.) .....	<u>301,611.57</u>
TOTAL .....	<u>\$929,433.61</u>

### LESS CREDITS:

Engineering Services - Journal Vouchers, Overpayments, Etc. ....	\$ 7,750.63
Fuels and Lubricants .....	37,979.70
Maintenance and Repairs .....	25,197.80
Expendable Accessories .....	1,713.12
Vehicle Repairs .....	1,344.81
Small Tools .....	26.18
Maintenance Depot - Space Rental and Invoice Correction .....	4,255.94
City Yard (Journal Voucher - Space Rental) .....	4,220.00
North Side Depot (Journal Voucher - Space Rental) .....	4,220.00
City Pensions (Journal Vouchers - Inter. Dept. Charges) ....	47,472.32
Canada Pensions (Journal Vouchers - Inter. Dept. Charges) ....	20,457.29
Workmen's Compensation Board (Cash Receipts) ....	1,887.66
Levine's Limited - Sale of Scrap Iron .....	85.50
Miscellaneous .....	<u>1,141.95</u>
	\$157,752.90
NET EXPENDITURE .....	<u>\$771,680.71</u>

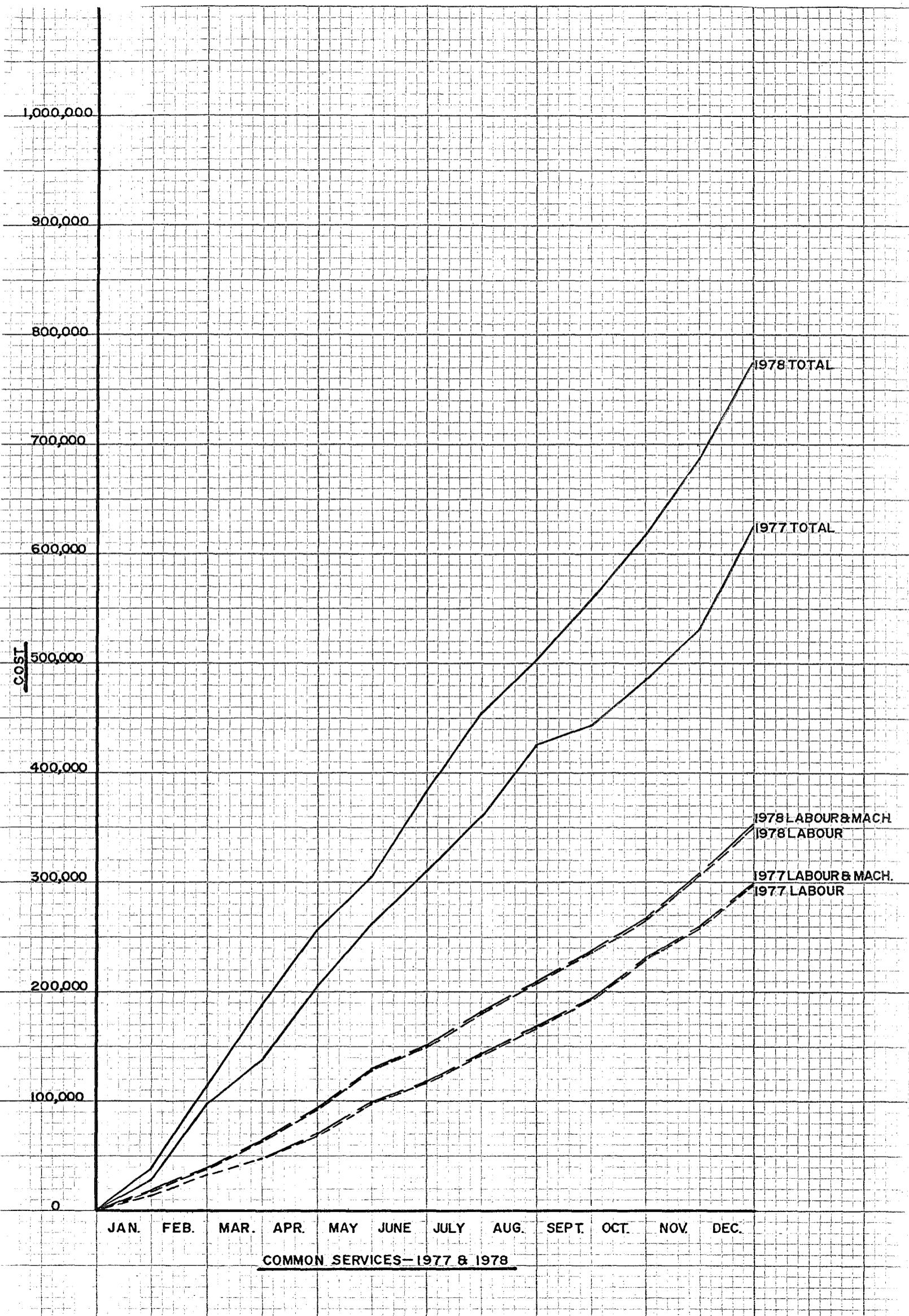
### (2) ROAD TRANSPORT:

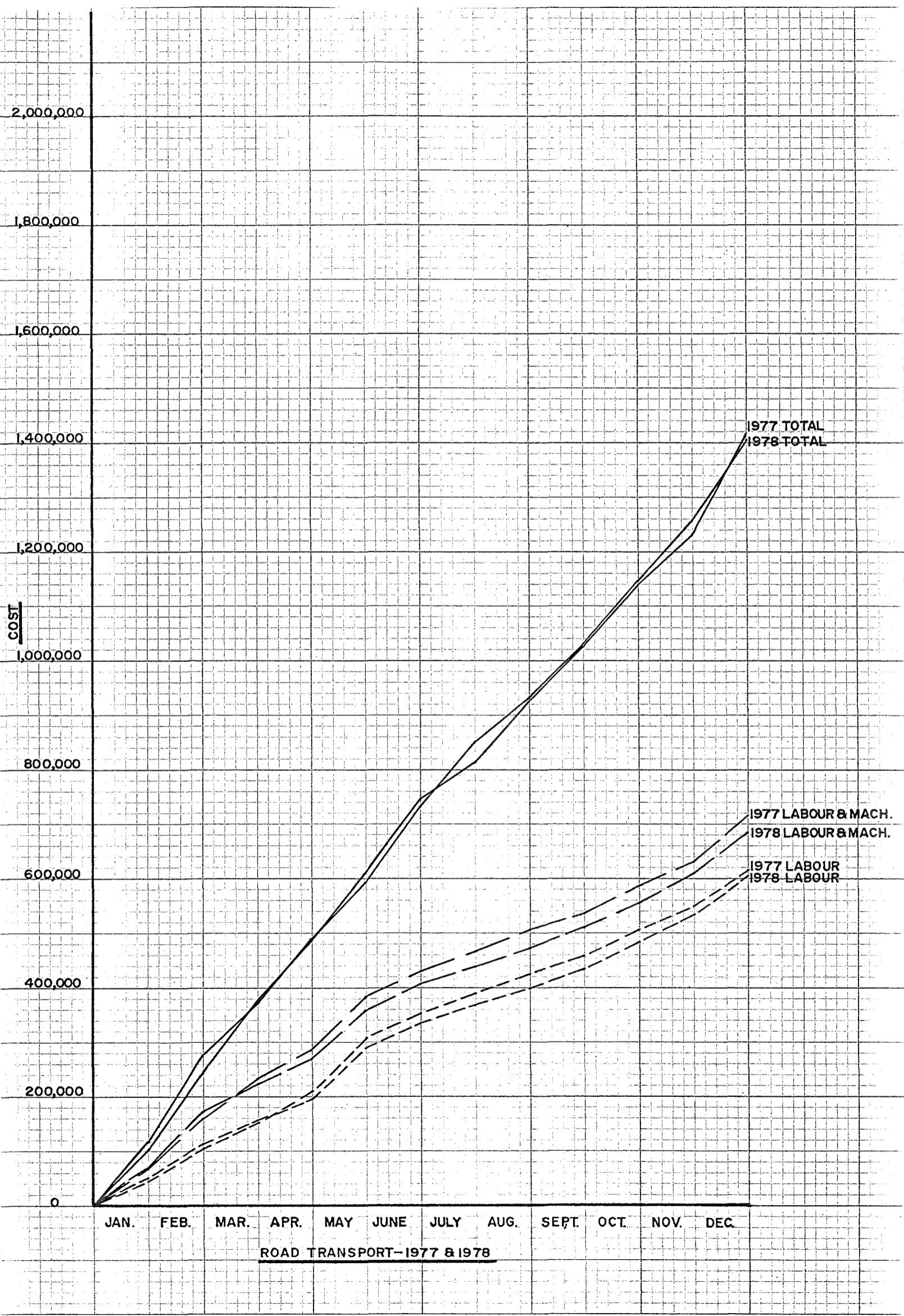
(1) ADMINISTRATION: The total net expenditure under this heading was \$10,112.86.

### (2) ROADS & STREETS:

Gross Expenditure .....	\$1,122,664.68
Less Credits .....	<u>26,114.63</u>
NET EXPENDITURE .....	<u>\$1,096,550.05</u>

The above credit of \$26,114.63 is made up of labour and materials charged to private parties; materials such as gas, oil, etc. used by other City Departments, and materials such as sand, salt, etc. to other City Departments.





The GROSS EXPENDITURE is divided as follows:

Roadway Surfaces (Maintenance) .....	\$ 343,388.12
Sidewalk Repairs .....	15,806.51
Culverts & Ditches .....	31,974.71
Storm Sewer .....	32,571.69
Street Cleaning & Flushing .....	208,863.39
Snow & Ice Removal .....	353,315.91
Sanding & Salting .....	136,744.35
TOTAL .....	<u>\$1,122,664.68</u>

The NET EXPENDITURE of \$1,096,550.05 is divided into the following items. These items give an account of the amount and kind of work done by the Roads and Streets Department (these expenditures will include any City Machinery charges not included in the above).

(a) ROADWAY SURFACES (MAINTENANCE)

(1) Gravel Roads and Chip Seal

City Motor Graders: - Road Patrol

Labour .....	\$ 6,443.82
City Machinery Charges .....	<u>5,598.00</u>
TOTAL .....	<u>\$ 12,041.82</u>

Grading and Gravelling: Grading and application of Gravel on City Roads and Streets.

Labour .....	\$ 4,534.66
City Machinery Charges .....	9,163.00
Materials .....	<u>3,865.36</u>
TOTAL .....	<u>\$ 17,563.02</u>

865.7 Tons of Gravel and Crushed Rock was used in the maintenance and repairs to Gravel Roads under Roadway Surfaces. This was purchased from Forbes & Sloat Ltd., Dunham's Contracting Ltd., and Diamond Construction (1961) Ltd.

Chip Seal:

The expenditure incurred under this heading was for street preparatory work and for payment to Flintkote Company of Canada Ltd. for supply and placement of 3/8" Chips. The expenditure was made up as follows:

Labour .....	\$ 335.36
City Machinery .....	257.00
Flintkote Company of Canada Ltd. ....	<u>13,189.55</u>
TOTAL .....	<u>\$ 13,781.91</u>

The following Roads and Streets were Chip Sealed in 1978 by Flintkote Company of Canada Ltd.:

<u>LOCATION</u>	<u>LINEAL FEET</u>
Vanier Highway Service Road	1,837
Glasier Road	3,833
Rainsford Lane - T.C.H. to Hanwell Rd.	<u>6,093</u>
TOTAL .....	<u>11,763</u>

11,763 Lineal Feet = 2.23 Miles

Materials Used:

363 Tons of 3/8" Chips @ \$12.25/Ton .....	\$ 4,446.75
10,660 Gallons of RS-2K Asphalt Emulsion @ \$0.69/Gallon .....	8,421.40
5% SS&E Tax on Emulsion only .....	<u>321.40</u>
TOTAL .....	<u>\$ 13,189.55</u>

(2) Paved Streets

Patching and repairing pavement, applying seal coat, light tar or asphalt to pavement.

Labour .....	\$115,271.65
City Machinery .....	49,359.00
Materials .....	<u>89,761.89</u>
GROSS EXPENDITURE ...	<u>\$254,392.54</u>

Patching material, when available, was obtained from Gorman Construction Limited, Flintkote Co. of Canada Ltd., and Diamond Construction (1961) Ltd.

The total net expenditure for Pavement Repairs for 1978 amounted to \$243,612.07 and was computed as follows:

Asphalt: Stock from 1977

270 Gallons RS-2 .....	\$ 240.30
900 Gallons R-800 .....	<u>779.85</u>
	\$ 1,020.15

Plus Stock Purchased in 1978

8,100 Gallons RS-2 .....	<u>\$7,346.77</u>
	\$ 7,346.77
	\$ 8,366.92

Less Stock Dec. 31, 1978

270 Gallons RS-2 .....	\$ 240.30
900 Gallons R-800 .....	<u>779.85</u>
	\$ 1,020.15

NET COST OF LIQUID ASPHALT ..... \$ 7,346.77

Expenditures:

Cost of Hot Mix Asphalt .....	\$ 77,122.08
Liquid Asphalt (Includes Winter Coldmix Asphalt) ...	8,525.90
Crushed Rock & Crusher Dust .....	3,594.37
City Labour (Payrolls) .....	115,271.65
City Machinery .....	49,359.00
Miscellaneous .....	<u>519.54</u>
GROSS EXPENDITURE ..	<u>\$254,392.54</u>

Less Credits:

Sundry Journals .....	\$ 7,079.19
Journal Vouchers (Asphalt, Dust, Etc.)	<u>3,701.28</u>
	10,780.47
NET EXPENDITURE ....	<u>\$243,612.07</u>

(3) ASPHALT SEALING PROGRAM

Under this heading the following streets were Surface Sealed with 3/8" Minus Asphalt by Grant-Mills Limited at \$20./Ton in Place.

<u>LOCATION</u>	<u>LINEAL FEET</u>
St. John Street - Aberdeen Street to Scully Street	250
Edinburgh Street - Smythe Street to York Street	2,150
St. Marys Street - C.P.R. Tracks to End of Curbed Section	2,880
TOTAL .....	<u>5,280</u>

5,280 Lineal Feet = 1.00 Mile

#### Slurry Seal

The following Roads and Streets were Slurry Sealed in 1978 by Flintkote Company of Canada Ltd. under this heading:

<u>LOCATION</u>	<u>LINEAL FEET</u>
Waterloo Row - Elmcroft Place to Cenotaph	4,200
Queen Street - Cenotaph to Regent Street	1,616
Woodstock Road - Rookwood Avenue to Hanwell Rd.	2,786
TOTAL .....	<u>8,602</u>

8,602 Lineal Feet = 1.63 Miles

Following is the expenditure for materials and labour for the surface sealing and slurry sealing of the above streets:

Labour.....	\$ 1,279.51
City Machinery.....	965.00
Flintkote Company of Canada Ltd. (Labour & Materials)	21,817.88
Grant-Mills Ltd. (Labour & Materials).....	<u>25,466.00</u>
TOTAL NET EXPENDITURE ....	<u>\$49,528.39</u>

#### (4) Curb and Gutter Repair

NET EXPENDITURE ..... \$ 11,965.23

The total net expenditure under this heading was made up as follows:

Labour .....	\$ 9,300.76
City Machinery Charges .....	2,583.00
Materials .....	<u>3,336.47</u>
TOTAL .....	15,220.23
Less Credit: .....	<u>3,255.00</u>
NET EXPENDITURE .....	<u>\$ 11,965.23</u>

The above credit was for Sundry Journals and Journal Vouchers, regarding curb repairs. Included in the credit is \$1,200.00 charged to N.I.P. for curb repairs on Aberdeen St. and Charlotte St.

#### (5) Driveway Entrances (Maintenance)

NET EXPENDITURE ..... \$ 18,041.05

The total net expenditure was made up as follows:

Labour .....	\$ 8,760.93
City Machinery Charges .....	4,096.00
Materials .....	<u>5,184.12</u>
TOTAL .....	<u>\$18,041.05</u>

(6) Rights-of-Way, Guard Posts, Etc.

Item	Labour Hired Trucks & Machinery	City Machinery Charges	Materials	Credits	Totals
Sodding & Seeding	\$ 6,340.87	\$ 1,404.00	\$ -	\$ -	\$ 7,744.87
Rip Rapping	3,264.34	2,711.00	20.00	-	5,995.34
Cutting Grass	10,710.35	3,647.00	22.11	-	14,379.46
Guard Rails	2,959.78	635.50	703.61	70.00	4,368.89
Clearing Rt.-of-Ways	-	-	-	-	-
TOTALS	\$23,275.34	\$ 8,397.50	\$745.72	\$ 70.00	\$32,488.56

(b) SIDEWALKS (MAINTENANCE)

The expenditure under this heading amounted to \$15,529.01 and was made up as follows:

Labour .....	\$ 9,818.79
City Machinery Charges .....	2,442.50
Materials .....	<u>5,987.72</u>
GROSS EXPENDITURE .....	18,249.01
Less Credits .....	<u>2,720.00</u>
NET EXPENDITURE .....	<u>\$ 15,529.01</u>

The credits were for the following:

Sundry Journals .....	<u>\$ 2,720.00</u>
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(c) STREETS (GENERAL MAINTENANCE)

The expenditure under this heading is for ditching and installation of culverts.

The total net expenditure under this heading was \$45,757.21 and is made up as follows:

Labour (Ditching) .....	\$ 3,217.35
Labour (Culverts) .....	14,268.84
City Machinery (Ditching) .....	4,173.00
City Machinery (Culverts) .....	12,739.50
Journal Vouchers (Pensions) .....	819.24
Workmen's Compensation Board Assessment .....	650.00
Materials .....	<u>13,019.28</u>
GROSS EXPENDITURE .....	48,887.21
Less Credits .....	<u>3,130.00</u>
NET EXPENDITURE .....	<u>\$ 45,757.21</u>

The above credits were for culvert installations on newly subdivided lots on ditched streets.

(d) STORM SEWER

GROSS EXPENDITURE .....	\$ 45,112.69
Less Credits .....	<u>2,114.15</u>
NET EXPENDITURE .....	<u>\$ 42,998.54</u>

The above credits were for Sundry Journals and work done and materials used for private parties.

The storm sewers in the City were flushed where necessary and all catch basins were cleaned and repaired during the year and repairs were made to any breaks that occurred, amounting to \$42,998.54 made up as follows:

Workmen's Compensation Board - 1978 Assessment .....	\$ 550.00
Journal Vouchers (Pensions) .....	977.51
Labour .....	22,593.86
City Machinery .....	12,541.00
Lease Agreements (C.N. & C.P.) .....	313.00
Materials Less Credits .....	<u>6,023.17</u>
TOTAL .....	\$ <u>42,998.54</u>

(e) STREET CLEANING AND FLUSHING:

GROSS EXPENDITURE .....	\$232,326.89
Less Credits .....	<u>501.04</u>
NET EXPENDITURE .....	\$ <u>231,825.85</u>

The GROSS EXPENDITURE is made up as follows:

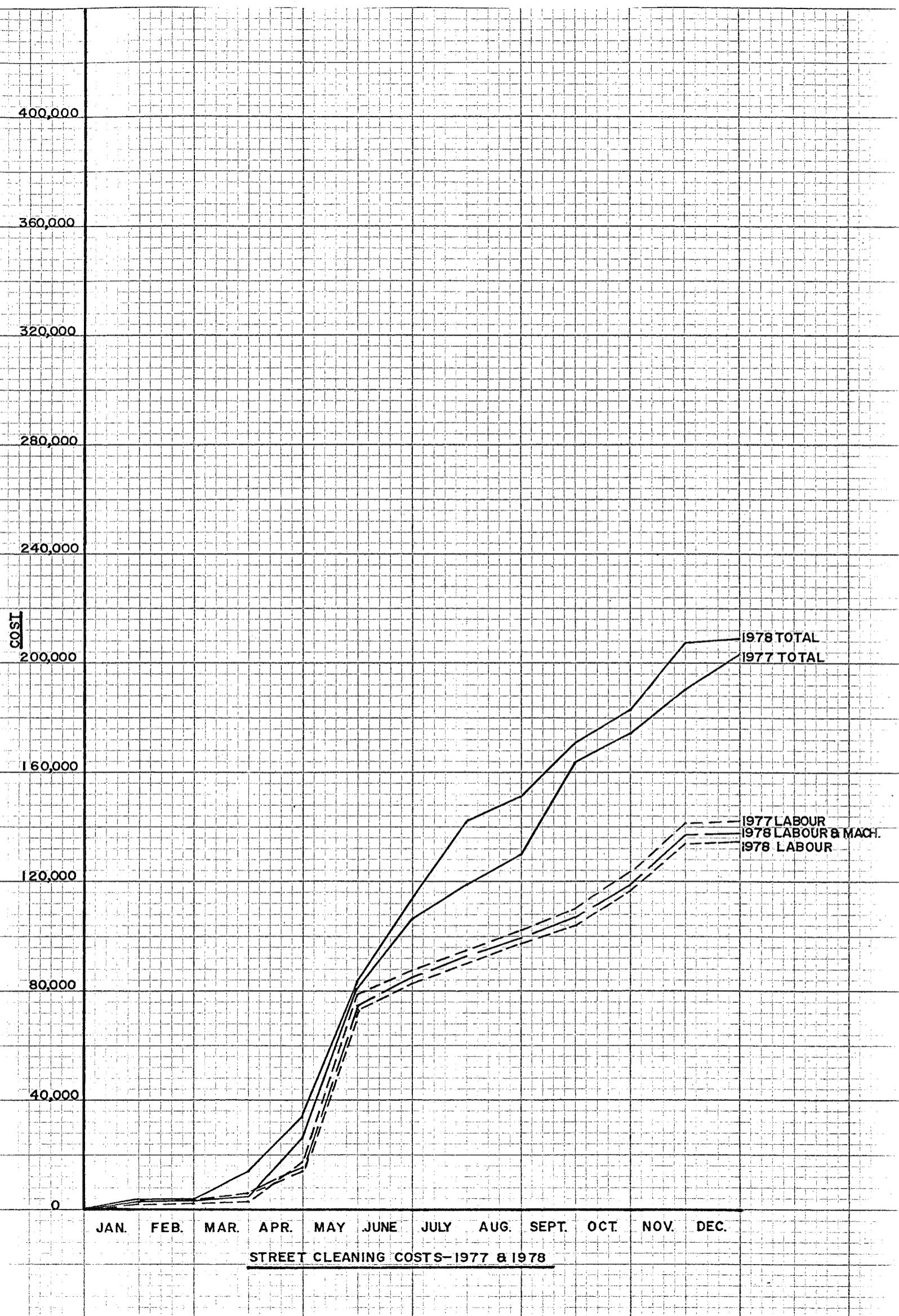
Personnel - Labour, Pensions, Compensation .....	\$101,438.88
General Services - Trucking & Repairs .....	49,521.57
Gas, Oil, Grease .....	4,254.23
Brooms - Main & Gutter .....	7,761.30
Brooms - Hand .....	1,470.09
Anti-Litter Cans & Waste Collection .....	10,669.10
Dust Control .....	12,916.93
City Machinery .....	23,463.50
Miscellaneous - Tree Pickup .....	<u>20,831.29</u>
TOTAL .....	\$ <u>232,326.89</u>

The above credits were for Journal Vouchers regarding City Machinery, Cash Receipts for accident claims and Journal Vouchers regarding calcium chloride.

Two Wayne Sweepers, #50 and #52, and a Vacuum-Sweep, #53, carried out the cleaning of City Streets. These machines worked a total of 2,973 hours from March 31, 1978 to November 24, 1978.

The following is a list of machinery used in street cleaning and dust control (gravelled roads) together with their repair costs for 1977 and 1978, including tires and tubes:

Name of Machine	Year Purchased	1977 Repairs	1978 Repairs
International 3 Ton #20	1968	\$ -	\$ 1,017.18
Wayne Sweeper #50	1975	4,606.77	14,594.02
Sicard Flusher #51	1955	6,743.85	941.89
Wayne Sweeper #52	1968	8,752.37	5,724.11
Vacuum-Sweep #53	1975	4,520.89	6,870.26
Ford 1 Ton #204	1978	-	1,386.27
TOTALS		\$ 24,623.88	\$ 30,533.73



(f) SNOW AND ICE REMOVAL

(1) Salting and Sanding Streets and Sanding Sidewalks

Storing sand and salt in Winter Storage Piles and spreading same on slippery streets and sidewalks:

Streets:

Personnel (Labour, Pensions, Compensation) .....	\$ 31,560.89
General Services (Repairs & Maintenance) .....	15,476.57
Expendable Accessories .....	-
City Machinery Charges .....	14,413.75
Materials .....	<u>75,963.84</u>
TOTAL EXPENDITURE ...	137,415.05
Less Credits .....	<u>1,719.58</u>
NET EXPENDITURE ....	<u>\$ 135,695.47</u>

Sidewalks:

Labour & Pensions .....	\$ 10,874.92
City Machinery Charges .....	5,282.50
Materials Less Credits .....	<u>2,577.20</u>
NET EXPENDITURE ....	<u>\$ 18,734.62</u>

10,000 Cubic Yards of sand was purchased during the Fall of 1978.

The sand was supplied by Sandi-Co Ltd. at a price of \$1.58/Cubic Yard, delivered to the City Stock Piles at Maintenance Depot, Regent St. and Services Depot, Killarney Rd. (St. Marys St.).

In 1978, 2,432.22 Tons of salt was used for ice control. The cost and distribution charges are included under the above heading. The City purchased 2,432.22 tons of salt in 1978.

In stock as of December 31, 1978 ..... 100 Tons

(2) Snow Control

Blowing, shovelling and hauling snow, plowing or scraping roads, cleaning gutters, thawing catch basins of ice and snow and any other means of snow control.

Streets:

The total cost of snow control (Streets) amounted to \$485,704.69 and was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 169,190.69
General Services (Repairs and Maintenance, Hired Trucks, & Machinery, Etc.) .....	107,021.64
City Machinery Charges .....	160,355.50
Expendable Materials .....	44,314.13
Miscellaneous Materials .....	<u>4,822.73</u>
TOTAL .....	<u>\$ 485,704.69</u>

The following table shows comparative labour (including hired trucks & machinery) costs of snow control for the year 1976 to 1978 inclusive:

	1976	1977	1978
Snow Plowing Roads & Streets	\$119,134.63	\$129,684.40	\$ 98,904.16
Blowing, Hauling & Shovelling	84,482.92	82,476.60	91,318.74
Catch Basins	36,566.77	32,623.80	31,246.26
Carleton St. Bridge	-	-	41.95
Snow Fences	994.99	1,573.71	1,686.07
Plowing Parking Lots	462.15	327.71	224.75
Repairs (Labour - Equipment)	5,213.38	12,579.35	11,061.55
Repairs (Flood)	2,341.88	6,844.71	4,695.16
TOTALS	\$249,196.72	\$266,110.28	\$239,178.64

The City of Fredericton was responsible for plowing, sanding, and salting 174.970 Miles of Roads and Streets during 1978. (80.760 Miles on the North Side and 94.210 Miles on the South Side).

The overall cost for plowing, sanding and salting City Roads and Streets was \$623,119.74 and was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 200,751.58
General Services (Hired Trucks & Machinery,	
Repairs, Etc.) .....	122,498.21
City Machinery Costs .....	174,769.25
Materials (Sand & Salt, Fuels & Lubricants) .....	80,786.57
Expendable Materials .....	44,314.13
TOTAL .....	<u>\$ 623,119.74 (1)</u>

Therefore, the unit cost of plowing, sanding, and salting one mile of road (street) was \$3,561.29.

#### Sidewalks:

81.54 Miles of Sidewalk were plowed during the winter months of 1978. (24.12 Miles on the North Side and 57.42 Miles on the South Side)

The total expenditure for plowing amounted to \$30,457.22 and was made up as follows:

Labour & Pensions .....	\$ 22,782.72
Hired Machinery .....	5,184.00
City Machinery.....	<u>2,490.50</u>
TOTAL .....	<u>\$ 30,457.22</u>

The unit cost per mile for plowing and sanding sidewalks was \$606.85 and was made up as follows:

Labour & Pensions .....	\$ 33,657.64
Hired Trucks & Machinery .....	5,184.00
City Machinery Charges .....	7,773.00
Materials (Sand, Etc.) .....	2,868.13
TOTAL .....	<u>\$ 49,482.77 (2)</u>

Unit Cost Per Mile     \$49,482.77     =     \$606.85.  
                              81.54

GROSS COST OF SNOW CONTROL - Add (1) and (2) .....	\$ 672,602.51
LESS CREDITS .....	<u>3,543.97</u>
NET COST (Including City Machinery) .....	\$ <u>669,058.54</u>
NET COST OF SNOW CONTROL (Less City Machinery Charges \$182,542.25) ....	<u>\$ 486,516.29</u>

Snowfall in Fredericton for the last five years was as follows:

1974 .....	84.2 inches (213.87 cm)
1975 .....	128.4 inches (326.14 cm)
1976 (Agriculture Canada) .....	107.1 inches (271.90 cm)
1976 (Airport Weather Office) .....	142.2 inches (361.10 cm)
1977 (Agriculture Canada) .....	101.1 inches (256.80 cm)
1977 (Airport Weather Office) .....	129.44 inches (328.80 cm)
1978 (Agriculture Canada) .....	89.29 inches (226.80 cm)
1978 (Airport Weather Office) .....	121.34 inches (308.20 cm)

The following equipment is used on Snow Control and Ice Removal and the repair and maintenance costs for this equipment is shown as follows:

Name of Vehicle	Year Purchased	1977 Repairs	1978 Repairs
Dodge 3 Ton #22	1976	\$ -	\$ 935.76
G.M.C. 3 Ton #24	1975	20.63	1,380.64
G.M.C. 3 Ton #25	1975	122.05	593.06
Ford 3 Ton #26	1975	227.57	512.99
Dodge 3 Ton #27-76	1976	9.20	383.68
Dodge 3 Ton #28-76	1976	15.42	524.65
Chevrolet 3 Ton #29	1977	-	166.29
Chevrolet 3 Ton #31	1977	-	281.21
International Loadstar #32	1978	-	119.12
Chevrolet 3 Ton #63	1971	547.97	414.73
Chevrolet 3 Ton #64	1974	836.81	1,103.61
Sicard Snow Blower #86	1949	353.01	1,285.70
Sicard Snow Blower #87	1961	37.46	1,147.88
Sicard Snow Blower #88	1963	477.43	552.72
SMI Snow Blower #89	1974	5,983.71	12,624.34
Chevrolet 5 Ton #101	1975	215.87	349.25
Ford 5 Ton #102	1975	141.91	250.76
G.M.C. 5 Ton #103	1975	372.76	1,616.96
G.M.C. 5 Ton #104	1975	281.46	984.14
G.M.C. 5 Ton #105	1975	643.88	807.17
Ford 3/4 Ton #120	1975	26.46	311.37
Bombardier #124	1977	-	110.11
Bombardier #125	1976	396.50	730.30
Bombardier #128-78	1978	-	-
Bombardier #132	1974	178.70	1,612.00
Bombardier #133	1974	580.30 Cr.	478.88
Bombardier #134	1968	1,613.99	375.15
Ford 5 Ton #203-75	1975	-	29.52
Trailer 15 H.P. Boiler #256	-	74.97	20.29
TOTALS		\$11,997.46	\$29,702.28

### (3) STREET LIGHTING

The Multiple Lighting System for the City of Fredericton as of December 31, 1978 consisted of:

35 -	400 Watt H.P. Sodium	@ \$164.45 per light per year
10 -	125 Watt M.V. Wood	@ \$69.40 per light per year
2 -	175 Watt M.V. Conc.	@ \$100.70 per light per year
199 -	175 Watt M.V. Wood	@ \$83.90 per light per year
35 <sup>4</sup> -	175 Watt Ref. M.V.	@ \$65.00 per light per year
14 -	250 Watt M.V. Conc.	@ \$128.35 per light per year
9 -	250 Watt M.V. Wood	@ \$111.55 per light per year
1,705 -	250 Watt Ref. M.V.	@ \$92.65 per light per year
572 -	400 Watt Ref. M.V.	@ \$126.25 per light per year
1 -	500 Watt Ref. M.V.	@ \$105.70 per light per year
2 -	400 Watt Flood Light	@ \$0.41 per light per year

The total street lighting costs for 1978 were as follows:

Multiple Lighting System Contract .....	\$ 279,537.38
New Installations .....	4,663.94
New Bulbs .....	216.50
NET EXPENDITURE .....	<u>\$ 284,417.82</u>

### (4) TRAFFIC SERVICES

The expenditure under this heading is made up as follows:

- (a) Street Signs
- (b) Off-Street Parking

#### (a) Street Signs:

Purchasing, repairing and installing Street Signs on City Streets.

The expenditure under this heading amounted to \$15,635.17 and was made up as follows:

Personnel (Labour, Pensions, Workmen's Compensation, Etc.) .....	\$ 2,491.73
Repairs and Maintenance .....	316.12
Materials .....	<u>12,942.92</u>
GROSS EXPENDITURE ....	15,812.77
Less Credits .....	<u>177.60</u>
NET EXPENDITURE .....	<u>\$ 15,635.17</u>

The above credit was for Journal Vouchers regarding City Decals and Cash Receipts for sign damages and scrap metal.

#### (b) Off-Street Parking:

The expenditure under this heading amounted to \$96.61 and was made up as follows:

Personnel (Labour, Pensions, Workmen's Compensation) ...	\$ 65.56
Repairs and Maintenance .....	<u>31.05</u>
NET EXPENDITURE .....	<u>\$ 96.61</u>

400,000

360,000

320,000

280,000

240,000

COST  
200,000

160,000

120,000

80,000

40,000

0

JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

STREET LIGHT COSTS - 1977 & 1978

1978 TOTAL

1977 TOTAL

The following is a list of vehicles and machinery used in COMMON SERVICES, together with the repair costs for 1977 and 1978, including tires and tubes:

Name	Year Purchased	1977 Repairs	1978 Repairs
Chevrolet #1	1976	\$ 441.23	\$ 556.71
Dodge 1/2 Ton #3	1975	586.08	576.97
Chevrolet 1/2 Ton #4	1974	393.79	984.60
Chevrolet 1/2 Ton #6	1976	266.43	397.67
Chevrolet 1/2 Ton #8	1972	328.76	1,649.85
Ford 3/4 Ton #10-73	1973	-	507.37
Dodge 1/2 Ton #15	1975	517.51	678.07
G.M.C. 3 Ton Dump #16	1973	732.56	1,177.80
Dodge 3 Ton Dump #17	1969	1,232.30	147.66
Chevrolet 3 Ton Dump #18	1971	697.11	1,328.32
Ford 3 Ton Dump #19	1970	1,376.53	741.88
Ford 3 Ton Dump #21	1972	607.53	2,183.18
Dodge 3 Ton #22	1976	306.01	99.13
Dodge 3 Ton Dump #23	1974	2,125.06	775.21
G.M.C. 3 Ton Dump #24	1975	270.97	1,064.01
G.M.C. 3 Ton Dump #25	1975	612.57	1,008.38
Ford 3 Ton Dump #26	1975	493.66	439.07
Dodge 3 Ton Dump #27-76	1976	427.46	441.45
Dodge 3 Ton Dump #28-76	1976	284.95	103.53
Chevrolet 3 Ton #29	1977	72.20	171.15
Chevrolet 3 Ton Dump #30	1977	8.12	2,075.05
Chevrolet 3 Ton Dump #31	1977	280.97	351.20
International Loadstar #32	1978	-	97.85
International Loadstar #33	1978	-	82.51
International Loadstar #34	1978	-	50.29
Galion Grader 118 #36	1966	1,245.02	1,891.54
Austin Western 300 Pacer #37	1962	1,097.60	4,528.94
Galion Grader T400 #38	1972	1,388.68	2,586.40
Caterpillar 120 Grader #39	1974	1,986.95	1,781.94
Caterpillar 120 Grader #40	1974	3,222.16	13,076.02
Carerpillar 120 Grader #41	1974	2,697.87	3,268.83
Caterpillar 120 Grader #42	1974	7,493.37	2,937.02
Galion T-500A Grader #43-76	1976	542.39	1,371.71
Galion T-500A Grader #44-76	1976	337.76	249.40
Galion T-600A Grader #45-76	1976	7,329.96	5,410.75
Galion T-500A Grader #46-77	1977	142.70	144.67
Galion T-500A Grader #47-77	1977	75.11	593.40
Dodge Vacall #54	1971	550.09	6,457.47
Hy-Hoe Backhoe #55	1964	2,993.39	8,537.73
Unit Trench Hoe #56	1957	-	527.57
Hopto Backhoe #57	1973	-	50.60
Ingersol Rand Compressor #58	1969	435.11	188.26
Hy-Hoe Backhoe #59	1974	5,071.85	6,379.09
Miller Welder #65	1959	-	34.35
Ingersol Rand Compressor #67	1957	1,486.80	3,038.66
Atlas Copco Compressor #68	1964	72.09	24.00
Atlas Copco Compressor #70	1974	267.04	144.48
Essick Roller #72	1970	432.62	977.50
Essick Roller #73	1971	69.09	642.59
Mikasa Roller #74-76	1976	148.64	172.49
Essick Roller #75	1974	236.30	1,057.40
Ford Tractor #82	1974	186.61	412.37
Essick Roller #84-76	1976	101.36	27.83
Chevrolet 5 Ton #101	1975	417.41	70.20
Ford 5 Ton #102	1975	656.44	639.23
G.M.C. 5 Ton #103	1975	1,691.43	3,319.80
G.M.C. 5 Ton #104	1975	1,157.36	1,626.07
G.M.C. 5 Ton #105	1975	483.46	1,441.22
Ford 1/2 Ton Crew Cab #111	1974	656.79	3,005.48
Ford 1/2 Ton Crew Cab #112	1974	783.80	1,502.71
Ford 3/4 Ton #120	1974	299.87	1,103.44

Name	Year Purchased	1977 Repairs	1978 Repairs
International Scout II #121	1975	\$ 450.91	\$ 1,007.63
International Scout II #122	1975	264.16	649.02
International Scout #129	1972	900.39	503.53
International Scout #130	1973	463.72	281.51
International Scout #131	1974	334.10	534.38
Michigan 55A Loader #135	1974	3,680.58	6,039.39
Michigan 55A Loader #136	1974	4,712.66	6,032.22
Michigan 55A Loader #137	1974	4,012.90	6,189.68
Michigan 55A Loader #138	1974	2,006.36	5,376.89
Hough H60E Loader #139	1978	-	167.81
John Deere Loader #141	1975	255.07	2,941.86
Ford Loader #142	1977	75.69	830.49
Case W-18 Loader #143	1974	5,296.93	3,964.73
Caterpillar D5 Dozer #146	1969	9,192.09	12,497.12
International TD8C Dozer #147	1971	2,334.07	2,372.35
Case 850 Dozer #148	1968	443.34	176.07
Case 750 Dozer #149	1965	1,312.25	1,159.31
Dodge 1/2 Ton #201	1973	740.71	734.25
Chevrolet 3 Ton #202	1974	1,328.09	2,208.23
Ford 5 Ton #203-75	1975	720.03	981.90
Dodge 3 Ton #205	1972	342.73	11.32
Case Backhoe #207	1972	3,097.93	1,171.74
Case 310 Dozer #208	1968	161.66	54.35
Essick Roller #214	1974	-	137.05
Ford 1/2 Ton #251	1974	946.34	425.42
Case 780 Backhoe #253	1976	3,106.61	5,677.06
Case 450 Dozer #254	1973	1,249.24	1,074.01
Gardner Denver Compressor #255	1968	27.14	2,362.56
TOTALS		\$105,274.62	\$162,471.95

The following items of machinery were purchased in 1978 and charged to TRANSPORTATION SERVICES:

3 - International Loadstars - Asset No.'s 32-78, 33-78, 34-78

Cost .....	\$ 31,924.32
Plus 5% SS&E Tax .....	1,596.21
License & Registration .....	<u>18.00</u>
TOTAL COST .....	<u>\$ 33,538.53</u>

1 - 1974 Ford One Ton Cab and Chassis - Asset No. 204

Cost .....	\$ 2,300.00
License .....	6.00
Plus 8% SS&E Tax .....	<u>184.00</u>
TOTAL COST .....	<u>\$ 2,490.00</u>

3 - Truck Bodies for Asset No.'s 32-78, 33-78, 34-78

Cost .....	<u>\$ 2,990.00</u>
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CAPITAL ACCOUNT CURB & GUTTER

The net expenditure under this heading amounted to \$470,354.56.

For the above expenditure, concrete curb and gutter was constructed at the following locations:

<u>Location</u>	<u>Lineal Feet</u>
Argyle Street - South Side	301
Gulliver Dr. - Weyman St. to Walker St. - Both Sides	1,234
Shibu Ct. - Court Area - Both Sides	205
Kent St. - Existing to End of 1975 Const. - Both Sides	1,295
Jewett St. - Existing to End of 1975 Const. - Both Sides	885
Barton Cres. - Existing to Dickson St. - Both Sides	4,740
Neville St. - Both Sides	1,915
Kingsley St. - Both Sides	1,223
Edgewood Dr. - Brookside Dr. to Kingsley St. - Both Sides	632
Longwood Dr. - Woodmount Dr. to Lilac Cres. - Both Sides	1,610
Linden Cres. - Both Sides	2,679
Greenfields Dr. - Existing to Prospect St. - Both Sides	1,546
Abbott Ct. - Both Sides	2,820
Golf Club Rd. - Existing to near Birdie Ct. - Both Sides	1,466
Corbett Ave. - Both Sides	3,015
Carmen Ave. - Watters Dr. to Colwell Dr. - Both Sides	1,820
Hollybrook St. - Existing to End of 1975 Const. - Both Sides	470
Hallett St. - Both Sides	530
** Woodmount Dr. - Both Sides	2,650
** Epworth Circle - Both Sides	2,220
** Broad St. - Both Sides	2,450
** Melvin St. - Both Sides	2,490
** Maddison Ave. - Both Sides	2,250
** Gourley Ct. - Both Sides	450
** Burpee St. - Sunset Dr. to Floral Ave. - Both Sides	6,368
** Robinson Dr. - Both Sides	2,400
** Hildebrand Cres. - Both Sides	3,350
*	
** Royal Rd. - C.P.R. Tracks to Primrose Ave. - Both Sides	2,185
TOTAL LINEAL FEET .....	<u>55,199</u>

55,199 Lineal Feet = 10.45 Miles

\* Expenditure included under DESIGNATED ROUTES.  
\*\* Constructed by Frizzell Brothers Construction.

All the above Curb and Gutter was constructed by City Crews except those denoted by Asterisks.

All the concrete poured by City Crews was purchased ready-mix from Gordon's Ready-Mix Ltd. at a price of \$33.40/Cubic Yard. Frizzell Brothers Construction were responsible for obtaining their own concrete.

The unit cost of one lineal foot of curb and gutter placed by City Crews, found by dividing the total length laid, which equalled 28,386 lineal feet into the total cost of \$204,631.32 was \$7.21/lineal foot.

The unit cost of one lineal foot of curbing by Frizzell Brothers Construction, found by dividing the total length laid, which equalled 26,813 lineal feet into the total cost of \$287,041.62 was \$10.71 per lineal foot.

The topsoiling of boulevards is included in the above costs as well as design and supervision costs.

TOPSOILING COSTS:

Frizzell Brothers Construction were responsible for topsoiling all boulevards on streets which they constructed curb and gutter. All other boulevards were topsoiled by City Crews.

Frizzell Brothers Construction:

Total Cost of Topsoiling, Fertilizer, Etc.....	\$ 50,828.80
Lineal Feet of Curb Constructed .....	26,813
Cost/Foot (Topsoiling) .....	1.90
Therefore, cost/foot of Curbing only .....	8.81

City Crews:

Labour .....	\$ 20,554.23
Hired Trucks & Machinery .....	-
City Machinery Charges .....	-
Materials .....	<u>11,761.75</u>
TOTAL .....	<u>\$ 32,315.98</u>

Total Cost of Curbing, including Topsoiling .....	\$204,631.32
Less: Cost of Topsoiling .....	<u>32,315.98</u>
TOTAL COST OF CURBING .....	<u>\$172,315.34</u>

Cost/Lin.Ft. in Place =  $\frac{\$172,315.34}{28,386}$  = \$ 6.07

Cost/Lin.Ft. of Topsoiling =  $\frac{\$32,315.98}{28,386}$  = \$ 1.14

Labour cost of constructing 1 Lineal Foot of Curb and Gutter, minus topsoiling was.....  $\frac{\$78,012.75}{28,386}$  = \$ 2.75

CAPITAL ACCOUNT PAVING

In 1978, Grant-Mills Limited was awarded a contract to lay pavement and resurface a number of City Streets. Also, Flintkote Company of Canada Limited Armour Coated a number of City Streets.

The material cost amounted to \$697,303.37 and was made up as follows:

Grant-Mills Limited:

5,768.30 Tons 3/8" Minus Asphalt @ \$20.00/Ton.....	\$ 115,366.00
15,164.30 Tons 1/2" Seal Minus Asphalt @ \$18.00/Ton.	272,957.40
13,626.90 Tons 3/4" Dense Mix Asphalt @ \$17.00/Ton..	231,657.30
19,367 Gallons of N.B. Primer @ \$0.60/Gallon.....	11,620.20
7,700 Gallons of Tack Coat @ \$0.60/Gallon.....	4,620.00

Flintkote Company of Canada Limited:

451.25 Tons of 3/4" Chips @ \$10.75/Ton.....	4,850.94
190.95 Tons of 1/2" Chips @ \$11.65/Ton.....	2,224.57
134.25 Tons of 3/8" Chips @ \$12.25/Ton.....	1,644.56

12,340 Gallons of Colas Asphalt Emulsion @ \$0.79/Gallon \$ 9,748.60  
 5% SS&E Tax on Emulsion Only ..... 372.05

Gorman Construction Limited:

255.75 Tons of 1/2" Seal @ \$18.00/Ton .....	4,603.50
160.90 Tons of Sand Seal @ \$18.75/Ton .....	3,016.88
29.10 Tons of 1/2" Seal @ \$18.95/Ton.....	551.45

A.D.I. Limited - Asphalt Testing ..... 7,687.60

Miscellaneous - Journal Vouchers, Etc. ..... 26,382.32

TOTAL ..... \$ 697,303.37

The street preparatory work, other than the laying in place of the pre-mixed material, was done by regular City Crews at an expenditure of \$74,349.18 made up as follows:

Materials .....	\$ 8,171.83
City Labour .....	39,981.85
City Machinery .....	<u>26,195.50</u>
<u>TOTAL</u> .....	<u>\$ 74,349.18</u>

The total net expenditure under this heading amounted to \$477,502.96 and was made up as follows:

City Labour .....	\$ 39,981.85
City Machinery .....	26,195.50
Grant-Mills Limited .....	636,220.90
Flintkote Company of Canada Ltd. ....	18,840.72
Journal Vouchers (Pension Funds) .....	1,683.34
Gorman Construction Limited .....	8,171.83
A.D.I. Limited .....	7,687.60
Miscellaneous .....	<u>26,382.32</u>
<u>GROSS EXPENDITURE</u> .....	<u>765,164.06</u>
<u>Less Credit</u> .....	<u>287,661.10</u>
<u>NET EXPENDITURE</u> .....	<u>\$ 477,502.96</u>

The above credit of \$287,661.10 was made up of \$266,608.54 for paving Provincial Designated Routes and \$21,052.56 charged to the Neighbourhood Improvement Program for paving Union Street and MacLaren Avenue.

The paving program required the supply and placement of the following grades of materials:

- (1) New Pavement - 3/4" Dense Mix @ \$17.00/Ton in Place
- (2) Recap - 1/2" Minus @ \$18.00/Ton in Place
- (3) Surface Seal - 3/8" Minus @ \$20.00/Ton in Place
- (4) Armour Coat - 3/4"-1/2"-3/8" Chips

(1) New Pavement

The following streets were paved with 3/4" Dense Mix by Grant-Mills Limited in 1978.

<u>Location</u>	<u>Lineal Feet</u>
Hollybrook St. - Existing to End of 1975 Const.	121
Hallett St.	301
Gulliver Dr. - Weyman St. to Walker St.	597
Carman Ave. - Watters Dr. to Colwell Dr.	924
Corbett Ave.	1,420
Greenfields Dr. - Existing to Prospect St.	813
Abbott Ct.	713
Longwood Dr. - Woodmount Dr. to Lilac Cres.	898
Linden Cres.	1,352
Shibu Ct. - Court Area	85
Kingsley St.	544
Edgewood Dr. - Brookside Dr. to Kingsley St.	340
Neville St.	1,288
Kent St. - Existing to End of 1975 Const.	708
Jewett St. - Existing to End of 1975 Const.	618
Barton Cres. - Existing to Dickson St.	2,445
Woodmount Dr.	1,373
Epworth Circle.	1,130
Broad St.	1,236
Melvin St.	1,214
Maddison Ave.	998
Gourley Ct.	169
Burpee St. - Sunset Dr. to Floral Ave.	3,168
Robinson Dr.	1,220
Hildebrand Cres.	1,700
TOTAL .....	<u>25,375</u>

25,375 Lineal Feet = 4.81 Miles

For the above, the following materials were used:

19,367 Gallons of N.B. Prime @ \$0.60/Gallon .....	\$ 11,620.20
13,626.90 Tons 3/4" Hot Mix Asphalt @ \$17.00/Ton ...	<u>231,657.30</u>
TOTAL .....	<u>\$ 243,277.50</u>

The street grading and preparatory work was done by regular City Crews.

#### (2) Recap - 1/2" Minus

The following streets were recapped by Grant-Mills Limited in 1978:

<u>Location</u>	<u>Lineal Feet</u>
Campbell St. - City Hall Area	405
Golf Club Rd. - #90 to End of Curbing	680
Wilsey Rd. - Doak Rd. to Vanier Hwy.	2,200
* Queen St. - Carleton St. to York St.	620
* York St. - Queen St. to King St.	370
**Regent St. - Rte. #101 - Montgomery St. to Prospect St.	2,910
**Woodstock Rd. - Rte. #12 - Hanwell Rd. to T.C.H.	11,310
**Royal Rd. - Rte. #620 - C.P.R. Tracks to Primrose Ave.	1,230
**Killarney Rd. - Transmission Line to City Limits	13,881
Killarney Loop (Mitchell Turn)	1,088
TOTAL .....	<u>34,694</u>

34,694 Lineal Feet = 6.57 Miles

\* Expenditures charged to Capital Permanent Streets Reconstruction.  
\*\* Expenditures charged to Designated Routes.

The following material was used for the above streets.

15,164.30 Tons 1/2" Minus Asphalt @ \$18.00/Ton ..... \$ 272,957.40

(3) Surface Seal - 3/8" Minus

The following streets were surface sealed by Grant-Mills Limited Under "Capital Account" with 3/8" Minus Hot Mix Asphalt:

<u>Location</u>	<u>Lineal Feet</u>
Prospect St. - Smythe St. to Greenfields Dr.	2,140
Meadow Green Ct.	671
Mayland Ct.	269
Charing Cres.	1,837
Topcliffe Cres.	1,938
Bradford St.	829
Nottingham St.	998
Bristol St. - East Norfolk Dr. to Nottingham St.	1,328
Limerick Rd. - McNair Dr. to Flemming Rd.	500
Flemming Rd. - Tilley Dr. to Wetmore Rd.	650
Wetmore Rd. - To Chandler Dr.	1,729
Tilley Dr.	1,721
Hazen Ct.	628
Ashfield St.	1,927
* Union St. - Hughes St. to Gibson St.	3,428
* MacLaren Ave. - Cliffe St. to Gibson St.	5,190
TOTAL .....	<u>25,783</u>

25,783 Lineal Feet = 4.88 Miles

\* Expenditures partially paid by Neighbourhood Improvement Program.

For the above streets, the following materials were used:

5,768.30 Tons 3/8" Minus Asphalt @ \$20.00/Ton..... \$ 115,366.00  
7,700 Gallons of Tack Coat @ \$0.60/Gallon ..... 4,620.00  
TOTAL ..... \$ 119,986.00

(4) Armour Coat - 3/4"-1/2"-3/8" Chips

The following Roads and Streets were resurfaced with 3/4"-1/2"-3/8" Chips in 1978 by Flintkote Company of Canada Limited.

<u>Location</u>	<u>Lineal Feet</u>
Carriage Hill Drive	1,510
Aquarius Street	560
McMann St.	401
Holland St.	280
TOTAL .....	<u>2,751</u>

2,751 Lineal Feet = 0.52 Miles

Materials Used:

451.25 Tons of 3/4" Chips @ \$10.75/Ton ..... \$ 4,850.94  
190.95 Tons of 1/2" Chips @ \$11.65/Ton ..... 2,224.57  
134.25 Tons of 3/8" Chips @ \$12.25/Ton ..... 1,644.56  
12,340 Gallons of RS-2K Asphalt Emulsion @ \$0.79/Gal. 9,748.60  
TOTAL ..... \$ 18,468.67

CAPITAL ACCOUNT DOMESTIC SEWER

GROSS EXPENDITURE .....	\$ 206,573.13
LESS CREDIT .....	<u>190,524.22</u>
NET EXPENDITURE .....	<u>\$ 16,048.91</u>

Included in the Gross Expenditure of \$206,573.13 is the amount of holdback from jobs completed in 1977 paid in 1978 accounts.

The above credit is made up as follows:

Journal Vouchers (Materials paid for by Capital Account Domestic Sewer & charged to other City Departments) .....	\$ 18,574.44
Work done and materials sold to Private Parties ....	3,104.41
N.B. Housing Corp. - Birch Hill Subd. ....	23,916.34
Hill Brothers Ltd. - Fairway View Subd. ....	15,288.44
N.B. Housing Corp. - Ebony Dr. ....	7,051.07
K.&T. Development Ltd. - Rosewood Estates Subd. ....	)Improvement Charges 29,663.32
N.B. Housing Corp. - Southwood Park ....	)..... 65,489.99
N.B. Housing Corp. - MacPherson St. (1977) ....	)..... 5,598.63
The Rocca Group Ltd. - Lincoln Heights Subd. ....	75.64
Allender Investments Ltd. - Crocket St. ....	7,431.02
Nashwaaksis Realty Ltd. - Sabine Heights Subd)....	5,860.00
Chippin's Ltd. - Longwood Dr. Area ....	8,166.00
Maritime Engineering Ltd. - Precast Manhole Sections	304.92
TOTAL .....	<u>\$ 190,524.22</u>

Domestic Sewer Mains were constructed at the following locations:

Location	LINEAL FEET					
	8"A.C.	10"A.C.	12"A.C.	14"A.C.	6"F.M.	8"F.M.
Birch Hill Subd.	1,684					
MacPherson St. 15-77	272					
Fairway View Subd.	752					
Ebony Drive	389					
Rosewood Estates Subd.	1,844					
Neill Subd. - Crocket St.	441					
Southwood Park	2,336					
Vanier Industrial Park						
*Woodstock Rd. #1	453	1,498	1,365	140	668	
*Woodstock Rd. #2						134
*Woodstock Rd. #3	357	138	58	55		
*Riverside Dr. - Lift Stn. 15	39					55
*Riverside Dr. - Lift Stn. 16 & 17	213	50	118		169	
TOTALS	8,780	1,686	1,541	195	892	134

\* See Capital Service Development Projects for Costs.

Total Lineal Feet of Main Installed in 1978 = 13,228 = 2.51 Miles

The following shows the actual cost of installing the above listed Domestic Sewer Mains (excluding projects inspected by Consultants on the City's behalf).

Location	Payment to Contractors Including Reserve For Holdback	City Labour & Machinery	Materials	Total
Birch Hill Subdivision	\$ 14,988.00	\$ 713.32	\$ 8,215.02	\$ 23,916.34
MacPherson St. - 15-77	4,612.05	466.90	1,550.28	6,629.23
Fairway View Subdivision	10,553.76	621.28	3,998.85	15,173.89
Ebony Drive	4,752.00	189.16	2,109.91	7,051.07
Rosewood Estates Subd.	19,986.00	1,044.94	8,632.38	29,663.32
Neill Subd. - Crocket St.	4,291.50	801.64	2,337.88	7,431.02
Southwood Park	46,257.72	3,042.58	16,189.69	65,489.99
TOTALS	\$105,441.03	\$6,879.82	\$43,034.01	\$155,354.86

The above costs include any holdback payments, thus showing the actual cost of construction.

The following is the cost of laying pipe per foot including man-holes by Contractors in the above locations in 1978:

Location	8" A.C.	6" D.I.F.M.
Birch Hill Subdivision	\$ 13.91	\$
MacPherson St. - 15-77	14.81	
Fairway View Subdivision	20.18	
Ebony Drive	17.83	
Rosewood Estates Subdivision	16.09	
Neill Subdivision - Crocket St.	16.28	
Southwood Park	21.27	23.64

Materials in stock as of December 31, 1978:

Service Materials (4" A.C. Pipe, 4" Soil Pipe, 6" A.C. Pipe, Saddles & Fittings) .....	\$ 10,500.00
5,470 Lin.Ft. of 8" A.C. @ \$3.03/foot .....	16,574.10
572 Lin.Ft. of 10" A.C. @ \$3.54/foot .....	2,024.88
32 - Special "B" St. Thru Sections @ \$87.94 each ....	2,814.08
23 - 3-Way-Rt. Special "B" Sections @ \$93.45 each ...	2,149.35
11 - 3-Way-Lt. Special "B" Sections @ \$93.45 each ...	1,027.95
29 - "A" Sections @ \$51.71 each .....	1,499.59
22 - "C" Sections @ \$117.60 each .....	2,587.20
46 - "D" Sections @ \$25.67 each .....	1,180.82
20 - Flat Top "Dx" Sections @ \$22.00 each .....	440.00
25 - "B" Sections @ \$81.38 each .....	2,034.50
	\$ 42,832.47

#### CAPITAL ACCOUNT SURFACE SEWER

GROSS EXPENDITURE .....	\$ 320,923.61
LESS CREDITS .....	<u>311,737.86</u>
NET EXPENDITURE .....	\$ <u>9,185.75</u>

The above total credit is made up as follows:

Province of New Brunswick - 1978 Improvements to Designated Routes .....	\$ 7,333.45
Journal Vouchers (Materials paid for by Capital Account Surface Sewer & charged to other City Departments) .....	40,809.16
Work Done & Materials sold to Private Parties .....	2,554.21
N.B. Housing Corp. - Birch Hill Subd. ).....	46,866.24
Hill Brothers Ltd. - Fairway View Subd. ).....	27,815.92
N.B. Housing Corp. - Ebony Dr. ).....	9,121.58
K. & T. Development Ltd. - Rosewood Estates Subd. ) Local Improvement	49,631.42
N.B. Housing Corp. - Southwood Park ) Charges	81,450.75
Chippin's Ltd. - Longwood Dr. Area ).....	9,394.00
Allender Investments Ltd. - Crocket St. ).....	18,432.63
N.B. Housing Corp. - MacPherson St. (1977) ).....	7,564.98
The Rocca Group Ltd. - Lincoln Heights Subd. ).....	78.06
Nashwaaksis Realty Ltd. - Sabine Heights Subd).....	9,858.00
Government of Canada - Rebate on Federal Sales Tax on Backing Brick .....	782.71
L.E. Shaw Ltd. - Corrections Re Cartage on 1977 Invoices	44.75
TOTAL .....	<u>\$ 311,737.86</u>

Under this heading Surface Sewer Mains and Laterals were constructed at the following locations:

LINEAL FEET - CONCRETE PIPE

Location	10"	12"	15"	18"	24"	30"	36"	C.M.P. 48"
Birch Hill Subd.	142	1,714						
MacPherson St. - 15-77	56	121	138					
Fairway View Subd.	270	981						
Ebony Drive	56	404						
Rosewood Estates Subd.	145	26		1,319	422	58		
Neill Subd. - Crocket Street	62	373	314					
Southwood Park	309	1,049	584		651			
* Birch Crescent	193	1,379	184					
* Hachey Avenue	78	704						
* Nashwaaksis 128-24	1,004	5,949	489					
* Nashwaaksis 128-25	664	3,012	623	1,700	256	98	179	
* Nashwaaksis 128-26	482	1,498	1,442	311				
Vanier Ind. Park	756							495
Young Street	164							
Greenwood Drive			8	96				
Sabine Heights (Incomplete)								
*Woodstock Rd. #1					24		48	
*Woodstock Rd. #2								106
*Woodstock Rd. #3			18	74				
*B.P. Lift Stn's #16 & #17						218	24	
*Maple Street						64		
TOTALS	4,381	17,236	3,944	3,707	1,353	204	508	495

\* Expenditures included under Capital Service Development Projects.

TOTAL LINEAL FEET OF MAIN INSTALLED IN 1978 = 31,828 = 6.03 Miles

The following shows the actual cost of installing the above listed Storm Sewer Mains (excluding projects inspected by Consultants on the City's behalf.)

Location	Payment to Contractors Including Reserve For Holdback	City Labour & Machinery	Materials	Total
Birch Hill Subd.	\$ 33,686.00	\$ 1,064.38	\$12,115.86	\$ 46,866.24
MacPherson St. 15-77	6,772.10	454.21	2,245.54	9,471.85
Fairway View Subd.	16,712.58	1,177.19	10,093.90	27,983.67
Ebony Drive	5,760.00	244.69	3,116.89	9,121.58
Rosewood Estates Subd.	30,417.00	1,509.10	17,705.32	49,631.42
Neill Subd.- Crocket St.	11,017.00	1,259.70	6,155.93	18,432.63
Southwood Park	58,463.00	2,336.99	20,650.76	81,450.75
Birch Crescent	29,904.74	5,707.98	13,168.43	48,781.15
Hachey Avenue	9,167.99	934.23	4,655.41	14,757.63
Sabine Heights (Incomplete)	1,988.05	798.05	3,532.78	6,318.88
TOTALS	\$203,888.46	\$15,486.52	\$93,440.82	\$312,815.80

Following is the cost of laying various sizes of pipe including Catch Basins and Manholes in Place.

#### COST PER LINEAL FOOT

Location	10"	12"	15"	18"	24"	30"
Birch Hill Subdivision	\$23.82	\$24.94	\$	\$	\$	\$
MacPherson St. 15-77	14.24	15.30	15.92	16.79		
Fairway View Subd.	21.49	22.61				
Ebony Drive	18.35	19.47				
Rosewood Estates Subd.	22.43	23.55		24.62	27.32	30.42
Neill Subd.- Crocket St.	21.76	22.88	23.39			
Southwood Park	29.31	30.43	31.16		34.20	
Birch Crescent	24.92	26.04	26.55			
Hachey Avenue	16.69	17.81				

Stock on hand December 31, 1978:

584 Lin.Ft. of 10" Concrete @ \$2.18/foot .....	\$ 1,273.12
2,628 Lin.Ft. of 12" Concrete @ \$3.30/foot .....	8,672.40
1,512 Lin.Ft. of 15" Concrete @ \$3.81/foot .....	5,760.72
1,088 Lin.Ft. of 18" Concrete @ \$4.37/foot .....	4,754.56
360 Lin.Ft. of 24" Concrete @ \$7.07/foot .....	2,545.20
72 Lin.Ft. of 36" Concrete @ \$15.05/foot .....	1,083.60
56 C.B. Frames & Covers @ \$168.85 each .....	9,455.60
29 M.H. Frames & Covers @ \$168.85 each .....	4,896.65
57 "A" Sections @ \$37.79 each .....	2,154.03
	\$ 40,595.88

#### CAPITAL ACCOUNT WATER

GROSS EXPENDITURE .....	\$ 334,200.83
LESS CREDITS .....	<u>292,241.67</u>
NET EXPENDITURE .....	<u>\$ 41,959.16</u>

The above credit is made up as follows:

Journal Vouchers (Materials Paid for by Capital Account Water & Charged to other City Departments)	\$ 29,719.67
Work done and materials sold to Private Parties .....	7,020.91
N.B. Housing Corp. - Birch Hill Subd. ).....	77,959.75
Hill Brothers Ltd. - Fairway View Subd.).....	16,435.64
N.B. Housing Corp. - Ebony Dr. ).....	9,196.89
K.&T. Development Ltd. - Rosewood Estates Subdivision )Local.....	43,930.75
N.B.H.C. - Southwood Park )Improvement.....	60,581.35
N.B.H.C. - MacPherson St. (15-77) )Charges.....	7,934.69
The Rocca Group Ltd. - Lincoln Heights Subdivision ).....	86.68
Allender Investments Ltd. - Crocket St.).....	15,653.34
Nashwaaksis Realty Ltd. - Sabine Heights Subdivision ).....	10,682.00
Chippin's Ltd. - Longwood Dr. Area ).....	13,040.00
TOTAL .....	<u>\$292,241.67</u>

Watermain Installations were made at the following locations in 1978:

Location	LINEAL FEET					
	4"	6"	8"	10"	12"	14"
Birch Hill Subdivision		112	1,720	906		
MacPherson St. 15-77			279			
Fairway View Subdivision		814				
Ebony Drive		527				
Rosewood Estates Subdivision		72	1,757			
Neill Subd. - Crocket St.		40	465			
Southwood Park		462	1,305	640		
*Maple Street			1,226			
*Rowan Street		21	753			
*Nashwaaksis 128-25	58		2,009			
Vanier Industrial Park					639	2,078
*Duke Street		384				
*Woodstock Rd. #1		15	23			
*Woodstock Rd. #2					6	
TOTALS	58	2,447	9,537	1,546	645	2,078

\* Expenditures included under Capital Service Development Projects.

TOTAL LINEAL FEET OF MAIN INSTALLED IN 1978 = 16,311 = 3.09 Miles

The following shows the actual cost of installing the above listed watermains (excluding projects inspected by Consultants on the City's behalf).

Location	Payment to Contractors Including Reserve For Holdbacks	City Labour & Machinery	Materials	Total
Birch Hill Subd.	\$ 39,700.22	\$ 2,479.90	\$ 35,779.63	\$ 77,959.75
MacPherson St. 15-77	4,816.61	229.04	3,204.40	8,250.05
Fairway View Subd.	8,466.12	555.12	7,361.20	16,382.44
Ebony Drive	5,074.80	295.25	3,826.84	9,196.89
Rosewood Estates Subd.	21,718.00	872.64	21,340.11	43,930.75
Neill Subd. - Crocket Street	6,690.00	786.97	8,176.37	15,653.34

Location	Payment to Contractors Including Reserve For Holdbacks	City Labour & Machinery	Materials	Total
Southwood Park	\$ 32,346.00	\$ 2,030.28	\$ 26,205.07	\$ 60,581.35
Maple Street	26,247.44	3,028.33	12,620.15	41,895.92
Rowan Street	8,755.67	679.81	9,438.69	18,874.17
TOTALS	\$153,814.86	\$10,957.34	\$127,952.46	\$292,724.66

The following shows the cost per foot for laying various sizes of pipe at the locations shown:

Location	COST PER LINEAL FOOT		
	6"	8"	10"
Birch Hill Subdivision	\$25.89	\$27.68	\$30.91
MacPherson St. - 15-77	18.46	20.41	
Fairway View Subdivision	20.13		
Ebony Drive	17.04		
Rosewood Estates Subdivision	22.30	24.09	
Neill Subdivision - Crocket Street	27.56	29.80	
Southwood Park	22.62	24.86	27.64
Maple Street		32.03	
Rowan Street	22.23	24.47	

Total Inventory Value as of December 31, 1978 ..... \$ 113,833.75

#### Cost of Well Water Supply To Date (South Side)

Total Cost to December 31, 1977 .....	\$ 1,261,121.70
<u>Plus: Expenditures for 1978 .....</u>	<u>-</u>
<b>TOTAL COST TO DECEMBER 31, 1978 .....</b>	<b>\$ 1,261,121.70</b>

#### Cost of Well Water Supply To Date (North Side)

Total Cost to December 31, 1977 .....	\$ 1,037,918.90
<u>Plus: Expenditures for 1978 .....</u>	<u>25,164.73</u>
<b>TOTAL COST TO DECEMBER 31, 1978 .....</b>	<b>\$ 1,063,083.63</b>

The expenditure of \$25,164.73 for 1978 was for Water Exploration.

#### Cost of Developing Water Supply for Silverwood To Date

Total Cost to December 31, 1977 .....	\$ 188,626.12
<u>Plus: Expenditures for 1978 .....</u>	<u>-</u>
<b>TOTAL COST TO DECEMBER 31, 1978 .....</b>	<b>\$ 188,626.12</b>

## CAPITAL SERVICE DEVELOPMENT PROJECTS

In 1974, projects were begun to upgrade and extend services in the newly amalgamated areas. These projects are known as Capital Service Development Projects - C.S.D.P. In 1978 the Provincial Government allotted the City of Fredericton a stimulation grant of \$1,000,000. to be applied to water and domestic sewer services only. Stimulation grants for 1974, 1975, 1976 and 1977 were \$1,500,000., \$1,250,000., \$1,000,000., and \$1,000,000. respectively.

Following is a summary of C.S.D.P. Costs from 1974 to 1978 for the various services:

### GROSS EXPENDITURES

<u>Year</u>	<u>Water</u>	<u>Domestic Sewer</u>	<u>Storm Sewer</u>	<u>Totals</u>
1974	\$ 563,987.05	\$ 169,761.70	\$ 494,027.15	\$ 1,227,775.90
1975	1,570,278.37	1,051,072.99	792,489.97	3,413,841.33
1976	827,814.68	468,296.19	588,338.30	1,884,449.17
1977	786,027.11	1,165,312.06	903,921.97	2,855,261.14
1978	300,561.65	362,441.90	1,214,097.67	1,877,101.22
<b>Totals</b>	<b>\$4,048,668.86</b>	<b>\$3,216,884.84</b>	<b>\$3,992,875.06</b>	<b>\$11,258,428.76</b>

<u>Year</u>	<u>Service Depot &amp; Equipment</u>	<u>Equipment Acquisition</u>	<u>Solid Waste Disposal</u>	<u>Totals</u>
1974	\$ 13,873.23	\$ 479,053.44	\$ 3,153.34	\$ 496,080.91
1975	366,636.81	165,149.47	8,725.42	540,511.70
1976	556,806.34	189,961.50	15,121.10	761,888.94
1977	19,458.69	146,862.61	17,605.61	183,926.91
1978	61,042.81	56,368.95	30,220.05	147,631.81
<b>Totals</b>	<b>\$1,017,817.88</b>	<b>\$1,037,395.97</b>	<b>\$ 74,825.52</b>	<b>\$ 2,130,039.37</b>

Overall Gross Expenditure of Capital Service Development Projects Todate ..... \$13,388,468.13.

Projects whether commenced or completed in 1978, will be dealt with individually below.

NOTE: Expenditures will be dealt with only. For any project which involved pipe laying, the length and size of pipe laid will be found in tables either under "Capital Water", "Capital Domestic Sewer", or "Capital Storm Sewer".

#### (1) C.S.D.P. - Water - East Nashwaaksis Area - 128-24

This project involved the construction of manholes around gate valves, formerly protected by standpipe, on various streets in the East Nashwaaksis Area. The expenditure in 1978 was for progress payments and professional services.

1978 Expenditure .....	\$ 7,951.18
Less Credits: Gov't. Stimulation Grant .....	<u>7,951.18</u>
NET COST TO CITY .....	<u>\$ - 0 -</u>

(2) C.S.D.P. - Storm Sewer - East Nashwaaksis Area - 128-24

This project involved the installation of storm sewer mains and connection of storm sewer house laterals on Cedar Ave., Willow Ave., Pugh St., Oak Ave., Fir Ct., Moss Ave., Capital Manor, Bloor St., and Preston Dr. The expenditure in 1978 was for progress payments and professional services.

1978 Expenditure .....	\$ 460,601.04
Less Credits: Gov't. Stimulation Grant .....	<u>113,475.48</u>
NET COST TO CITY .....	<u>\$ 347,125.56</u>

(3) C.S.D.P. - Water - Nashwaaksis - 128-25

This project involved the installation of watermain, hydrant installation, and valve chamber construction on MacFarlane St., Cherry Ave., Gorham Dr., and Fraser Ave. The expenditure in 1978 was for progress payments and professional services.

1978 Expenditure .....	\$ 70,753.68
Less Credits: Returned Materials .....	\$ 267.31
Gov't Stimulation Grant.....	<u>69,808.83</u>
NET COST TO CITY .....	<u>\$ 677.54</u>

(4) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-25

This project involved the installation of storm sewer mains and connection of storm sewer house laterals on MacFarlane St., Cherry Ave., Gorham Dr., and Fraser Ave. The expenditure in 1978 was for progress payments and professional services.

1978 NET EXPENDITURE .....	<u>\$ 405,823.38</u>
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(5) C.S.D.P. - Water - Nashwaaksis - 128-26

This project involved the construction of manholes around gate valves, formerly protected by standpipe, on Floral Ave., Edgewood Dr. and Ebony Dr. The expenditure in 1978 was for progress payments and professional services.

1978 Expenditure .....	\$ 5,234.65
Less Credits: Gov't. Stimulation Grant .....	<u>5,234.65</u>
NET COST TO CITY .....	<u>\$ - 0 -</u>

(6) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-26

This project involved the installation of storm sewer mains and connection of storm sewer house laterals on Floral Ave., Edgewood Dr., and Ebony Dr. The expenditure in 1978 was for progress payments and professional services.

1978 NET EXPENDITURE .....	<u>\$ 172,104.79</u>
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(7) C.S.D.P. - Domestic Sewer - Brookside Dr.

The expenditure for this project was for work towards the design for extension of domestic sewer on Brookside Dr. to service the Brookside Place Development.

1978 NET EXPENDITURE .....	<u>\$ 18.21</u>
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(8) C.S.D.P. - Water - Brookside Dr.

The expenditure for this project was for work towards the design for extension of watermain on Brookside Dr. to service Brookside Place Development.

1978 NET EXPENDITURE ..... \$ 18.21

(9) C.S.D.P. - Water - Maple Street

This project involved the interconnection of the Nashwaaksis and Carleton Ward water systems by installation of watermain from Douglas Ave. to McKeen St. The expenditure in 1978 was for materials, progress payments and inspection costs.

1978 Expenditure..... \$ 39,872.34

Less Credits: Materials Returned.....\$ 601.16  
Gov't. Stimulation Grant.... 39,271.18 39,872.34

NET COST TO CITY ..... \$ - 0 -

(10) C.S.D.P. - Water - Nashwaaksis - Exploration

In 1978, MacLaren Atlantic Ltd. set up a water exploration program for the West Nashwaaksis area. The expenditure in 1978 was for their professional services as well as payments to Maritime Water Supply Ltd. for test drilling.

1978 Expenditure ..... \$ 24,145.05

Less Credits: Gov't. Stimulation Grant ..... 24,145.05

NET COST TO CITY ..... \$ - 0 -

(11) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-21

The expenditure for this project was for a preliminary survey regarding 1978 construction by J. E. Brooks & Associates.

1978 NET EXPENDITURE ..... \$ 20,598.50

(12) C.S.D.P. - Water - East Nashwaaksis - 128-16

This project involved the extension of watermains on Broad St. and Maddison Ave., and also the construction of manholes around gate valves, formerly protected by standpipe, on various streets in the East Nashwaaksis Area. The expenditure in 1978 was for payment of holdback.

1977 Net Expenditure ..... \$ 35,887.87

1978 Net Expenditure ..... 343.66

TOTAL NET EXPENDITURE OF PROJECT TODATE ..... \$ 36,231.53

(13) C.S.D.P. - Storm Sewer - East Nashwaaksis - 128-16

This project involved the installation of storm sewer mains and connection of storm sewer house laterals on Broad St., Woodmount Dr., Epworth Circle, Melvin St., and Gourley Ct. The expenditure in 1978 was for progress payments, holdback payment and professional services.

1977 Net Expenditure ..... \$ 356,929.37

1978 Net Expenditure ..... 8,072.30

TOTAL NET EXPENDITURE OF PROJECT TODATE ..... \$ 365,001.67

(14) C.S.D.P. - Storm Sewer - West Nashwaaksis - 128-17

This project involved the installation of storm sewer mains and connection of storm sewer house laterals on Burpee St., Hildebrand Cres., and Robinson Dr. The expenditure in 1978 was for progress payments, holdback payment and professional services.

1977 Net Expenditure .....	\$ 343,034.16
1978 Net Expenditure .....	<u>8,855.27</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	\$ <u>351,889.43</u>

(15) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-30

1978 Net Expenditure .....	\$ <u>4,295.59</u>
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The above expenditure was for professional services regarding a preliminary survey for 1979 construction.

(16) C.S.D.P. - Water - Parkview Gardens 1976

In 1976 Spade Construction constructed manholes around gate valves formerly protected by standpipe. The 1978 expenditure was for payment of holdback on this project.

1976 Net Expenditure .....	\$ 3,104.95
1978 Net Expenditure .....	<u>294.30</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	\$ <u>3,399.25</u>

(17) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-29

1978 NET EXPENDITURE .....	\$ <u>3,653.43</u>
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The above expenditure was for professional services regarding a preliminary survey for 1979 construction.

(18) C.S.D.P. - Storm Sewer - Barker's Point (Birch Crescent)

This project involved the installation of storm sewer mains on Birch Crescent including the connection of any existing storm sewer house drains.

1978 Gross Expenditure .....	\$ 45,898.71
Less Credits: Materials Returned .....	<u>108.03</u>
1978 NET EXPENDITURE .....	\$ <u>45,790.68</u>

(19) C.S.D.P. - Storm Sewer - Barker's Point (Hachey Ave.)

This project involved the installation of storm sewer mains on Hachey Ave. including the connection of any existing storm sewer house drains.

1978 Gross Expenditure .....	\$ 14,135.47
Less Credits: Materials Returned .....	<u>294.64</u>
1978 NET EXPENDITURE .....	\$ <u>13,840.83</u>

(20) C.S.D.P. - Domestic Sewer - Riverside Dr. - 74603

This project involved the rebuilding of lift station #15 on Riverside Dr. together with supplying and installing any piping required. The expenditure in 1978 was for progress payments and professional services.

1977 Expenditure .....	\$ 51,163.43
1978 Expenditure .....	<u>52,944.54</u> \$ 104,107.97
Less Credits: Gov't Stimulation Grant .....	<u>104,107.97</u>
NET COST TO CITY .....	\$ - 0 -

(21) C.S.D.P. - Domestic Sewer - Riverside Dr. - 78850

This project involved the rebuilding and relocation of lift stations #16 and #17 on Riverside Dr. together with supplying and installing any piping required. The expenditure in 1978 was for progress payments and professional services.

1978 Expenditure .....	\$ 72,159.45
Less Credits: Gov't Stimulation Grant .....	<u>72,159.45</u>
NET COST TO CITY .....	\$ - 0 -

(22) C.S.D.P. - Storm Sewer - Barker's Point

The expenditure for this project was for the purchase and survey of the property containing the outfall servicing the Corbett Ave. area, and for the survey of the Riverside Dr. Street Limits.

1978 NET EXPENDITURE .....	\$ <u>8,164.76</u>
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(23) C.S.D.P. - Water - McMann St.

The purpose of this project was to connect services from existing houses to the new main installed in 1977.

1978 NET EXPENDITURE .....	\$ <u>1,596.03</u>
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(24) C.S.D.P. - Domestic Sewer - McMann St.

The purpose of this project was to connect services from existing houses to the new main installed in 1977.

1978 NET EXPENDITURE .....	\$ <u>1,538.54</u>
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(25) C.S.D.P. - Storm Sewer - Holland St.

The purpose of this project was for general cleanup where storm sewer mains were installed in 1977.

1978 NET EXPENDITURE .....	\$ <u>60.04</u>
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(26) C.S.D.P. - Storm Sewer - Corbett Ave. & Carman Ave.

This project involved the installation of storm sewer mains on Corbett Ave. and Carman Ave. including the connection of any existing storm sewer house drains. The expenditure in 1978 was for payment of holdback.

1977 Net Expenditure .....	\$ 94,338.65
1978 Net Expenditure .....	<u>6,518.43</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	<u>\$100,857.08</u>

- (27) C.S.D.P. - Domestic Sewer, Storm Sewer & Water - McMann St. & Holland St.

This project involved the installation of domestic sewer, storm sewer, and watermains on McMann St. and Holland St. The 1978 expenditures were for holdbacks.

1977 Net Water Expenditure .....	\$ 14,498.96
1977 Net Domestic Sewer Expenditure .....	15,326.10
1977 Net Storm Sewer Expenditure .....	21,203.79
1978 Net Water Expenditure .....	602.48
1978 Net Domestic Sewer Expenditure .....	854.65
1978 Net Storm Sewer Expenditure .....	<u>1,303.36</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	<u>\$ 53,789.34</u>

- (28) C.S.D.P. - Storm Sewer - Greenwood Dr.

This work involved the replacement of a box culvert and also the extension of an offtake through property at 218 Greenwood Dr.

1978 NET EXPENDITURE .....	<u>\$ 1,884.47</u>
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- (29) C.S.D.P. - Water - Monteith Subdivision 1979

1978 Expenditure .....	\$ 4,109.11
Less Credit: Gov't. Stimulation Grant .....	<u>4,109.11</u>
NET COST TO CITY .....	<u>\$ - 0 -</u>

The above expenditure was for professional services regarding 1979 construction.

- (30) C.S.D.P. - Domestic Sewer - Monteith Subdivision 1979

1978 NET EXPENDITURE .....	<u>\$ 3,484.41</u>
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The above expenditure was for professional services regarding 1979 construction.

- (31) C.S.D.P. - Storm Sewer - Monteith Subdivision 1979

1978 Net Expenditure .....	<u>\$ 838.45</u>
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The above expenditure was for professional services regarding 1979 construction.

- (32) C.S.D.P. - Water - Woodstock Rd. - Garden Creek Area -  
75613, 75614, 75615

This project involved the installation of watermains on a section of Golf Club Rd., Riverside Ct., Woodstock Rd., and a section along the T.C.H. to Monteith Dr., the laying of house services from the mains to the property lines and also the construction of a well at the area of the proposed treatment plant including a building with chlorination equipment. This was done under three contracts. Work was finalized in 1978.

Previous Gross Expenditures .....	\$ 20,095.81
Gross Expenditure at end of 1977 .....	593,314.65
Less Credits: Gov't. Stimulation Grant ..	\$ 407,180.24
Can. Brit. Ltd. - Overpayment	<u>127.96</u>
Net Expenditure at end of 1977 .....	206,102.26
Gross Expenditure 1978 .....	101,209.57
Less Credits: Gov't. Stimulation Grants (Includes 1977 Balance) .....	<u>291,818.38</u>
NET COST TO CITY TODATE .....	\$ <u>15,493.45</u>

(33) C.S.D.P. - Domestic Sewer - Woodstock Rd. - Garden Creek Area  
75613, 75614, 75615

This project involved the installation of domestic sewer mains and some forcemain on the Golf Club Rd., Riverside Ct., Woodstock Rd., and a section along the T.C.H. to Monteith Dr.; the laying of house services from the mains to the property lines; construction of lift stations; and site development at the proposed treatment plant. This was done under three contracts. Work was finalized in 1978.

Previous Gross Expenditures .....	\$ 164,907.54
Gross Expenditure at End of 1977 .....	988,217.72
Less Credits: Gov't. Stimulation Grant.....	\$ 592,819.76
Can. Brit. Ltd. - Overpayment	<u>179.75</u>
Net Expenditure at End of 1977 .....	560,125.75
Gross Expenditure 1978 .....	185,090.99
Less Credits: E.J. Ludford - Overpayment .....	\$ 92.01
Gov't. Stimulation Grant.....	<u>229,082.19</u>
*NET COST TO CITY TODATE .....	\$ <u>516,042.54</u>

\* This Net Balance will be paid for by C.M.H.C. Forgiveness of Loan and by Annual Interest Payments by the Province of New Brunswick.

SUMMARY OF PROJECT TODATE

Gross Water & Domestic Sewer Expenditures - 1978 .....	\$ 286,300.56
Previous Gross Water & Domestic Sewer Expenditures .....	<u>1,766,535.72</u>
Total Gross Expenditure of Project Todate .....	2,052,836.28
Less Credits: Gov't. Stimulation Grants.....	\$ 1,520,900.57
Can. Brit. Ltd. - Overpayments .	307.71
E.J. Ludford Ltd. - Overpayments	<u>92.01</u>
TOTAL COST TO CITY TODATE .....	\$ <u>531,535.99</u>

(34) C.S.D.P. - Domestic Sewer - Woodstock Rd. 75616

The expenditure for this account was for professional services.

1978 Expenditure .....	\$ 488.47
Less Credits: Gov't. Stimulation Grant .....	<u>488.47</u>
NET COST TO CITY .....	\$ <u>- 0 -</u>

(35) C.S.D.P. - Domestic Sewer - Phyllis Creek Pumping Station - 77854

The expenditure for this account was for professional services.

Previous Expenditures .....	\$ 1,151.82
1978 Expenditure .....	4,414.18
Less Credit: Gov't. Stimulation Grant .....	<u>4,414.18</u>
NET COST TO CITY TODATE .....	\$ 1,151.82

(36) C.S.D.P. - Water - Woodstock Rd. Service Installations

When services were being stubbed in on the Woodstock Rd., a private drive containing a number of houses was not taken into consideration for servicing by the Consultant. The expenditure under this account was for servicing those houses.

1978 Expenditure .....	\$ 2,688.92
Less Credits: Gov't. Stimulation Grant .....	<u>2,688.92</u>
NET COST TO CITY .....	\$ - 0 -

(37) C.S.D.P. - Domestic Sewer - Woodstock Rd. Service Installations

When services were being stubbed in on the Woodstock Rd., a private drive containing a number of houses was not taken into consideration for servicing by the Consultant. The expenditure under this account was for servicing those houses.

1978 Expenditure .....	\$ 2,896.68
Less Credits: Gov't. Stimulation Grant .....	<u>2,896.68</u>
NET COST TO CITY .....	\$ - 0 -

(38) C.S.D.P. - Domestic Sewer - Hanwell Road

In 1978, the City of Fredericton was petitioned to extend services from the existing on Hanwell Rd. to the Prospect Street Intersection. The 1978 expenditure incurred was for a location survey of properties, etc. by Seaboard Surveys Ltd. to aid in future design of services.

1978 Expenditure .....	\$ 6,139.08
Less Credits: Gov't. Stimulation Grant .....	<u>6,139.08</u>
NET COST TO CITY .....	\$ - 0 -

(39) C.S.D.P. - Domestic Sewer - Lincoln Rd. & Glasier Rd.

In 1975, work commenced to provide Lincoln Rd. from near Draco Rd. to the Glasier Rd. and a portion of the Glasier Rd. with domestic sewer service including mains, services, and lift stations. The expenditure in 1978 was for final progress and holdback payments to Frecon Ltd. and Multi-Ventures Ltd. and payments for professional services.

Previous Expenditures .....	\$ 1,185,549.32
1978 Expenditure .....	17,617.60
Less Credits: Gov't Stimulation Grants	
(Previous).....	\$604,462.71
Gov't. Stimulation Grant	
(1978) .....	<u>16,617.60</u>
	<u>621,080.31</u>
NET COST TO CITY TODATE .....	\$ 582,086.61

(40) C.S.D.P. - Water - Lincoln Rd. & Glasier Rd.

The installation of watermains and water services on Lincoln Rd. from the Research Station to Glasier Rd. and along a portion of Glasier Rd. was begun in 1975. The expenditure in 1978 was for final progress payments.

Previous Expenditures .....	\$ 635,551.99
1978 Expenditure .....	5,591.60
Less Credits: Gov't. Stimulation Grants (Previous).....	\$ 233,555.85
Gov't. Stimulation Grant (1978).....	<u>5,591.60</u> <u>239,147.45</u>
NET COST TO CITY TODATE .....	\$ <u>401,996.14</u>

(41) C.S.D.P. - Domestic Sewer - Lincoln Rd. - Fundy Motel Area

This project involved the installation of a domestic sewer service to service one section of the Motel which was overlooked during the original servicing of Lincoln Rd.

1978 NET EXPENDITURE .....	\$ <u>3,883.42</u>
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(42) C.S.D.P. - Water - Rowan St.

This project involved the installation of an 8" watermain from Glasier Rd. to L. & A. Machine Works to serve as a fire line to L. & A. Machine Works.

1978 Gross Expenditure .....	\$ 19,338.48
Less Credits: Materials Returned.....	\$ 464.31
L. & A. Machine Works .....	<u>18,000.00</u> <u>18,464.31</u>
NET COST TO CITY .....	\$ <u>874.17</u>

(43) C.S.D.P. - Water - Marysville (1979)

The expenditure under this heading was for payrolls and machinery used for preliminary work for 1979 construction.

1978 NET EXPENDITURE .....	\$ <u>338.45</u>
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(44) C.S.D.P. - Water - Glasier Rd.

The expenditure under this heading was for labour involved in flushing the new main and for collection of samples for coliform bacteria tests.

1978 NET EXPENDITURE .....	\$ <u>89.04</u>
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(45) C.S.D.P. - Water - Marysville

The expenditure under this heading was for work involving the search for gate valves and tracing mains for use in future upgrading.

1978 NET EXPENDITURE .....	\$ <u>274.08</u>
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(46) C.S.D.P. - Domestic Sewer - Marysville

This project involved the installation of the domestic sewer house lateral at #32 Downing St.

1978 NET EXPENDITURE .....	\$ <u>268.68</u>
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(47) C.S.D.P. - Water - Duke Street

This project involved the upgrading of a portion of Duke St. with a new watermain and reconnection of existing house water laterals.

1978 Gross Expenditure .....	\$ 14,965.41
Less Credits: Materials Returned.....	<u>163.37</u>
1978 NET EXPENDITURE .....	\$ <u>14,802.04</u>

(48) C.S.D.P. - Water and Domestic Sewer - Mill Street

Residences on Mill St. were once serviced with water by a copper line running behind the properties and their domestic sewage ran into outfalls which emptied into the Nashwaak River. In 1977 new mains were installed and houses connected to the new system. The 1978 expenditures were for holdback payments.

1977 Net Water Expenditure .....	\$ 8,225.95
1977 Net Domestic Sewer Expenditure .....	6,965.92
1978 Net Water Expenditure .....	504.79
1978 Net Domestic Sewer Expenditure .....	<u>520.99</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	\$ <u>16,217.65</u>

(49) C.S.D.P. - Storm Sewer - Marysville (Hanson's Pit Area)

The expenditure incurred under this project was for labour and machinery involved in the construction of a rip-rap wall at the ditch inlet which had been installed in 1977.

1978 NET EXPENDITURE .....	\$ <u>985.66</u>
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(50) C.S.D.P. - Maintenance Depot - Regent St.

The expenditure under this account was for progress payments for construction of a 5-Bay Dry Storage Building at the Maintenance Depot on Regent St. and for professional services by A.D.I. Ltd.

1978 NET EXPENDITURE .....	\$ <u>61,042.81</u>
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(51) C.S.D.P. - Equipment Acquisition

In 1978, the City purchased such equipment as sidewalk plows and payloaders under Service Development. (See List of Machinery purchased and charged to Capital Service Development Equipment.)

Previous Expenditures .....	\$ 981,027.02
1978 Expenditure .....	56,368.95
Less Credits: Previous Gov't. Stimulation Grants....	<u>479,053.44</u>
NET COST TO CITY TODATE .....	\$ <u>558,342.53</u>

(52) C.S.D.P. - Solid Waste Disposal

Expenditures incurred for this project in 1978 were for professional services by MacLaren Atlantic Ltd. and for test drilling and property appraisals.

1978 Net Expenditure .....	\$ 30,220.05
1977 Net Expenditure .....	17,605.61
1976 Net Expenditure .....	15,121.10
1975 Net Expenditure .....	8,725.42
Previous Expenditures .....	<u>3,153.34</u>
TOTAL NET EXPENDITURE OF PROJECT TODATE .....	\$ <u>74,825.52</u>

(53) C.S.D.P. - Water - Monteith Subdivision

In the fall of 1978, a temporary 2" plastic water service was installed by City Forces to service the lower level system of the Monteith Subdivision until upgraded facilities to City Standards are installed. The expenditures incurred were for payrolls, machinery and materials.

1978 NET EXPENDITURE ..... \$ 1,804.13

The following items of machinery were purchased in 1978 and charged to CAPITAL SERVICE DEVELOPMENT (EQUIPMENT):

1 - Model SW48FA Sidewalk Plow - Asset No. 128-78

Total Cost .....	\$ 15,556.00
Less Rentals .....	<u>4,851.00</u>
	10,705.00
Plus 5% N.B. SS&E Tax .....	<u>535.25</u>
NET COST .....	\$ <u>11,240.25</u>

1 - Hough Model H-60E Payloader - Asset No. 139-78

Cost .....	\$ 42,974.00
License .....	6.00
Plus 5% N.B. SS&E Tax .....	<u>2,148.70</u>
TOTAL COST .....	\$ <u>45,128.70</u>

DESIGNATED ROUTES

The City of Fredericton has a total of 38.238 miles of provincial designated highways within its boundaries. In 1978, the provincial government paid \$1,596. and \$402. per lane mile towards winter and summer maintenance of the routes respectively. If any improvements such as curb and gutter, paving or storm sewer installations are to be done to these routes, they have to be authorized by the Department of Transportation. If so authorized, then the provincial government assists the City in paying for the construction.

The following authorized projects were undertaken in 1978:

Location and Type of Construction

- 1.) Recap Route 12, Woodstock Rd. - Hanwell Rd. to T.C.H... \$ 87,925.96
- 2.) Recap Route 101, Regent St. - Montgomery St. to Prospect St. .... 20,886.52
- 3.) Complete Storm Sewer Installation, Route 12, Woodstock Rd. .... 7,333.45

4.) Recap Route 620, Royal Rd. ....	\$ 22,848.74
5.) Install Curb and Gutter, Route 620, Royal Rd. ....	24,335.57
6.) Recap Killarney Road - Old City Limits to Present City Limits ....	<u>134,947.32</u>
TOTAL COSTS INCURRED ...	<u>\$298,277.56</u>

#### CAPITAL ACCOUNT GRAVEL ROADS

GROSS EXPENDITURE .....	\$ 296,990.10
LESS CREDITS .....	<u>210,691.45</u>
NET EXPENDITURE .....	<u>\$ 86,298.65</u>

The above credits are made up as follows:

Journal Vouchers (Gravel, Grade Stakes, Etc.) ....	\$ 25,236.98
N.B. Housing Corp. - Birch Hill Subd. ) ....	35,287.24
Hill Brothers Ltd. - Fairway View Subd. ) ....	18,835.85
N.B. Housing Corp. - Ebony Dr. ) ....	9,813.98
K. & T. Development Ltd. - Local....	
Rosewood Estates Subd. ) Improvement	29,125.21
N.B. Housing Corp. - Southwood Park ) Charges..	43,638.38
N.B. Housing Corp. - MacPherson St. 15-77) ....	19,097.26
Chippin's Ltd. - Dunn Acres ) ....	13,138.06
Allender Investments Ltd. - Crocket St. ) ....	6,945.81
Materials Used On Service Installations ....	<u>9,572.68</u>
TOTAL ... \$	<u>210,691.45</u>

Included in the above expenditures are:

- (1) Grading and Gravelling Curbed Streets
- (2) Gravel Road Construction

#### (1) Grading and Gravelling Curbed Streets

The list of streets under this heading will be found under "Capital Curb and Gutter" which is found in the body of this report on page 18. The expenditure for gravelling curbed streets amounted to \$90,048.44.

#### (2) Gravel Road Construction

The cost of constructing and gravelling the following streets under this heading was as follows:

Location	Lineal Feet	Expenditure
Fairway View Subdivision (Eagle Ct. & Birdie Ct.)	882	\$ 18,835.85
Southwood Park (Pugsley St., Tweedie Ct., Wetmore Rd.)	2,366	43,638.38
Birch Hill Subdivision (MacPherson St., Stafford Dr.)	2,761	54,384.50
Young Street Extension	301	5,832.48
Ebony Drive	517	9,813.98
Rosewood Estates Subdivision (Rosewood Dr., Talisman Cres.)	1,653	29,125.21
Crocket Street Extension	400	6,945.81
TOTALS	8,880	\$168,576.21

The total mileage for new street construction under Capital Account Gravel Roads for 1978 = 2.91 Miles \* .

\* Includes Vanier Industrial Park (Urquhart Rd. & Pepin Rd.)

#### CAPITAL ACCOUNT TRAFFIC LIGHTS

NET EXPENDITURE ..... \$ 23,875.62

In 1978, Traffic Lights were activated at the Smythe & Parkside and Smythe & Priestman Intersections and Traffic Lights were installed and activated at Regent St. - Regent Mall Entrance and Prospect St. - Fredericton Mall Entrance by Stan Cassidy Ltd.

The above net expenditure was made up as follows:

Stan Cassidy Ltd. - Smythe - Parkside - Priestman Lights ...	\$ 8,900.00
Stan Cassidy Ltd. - Installation of Safety Chains .....	2,620.00
Stan Cassidy Ltd. - Regent St. - Regent Mall Lights .....	12,564.00
Stan Cassidy Ltd. - Prospect St. - Fredericton Mall Lights .	11,403.00
Journal Vouchers (Payrolls, Pensions, Machinery, Etc.) .....	1,408.37
Gorman Construction Ltd. - Asphalt .....	343.12
Bond Discount .....	1,050.00
Canadian General Electric - 1 Baselite Assembly .....	<u>265.24</u>
 Gross Expenditure .....	38,553.73
Less Credit: Regent Mall Shopping Centre Ltd. - Re Installation of Lights .....	<u>14,678.11</u>
 NET EXPENDITURE .....	\$ <u>23,875.62</u>

#### CAPITAL ACCOUNT INDUSTRIAL PARK - STORM SEWER

In 1977, construction began on servicing a new industrial park off the Vanier Highway. This project was undertaken jointly by the City of Fredericton, the Department of Commerce and Development and the Capital Region Development Commission Inc. By agreement, the province bears the cost of domestic sewer services, water services, service roads up to bottom of pavement grading for rail services, paving on service roads, initial rail trackage to Park, and associated engineering fees. The municipality must bear the costs of storm sewer services, curb and gutter and lighting and associated engineering fees. The estimated total cost to the municipality is \$600,000.

The net cost for 1978 of \$133,318.15 was for the City of Fredericton's portion regarding storm sewer construction and is made up as follows:

Multi-Ventures Ltd. (Progress Payments) .....	\$ 119,844.53
Neill & Gunter Ltd. (Engineering Services) .....	<u>13,473.62</u>
 TOTAL .....	\$ <u>133,318.15</u>

#### Total Cost to Municipality Todate:

1977 Net Expenditure .....	\$ 265,380.24
1978 Net Expenditure .....	<u>133,318.15</u>
 TOTAL COST ....	\$ <u>398,698.39</u>

NOTE: Footages for domestic sewer, storm sewer, and watermain may be found under "Capital Domestic Sewer", "Capital Storm Sewer", and "Capital Water" for the project in 1978.

#### CAPITAL PERMANENT STREETS - RECONSTRUCTION

In 1978, the City of Fredericton undertook the complete upgrading of Queen Street between Carleton Street and York Street and York Street between Queen Street and King Street. This upgrading included the construction of new curb and gutter and sidewalk and repaving of the streets.

The net expenditure for the project was \$78,957.63 and is made up as follows:

Journal Vouchers (Payrolls, Pensions, Machinery, Etc.)	\$ 48,824.60
Gorman Construction Ltd. - Asphalt .....	2,400.45
Elmtree Concrete Ltd. - Ready-Mix Concrete .....	3,640.60
Grant-Mills Ltd. - Asphalt .....	19,636.50
Diamond Construction (1961) Ltd. - Crushed Rock ....	3,323.04
Dunham's Contracting Ltd. - Gravel .....	250.84
Miscellaneous Materials (Lumber, anchorite, primer, etc.) ...	881.60
TOTAL ...	<u>\$78,957.63</u>

#### CAPITAL ACCOUNT CITY HALL

NET EXPENDITURE ..... \$ 608.56

The expenditure for this account was for installation of lights over drafting tables in the Engineering Drafting Room.

#### CAPITAL ACCOUNT RECREATION

NET EXPENDITURE ..... \$ 2,007.82

The expenditure for this account was for Journal Vouchers regarding payrolls, city machinery, materials and pensions for work done by public works staff at Killarney Lake and Henry Park.

#### CAPITAL ACCOUNT TOURISM

NET EXPENDITURE ..... \$ 504.35

The above expenditure was made up as follows:

Journal Voucher (Concrete Pipe & Crushed Rock) .....	\$ 73.50
Hawkin's Trucking Ltd. (Sand) .....	103.60
Wendell Thomas Ltd. (Topsoil) .....	327.25
TOTAL .....	<u>\$ 504.35</u>

#### CAPITAL ACCOUNT FIRE & POLICE STATION - PARKING LOT

NET EXPENDITURE ..... \$ 819.21

The above expenditure is made up as follows:

Journal Vouchers (Payrolls, Pensions, Machinery, Etc.)..	\$ 397.80
Diamond Construction (1961) Ltd. (Crushed Rock) .....	<u>421.41</u>
TOTAL .....	<u>\$ 819.21</u>

CAPITAL ACCOUNT FIRE

NET EXPENDITURE ..... \$ 345.35

The above expenditure was for Journal Vouchers regarding payrolls, city machinery and materials for work on the water service at the Royal Road Fire Station.

LOCAL IMPROVEMENT - 1978

The following summary of Local Improvement Projects undertaken in 1978 or continued from 1977, shows the actual cost of construction charged to the Subdivider, including holdback payments.

Location	Service	Cost	No. of Lots
Chippin's Limited Dunn Acres - Biggs St. & Forest Hill Ext. Contract 3-77; 1-77	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk	\$ 77,142.55 30,946.14 83,819.99 47,891.48 <u>13,200.00</u>	
	TOTAL	<u>\$253,000.16</u>	
N.B.H.C. - Portion of MacPherson St. Murray Ave. to Existing Contract 15-77	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk	\$ 27,703.38 19,428.68 29,768.46 19,521.31 <u>6,600.00</u>	19 Single
	TOTAL	<u>\$103,021.83</u>	
N.B.H.C. - Birch Hill Subdivision MacPherson St. & Stafford Drive Contract 1-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk	\$ 77,959.75 23,916.34 46,866.24 35,287.24 <u>12,355.00</u>	42 Single
	TOTAL	<u>\$196,384.57</u>	
Hill Brothers Limited Fairway View Subdivision Eagle Ct. & Birdie Ct. Contract 2-78	Water Domestic Sewer Storm Sewer Gravel Road	\$ 16,382.44 15,173.89 27,983.67 <u>18,835.85</u>	
	TOTAL	<u>\$ 78,375.85</u>	22 Single
N.B.H.C. - Ebony Drive Existing to Wilcox St. Contract 3-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk	\$ 9,196.89 7,051.07 9,121.58 9,813.98 <u>3,802.00</u>	9 Single
	TOTAL	<u>\$ 38,985.52</u>	

Location	Service	Cost	No. of Lots
K. & T. Development Ltd. Rosewood Estates Subdivision Rosewood Dr. & Talisman Cres. Contract 4-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk  TOTAL	\$ 43,930.75 29,663.32 49,631.42 29,125.21 9,180.00  \$ 161,530.70	29 Single
John Neill Subdivision Crocket Street Contract 5-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk  TOTAL	\$ 15,653.34 7,431.02 18,432.63 6,945.81 1,248.00  \$ 49,710.80	8 Single
N.B.H.C. - Southwood Park Wetmore Rd., Pugsley St., Tweedie Ct. (Incomplete) Contract 8-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk  TOTAL	\$ 60,581.35 65,489.99 81,450.75 43,638.38 11,064.00  \$ 262,224.47	51 Single
Nashwaaksis Realty (1966) Ltd. Sabine Heights Subdivision Cherry Ave., Fulton Ave., Sierra Dr. (Incomplete) Contract 15-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk  TOTAL	\$ 295.56 322.41 6,318.88 195.11 930.00  \$ 8,061.96	18 Single
Chippin's Limited Longwood Drive Area Mulberry Ct., Juniper Ct., Broad St. (Incomplete) Contract 16-78	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk  TOTAL	\$ 175.02 302.07 233.47 199.20 3,900.00  \$ 4,809.76	33 Single
L & A Machine Works (Rowan St.) Water Line for Sprinkler & Domestic Supply Contract 14-78	Water     TOTAL	\$ 18,895.67     \$ 18,000.00 Charged to Applicant	-

#### SUMMARY OF COSTS TO SUBDIVIDERS FOR SERVICES - 1978

Water .....	\$ 347,916.70
Domestic Sewer .....	199,724.93
Storm Sewer .....	353,627.09
Gravel Road .....	211,453.57
Sidewalk .....	62,279.00
 TOTAL .....	 \$ 1,175,001.29

Number of Lots Developed	-----	Single	-	231
		Multiple	-	18

## ENVIRONMENTAL HEALTH SERVICES

GROSS EXPENDITURE .....	\$ 462,001.32
LESS CREDITS .....	-
NET EXPENDITURE .....	\$ 462,001.32

Under the above heading, the following items are included:

- (1) Garbage & Waste Collection
  - (2) Sanitary Landfill - Disposal

## (1) Garbage & Waste Collection

In 1978, Garbage and Waste Collection was operated by Maritime S. & S. Ltd. The amount paid for the above operation was \$254,035.33 and is made up as follows:

Maritime S. & S. Ltd. - Collection Contract .....	\$ 235,999.33
City of Fredericton - Re Performance Bonds .....	18,000.00
The Daily Gleaner - Advertisement .....	<u>36.00</u>
TOTAL ....	\$ 254,035.33

(2) Sanitary Landfill - Disposal

The expenditure under this section was for the following:

PUBLIC HEALTH SERVICES - CEMETERIES

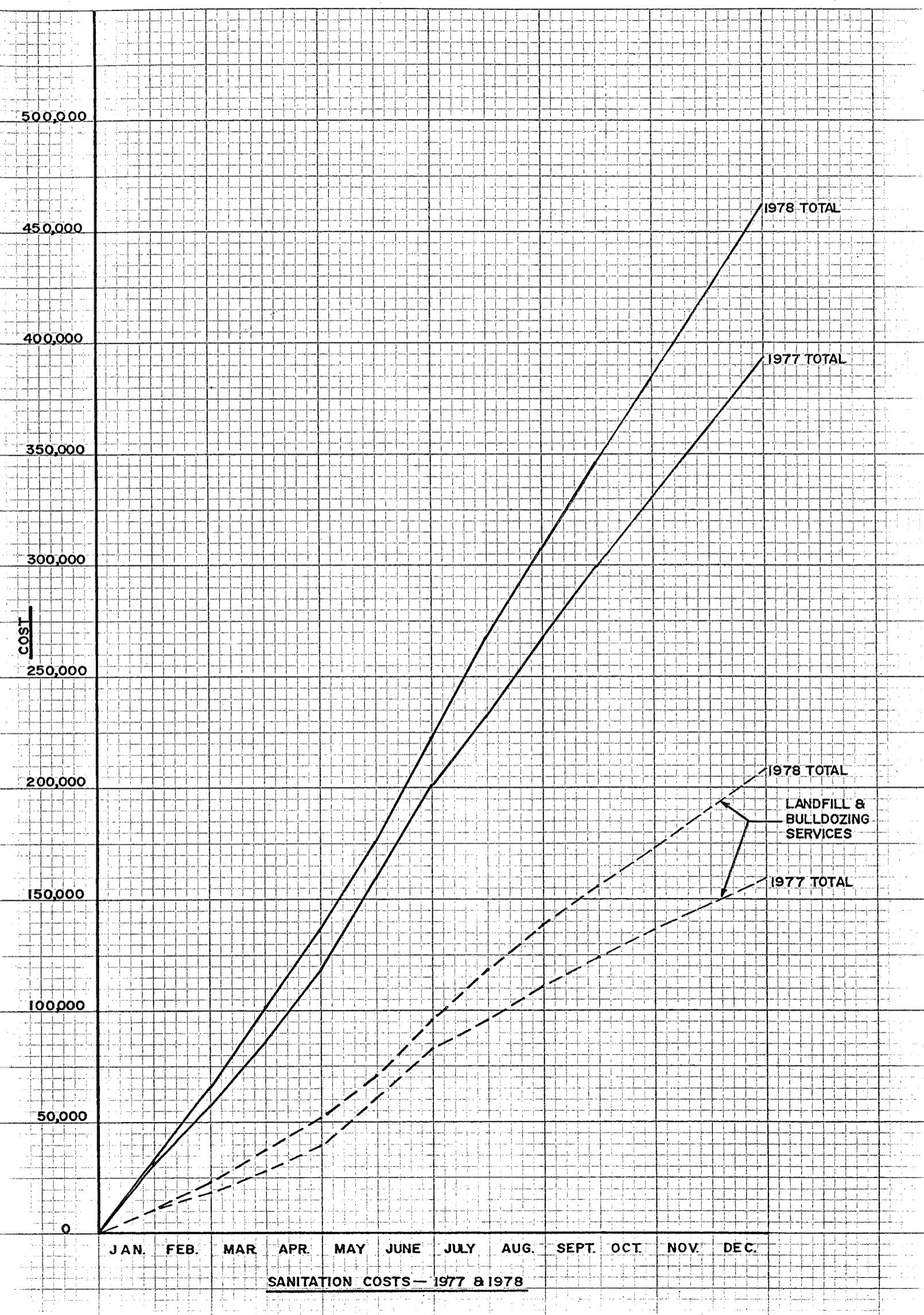
Under this heading are included:

- (1) The Old Burial Ground
  - (2) The Loyalist Burial Ground

## (1) The Old Burial Ground

GROSS EXPENDITURE .....	\$ 5,373.30
LESS CREDITS .....	<u>419.54</u>
NET EXPENDITURE .....	\$ 4,953.76

The above expenditure was made up as follows:



(2) The Loyalist Burial Ground

GROSS EXPENDITURE .....	\$ 601.05
LESS CREDITS .....	-
NET EXPENDITURE .....	\$ <u>601.05</u>

The above expenditure was made up as follows:

Personnel (Payroll and Compensation) .....	\$ 601.05
General Services (City Machinery) .....	-
NET EXPENDITURE .....	\$ <u>601.05</u>

CULTURAL SERVICES

Included under this heading are:

- (1) Odell Park
- (2) Wilmot Park
- (3) Carleton Park
- (4) Development of Park Areas
- (5) Other Parks
- (6) Public Works

(1) Odell Park

GROSS EXPENDITURE .....	\$ 27,667.55
LESS CREDITS .....	<u>1,726.38</u>
NET EXPENDITURE .....	\$ <u>25,941.17</u>

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 21,967.53
General Services (Telephone, Insurance, Repairs, & Maintenance, Machinery) .....	3,982.78
City Government Services (Water and Sewer Rates) ...	92.00
Goods (Materials, Fuels & Lubricants).....	<u>1,625.24</u>
GROSS EXPENDITURE .....	\$ 27,667.55

Less Credits: John Doherty - Payment of Long Distance Calls.....	12.13
Journal Voucher - Machinery (out)....	352.00
Journal Voucher - Inter Dept. Use of Machinery .....	64.00
Elm Glass Ltd. - Return of Stain ....	15.08
Journal Voucher - Correction Re Labour Charges .....	1,208.26
Journal Voucher - To cancel York Steel Invoice .....	<u>74.91</u>
NET EXPENDITURE .....	\$ <u>25,941.17</u>

(2) Wilmot Park

NET EXPENDITURE .....	\$ <u>15,373.28</u>
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The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 11,316.07
General Services (Insurance, Repairs & Maintenance, Lighting, Machinery) .....	3,092.48
City Government Services (Water and Sewer Rates) ...	128.48
Goods (Materials, Gas & Oil) .....	<u>836.25</u>
NET EXPENDITURE .....	\$ 15,373.28

(3) Carleton Park

NET EXPENDITURE .....	\$ <u>10,043.64</u>
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The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 6,592.52
General Services (Machinery & Land Rental) .....	2,805.50
Goods (Materials, Gas & Oil) .....	<u>645.62</u>
NET EXPENDITURE .....	\$ <u>10,043.64</u>

(4) Development of Park Areas

GROSS EXPENDITURE .....	\$ 5,285.23
LESS CREDITS .....	<u>856.00</u>
NET EXPENDITURE .....	\$ <u>4,429.23</u>

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation) .....	\$ 2,351.63
General Services (Machinery) .....	788.00
Goods (Materials, Gas & Lubricants) .....	<u>2,145.60</u>
GROSS EXPENDITURE .....	5,285.23
Less Credits: Journal Vouchers (Cedar Posts) .....	<u>856.00</u>
NET EXPENDITURE .....	\$ <u>4,429.23</u>

(5) Other Parks

NET EXPENDITURE .....	\$ <u>2,378.33</u>
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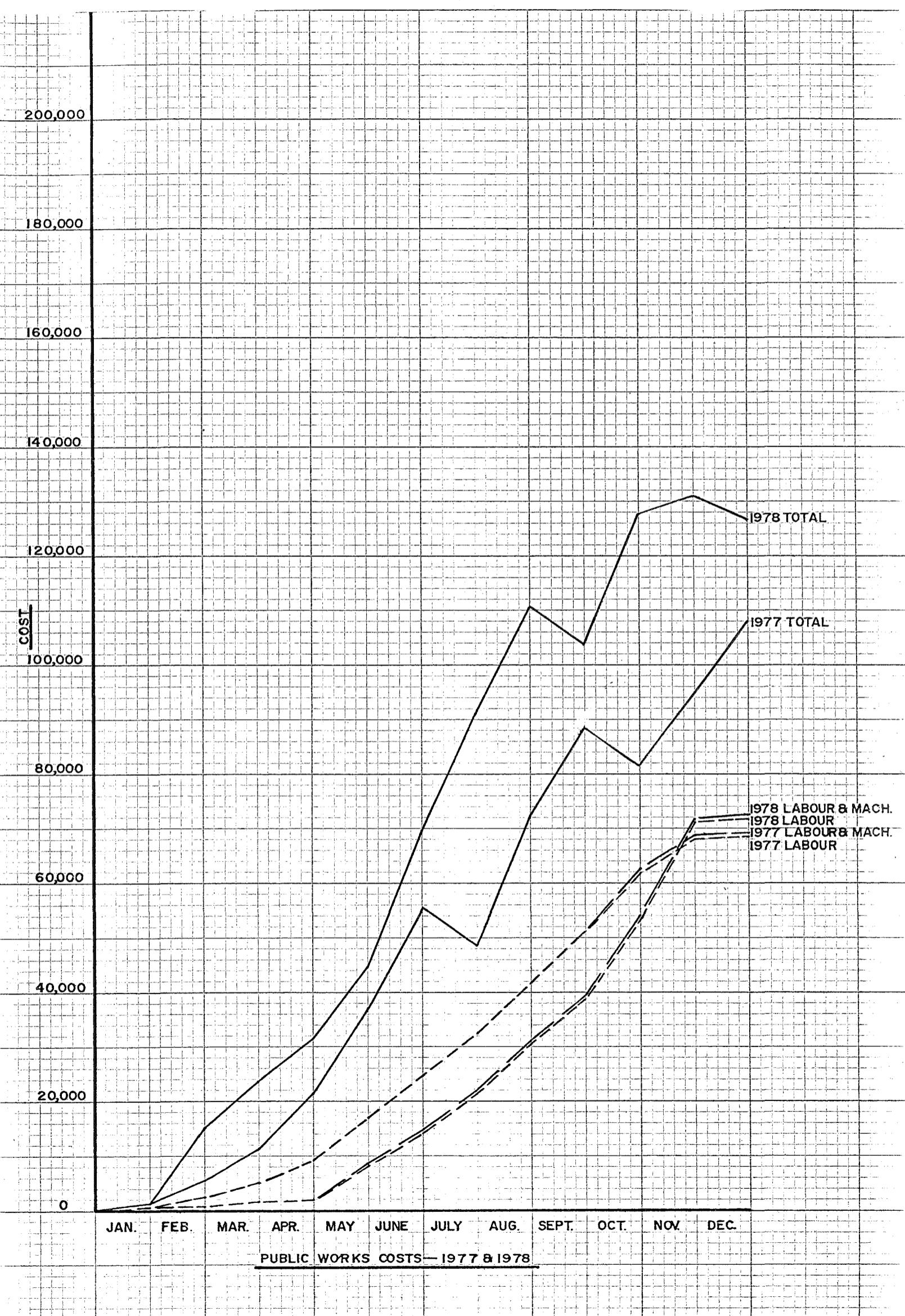
The above expenditure was made up as follows:

Personnel (labour, Pensions, Compensation) .....	\$ 1,247.78
General Services (Repairs & Maintenance, Machinery). .	517.63
Goods (Materials) .....	<u>612.92</u>
NET EXPENDITURE .....	\$ <u>2,378.33</u>

(6) Public Works

GROSS EXPENDITURE .....	\$ 250,792.66
LESS CREDITS .....	<u>124,288.04</u>
NET EXPENDITURE .....	\$ <u>126,504.62</u>

The above total credits of \$124,288.04 were made up as follows:



Over Expenditure Correction on Canada Works.....	\$ 23,844.00
Province of New Brunswick - Tree Removal Costs.....	61,184.78
Valley Forest Products - Purchase of Dead Elms .....	18,958.01
Journal Vouchers - Use of Truck #303 (Canada Works)	840.00
Journal Vouchers - Inter Department Use of Machinery	3,192.00
Journal Vouchers - Trees and Grass Seed .....	32.15
Journal Vouchers - Mobile Radio .....	7,962.46
Journal Vouchers - Regular Gasoline (Out) .....	894.85
Journal Vouchers - Land Lime (Out) .....	35.70
Petrofina Canada Ltd. - Re SS&E Tax .....	1.44
Neighbourhood Improvement Program - Share of Tree Planting & Supply of Benches .....	2,881.25
Journal Voucher - Use of City Machinery on Canada Works .....	4,080.00
Journal Voucher - Correction of Connell Nurseries Invoice .....	304.30
Jury Duty - Ross Anderson .....	77.10
TOTAL .....	<u>\$ 124,288.04</u>

The hired trucks, labour and City Machinery charged under Public Works Expenditure were incurred as follows:

Item	Labour & Supervision	Hired Trucks	City Machinery
Trees	\$ 59,320.04	\$ 368.00	\$ 31,522.50
Back Drain	1,647.49	-	670.50
Surface Sewer	-	-	-
Unforeseen	10,876.12	-	1,204.50
Back Drain Diversion	-	-	-
Casual's Vacation Pay	40,309.05	-	-
TOTALS	\$112,152.70	\$ 368.00	\$ 33,397.50

The net expenditure for the above was as follows:

Personnel (Labour, Pensions, U.I.C., Compensation, Honorarium) .....	\$ 51,861.51
General Services (Equipment Maintenance, Small Tools & Equipment, Machinery & Trucking, Building Rental, Etc.) .....	52,948.84
Goods (Materials, Gas & Oil, New Trees) .....	17,036.77
Fixed Assets (Purchase Equipment) .....	<u>4,657.50</u>
TOTAL .....	<u>\$ 126,504.62</u>

The Provincial Government allocated a maximum of \$65,000. in their fiscal year from April 1, 1978 to March 31, 1979 as their share towards removal of diseased elm trees in the amalgamated area.

In 1978, 3,214 trees were removed upon the recommendation of the Fredericton Tree Commission. The condemned trees were either in a decadent condition, a menace to public safety or possible breeding places for the Elm Bark Beetle.

Following is a list of trees removed in 1978:

Species	Number Removed
Elm	3,180
Maple	18
Poplar	4
White Birch	1

<u>Species</u>	<u>Number Removed</u>
Manitoba Maple	1
Birch	5
Spruce	1
Pine	3
Oak	1
TOTAL .....	<u>3,214</u>

The procedure followed at present time is as follows:

The trees are condemned by four members of the Fredericton Tree Commission. The list, signed by the four members, is then forwarded to the Office of the City Engineer.

Trees on private property which are condemned as possible breeding places for the Dutch Elm Disease, are also removed by City Crews.

In 1978, 680 trees were removed with Dutch Elm Disease in the Pre-Amalgamation Area of Fredericton.

Following is a list of trees (Elm) removed from 1964 to 1978 with Dutch Elm Disease in the Pre-Amalgamation Area of Fredericton.

Year.	No. Lost to Dutch Elm Disease	% Lost to Dutch Elm Disease	Other Causes	Total
1964	14	29 %	34	48
1965	8	24	25	33
1966	12	21	44	56
1967	18	20	73	91
1968	33	16	174	207
1969	30	21	108	138
1970	49	39	78	127
1971	57	42	77	134
1972	61	42	84	145
1973	92	46	108	200
1974	132	33	266	398
1975	75	19.6	307	382
1976	*118	28.2	300	418
1977	681	91.6	62	743
1978	680	92	56	736
TOTALS	2,060	53	1,796	3,856

\* Not the entire total recommended for removal. The remainder removed in 1977.

Permission for the removal of trees on private property, as well as a statement to the effect that no claim for damages will be filed by the property owners, are obtained before proceeding with this work.

Trees were planted at the following locations in 1978:

<u>Location</u>	<u>Number of Trees</u>
Matthews Ct.	17
Rice St.	9
Perry Ct.	5
Hollybrook St.	4
William St.	15
Haines Cres.	26
Shibu Ct.	8
Barton Cres.	6

<u>Location</u>	<u>Number of Trees</u>
Jenning Dr.	24
Dickson St.	25
Cedar Ave.	40
Teak Dr.	15
Hilltop Dr.	15
Bird Ave.	25
Willow Ave.	15
Douglas Ave.	28
Arlington St.	18
Islandview Dr.	18
Oriole Ct.	7
Mountain Dr.	17
Silverwood Rise	9
Silverwood Ct.	6
Alexandra St.	32
Brunswick St.	24
University Ave.	27
George St.	37
Smythe St.	4
397 Parkhurst Dr.	3
Burnham Ct.	29
Queen - Waterloo Green	2
Oxford St.	1
Westmorland St.	19
Lansdowne St.	6
Grey St.	8
Colonial Hts.	5
Gibson Cor. Union	10
City Hall	3
Doyle Ct.	10
Queen St. - Legislature	1
Brunswick St. Burial Ground	2
Northumberland St.	6
TOTAL .....	<u>581</u>

183 trees were planted at various locations to replace losses due to dry weather and vandalism.

Under the above heading, the following trees were purchased in 1978 from John Connell Nurseries Ltd., Waterdown, Ontario, and from C.C. Smith, Fredericton, N.B.

John Connell Nurseries Ltd.:

2	Savin Junipers 15"-18" @ \$6.00/each .....	\$ 12.00
2	Mugo Pine 15"-18" @ \$11.00/each .....	22.00
2	Japanese Yew 24"-30" @ \$16.00/each .....	32.00
2	Burning Bush 18"-24" @ \$3.90/each .....	7.80
375	Tilia Cordata (Lindens) 8'-10' @ \$9.00/each .....	3,375.00
100	Acer Platanoides (Norway Maple) 8'-10' @ \$8.50/each .....	850.00
50	Acer Crimson King (Maple) 8'-10' @ \$13.00/each .....	650.00
50	Acer Schwerdtneri (Maple) 8'-10' @ \$10.50/each .....	525.00
100	Acer Saccharum (Sugar Maple) 8'-10' @ \$14.00/each .....	1,400.00
	Freight Charges .....	<u>1,100.00</u>
	TOTAL .....	<u>\$ 7,973.80</u>

Lansdowne Nursery:

20	Norway Maple 8'-10' @ \$10.00/each .....	\$ 200.00
4	Norway Maple 6'-8' @ \$9.00/each .....	36.00
14	Schwerdtneri Maple 8'-10' @ \$12.50/each .....	175.00
3	Schwerdtneri Maple 6'-8' @ \$11.00/each .....	33.00
6	Crimson King Maple 8'-10' @ \$15.00/each .....	90.00
1	Red Maple 8'-10' @ \$12.00/each .....	12.00
10	Sugar Maple 8'-10' @ \$15.00/each .....	150.00

3	Sugar Maple 10'-12' @ \$18.00/each .....	\$ 54.00
2	Sugar Maple 12'-15' @ \$19.00/each .....	38.00
3	Tilia Greenspire 8'-10' @ \$11.50/each .....	34.50
1	Elm 10'-12' @ \$9.00/each .....	9.00
3	Burning Bush @ \$5.00/each .....	15.00
8	Privet 2'-3' @ \$1.50/each .....	12.00
	TOTAL ... \$	<u>858.50</u>

Total Trees Purchased & Donated -	754
1977 Stock -	9
Less: 1978 Stock -	<u>0</u>
Total Trees Planted -	<u>763</u>

A number of trees were also trimmed in 1978. The number and class of trees are as follows:

- (a) Large Trees (45' and over) - Approximately 45 mixed species
- (b) Medium Trees (20'-45') - Approximately 80 mixed species
- (c) Small Trees (6'-20') - Approximately 2,000 mixed species

A number of stumps were also removed along City Streets.

Stumps Removed and Topsoiled .....	<u>312</u>
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#### CONCRETE SIDEWALK CONSTRUCTION

GROSS EXPENDITURE .....	\$ 86,493.43
LESS CREDITS .....	<u>39,061.68</u>
NET EXPENDITURE .....	\$ <u>47,431.75</u>

For the above expenditure, Concrete Sidewalks were constructed at the following locations:

Location	Lineal Feet
*Westmorland St. - Argyle St. to Aberdeen St. (East Side)	307
Greenfields Dr. - Existing to Prospect St.	783
Golf Club Rd. - Existing to Birdie Ct.	714
Gulliver Dr. - Weyman St. to Walker St.	600
Neville St.	882
Longwood Dr. - Woodmount Dr. to MacDonald Ave.	1,465
Woodmount Dr.	1,296
Broad St.	1,046
Burpee St. - Sunset Dr. to Floral Ave.	3,009
Royal Rd. - C.P.R. to Primrose St.	1,190
Argyle St.	<u>248</u>
TOTAL .....	<u>11,540</u>

11,540 Lineal Feet = 2.19 Miles

\* Expenditure paid partially by Neighbourhood Improvement Program.

The above expenditure was made up as follows:

Frizzell Brothers Construction (Nashwaaksis Sidewalks).....	\$ 44,254.89
Journal Vouchers (Payroll, Pensions, Machinery, Materials).	21,859.42
Gordon's Ready-Mix Ltd. - Ready-Mix Concrete .....	11,778.05
Materials (Polyethelene, Bedding Sand, Fibreen Paper, Etc.).	3,255.56
Car Allowances (Timekeepers) .....	249.42
Bond Discount .....	1,350.00
Walter A. McAlloon - Rt.-of-Way Purchase .....	<u>433.00</u>

G.O.S. Hildebrand - Rt.-of-Way Purchase .....	\$ 1,311.00
Province of New Brunswick - SS&E Tax Re 1977 Purchases .....	49.29
N.B.E.P.C. - Relocating Poles .....	126.54
N.B. Telephone - Relocating Poles .....	164.00
N.B. Telephone - Relocating Burpee St. Facilities .....	800.00
Callaghan Contracting Ltd. - Holdback on 1977 Nashwaaksis Sidewalks ..	96.56
J. E. Brooks & Associates Ltd. - Professional Services ....	<u>765.70</u>
GROSS EXPENDITURE .....	
	\$ 86,493.43
LESS CREDITS: N.B. Housing Corp. - Birch ) Hill Subdivision ).....	12,355.00
N.B. Housing Corp. - Ebony Dr.) .....	3,802.00
K.&T. Development Ltd. - ) Rosewood Estates Subd. ) Local.....	9,180.00
N.B. Housing Corp. - ) Improvement Southwood Park ) Charges.....	11,064.00
Allender Investments Ltd. - ) Crockett St. ).....	1,248.00
N.I.P. - Designated Areas.....	1,381.50
Journal Voucher - Polyethelene (Out).....	<u>31.18</u>
NET EXPENDITURE .....	
	\$ <u>47,431.75</u>

The City of Fredericton bears the entire cost of sidewalk installation, except where Local Improvement Agreements are in effect with a Developer on new streets.

The concrete for the above construction of sidewalks was obtained from Gordon's Ready-Mix Ltd. at \$33.40 per cubic yard.

The actual cost for laying one lineal foot of sidewalk by City Crews was \$8.12 which includes Compensation, Pensions, and Holiday Funds.

#### TOURIST AND INDUSTRY

NET EXPENDITURE .....	\$ <u>178.07</u>
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The above expenditure was made up as follows:

Journal Vouchers (Payroll) .....	\$ 135.74
Journal Vouchers (Pensions) .....	4.33
Journal Vouchers (City Machinery) .....	<u>38.00</u>
TOTAL .... \$ <u>178.07</u>	

#### CITY HALL

NET EXPENDITURE .....	\$ <u>1,663.50</u>
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The above expenditure is only the expenditure for the City Hall made through the Office of the City Engineer and is not the total expenditure on City Hall.

The above expenditure was made up as follows:

Journal Vouchers (Payroll) .....	\$ 1,089.90
Journal Vouchers (Pensions) .....	53.05
Journal Vouchers (City Machinery) .....	439.50
Journal Vouchers (Cement, Crusher Dust, Lead, Soil Pipe ...)	60.93
E.M. Young Ltd. - Tree Bulbs & Tape .....	<u>20.12</u>
TOTAL .. \$ <u>1,663.50</u>	

### RECREATION

NET EXPENDITURE ..... \$ 7,222.63

The above expenditure does not include all playground expenditures, but only those which appear on departmental payrolls or costs of materials ordered through the Office of the City Engineer.

The above expenditure was made up as follows:

Journal Vouchers (Payroll) .....	\$ 513.79
Journal Vouchers (Pensions) .....	17.51
Journal Vouchers (City Machinery) .....	238.50
Journal Vouchers (Gasoline, Diesel Fuel, Pipe, Decals, Etc.) .....	<u>6,452.83</u>
TOTAL .....	\$ <u>7,222.63</u>

### BEAVERBROOK RINK

The expenditure under this heading was \$256.00 and was made up as follows:

Journal Vouchers (Regular Gasoline & Finasol) ..... \$ 256.00

### COLISEUM

The expenditure under this heading was \$170.50 and was made up as follows:

Journal Vouchers (Regular Gasoline) ..... \$ 170.50

### YORK ARENA

The expenditure under this heading was \$188.10 and was made up as follows:

Journal Vouchers (Regular Gasoline, Cement, Crushed Rock) \$ 188.10

### PAINT AND TRAFFIC DEPARTMENT

The expenditure under this heading was \$149.45 and was made up as follows:

Journal Vouchers (Cement, Sand) ..... \$ 149.45

### FIRE DEPARTMENT

NET EXPENDITURE ..... \$ 534,830.72

The above expenditure was made up as follows:

Journal Vouchers (Hydrants & Sprinklers) .....	\$ 526,920.00
Journal Vouchers (Payroll) .....	279.75
Journal Vouchers (Pensions) .....	17.74

Journal Vouchers (City Machinery) .....	\$ 494.00
Journal Vouchers (Gasoline & Diesel Fuel) .....	7,057.18
Journal Vouchers (Decals, Crushed Rock, Etc.) .....	<u>62.05</u>
TOTAL .....	\$ <u>534,830.72</u>

#### POLICE DEPARTMENT

NET EXPENDITURE .....	\$ <u>1,478.11</u>
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The above expenditure was made up as follows:

Journal Vouchers (Payrolls, Pensions, Machinery).....	\$ 148.61
Journal Vouchers (Rental of Space at City Yard) .....	1,260.00
Journal Vouchers (City Decals, Cement) .....	<u>69.50</u>
TOTAL .....	\$ <u>1,478.11</u>

#### BUILDINGS & MAINTENANCE

The expenditure under this heading was \$460.00 and was made up as follows:

Journal Vouchers (Gasoline) .....	\$ <u>460.00</u>
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#### PUBLIC TRANSIT

The expenditure under this heading was \$85.48 and was made up as follows:

Journal Vouchers (Payroll) .....	\$ 48.72
Journal Vouchers (Pensions) .....	2.53
Journal Vouchers (Gasoline) .....	<u>34.23</u>
TOTAL .....	\$ <u>85.48</u>

#### AMBULANCE

The expenditure under this heading was \$241.20 and was made up as follows:

Journal Vouchers (Gasoline) .....	\$ <u>241.20</u>
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#### INDUSTRIAL PARK - LAND ACCOUNT

NET EXPENDITURE .....	\$ <u>10,014.66</u>
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The above expenditure was made up as follows:

Province of New Brunswick - Re 1978 Taxes on Industrial Park Property .....	\$ 531.07
Journal Vouchers (Payroll) .....	1,267.63
Journal Vouchers (Pensions) .....	57.85
Journal Vouchers (Machinery) .....	1,139.00
Journal Vouchers (Pipe, Gravel, Brick, Cement, Etc.) .....	3,479.71
E. J. Ludford Ltd. (Holdback Re Contract 11-76) ....	<u>937.05</u>

Seaboard Surveys Ltd. (Re Work on Wilsey Rd. & Prints)	\$ 2,802.35
GROSS EXPENDITURE .....	10,214.66
Less Credit: Bert Bates - Share of Catch Basin	
Installation Cost .....	200.00
NET EXPENDITURE .....	<u>\$10,014.66</u>

#### PUBLIC LIBRARY

The expenditure under this heading was \$31.05 and was made up as follows:

Journal Vouchers (Crushed Rock) .....	\$ 31.05
---------------------------------------	----------

#### MUNICIPAL PARKING LOTS - CAMPBELL ST.

The City of Fredericton maintains six parking lots in the downtown area. Three of these are established on Campbell Street. Two of the lots are metered and one has attendant-type control. The attendant-type control parking lot (Campbell St. #1) was first established in 1966 with gate-type control but was changed in 1973. In 1977, this lot had to be relocated due to dredging operations for the new bridge. One metered lot (Campbell St. #2) was established in 1970 and is located in the area across from Simpson Sears and Levines Ltd. The other metered lot (Campbell St. #3) was established in 1977 in the area across from the N.B. Liquor Commission Building.

The expenditures in 1978 for these parking lots were as follows:

##### Campbell St. #1

Journal Vouchers (Payrolls) .....	\$ 579.46
Journal Vouchers (Pensions) .....	26.77
Journal Vouchers (Machinery) .....	976.00
Journal Vouchers (Cedar Posts, Sand, Paint, Crushed Rock) ...	<u>243.98</u>
NET EXPENDITURE .....	<u>\$ 1,826.21</u>

##### Campbell St. #2

Province of New Brunswick - 1978 Taxes .....	\$ 2,455.00
Journal Vouchers (Payrolls) .....	304.84
Journal Vouchers (Pensions) .....	13.08
Journal Vouchers (Machinery) .....	585.00
Journal Vouchers (Cedar Posts) .....	13.50
Bank of Montreal (Coin Wrapping Service) .....	<u>17.93</u>
NET EXPENDITURE .....	<u>\$ 3,389.35</u>

##### Campbell St. #3

Journal Vouchers (Payrolls) .....	\$ 228.94
Journal Vouchers (Pensions) .....	6.80
Journal Vouchers (Machinery) .....	567.00
Journal Vouchers (Cedar Posts) .....	<u>54.00</u>
NET EXPENDITURE .....	<u>\$ 856.74</u>

### PARKING LOTS - 1977

In 1977, due to dredging operations for the new bridge, new parking lots had to be established to help make up for loss of parking spaces. These included one metered lot (Queen Street above Levines Ltd.), one with Monthly rates (King Street) and one with attendant-type control (Regent Street Wharf).

The expenditures in 1978 for these parking lots were as follows:

#### Queen St.

Journal Vouchers (Payrolls) .....	\$ 283.15
Journal Vouchers (Pensions) .....	9.65
Journal Vouchers (Machinery) .....	665.00
Bank of Montreal - Coin Wrapping Service .....	11.18
Journal Vouchers (Crushed Rock, Crusher Dust) .....	46.58
NET EXPENDITURE .....	<u>\$ 1,015.56</u>

#### King St.

Journal Vouchers (Payrolls) .....	\$ 244.12
Journal Vouchers (Pensions) .....	8.13
Journal Vouchers (Machinery) .....	551.00
The Daily Gleaner (Advertisement) .....	87.75
Gordon Hickey Crew (Wages) .....	2,227.20
NET EXPENDITURE .....	<u>\$ 3,118.20</u>

#### Regent St. Wharf

Journal Vouchers (Payrolls) .....	\$ 1,459.46
Journal Vouchers (Pensions) .....	81.29
Journal Vouchers (Machinery) .....	2,543.50
Journal Vouchers (Sand, Crushed Rock, Cedar Posts, Etc.) ...	192.78
J. W. Bird & Co. Ltd. (Chain Spikes, Fence Staples, Etc.) ...	433.94
Diamond Construction (1961) Ltd. (Crushed Rock) ....	5,783.41
Gorman Const. Ltd. (Asphalt) .....	271.80
Maritime Accessories (Nuts, Bolts, Washers) .....	14.70
Province of New Brunswick (Signs) .....	49.28
Elm Glass Ltd. (Spray Enamel) .....	20.08
J.L. Simms & Sons Ltd. (Lumber, Nails, Clamps, Etc.)	87.84
Stan Cassidy Ltd. (Electrical to Building) .....	82.00
NET EXPENDITURE .....	<u>\$ 11,020.08</u>

### CANADA WORKS TREE PROGRAM

In 1978, the City of Fredericton made application for a Canada Works Program to be applied to its tree removal program. 776 Elm trees were removed under this program from December 4 - 31, 1978.

The expenditures in 1978 were as follows:

Journal Vouchers (Payroll) .....	\$ 67,467.03
Journal Vouchers (Machinery) .....	27,294.00
Unemployment Insurance Commission .....	1,360.05
Receiver General of Canada - Canada Pension .....	1,242.21

Journal Vouchers (Gasoline for Saws) .....	\$ 11.00
Mutual Insurance - Group Insurance .....	<u>38.40</u>
GROSS EXPENDITURE .....	\$ 97,412.69
Less Credits: Government of Canada - Balance of	
1977 Advance .....	10,144.01
Journal Voucher Re Over Expenditures ..	46,965.61
Gov't. of Canada (Program Payments) ..	52,328.00
Correction of Journal Vouchers .....	<u>176.27</u>
CREDIT BALANCE .....	\$ <u>12,201.20</u>

The above Credit Balance will be applied to the 1979 Tree Program.

#### DOMESTIC SEWER

GROSS EXPENDITURE .....	\$ 1,012,675.75
LESS CRÉDITS .....	<u>82,599.90</u>
NET EXPENDITURE .....	\$ <u>930,075.85</u>

The above expenditure was made up as follows:

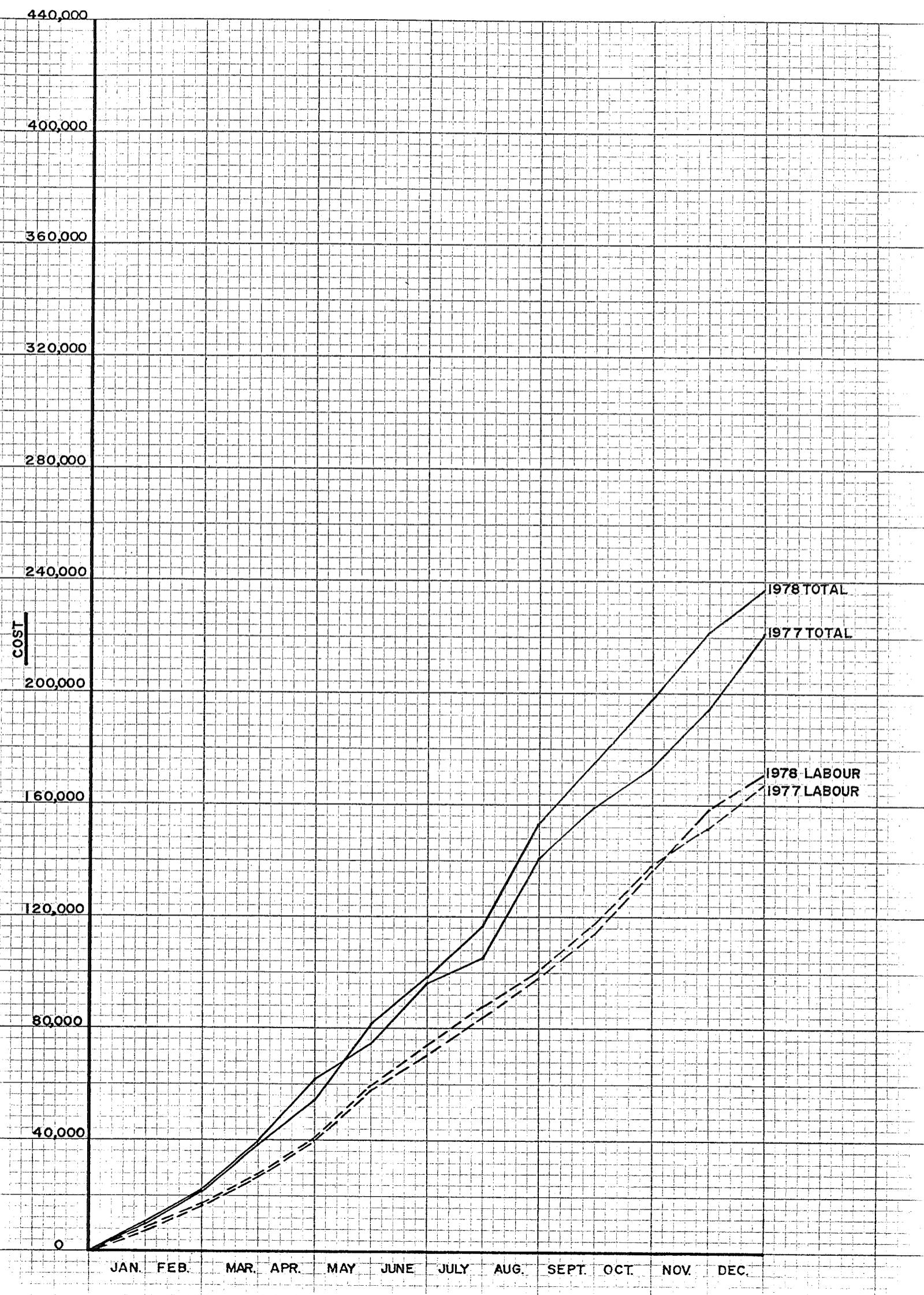
<u>Operating:</u> Labour - Lift Stations.....	\$ 13,373.59
Power - Lift Stations .....	4,959.11
Maintenance - Lift Stations .....	1,602.17
Materials - Lift Stations .....	1,792.78
<u>Maintenance:</u> Compensation .....	4,264.00
Labour Costs .....	169,050.40
Materials .....	59,057.16
Trucking Costs .....	12,215.10
Machinery Costs .....	52,752.90
<u>Treatment:</u> F.A.P.C.C. Sewage Treatment .....	520,136.70
Pollution Control - Lincoln Rd. ....	7,226.89
Pollution Control - Woodstock Rd. ....	2,962.33
<u>Debt Charges:</u> Principal and Interest .....	163,182.62
<u>Other:</u> Insurance Liability .....	<u>100.00</u>
GROSS EXPENDITURE .....	\$ <u>1,012,675.75</u>
<u>Less Credits:</u> Workmen's Compensation Board - N.Finnamore	69.23
Labour, Materials & Machinery for Service	
Installations & Repairs .....	75,746.72
Workmen's Compensation Board - F.Melanson	1,315.41
Journal Vouchers (Materials) .....	2,436.33
Journal Vouchers (Machinery) .....	1,293.41
Journal Vouchers (Corrections) .....	124.80
Journal Vouchers (Inter Dep't. Use of	
Machinery) .....	<u>1,614.00</u>
TOTAL .....	\$ <u>82,599.90</u>
NET EXPENDITURE .....	\$ <u>930,075.85</u>

New Customers connected to the City Sewer System in 1978 = 223

All Dead End Sewer Mains were cleaned and flushed in 1978.

The Fredericton Area Pollution Control Commission (F.A.P.C.) was formed in 1968 and work commenced on Pollution Control of Sewerage for the Fredericton Area, including Nashwaaksis, Marysville, Fredericton and Barker's Point. This system was put into operation on October 10, 1970.

STANDARD    CROSS SECTION



The Fredericton Domestic Sewer System consists of 139.643 Miles of Sewer Mains and is made up as follows:

Size	Silverwood Garden Creek	Nashwaaksis	Marysville	Barker's Point	Fredericton	Totals
4"	-	0.098	-	-	-	0.098
4"F.M.	0.008	-	-	-	0.512	0.520
6"	-	0.874	0.195	-	0.067	1.136
6"F.M.	0.019	-	0.335	0.042	1.869	2.265
8"	4.942	17.873	10.455	4.697	63.470	101.437
8"F.M.	0.158	-	0.195	-	0.040	0.393
10"	0.539	1.791	0.377	0.185	5.173	8.065
10"F.M.	0.732	-	-	-	-	0.732
12"	0.275	1.904	0.625	1.161	7.929	11.894
12"F.M.	-	-	-	-	0.459	0.459
14"	0.099	0.426	-	-	0.443	0.968
14" F.M.	-	-	0.328	-	0.158	0.486
15"	-	1.344	0.311	0.108	1.630	3.393
16"	-	0.047	-	-	0.120	0.167
18"	0.496	0.019	0.839	-	2.176	3.530
20"	1.851	-	-	-	-	1.851
24"	0.097	-	-	-	1.062	1.159
30"	-	-	-	-	0.200	0.200
36"	-	-	-	-	0.890	0.890
TOTALS	9.216	24.376	13.660	6.193	86.198	139.643

NOTE: (1) Mileages for Silverwood, Nashwaaksis, Barker's Point and Marysville are approximate only, due to measurement from plans.

(2) Fredericton includes the Lincoln Area.

The above mileages do not include sewer mains at the Exhibition Grounds, U.N.B., and St. Anne's Point on the Woodstock Road.

The Fredericton Area Pollution Control Commission Collector Sewer System constructed in 1969 and 1970 is not included in the above mileages. The approximate number of miles of this system is 7.1 and is made up of the following:

Size	LENGTH - MILES		
	*Fredericton North	Fredericton South	Total
8"	-	0.073	0.073
10"	-	0.210	0.210
10" Plastic F.M.	0.114	-	0.114
10" F.M.	-	0.189	0.189
12"	-	0.168	0.168
15"	-	0.288	0.288
16" Hyprescon F.M.	0.761	-	0.761
18"	-	0.323	0.323
18" F.M.	0.057	-	0.057
20"	0.691	-	0.691
20" Polyethylene Series 80	-	0.404	0.404
21"	0.721	0.204	0.925
22" Polyethylene Series 60	-	0.164	0.164
24"	1.311	-	1.311
30"	0.589	-	0.589
36"	0.108	0.432	0.540
42"	0.257	-	0.257
48"	0.040	-	0.040
TOTALS	4.649	2.455	7.104

\* Fredericton North includes former Nashwaaksis, Devon, Marysville, and Barker's Point.

Following is a list of vehicles used and charged to "Domestic Sewer" showing a comparison of repair charges for 1977 and 1978, including tires and tubes:

Name of Vehicle	Year Purchased	1977 Repairs	1978 Repairs
Ford 1/2 Ton Van #5 (Junked)	1971	\$ 546.67	\$ 9.16
Ford Crew Cab #5 (Formerly #114)	1974	1,169.74	2,122.96
John Bean Sewer Cleaner #83	1975	3,166.48	832.06
John Bean Sewer Cleaner #85	1977	318.20	28.51
Ford Crew Cab #114 (Now #5)	1974	-	760.81
Ford 3/4 Ton Crew Cab #114	1978	-	425.57
Chevrolet 3/4 Ton Crew Cab #115	1975	1,457.99	877.31
Chevrolet 1/2 Ton Crew Cab #116	1977	345.17	594.17
Dodge 3/4 Ton #252	1976	247.59	499.84
Chevrolet 2 Ton #303	1976	-	423.35
<b>TOTALS</b>		<b>\$ 7,251.84</b>	<b>\$ 6,573.74</b>

The following item of machinery was purchased in 1978 under "Domestic Sewer":

1 - 1978 Ford 3/4 Ton - Asset No. 114

Cost .....	\$ 7,100.00
Provincial Sales Tax .....	568.00
Licence .....	6.00
<b>TOTAL COST .....</b>	<b>\$ 7,674.00</b>

WATER

There are at present 25 wells in the City of Fredericton Water System (23 active wells and 2 test wells) and 18 Reservoirs.

ACTIVE WELLS - NORTH SIDE OF ST. JOHN RIVER:

Well	Location
Maple Street Well	110 yards west of intersection of St. Mary's St. and Maple St.
Cliffe Street Well	10 yards east of intersection of Dedham St. and Cliffe Street. This well is a standby service only due to marginal chemical characteristics.
Carleton Well 1963	200 yards north of former City Line and 400 yards easterly from Highland Ave.
Killarney Well	10 yards west of Killarney Rd. and 900 yards north of Maple St. and St. Mary's St. intersection.
Nashwaaksis #1	50 yards west of the intersection of Fulton Ave. and Maple St.
Nashwaaksis #2	50 yards west of the intersection of Maple St. and Oak Ave. on Maple St.

Nashwaaksis #3	35 yards west of the intersection of Maple St. and Douglas Ave. on Maple St.
Sunset Drive Well	50 yards southwest of the intersection of Sunset Dr. and McNeil Ave. on Sunset Dr.
Marysville #1	450 yards northwest of the intersection of Tower Rd. and Cowperthwaite St. on Tower Rd.
Marysville #2	170 yards northwest of the intersection of Tower Rd. and Cowperthwaite St. on Tower Rd.
Marysville #3	50 yards west of the southerly intersection of Minue Terrace and McGloin St. on Minue Terrace.
Barker's Point #1	250 yards east of intersection of Greenwood Dr. and Victory Ave. on Greenwood Dr.
Barker's Point #2	100 yards east of intersection of Greenwood Dr. and Dewitt Acres on Greenwood Dr.
Killarney Rd. #1	2,790 yards north of Maple St. and St. Mary's St. intersection on the west side of Killarney Rd.
Killarney Rd. #2	3,013 yards north of Maple St. and St. Mary's St. intersection on the west side of Killarney Rd.

ACTIVE WELLS - SOUTH SIDE OF ST. JOHN RIVER:

Well	Location
Fredericton Well #1	gravel-wall well located in Wilmot Park, 60 yards southeast of Rookwood Ave. and Woodstock Rd. intersection.
Fredericton Well #3	gravel-wall well located in Wilmot Park, 100 yards southwest of Odell Ave. and Woodstock Rd. intersection.
Fredericton Well #4	gravel-wall well located in Wilmot Park, 233 yards southeast of Rookwood Ave. and Woodstock Rd. intersection and 260 yards southwest of Odell Ave. and Woodstock Rd. intersection.
Fredericton Well #5	gravel-wall well located on Woodstock Rd. on the south bank of the St. John River, west of the R.C.M.P. "J" Division Headquarters, 190 yards northwest of Rookwood Ave. and Woodstock Rd. intersection.
Hanwell Rd. Well	rock-wall well located on the southeasterly side of Cameron Ct., 187 yards south of the Cameron Ct. and Hanwell Rd. intersection. This supplies approximately three-quarters of the residences on Hanwell Rd.
Silverwood #2	50 yards south of intersection of Mountain Dr. and Fairview Dr.
Silverwood #3	392 yards west and 628 yards south of Silverwood Reservoir.
Duval Well	1936 yards east of T.C.H. and Woodstock Rd. intersection and 880 yards west of Golf Club Rd. and Woodstock Rd. intersection.

TEST WELLS ONLY

Well	Location
Nashwaaksis #4	50 yards east of the intersection of Teak Dr. and Bird Ave. on Teak Dr.
Silverwood #4	Southeast of intersection of T.C.H. and MacIntosh Brook, 300 yards south of T.C.H. and 100 yards east of MacIntosh Brook.

Following is a list of Reservoirs and their capacities which provide water storage for the City of Fredericton Waterworks System:

FREDERICTON SOUTH:

Location	Number of Reservoirs	Total Capacity (I.G.)
Silverwood	1	50,000
Regent St.	1	250,000
Montgomery St.	3	2,250,000
Smythe St.	2	4,000,000
U.N.B.	1	100,000
Forest Hill (Canterbury Dr.)	2	243,000
Flemming Rd.	1	825,000
Hanwell Rd.	1	100,000
<b>SUB-TOTAL .....</b>	<b>12</b>	<b>7,818,000</b>

FREDERICTON NORTH:

Nashwaaksis	2	630,000
Barker's Pt.	1	250,000
Marysville	1	625,000
Carleton Ward	1	1,000,000
Killarney Rd.	1	820,000
<b>SUB-TOTAL .....</b>	<b>6</b>	<b>3,325,000</b>
<b>OVERALL TOTALS .....</b>	<b>18</b>	<b>11,143,000</b>

The Water Account includes all expenditures other than Capital Expenditure for Water.

The Water costs for the City of Fredericton are divided as follows:

(1)	Water Administration (Salaries of Office Staff, Office Equipment, Billing & Collecting) ....	\$ 145,983.18
(2)	Water Ordinary .....	493,974.61
(3)	Water Pumping Station & Well Production Costs ...	250,275.65
(4)	Amortization Costs (Principal) .....	350,045.14
(5)	Interest Charges .....	436,078.51
	<b>GROSS EXPENDITURE .....</b>	<b>\$ 1,676,357.09</b>
	<b>*LESS CREDITS .....</b>	<b>95,933.44</b>
	<b>NET EXPENDITURE .....</b>	<b>\$ 1,580,423.65</b>

\* Credits will be found under individual headings.

(1) WATER ADMINISTRATION:

GROSS EXPENDITURE .....	\$ 145,983.18
LESS CREDITS .....	<u>15,000.00</u>
NET EXPENDITURE .....	\$ 130,983.18

The above credit was made up as follows:

Journal Voucher - Portion of L.P. MacNeill Salary... \$ 8,000.00
Journal Voucher - Portion of E.L. Coy Salary ..... <u>7,000.00</u>
TOTAL ..... \$ <u>15,000.00</u>

The expenditure for Billing and Collecting was \$97,786.36 and was made up as follows:

Salaries .....	\$ 59,206.98
Rental of Office Space .....	3,509.00
Equipment & Supplies .....	27,236.38
Telephones .....	1,284.00
Postage .....	<u>6,550.00</u>
TOTAL .....	\$ <u>97,786.36</u>

METERS:

On December 31, 1978 there were 9,284 water services on meter and 1,302 on Flat Rate, making a total of 10,586.

The labour cost per meter for installing, reading, etc. was \$5.41 for 1978.

600 meters were installed in 1978, 141 regular meters changed to TRT, and 32 ARB meters changed to TRT.

In 1978, 15 discontinued services were excavated and shut off at the main, 111 stopped meters replaced and 30 frozen meters replaced.

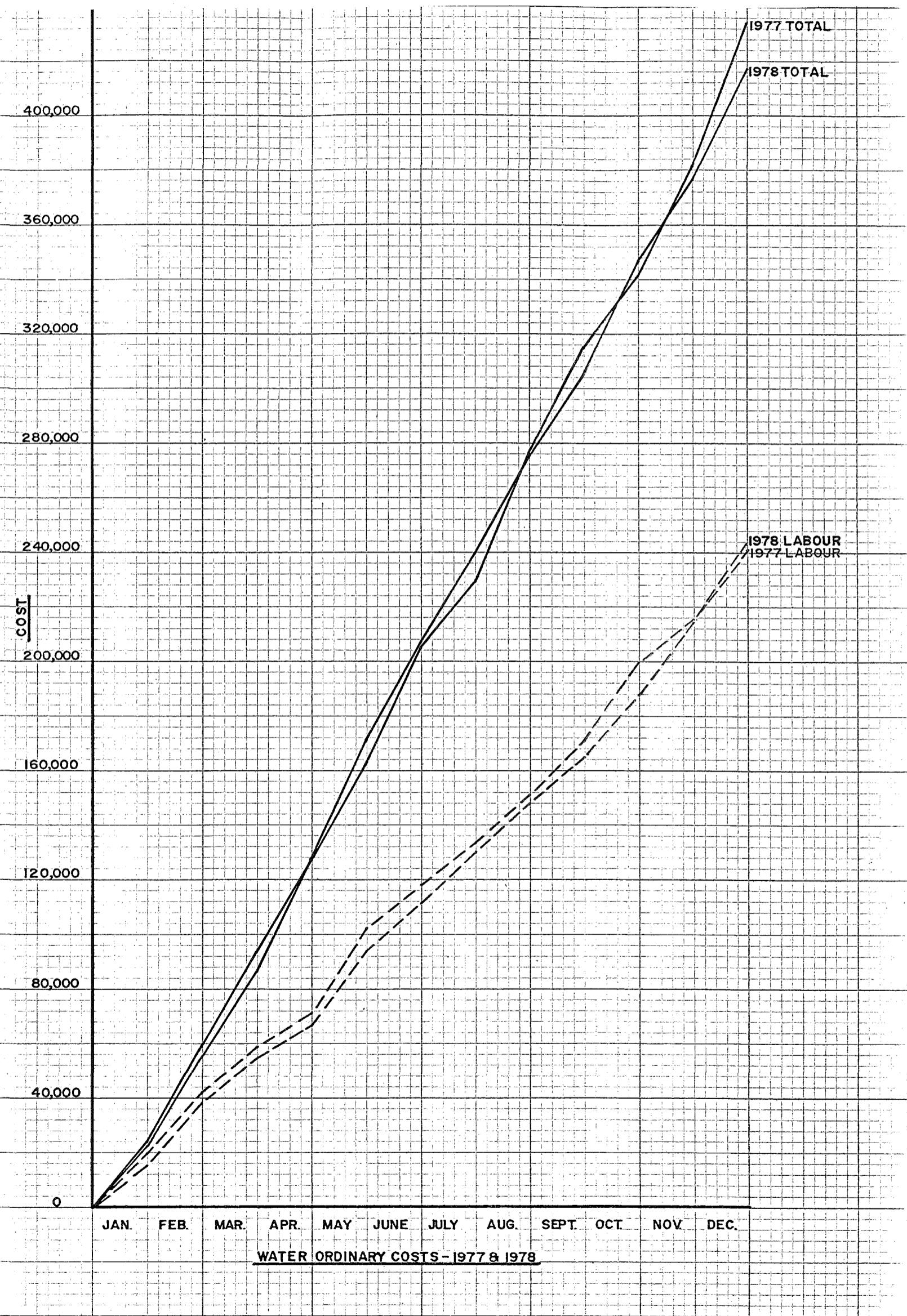
In 1978, all meters were read quarterly and billed quarterly during the year.

METERS IN STOCK DECEMBER 31, 1978

Size	ARB	Regular	TRT	To Be Repaired			Total
				ARB	Regular	TRT	
1/2"	1	1	2	-	-	6	10
5/8"	-	1	105	-	5	20	131
3/4"	1	-	4	-	6	7	18
1"	-	-	5	-	9	3	17
1 1/4"	-	-	-	-	4	-	4
1 1/2"	-	-	6	-	2	-	8
2"	-	-	-	-	2	-	2
TOTAL	2	2	122	-	28	36	190

(2) WATER ORDINARY:

The expenditure under this heading was as follows:



*GROSS EXPENDITURE .....	\$ 493,974.61
LESS CREDITS .....	<u>77,167.56</u>
NET EXPENDITURE .....	\$ <u>416,807.05</u>

\*Includes Meters.

The above credits were made up as follows:

Service Installations.....	\$ 68,588.89
Workmen's Compensation Board - Re J. Martin .....	450.00
Journal Vouchers - Materials (Out) .....	2,905.79
Journal Vouchers - Inter Dep't. Use of Machinery ...	538.00
Sale of Scrap Parts and Metal .....	538.80
Royden Thorpe - Re Purchase of 1971 Ford Van #5 ....	113.00
V.K. Mason Const. Ltd. - Use of bleeder valve - Boyne Ct. ....	50.00
Repairs to Damaged Hydrants .....	1,729.06
Neptune Meters Ltd. - Re 1977 Overcharge .....	122.19
Meter Repairs .....	673.21
Neptune Meters Ltd. - Credit on Invoice .....	664.80
Miscellaneous .....	66.66
Thawing Services .....	727.16
TOTAL .....	\$ <u>77,167.56</u>

The GROSS EXPENDITURE was made up as follows:

Journal Vouchers (Pensions) .....	\$ 12,121.37
City Payrolls for Hydrants (Labour) .....	45,274.19
City Payrolls for Hydrants (Maintenance) .....	9,145.44
City Payrolls for Meters (Repairs) .....	8,162.96
City Payrolls for Meters (Reading) .....	15,397.32
City Payrolls for Meters (Installations) .....	24,262.51
City Payrolls for Water (Maintenance) .....	89,353.42
City Payrolls for Water (Installation) .....	35,133.52
City Payrolls for Boosters (Labour - Outside Operators) .....	15,229.24
City Payrolls for Boosters (Maintenance) .....	<u>211.99</u>
TOTAL PAYROLLS ...	254,291.96
Hired Machinery Charges .....	24.00
Vehicle Repair (Excluding Shop Labour) .....	1,833.68
City Machinery Charges .....	62,872.25
Materials .....	106,431.92
Hydrants (Maintenance & Installation Materials) ...	5,667.28
Meters (Maintenance & Installation Materials) .....	<u>62,853.52</u>
GROSS EXPENDITURE .....	\$ <u>493,974.61</u>

The following sprinklers were installed in 1978:

- (1) McFadzen Holdings Ltd. - 500 Beaverbrook Ct.
- (2) Priestman Centre - 565 Priestman St.
- (3) The Daily Gleaner - 30 Prospect St. West
- (4) L. & A. Machine Works - 1968 Lincoln Rd.

There are at present (December 31, 1978) 136 Sprinkler Systems in the City.

There are in the City as of December 31, 1978, 1,272 Hydrants, broken down in the following areas:

Fredericton South .....	601
Fredericton North .....	134
Nashwaaksis .....	223
Marysville .....	127
Barker's Point .....	63
Silverwood .....	27
SUB-TOTAL ....	1,175
Located on Private Property .....	<u>97</u>
GRAND TOTAL ..	<u>1,272</u>

Hydrants were installed at the following locations in 1978:

<u>Location</u>	<u>Number</u>
Birdie Ct.	1
Eagle Ct.	1
Pickard St.	1
Rowan St.	2 (1 Private)
Leslie St.	1
MacPherson St.	3
Stafford Dr.	1
Rosewood Dr.	2
Talisman Cres.	2
Tweedie Ct.	1
Pugsley St.	2
Gorham Dr.	1
Fraser Ave.	1
Beaverbrook Ct.	1
Boyne Ct. (Forest Hill Estates)	5 (Private)
Vanier Industrial Park	<u>13</u>
TOTAL	<u>38</u>

#### DISTRIBUTION SYSTEM:

New Services Installed in 1978 .....	236
Old Services Relayed in 1978 .....	14
Frozen Services that had to be thawed .....	19

The Fredericton Distribution System consists of 147.565 miles of Watermain, made up as follows:

#### LENGTH OF MAINS - MILES

Size	Marysville	Nashwaaksis	Barker's Point	Silverwood Garden Creek	Fredericton	Total
1 1/4"	-	0.095	-	-	-	0.095
1 1/2"	-	0.045	-	-	-	0.045
2"	-	-	-	0.096	-	0.096
3"	-	-	-	-	0.270	0.270
4"	0.468	1.387	-	1.301	6.456	9.612
6"	7.268	12.655	2.433	2.141	34.561	59.058
8"	3.331	9.928	0.593	1.323	21.186	36.361
10"	1.532	3.038	3.208	0.009	11.224	19.011
12"	0.383	1.038	0.019	2.832	14.118	18.390
14"	-	-	-	-	1.904	1.904
16"	-	-	-	-	1.588	1.588
18"	-	-	-	-	0.980	0.980
Unknown	0.155	-	-	-	-	0.155
TOTAL	13.137	28.186	6.253	7.702	92.287	147.565

Mileages for Marysville, Nashwaaksis, Barker's Point, and Silverwood are approximate only, due to measurement from maps in some instances.

This does not include the watermains installed by the National Defence at the Exhibition Grounds; the University of New Brunswick; St. Anne's Point Barracks on the Woodstock Rd. and the low rental housing development in Fredericton North.

The supply system consists of 0.36 miles of 14" Cast Iron Pipe, extending from the well site at Wilmot Park to the Pumping Station; 0.16 miles of 12" cast iron pipe extending from the well on the south bank of the St. John River on Woodstock Rd. to the well site of #1 Well at Wilmot Park; and 0.10 miles of 15" Steel Pipe extending from the In-Take Pier in the St. John River to the Pumping Station.

Following is a list of vehicles used and charged to "Water Ordinary" showing a comparison of repair charges for 1977 and 1978, including tires and tubes:

Name of Vehicle	Year Purchased	1977 Repairs	1978 Repairs
G.M.C. 1/2 Ton #2	1975	\$ 1,447.28	\$ 1,268.67
G.M.C. 1/2 Ton #7	1972	295.32	1,023.96
G.M.C. 1/2 Ton Van #9 (Changed to #11)	1971	278.23	171.88
Ford Van #9	1978	-	156.95
G.M.C. 1/2 Ton Van #11 (Formerly #9)	1971	-	186.97
Dodge 1/2 Ton #12	1974	1,093.93	1,276.91
Miller Welder #91	1971	33.67	-
Dodge 1/2 Ton #301	1974	88.34	491.76
Fargo Tanker #302	1953	73.47	-
TOTALS		\$ 3,310.24	\$ 4,577.10

The following item of machinery was purchased in 1978 and charged to "Water Ordinary":

1 - Ford E150 Window Van - Asset No. 9

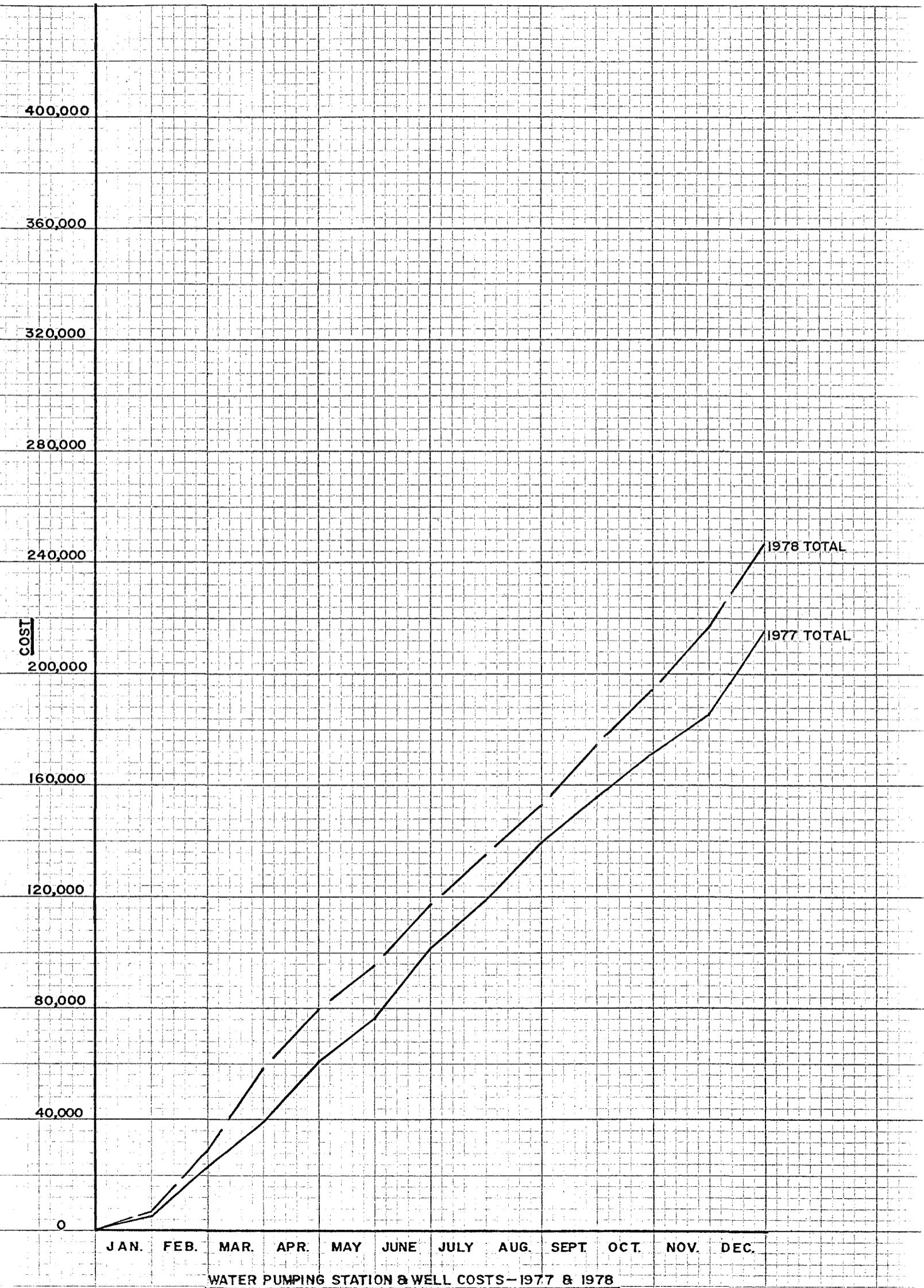
Cost .....	\$ 5,800.00
Provincial Sales Tax .....	464.00
Licence .....	6.00
TOTAL .....	<u>\$ 6,270.00</u>

(3) WATER PUMPING STATION:

GROSS EXPENDITURE .....	\$ 250,275.65
LESS CREDITS .....	<u>3,765.88</u>
NET EXPENDITURE .....	<u>\$ 246,509.77</u>

The above expenditure was made up as follows:

City Payrolls for employees at Fredericton Pumping Station (including Carleton Pumps) .....	\$ 79,520.36
Labour charged to City Wells .....	19,445.34
Labour for Well Repairs - Source (Outside Operation) .....	15,069.43



City Labour for Plant Maintenance .....	\$ 462.39
Maintenance of Plant Equipment (By Others) .....	2,591.75
Material Charges .....	121,627.96
City Analyst .....	3,640.92
Taxes & Insurance .....	<u>7,917.50</u>
GROSS EXPENDITURE .....	250,275.65

LESS CREDITS:

Canadian Industries Ltd. - Returned Cylinders ....	2,075.00
F.E. Myers & Brother Co. Ltd. - Repairs on Silverwood Pump on Warranty .....	1,144.64
Insurance Re Damages to Barker's Pt. Well #1 By Jewett's Datsun .....	100.00
Workmen's Compensation Board - Re Don Stevenson ..	444.91
Petrofina Canada Ltd. - Re 1977 Tax .....	<u>1.33</u>
NET EXPENDITURE .....	<u>\$ 246,509.77</u>

The material cost of \$121,627.96 is made up as follows:

N.B.E.P.C. (Power at Wells) .....	\$ 74,313.43
N.B.E.P.C. (Power at Plant) .....	28,210.37
Materials (Wells) .....	1,459.44
Heating (Plant) .....	2,479.14
Supplies (Plant) .....	1,838.49
Diesel & Lubricants (Plant) .....	854.86
Miscellaneous (Plant) .....	5,317.88
Materials used in Maintenance of Equipment (Plant)	1,531.34
Chlorine for Purification & Treatment .....	3,670.63
Chlorinator Parts .....	1,680.58
H.T.H. Crystals & Tablets .....	115.30
Other Chemicals for Purification & Treatment .....	<u>156.50</u>
TOTAL ....	\$ 121,627.96

Heating:

Following is the yearly consumption and costs of heating the Fredericton Pumping Station Plant for the last ten years:

Year	Gallons of Furnace Oil	Cost
1969	6,032.6	\$ 869.90
1970	5,829.6	840.79
1971	5,125.0	810.45
1972	5,547.0	913.02
1973	4,895.0	961.12
1974	5,774.0	1,836.79
1975	6,076.4	2,132.89
1976	5,737.6	2,156.01
1977	4,991.7	2,176.81
1978	5,069.0	2,459.14

COMPARISON OF WATER PUMPED AND COSTS

FOR FREDERICTON SOUTH (FORMER BOUNDARY) FOR THE LAST TEN YEARS

Year	Imperial Gallons Produced	Production Expenditure	Production Cost Per 1,000 Gallons
1969	730,089,200	\$ 69,831.20	9.5 cents
1970	796,421,300	72,282.38	9.1 cents
1971	841,712,300	76,827.46	9.1 cents
1972	921,309,300	81,585.18	8.9 cents
1973	941,502,100	81,478.87	8.66 cents
1974	962,420,800	105,320.82	10.94 cents

Year	Imperial Gallons Produced	Production Expenditure	Production Cost Per 1,000 Gallons
*1975	1,406,595,940	165,319.34	11.75 cents
*1976	1,420,884,270	207,272.52	15.00 cents
*1977	1,421,803,820	215,683.16	15.17 cents
*1978	1,387,438,500	246,509.77	17.77 cents

\* Production Costs for the entire Amalgamated Area.

The columns in the preceding comparison, showing Imperial Gallons produced, does not include water used from wells in the other sections of the City prior to 1975.

The total amount of water pumped from January 1, 1978 to December 31, 1978 for the entire City was 1,387,438,500 Imperial Gallons divided as follows:

Fredericton South .....	884,624,000
Fredericton North .....	111,570,200
Nashwaaksis .....	142,065,800
*Marysville .....	105,120,000
Barker's Point .....	47,642,500
Silverwood & Duval .....	63,517,600
Killarney .....	32,898,400
TOTAL .....	<u>1,387,438,500</u>

\* No Metering System for Marysville (Estimated at 200 I.G./Min./Day)

The total net water expenditure (operating) for the City from January 1, 1978 to December 31, 1978 was determined from the following:

Source of Supply.....	\$ 109,043.00
Power & Pumping .....	117,774.86
Maintenance of Equipment .....	4,585.48
Purification & Treatment .....	7,188.93
Transmission & Distribution (Operation) .....	44,849.51
Transmission & Distribution (Maintenance) .....	256,174.09
Other (Taxes & Insurance) .....	<u>10,753.55</u>
TOTAL .....	<u>\$ 550,369.42</u>

Therefore, the net operating cost to pump and deliver to the customer 1,000 Imperial Gallons of Water from January 1, 1978 to December 31, 1978 was:

$$\frac{\$ 550,369.42}{1,387,438.5} = \$ 0.40$$

All the preceding costs shown under "Water Pumping Station" and "Water Ordinary" do not include bond payments or sinking fund charges.

The cost of 1,000 gallons of water delivered including principal and interest is as follows:

Total Net Administration & Operating Costs .....	\$ 794,300.00
Principal and Interest .....	<u>786,123.65</u>
TOTAL COSTS .....	<u>\$ 1,580,423.65</u>

Total Cost of Water per Thousand Gallons:

$$\frac{\$1,580,423.65}{1,387,438.5} = \$1.14$$

Principal and Interest Costs:

$$\frac{\$786,123.65}{1,387,438.5} = \$0.57$$

Administration and Operating Costs:

$$\frac{\$794,300.00}{1,387,438.5} = \$0.57$$

Following is a table showing a comparison of net operating costs, administration and operating costs, principal and interest costs, and total costs per 1,000 Gallons from 1968 to 1978:

COSTS PER 1,000 GALLONS IN CENTS

Year	Net Operating & Operating	Administration & Operating	Principal & Interest	*Total Cost
1968	18.9	24.1	24.8	48.9
1969	29.3	36.4	17.7	54.1
1970	19.6	26.2	19.1	45.3
1971	21.2	27.8	22.3	50.1
1972	24.0	30.6	18.3	48.9
1973	18.8	29.3	18.2	47.5
**1974	29.0	42.0	23.0	65.0
**1975	33.0	48.0	27.0	75.0
**1976	34.0	52.0	49.0	101.0 = \$1.01
**1977	37.0	54.0	60.0	114.0 = \$1.14
**1978	40.0	57.0	57.0	114.0 = \$1.14

\* Total Cost = Administration & Operating + Principal & Interest

\*\* Values from 1968 to 1973 are for pre-amalgamated City only while values from 1974 to 1978 are for the amalgamated City.

The Water Pumping Station is under the supervision of Plant Supervisor, Mr. George Parker.

(4) HYDRANT REVENUE

Hydrant Rental for Fire Protection amounted to \$526,920.00 in 1978.

WATER AND SEWER REVENUE - 1978

WATER:

Item	Net Expenditure	Revenue
Water Office Administration		
(a) Administrative (Eng. Dep't. Staff)	\$ 33,196.82	\$ -
(b) Billing & Collecting (Office)	97,786.36	-
Water Ordinary		
(a) General - Operating & Maintenance	238,226.27	1,155,091.16

Item	Net Expenditure	Revenue
(b) Meters	\$ 112,947.40	\$ 43,837.34
(c) Hydrants	65,633.38	526,920.00
<u>Water Pumping Station</u>		
(a) General Costs - Wells, Plant, Purification & Treatment, Etc.	234,951.35	-
(b) City Analyst	3,640.92	-
(c) Taxes & Insurance	7,917.50	-
Principal & Interest	786,123.65	-
TOTALS	\$ 1,580,423.65	\$ 1,725,848.50

SURPLUS: \$145,424.85

DOMESTIC SEWER:

Item	Net Expenditure	Revenue
Sewerage Domestic - Maintenance & Installation	\$ 236,567.31	\$ 1,006,971.43
Pollution Control - Lincoln	7,226.89	-
Pollution Control - Woodstock Rd.	2,962.33	-
F.A.P.C.C. Sewage Treatment	520,136.70	-
Principal & Interest	163,182.62	-
TOTALS	\$ 930,075.85	\$ 1,006,971.43

SURPLUS: \$76,895.58

Accompanying this Report is the Report of Mr. E. W. Hagerman,  
City Analyst, on the Fredericton Water Supply from January 1, 1978 to  
December 31, 1978.

## FREDERICTON WATER SUPPLY

1978

The Saint John River, flowing approximately west to east, divides Fredericton into North and South areas.

For this report it is convenient to divide the north area into five subdivisions as (1) Carleton (originally North and South Devon), (2) Nashwaaksis (3) Killarney (High Level System), (4) Barker's Point and (5) Marysville.

### FREDERICTON NORTH AREA

#### CARLETON:

The water supply for Carleton is pumped from four (4) wells; St. Mary's, Carleton, Cliffe and Maple-McKeen. Their total capacity is approximately 400 Imperial Gallons Per Minute (I.G.P.M.).

Cliffe St. Well (Originally Bridge St.) is high in manganese and so is maintained for use in case of emergency.

These wells deliver water to the Distribution System and surplus to the 1,000,000 Gallon Carleton Reservoir (Top Water Level 190 Feet).

Continuous chlorination at St. Mary's Pump produces a chlorine residual of 0.1 to 0.15 p.p.m. in the combined supply of the Carleton System.

Continuous chlorination is also maintained at Maple-McKeen well house.

#### NASHWAAKSIS:

There are three (3) wells in the Nashwaaksis System, all situated along Maple Street. Their combined pumpage is 520 I.G.P.M. and they pump through the Distribution System into two Reservoirs of 300,000 and 320,000 Gallon capacities, with a common Top Water Level of 190 Feet.

These two Reservoirs are adjacent to each other and to Longwood Drive. They supply water to the lower levels of Nashwaaksis.

This system is chlorinated at #1 well, situated at the intersection of Maple St. and Fulton Ave. A chlorine residual of 0.15 - 0.2 p.p.m. should show at the pump discharge.

The higher levels in Nashwaaksis (mostly north of Maple St.) were formerly supplied by a small booster station. This station has been abandoned and replaced by water from the Killarney High Level System, which has a Top Water Level of 320 Feet.

A fourth well, on Sunset Drive, is capable of producing a large quantity of water but, because of objectionable tastes, it is not pumped into the system but is maintained for emergency use.

### KILLARNEY HIGH LEVEL SYSTEM:

Two new wells, K1 and K10, rated at 150 I.G.P.M. each, along with a circular concrete reservoir of 820,000 Imperial Gallons capacity, with a Top Water Level of 320 Feet, were completed, together with the necessary pipe grid, and put in operation November, 1976.

These two wells and reservoir are located on the Killarney Road, near the Heron Road Intersection. The Top Water Elevation (320 Feet) of this High Level Killarney System, will provide water, under pressure, for large areas at elevations above the 190 T.W.L. of the older reservoirs.

A gas chlorinator is located in K10 well House ready for instant use, but since the initial chlorination of the system after construction, all tests for coliforms have been negative.

This system is supplying water to the higher levels in Nashwaaksis and along Killarney Road.

### BARKER'S POINT

There are two (2) wells in this system having a total capacity of 300 Imperial Gallons Per Minute.

They pump into the Distribution System to a 250,000 Gallon Reservoir having a Top Water Level of 190 Feet.

A gas chlorinator is located in #1 Pump House, but it is not in constant use.

### MARYSVILLE:

Marysville is divided into east and west areas by the Nashwaak River, running south.

There are three (3) wells in Marysville, #1 and #2 on the west side of the river and #3 on the east side. The east and west systems are connected by an 8 inch and a 10 inch pipe in the river bottom.

Wells #1 and #2 have a combined capacity of 500 I.G.P.M. They are in use as required. Both wells are situated on Tower Road and pump to the Distribution System and Tower Road Reservoir (with a capacity of 625,000 Imperial Gallons and a Top Water Level of 240 Feet).

Well #3 is situated on the east bank of the Nashwaak River at Minue Terrace. This well will produce 360 I.G.P.M., but the quality of its water is not equal to that from #1 and #2, so it is reserved for emergency use.

A gas chlorinator is connected to the system at #3 well but continuous chlorination is not practiced.

### FREDERICTON SOUTH AREA

The area south of the Saint John River includes:

- (1) The original City of Fredericton and the Urban Sprawl around it.
- (2) Silverwood.
- (3) Duval Well - Woodstock Rd. - Pumps into Fredericton South System

The water for Fredericton South is pumped from four gravel-wall wells (#1, #3, and #4 in Wilmot Park; #5 on the nearby River Bank), a rockwell (Hanwell) in Cameron Court, off the Hanwell Road and a new well (Duval) on the former Duval property on the Woodstock Road.

These wells were developed as follows:

#1 - 1955; #3 - 1960; #4 - 1961; #5 - 1969; Hanwell - 1967; Duval - 1978

The demand for water varies throughout the day and so the wells are worked in various combinations to meet this demand.

Although coliform tests on RAW water from wells #1, #3, #4, and #5 are negative, sufficient chlorine is added to the plant effluent so that it shows 0.1 to 0.15 parts per million residual as it enters the Distribution System.

Hanwell Well, drilled in rock, pumps 130 I.G.P.M. to the Distribution System and a concrete reservoir having a Top Water Level of 269 Feet and a capacity of 100,000 Imperial Gallons. Positive results occasionally occur in this well, so the water is continuously chlorinated. The dosage varies from 0.1 to 0.15 parts per million.

The Duval well was activated into the system on May 31, 1978 pumping at 170 I.G.P.M.

Silverwood, a suburb of Fredericton, is six to seven miles southwest of the City Centre, and borders on the St. John River. Its water supply is pumped from one original well, located in the built up area, and from a second well, 3,000 Feet Southerly along a wood road leading to Hanwell Road. The average daily demand on the system in 1978 was approximately 35,000 I.G. Per Day.

The water from all wells is delivered to a 50,000 Imperial Gallon Reservoir, having a Top Water Level of 407 feet. This provides gravity flow to the customer.

Continuous chlorination of this water supply is not practiced but a portable chlorinator is always available.

The original #1 Well on the T.C.H. opposite Orchard Drive has been abandoned due to lack of water in the well and Phenol Contamination.

Following are lists of chemical tests made on water samples in 1978 and also the results of bacteriological tests on water samples for the presence of the coliform group.

(Sgd.) E. W. Hagerman  
CITY ANALYST

### TEST FOR COLIFORM GROUP OF BACTERIA

- (1) A minimum sample of 100 milliliters is collected.
- (2) Five 10 milliliter portions, of the sample, are tested.
- (3) Primary plantings are made in Lactose Broth.
- (4) Portions forming gas in Lactose Broth are confirmed in 2% Brilliant Green Bile.

### APPLICATION OF TEST

- (1) Of all 10 milliliter portions examined per month not more than 10% may be positive (i.e., make gas)
- (2) The presence of coliforms in 3 or more 10 ml. portions of a standard sample must not occur:
  - (a) in two consecutive samples
  - (b) in more than 1 sample per month when less than 20 are examined per month.
- (3) Using a standard sample of five 10 ml. portions provides for an estimation of the Most Probable Number (M.P.N.) of Coliform Bacteria per 100 milliliters of sample as shown in table below.

### M.P.N. FOR FIVE 10 ML. TUBES PLANTED

No. of Tubes Giving Positive Results Out of Five 10 ml. Tubes Planted	M.P.N. of Coliform Organisms Per 100 ml of Sample
--	--

* 0+	0
1+	2.2
2+	5.1
3+	9.2
4+	16.0
* 5+	Indeterminate

\* Revised - Formerly 0 = Less than 2.2  
Formerly 5 = More than 16.0

### FREDERICTON WATER SUPPLY TESTS FOR COLIFORM BACTERIA - 1978

- NOTE: (1) All well samples are Raw Water (i.e., collected before chlorination)
- (2) M.P.N. - Most Probable Number

FREDERICTON NORTH

CARLETON:

5-10 ml. portions in Lactose Broth      Confirmed - Brilliant Green  
Bile

Date of Sample	Origin of Sample (All Well Samples are Non-Chlorinated)	M.P.N. Per 100 ml. Sample
Mar. 16	Bridge (Cliffe) St. Well	N.B. - Well Samples are 0
Mar. 16	Maple - McKeen Well	Raw Water 0
Mar. 16	St. Marys Well	Unless Other- 0
Mar. 16	Highland Ave. Well	wise Specified 0
Apr. 27	Maple - McKeen Well	0
Apr. 27	St. Mary's Well (Raw)	0
Apr. 27	Highland Ave. or Carleton	0
Apr. 28	Bridge (Cliffe) St. Well	0
July 5	Bridge (Cliffe) St. Well	0
July 5	St. Mary's Well	2.2
July 5	Highland Ave. Well	0
July 5	Maple - McKeen Well (Chlorinated)	0
Aug. 24	Maple - McKeen Well (Before Chlorine)	2.2
Sept. 5	10" Line Carleton to Marysville from 3/4" B.O.W.G.M.H. Murray Ave. (New Line)	2.2
Sept. 7	As above - Collected by A. Holyoke & E. W. Hagerman (New Line)	6.0+
Sept. 11	760 Irvine St. - Kitchen Sink	0
Sept. 11	Blowoff Murray Ave. Manhole (New Line)	16.0+
Oct. 12	Carleton or Highland Ave. Well	0
Oct. 12	St. Mary's Well (Raw)	0
Oct. 14	Maple - McKeen Well (Raw)	2.2
Nov. 20	Carleton Well (Raw)	0
Nov. 20	St. Mary's Well (Raw)	0
Nov. 20	Maple - McKeen Well (Raw)	0
Dec. 18	St. Mary's Well (Raw)	0
Dec. 18	Highland Ave. Well (Raw)	0

NASHWAAKSIS:

Jan. 11	121 Longwood Dr. - Dr. George Gregory	0
Jan. 14	49 Wilcox St. (Taste of Oil Reported) (No Sign of Oil in Sample)	0
Apr. 27	Maple #3 (Raw)	0
Apr. 27	Maple #2 (Raw)	0
Apr. 27	Maple #1 (Raw)	0
June 27	#1 - Sample 3/4 B.O. Na'sis High Level	0
June 27	#2 Duplicate of Next Above	0
July 5	Maple #1 (Raw)	2.2 Confirmed in B.G.B.
July 5	Maple #2 (Raw)	0
Aug. 1	Ebony Dr. Ext. - 3/4" B.O.W.G.M.H. - Ebony & Wilcox (New Line)	2.2
Aug. 1	Ebony Dr. Ext. - As Above (new Line)	2.2
Aug. 8	150 Sunset Dr.	0
Aug. 8	Ebony Dr. - Hydrant in Front of House #26 (New Line)	16+
Aug. 9	Ebony Dr. Ext. 3/4" B.O.W.G.M.H. - Ebony & Wilcox (New Line)	0
Aug. 10	27 Ebony Dr.	0
Aug. 28	19 Haines Crescent	0

Date of Sample	Origin of Sample (All Well Samples are Non-Chlorinated)	M.P.N. Per 100 ml. Sample
Aug. 29	103 Brookside Dr. - Lloyd Johnson	0
Sept. 28	6" Line - Cherry to Fraser (New Line)	16+
Oct. 5	Maple St. Interconnection from 3/4 B.O. in W.G.M.H. in Front of Maple - McKeen Well - Water from Nashwaaksis (New Line)	0
Oct. 7	Fraser Ave. (New Line)	2.2
Oct. 9	Fraser Ave. (New Line) 2nd Sample	0
Oct. 14	Na'sis #2 Well (Raw)	0
Oct. 14	Na'sis #1 Well (Raw)	0
Oct. 14	Na'sis #3 Well (Raw)	0
Oct. 31	MacFarlane St. (New Line)	16+
Nov. 3	MacFarlane to Brookside - (New Line)	16+
Nov. 7	204 McNeil Ave.	0
Nov. 15	MacFarlane St. - From 3/4" B.O. In T.S.&V. Brookside Dr. (New Line)	0
Dec. 18	Maple - McKeen St. (Raw)	2.2
Dec. 18	Maple #1 (Raw)	0
Dec. 18	Maple #2 (Raw)	16+
Dec. 18	Maple #3 (Raw)	0
Dec. 27	Maple #2 (Raw)	5.1

#### KILLARNEY HIGH LEVEL SYSTEM:

Mar. 16	K10 Well	0
April 27	K10 Well	0
July 5	K10 Well	0
Oct. 12	K10 Well	0
Nov. 20	K1 Well	0
Dec. 18	K10 Well	0

#### BARKER'S POINT:

Mar. 16	Barker's Pt. #1	All are Raw Water	0
Mar. 16	Barker's Pt. #2	Samples, i.e. Before Chlorine	0
Apr. 27	Barker's Pt. #2	Chlorine	0
Apr. 28	Barker's Pt. #1		0
July 5	Barker's Pt. #1		0
July 5	Barker's Pt. #2		0
Oct. 12	Barker's Pt. #1		0
Nov. 20	Barker's Pt. #1	- +	0
Nov. 20	Barker's Pt. #2	4 1	2.2
Nov. 27	Barker's Pt. #2		0
Dec. 18	Barker's Pt. #1		0
Dec. 18	Barker's Pt. #2		0

#### MARYSVILLE:

Mar. 16	Marysville #1 (Raw)	0
Mar. 16	Marysville #2 (Raw)	0
Mar. 16	Marysville #3 (Raw)	0
Apr. 27	Marysville #1 (Raw)	0
Apr. 27	Marysville #2 (Raw)	0
Apr. 27	Marysville #3 (Raw)	0
June 6	MacPherson St. Main - From 3/4" B.O. in W.G.M.H. - MacPherson & Grant (New Line)	0
June 6	MacPherson St. Main (#2 Sample) - From 3/4" B.O. in W.G.M.H. MacPherson & Grant Cl Residual Nil (New Line)	0
July 5	Marysville #1 (Raw)	0
July 5	Marysville #2 (Raw)	0
July 5	Marysville #3 (Raw)	0

Date of Sample	Origin of Sample (All Well Samples are Non-Chlorinated)	M.P.N. Per 100 ml. Sample
Aug. 1	MacPherson St. Ext. - 4 P.M. From Hydrant at Corner of Stafford & MacPherson (New Line)	0
Aug. 2	Stafford Dr. - From 3/4" B.O. in W.G.M.H. Corner Stafford & MacPherson (New Line)	2.2
Aug. 3	10" Main - Irvine-Young-Murray Inter-connection - Sample From Hydrant on Leslie St. (New Line)	16+
Aug. 8	Stafford Dr. - From 3/4" B.O. in W.G.M.H. (New Line)	16+
Aug. 8	62 Murray Ave. Marysville Main - Sample From Hydrant via hose	0
Aug. 8	W.G.M.H. Murray Ave. - 3/4" B.O. - 10" Main - Irvine-Young-Murray (New Line)	16+
Aug. 15	Stafford Dr. - Hydrant Lot 23 (New Line)	0
Aug. 15	Stafford Dr. - 3/4" B.O. - W.G.M.H. Corner Stafford & MacPherson (New Line)	0
Sept. 5	10" Line - Irvine-Young-Murray - From 3/4" B.O. W.G.M.H. Murray Ave. (New Line)	2.2
Sept. 7	As Above (new Line)	16.0
Sept. 19	Sample #1 Murray Ave. Blowoff (New Line)	0
Sept. 19	Sample #3 Murray Ave. Blowoff (New Line)	0
Oct. 12	#1 Well (Raw)	0
Oct. 12	#2 Well (Raw)	0
Oct. 23	156 Crocket St. (new Line)	16+
Oct. 23	Crocket St. Extension - 3/4 B.O. in W.G.M.H. (New Line)	0
Oct. 24	154 Crocket St.	0
Oct. 27	156 Crocket St. (From Tap)	0
Oct. 27	30 Duke St. (From Outside Tap)	0
Oct. 27	3/4" B.O. In W.G.M.H. in front of 30 Duke St.	0
Nov. 20	#1 Well (Raw)	0
Nov. 20	#2 Well (Raw)	0
Dec. 18	#1 Well (Raw)	0
Dec. 18	#2 Well (Raw)	0
Dec. 18	#3 Well (Raw)	0

#### FREDERICTON SOUTH

Jan. 19	Plant Effluent (1, 3, 4, 5 Wells) PH 6.65 @ 25°C	+0	+Cl <sub>2</sub>
Feb. 23	#5 Well - Raw = No Chlorine	0	
Mar. 2	#4 Well Raw - Park	0	
Mar. 2	#1 Well - Raw - Park	0	
Mar. 2	#5 Well - Raw	0	
Mar. 8	#5 Well - Raw	0	
Mar. 8	#1 Well - Raw - Park	0	
Mar. 8	#4 Well - Raw - Park	0	
Mar. 9	Hanwell - Raw	0	
Mar. 25	Hanwell - Raw	0	
Mar. 26	Montgomery Booster	0	-Cl <sub>2</sub>
Mar. 26	31 Glasier Road	0	-Cl <sub>2</sub>
Mar. 27	Hanwell - Raw	0	
Mar. 29	140 Wilsey Rd. (Stains In Dishwasher)	0	-Cl <sub>2</sub>
Mar. 29	Acadia Marble (Lincoln Rd.)	0	-Cl <sub>2</sub>
Apr. 6	#3 Well - Raw - Park	0	
Apr. 6	#4 Well - Raw - Park	0	
Apr. 6	#5 Well - Raw	0	
May 4	#4 Well - Raw - Park	0	
May 4	#1 Well - Raw - Park	0	

Date of Sample	Origin of Sample (All Well Samples are Non-Chlorinated)	M.P.N. Per 100 ml. Sample
May 4	#5 Well - Raw	0
May 7	Hanwell - Raw	0
May 16	Glasier Rd. - First Hydrant over tracks (New Line)	2.2 Cl <sub>2</sub>
May 18	Last Hydrant - "C" Street - Vanier Industrial Park (New Line)	0 Cl <sub>2</sub>
May 22	Hanwell - Raw	0
May 31	Hanwell Well (Overflow)	0
June 13	#1 Park Well (Raw)	0
June 13	#4 Park Well (Raw)	0
June 13	#5 Well (Raw)	0
June 14	Duval Well (Raw)	0
June 14	Hanwell (Raw)	0
June 29	#3 Park Well (Raw)	0
June 29	#4 Park Well (Raw)	0
June 29	#5 Park Well (Raw)	0
July 3	Hanwell Well	0
July 10	Eagle Ct. - 2 Samples (New Line)	0
July 17	#3 Park Well (Raw)	0
July 17	#4 Park Well (Raw)	0
July 18	#1 Park Well (Raw)	0
July 18	#5 Well	0
July 19	Duval Well (Raw)	0
July 19	Hanwell (Raw)	0
Aug. 14	Rosewood Estates - Hydrant at Booster Station (New Line)	0
Aug. 14	Rosewood Estates - Hydrant at Talisman & Rosewood (New Line)	2.2
Aug. 21	Rosewood - 3/4" B.O. - D.S.M.H. End of Talisman Cr. (New Line)	0
Aug. 24	Hanwell (Raw)	0
Aug. 24	Duval Well (Raw)	0
Aug. 24	#1 Park Well (Raw)	0
Aug. 24	#5 Well (Raw)	0
Aug. 31	1527 Lincoln Road	0
Aug. 31	28 Waterloo Row (Dep't. of Health)	5+/100 Milipore
Sept. 16	24 Waterloo Row	0
Sept. 16	32 Waterloo Row	0
Sept. 14	28 Waterloo Row (Dep't. of Health)	0
Sept. 18	#3 Park Well	0
Sept. 18	#4 Park Well	0
Sept. 26	Vanier Industrial Park (New Line)	0
Oct. 11	L. & A. Machine Shop - Rowan St.	0
Oct. 30	192 Emmerson Ct.	0
Nov. 3	192 Emmerson Ct.	0
Nov. 7	N.B.H.C. - Southwood Park From 3/4" B.O. in C.B. (New Line)	0
Nov. 7	N.B.H.C. - Southwood Park From 3/4" B.O. in D.S.M.H. (New Line)	0
Nov. 7	N.B.H.C. - Southwood Park From 3/4" B.O. in D.S.M.H. end of Tweedie Ct. (New Line)	0
Nov. 9	Drinking Fountain, City Service Bldg. Saunders St. Lower End of Wilmot Park	0
Nov. 14	#1 Park Well (Raw)	0
Nov. 14	#3 Park Well (Raw)	0
Nov. 14	#4 Park Well (Raw)	0
Nov. 28	124 Colonial Heights	0
Dec. 5	10" Main - Boyne Ct. Apts. - From Hydrant Nipple in Front of Bldg. #2 (New Line)	0

SILVERWOOD:

Date of Sample	Origin of Sample (All Well Samples are Non-Chlorinated)	M.P.N. Per 100 ml. Sample
Mar. 26	Silverwood #2 (Raw)	0
Mar. 27	Silverwood #3 (Raw)	0
May 7	Silverwood #2 (Raw)	0
May 7	Silverwood #3 (Raw)	0
May 22	Silverwood #2 Pump (Raw)	0
May 22	Silverwood #3 Pump (Raw)	0
July 19	Silverwood #3 (Raw)	0
July 19	Silverwood #2 (Raw)	0
Aug. 24	Silverwood #2 (Raw)	0
Aug. 24	Silverwood #3 (Raw)	0
Aug. 24	34 Mountain Dr.	0*
Aug. 24	11 Fairview Dr.	0

\* 1+ But it Would Not Confirm

**INSTALLATION OF SERVICES-1978**

**DOMESTIC SEWER-  
STORM SEWER ONLY** ■■■■■

**WATER ONLY** /~~~~~

**DOMESTIC SEWER ONLY** X X X X X X

**STORM SEWER & WATER** X X X X X X

CITY OF FREDERICTON

ST MARYS PARISH

**CITY OF FREDERICTON**

FEET 1300  
0  
1300

1978



**PAVING & SURFACE TREATMENT PROGRAM - 1978**


CAPITAL RECAP - 1/2" MINUS  
CAPITAL PROGRAM - 5/8" MINUS  
MAINTENANCE PROGRAM - 2 1/8" MINUS  
CAPITAL PROGRAM - 3 1/4" DENSE MIX

SLURRY SEAL X  
CHIP SEAL X  
ARMOUR COAT ○○○○○  
NEW STREET CONSTRUCTION

**CITY OF FR**

FEET 1000  
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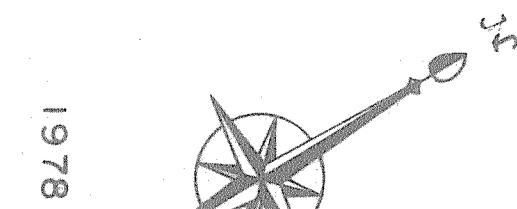
19



**CONSTRUCTION-1978**  
**CONCRETE CURB & GUTTER**  
**CONCRETE SIDEWALK**

**CITY OF FREDERICK**

FEET 1300 0 1300 2600 3900



1978

