

ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1977



1977 TOTALS

OPERATING

Gasoline	\$ 46,710.51	
Diesel Fuel	22,022.05	
Oil	2,831.66	
Anti-Freeze	<u>382.11</u>	
	\$ 71,946.33	<u>\$ 71,946.33</u>

Maintenance

Outside Labour	\$ 26,189.56	
Parts	84,385.57	
Tires	<u>18,399.40</u>	
Sub	\$128,974.53	
Shop Labour	<u>27,413.82</u>	
	\$156,388.35	<u>\$156,388.35</u>
Total - Operating & Maintenance		\$228,334.68

INSURANCE

	\$ 19,058.00	<u>\$ 19,058.00</u>
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DEPRECIATION

	\$227,193.29	<u>\$227,193.29</u>
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GRAND TOTAL		
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	\$474,585.97	
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City of Fredericton - Insurance Costs - 1977

#	Asset	1976 Insurance	1977 Insurance
1	1976 Chev. 4 Door	\$ 242.00 (from May/76)	274 ✓ ✓
2	1975 G.M.C. 1/2 Ton (w.P.S.tn)	170.00	189 ✓ ✓
3	1975 Dodge 1/2 Ton	170.00	190 ✓ ✓
4	1974 Chev. Panel	217.00	239.00 ✓
5	1971 Ford Van Demiseued	167.00	191 ✓ ✓
6	1976 Chev. 1/2 Ton	100.00 (from June/76)	196 ✓ ✓
7	1972 G.M.C. 1/2 Ton (Meters)	168.00	190.00 ✓
8	1972 Chev. 1/2 Ton	168.00	190.00 ✓
9	1971 G.M.C. Van (Meters)	168.00	239.00 ✓
10	1973 Ford 3/4 Ton	213.00	239.00 ✓
11	1974 Dodge 1/2 Ton (w.P.S.tn)	168.00	191.00 ✓
12	1974 G.M.C. 1/2 Ton	170.00	191.00 ✓
13	1975 Dodge 1/2 Ton	(was #116 during 1976)	191.00 ✓
14	1973 G.M.C. 3 Ton	225.00	242.00 ✓
15	1969 Dodge 3 Ton	209.00	239.00 ✓
16	1971 Chev. 3 Ton	242.00	242.00 ✓
17	1970 Ford 3 Ton	242.00	242.00 ✓
18	1968 Int. 3 Ton	217.00	239.00 ✓
19	1972 Ford 3 Ton	213.00	242.00 ✓
20	1976 Dodge 3 Ton	123.00 (from June/76)	242.00 ✓
21	1974 Dodge 3 Ton	231.00	242.00 ✓
22	1975 G.M.C. 3 Ton	231.00	242.00 ✓
23	1975 G.M.C. 3 Ton	231.00	242.00 ✓
24	1975 Ford 3 Ton	231.00	242.00 ✓
25	1976 Dodge 3 Ton	113.00 (from July 5/76)	242.00 ✓
26	1976 Dodge 3 Ton	107.00 (from July 15/76)	242.00 ✓
27	1977 Chev. 3 Ton \$ 11,464.80	—	92.00 (from Aug. 16/77)
28	1977 Chev. 3 Ton \$ 11,464.80	—	90.00 (from Aug. 19/77)
29	1977 Chev. 3 Ton \$ 11,464.80	—	90.00 (from Aug. 19/77)
30	1966 Galion Grader	187.00	171.00 ✓
31	1962 Austin Western	177.00	167.00 ✓
32	1972 Galion Grader	251.00	167.00 ✓
33	1974 Caterpillar Grader	251.00	199.00 ✓
34	1974 Caterpillar Grader	251.00	199.00 ✓
35	1974 Caterpillar Grader	251.00	199.00 ✓
36	1974 Caterpillar Grader	251.00	199.00 ✓
37	1976 Galion Grader	38.00 (from Aug. 26/76)	210.00 ✓
38	1976 Galion Grader	38.00 (from Aug. 30/76)	210.00 ✓
39	1976 Galion Grader	38.00 (from Aug. 26/76)	210.00 ✓
40	1977 Galion Grader \$ 54,333.00	—	55.00 (from Sep. 1/77)
41	1977 Galion Grader \$ 54,333.00	—	43.00 (from 8/77)

City of Fredericton - Insurance Costs 1977

#	Asset	1976 Insurance	1977 Insurance
50	1975 Wayne Sweeper	\$ 105.00	171.00 ✓ ✓
51	1955 Sicard Flusher	72.00	161.00 ✓ ✓
52	1968 Wayne Sweeper	105.00	161.00 ✓ ✓
53	1975 Int. Vacu-Sweep	105.00	171.00 ✓ ✓
54	1971 Dodge Vacall	173.00	176.00 ✓ ✓
55	- 1964 Hy-Bee Backhoe	90.00	120. ✓ ✓
56	- 1957 Unit Trench Hoe	60.00	Obsolete - Take off C policy
57	- 1961 Hopto Backhoe	55.00	✓ ✓ ✓ ✓ ✓
58	- 1969 Ingersoll Rand Compressor	15.00	24 ✓ ✓
59	- 1974 Hy-Bee Backhoe	110.00	273.00 68 ✓ ✓
60	1967 Dodge 3 Ton	134.00	Obsolete - off policy 23/3/77
63	1954 Chev. 3 Ton	127.00	144.00 ✓
64	1967 Chev. 3 Ton	134.00	145.00 ✓ ✓
66	- 1953 Arctic Compressor	12.00	Obsolete - off policy 23/3/77
67	- 1957 Ingersoll Rand Compressor	20.00	20. ✓
68	- 1964 Copco Compressor	18.00	15. ✓ ✓
70	- 1974 Copco Compressor	52.00	60. ✓ ✓
72	- 1970 Essick Roller	19.00	16. ✓ ✓
73	- 1971 Essick Roller	30.00	23 ✓ ✓
74	- 1976 Mikasa Roller	40.00 (from June 3/76)	25. ✓ ✓
75	- 1974 Essick Roller	35.00	25 ✓ ✓
82	- 1974 Ford Tractor	35.00	32 ✓ ✓
83	- 1975 John Bean Sewer Cleaner (D.S.)	? 16,200.00	125 ✓
84	- 1976 Essick Roller	20.00 (from June 28/76)	45. ✓ ✓
85	- 1977 John Bean Sewer Cleaner (D.S.)	—	38 (from Sept 20/77) ✓
86	1949 Sicard Snow Blower	88.00	153.00 ✓ ✓
87	1955 Sicard Snow Blower	88.00	153.00 ✓ ✓
88	1963 Sicard Snow Blower	105.00	161.00 ✓ ✓
89	1974 S.M. Snow Blower	193.00	199.00 ✓ ✓
91	- 1971 Miller Welder. (Welder)	18.00	17.00 ✓ ✓
101	1975 Chev. 5 Ton	172.00	176.00 ✓
102	1975 Ford 5 Ton	172.00	176.00 ✓
103	1975 G.M.C. 5 Ton	172.00	176.00 ✓
104	1975 G.M.C. 5 Ton	172.00	176.00 ✓
105	1975 G.M.C. 5 Ton	172.00	176.00 ✓
111	1975 Ford Crew Cab 1/2 Ton	170.00	196.00 ✓
112	1975 Ford Crew Cab 1/2 Ton	170.00	196.00 ✓
113	1975 Ford Crew Cab 1/2 Ton ^{Dorm} Sewer	170.00	196.00 ✓
115	1975 Chev. Crew Cab 3/4 Ton ✓	170.00	196.00 ✓

City of Fredericton - Insurance Costs - 1977

#	Asset	1976 Insurance	1977 Insurance
116	1975 Dodge 1/2 Ton (Dom. Sealed)	\$ 170.00	(to Aug 16/77) - After this becomes \$ 65.00
116	1977 Chevy Crew Cab \$ 7355.73	—	From Aug 16/77 - 94.00 ✓
120	1975 Ford 3/4 Ton 4x4	174.00	199.00 ✓
121	1975 Int. Scout	170.00	199.00 ✓
122	1975 Int. Scout	170.00	199.00 ✓
124	1977 Bombardier Plow: \$ 15,024.61	—	(From May 31/77 - '85. ✓
125	1976 Bombardier Plow	56.00 (From May 31/76)	20. ✓
126	1970 CJS Kaiser Jeep	167.00	Obsolete - off policy 23/3/77
127	1971 CJS Kaiser Jeep	168.00	Obsolete - off policy 23/3/77
128	1969 Bronco Jeep:	167.00	193.00 ✓
129	1972 Int. Scout	168.00	191.00 ✓
130	1973 Int. Scout	174.00	191.00 ✓
131	1975 Int. Scout	168.00	191.00 ✓
132	1974 Bombardier Plow	80.00	100. ✓
133	1974 Bombardier Plow	20.00	100. ✓
134	1968 Bombardier Plow	40.00	51. ✓
135	1974 Michigan Loader	225.00	290. ✓
136	1974 Michigan Loader	225.00	290. ✓
137	1974 Michigan Loader	225.00	290. ✓
138	1974 Michigan Loader	225.00	290. ✓
141	1975 John Deere Loader	230.00	300. ✓
142	1970 A.C. Loader	80.00	67 (to Sept 2/77) ✓
142	1977 Ford Loader: \$ 54,488.00	—	137 (from Sept 2/77)
143	1974 Case Loader	180.00	240. ✓
146	1969 Caterpillar DS Dozer	115.00	115. ✓
147	1971 Int. TD8C Dozer.	115.00	115. ✓
148	1968 Case "350" Dozer	65.00	55. ✓
149	1965 Case "750" Dozer	55.00	45. ✓
151	1973 Dodge 1/2 Ton	168.00	190.00 ✓
152	1974 Chevy 3 Ton	217.00	245.00 ✓
203	1975 Ford F750 5 Ton	213.00	176.00 ✓
204	1969 Ford 1 Ton	209.00	237.00 ✓
205	1972 Dodge 3 Ton	231.00	242.00 ✓
07	1971 Case Backhoe-Loader	85.00	100. ✓
08	1968 Case "310" Dozer	37.00	25. ✓
14	1974 Essick Roller	45.00	45. ✓
15	1966 Dodge 3 Ton.	217.00	Obsolete - off policy 23/3/77
51	1973 Ford 1/2 Ton. (Dom. Sealed)	170.00	190.00 ✓
52	1976 Dodge 3/4 Ton Crew Cab	108.00 (from June 30)	196.00 ✓

City of Fredericton - Insurance Costs - 1977

Asset

		1976 Insurance	1977 Insurance
253	1976 Case "780" Backhoe	\$ 68.00 (from Sept. 1/6)	300.
254	1973 Case "450" Dazer	60.00	72.
255	1969 Gardner Denver Compressor	35.00	40.
301	1974 Dodge 1/2 Ton (Water)	(70.00)	191.00
302	1953 Fargo Tanker (Water)	177.00	153.00
303	1966 Chev. Ladder Truck	173.00	236.00

To Morrison Ins - Feb 9/78

Returned - March 6/78

To Monsons Feb 9/78
Called 22/78

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City of Fredericton - Insurance Costs- 1977

#	Assets	1976 Insurance	1977 Insurance
1	1976 Chev. 1/2 Ton	\$ 242.00 (from May/76)	
2	1975 G.M.C. 1/2 Ton (Water)	170.00	
3	1975 Dodge 1/2 Ton	170.00	
4	1974 Chev. Panel	217.00	
5	1971 Ford Van (Dom. Sower)	167.00	
6	1976 Chev. 1/2 Ton	100.00 (from June/76)	
7	1972 G.M.C. 1/2 Ton Water (Motors)	168.00	
8	1972 Chev. 1/2 Ton	168.00	
9	1971 G.M.C. Van Water (Motors)	168.00	
10	1973 Ford 3/4 Ton (Water)	213.00	
12	1974 Dodge 1/2 Ton (Water) 1974 G.M.C. 1/2 Ton	168.00 170.00	{ 1974 GMC write off Dec 21/76
15	1975 Dodge 1/2 Ton (was \$16 during 1976)		{ From Aug 16/77 only -
16	1973 G.M.C. 3 Ton	225.00	
17	1969 Dodge 3 Ton	209.00	
18	1971 Chev. 3 Ton	242.00	
19	1970 Ford 3 Ton	242.00	
20	1968 Int. 3 Ton	217.00	
21	1972 Ford 3 Ton	213.00	
22	1976 Dodge 3 Ton	123.00 (from June/76)	
23	1974 Dodge 3 Ton	231.00	
24	1975 G.M.C. 3 Ton	231.00	
25	1975 G.M.C. 3 Ton	231.00	
26	1975 Ford 3 Ton	231.00	
27	1976 Dodge 3 Ton	113.00 (from July 5/76)	
28	1976 Dodge 3 Ton	107.00 (from July 15/76)	
29	1977 Chev. 3 Ton \$ 11,464.80	—	(from Aug. 16/77)
30	1977 Chev. 3 Ton 11,464.80	—	(from Aug 19/77)
31	1977 Chev. 3 Ton 11,464.80	—	(from Aug. 19/77)
36	1966 Galion Grader	187.00	
37	1962 Austin Western	177.00	
38	1972 Galion Grader	251.00	
39	1974 Caterpillar Grader	251.00	
40	1974 Caterpillar Grader	251.00	
41	1974 Caterpillar Grader	251.00	
42	1974 Caterpillar Grader	251.00	
43	1976 Galion Grader	88.00 (from Aug. 26/76)	
44	1976 Galion Grader	88.00 (from Aug 30/76)	
45	1976 Galion Grader	88.00 (from Aug. 26/76)	
46	1977 Galion Grader \$ 54,333.00	—	(from Sept. 28/77)
47	1977 Galion Grader \$ 54,333.00	—	(from Oct. 18/77)

City of Fredericton - Insurance Costs 1977

#	Asset	1976 Insurance	1977 Insurance
50	1975 Wayne Sweeper Cleaning (Street)	\$ 105.00	
51	1955 Sicard Flusher ✓	72.00	
52	1968 Wayne Sweeper ✓	105.00	
53	1975 Int. Vacu-Sweep ✓	105.00	
54	1971 Dodge Vacall	173.00	
55	1964 Hy-hoe Backhoe	90. ⁰⁰	
56	1957 Unit Trench Hoe	60. ⁰⁰	Obsolete - Take off policy
57	1961 Hopto Backhoe	55. ⁰⁰	- - - ✓ ✓
58	1969 Ingersoll Rand Compressor	15. ⁰⁰	
59	1974 Hyhoe Backhoe	110. ⁰⁰	
60	1967 Dodge 3 Ton	134. ⁰⁰	Obsolete - Off policy 23/3/77
63	1954 Chev. 3 Ton (Boiler)	127. ⁰⁰	
64	1967 Chev. 3 Ton (Sander)	134. ⁰⁰	
66	1953 Arpic Compressor	12. ⁰⁰	Obsolete - Off policy 23/3/77
67	1957 Ingersoll Rand Compressor	20. ⁰⁰	
68	1964 Copco Compressor	18. ⁰⁰	
70	1974 Copco Compressor	52. ⁰⁰	
72	1970 Essick Roller	19.00	
73	1971 Essick Roller	30.00	
74	1976 MiKasa Roller	40.00	(from June 3/76)
75	1974 Essick Roller	35.00	
82	1974 Ford Tractor	35.00	
83	1975 John Bean Sewer Cleaner (D.S.)	?	
84	1976 Essick Roller	20.00	(from June 28/76)
85	1977 John Bean Sewer Cleaner ^{16200.00} (D.S.)	—	(from Sept 20/77)
86	1949 Sicard Snow Blower	88.00	
87	1955 Sicard Snow Blower	88.00	
88	1963 Sicard Snow Blower	105.00	
89	1974 S.M.I. Snow Blower	193.00	
91	1971 Miller Welder. (Water)	18.00	
101	1975 Chev. 5 Ton. (Winter use only)	177.00	
102	1975 Ford 5 Ton ✓	177.00	
103	1975 G.M.C. 5 Ton	177.00	
104	1975 G.M.C. 5 Ton	177.00	
105	1975 G.M.C. 5 Ton	177.00	
111	1975 Ford Crew Cab 1/2 Ton	170.00	
112	1975 Ford Crew Cab 1/2 Ton	170.00	
114	1975 Ford Crew Cab 1/2 Ton (D.S.)	170.00	
115	1975 Chev. Crew Cab 3/4 Ton (D.S.)	170.00	

City of Fredericton - Insurance Costs - 1977

#	Asset	1976 Insurance	1977 Insurance
116	1975 Dodge 1/2 Ton (DS + R.T.)	\$ 170.00	(to Aug 16/77) - After this becomes #15
116	1977 Chevy Crew Cab (DS)	—	From Aug 16/77 —
120	1975 Ford 3/4 Ton 4x4	174.00	
121	1975 Int. Scout	170.00	
122	1975 Int. Scout	170.00	
124	1977 Bombardier Plow - SC. *15,024.61	—	(From May 31/77 —
125	1976 Bombardier Plow SC.	56.00 (From May 31/76)	
126	1970 CJS Kaiser Jeep	167.00	Obsolete - off policy 23/3/77
127	1971 CJS Kaiser Jeep	168.00	Obsolete - off policy 23/3/77
128	1969 Bronco Jeep	167.00	
129	1972 Int. Scout	168.00	
130	1973 Int. Scout	174.00	
131	1975 Int. Scout	168.00	
132	1974 Bombardier Plow S.C.	80.00	
133	1974 Bombardier Plow S.C.	80.00	
134	1968 Bombardier Plow S.C.	40.00	
135	1974 Michigan Loader	225.00	
136	1974 Michigan Loader	225.00	
137	1974 Michigan Loader	225.00	
138	1974 Michigan Loader	225.00	
141	1975 John Deere Loader	230.00	
142	1970 A.C. Loader 32488.00 allowed in trade	80.00	(to Sept 2/77)
142	1977 Ford Loader 23,766.00 - Net	—	(from Sept 2/77)
143	1974 Case Loader	180.00	
146	1969 Caterpillar D5 Dozer	115.00	
147	1971 Int. TD8C Dozer	115.00	
148	1968 Case "850" Dozer	65.00	
149	1965 Case "750" Dozer	55.00	
201	1973 Dodge 1/2 Ton	168.00	
202	1974 Chevy 3 Ton	217.00	
203	1975 Ford F750 5 Ton	213.00	
204	1969 Ford 1 Ton	209.00	
205	1972 Dodge 3 Ton	231.00	Obsolete - Take off policy
207	1971 Case Backhoe-Loader	85.00	
208	1968 Case 310 Dozer	37.00	
214	1974 Essick Roller	45.00	
215	1966 Dodge 3 Ton	217.00	Obsolete - off policy 23/3/77
251	1973 Ford 1/2 Ton	170.00	
252	1976 Dodge 3/4 Ton Crew Cab (Don Sewer)	108.00 (from June 30)	

City of Fredericton - Insurance Costs - 1977

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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, 1977 to December 31, 1977 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.....	6.29 miles
Concrete Sidewalk.....	1.26 miles
New Street Construction.....	3.08 miles
New Pavement (3/4" Densemix).....	2.90 miles
Recap (1/2" Minus).....	0.17 miles
Sealing City Streets (3/8" Minus).....	6.82 miles
Slurry Sealed City Streets.....	2.40 miles
Armour Coated City Streets.....	1.40 miles
Chip Sealed City Streets.....	0.04 miles
4"-6"-8"-10" Force main - Domestic Sewer.....	0.89 miles
8"-10"-12"-14"-16"-18"-20" Etc. Gravity - Domestic Sewer.....	9.47 miles
10"-12"-15"-18"-24"-30"-36"-42"-48" Storm Sewer.	8.94 miles
4"-6"-8"-10"-12"-14" Water Mains.....	9.04 miles
Street Reconstruction.....	0.05 miles

ALSO

308 Water Services Installed
302 Domestic Sewer Services Installed
 8 Sprinklers Installed
 63 Services Relayed (Water)
 9 Services Relayed (Domestic Sewer)
666 Water Meters Installed
 4 Extension of Existing Services

Contractors under contract with the Public Works Department of the City of Fredericton in 1977 constructed, completed construction or began construction, on the following projects:

- E.J. Ludford Line Construction Ltd. - To installation of services on Boyne Ct.
- Frecon Ltd. - To installation of services on Sewell St. and Lawson Ct.
- John Kilburn & Sons Ltd. - To installation of services on Biggs St. and Forest Hill Rd.
- Spade Construction Ltd. - To installation of services on Willis St.
- Stan Cassidy Ltd. - To supply and installation of Traffic Lights at Smythe St.- Priestman St. and Smythe St.- Parkside Dr. intersections.

- Spade Construction Ltd. - To installation of storm sewer on Brunswick St.
- Spade Construction Ltd. - To installation of watermain on Union St.
- Spade Construction Ltd. - To installation of watermain on Church St.
- E.J. Ludford Line Construction Ltd. - To installation of services on Holland and McMann Streets.
- Multi-Ventures Ltd. - To installation of storm sewer on Corbett Ave. and Carman Ave.
- E.J. Ludford Line Construction Ltd. - To installation of services on Jewett St., Kent St., and Ferris St.
- Eastland Construction Ltd. - To installation of watermain in the Forest Hill system.
- E.J. Ludford Line Construction Ltd. - To installation of domestic sewer and storm sewer on Tower Rd.
- Spade Construction Ltd. - To installation of watermain and domestic sewer on Mill Street.
- Spade Construction Ltd. - To installation of services on MacPherson St.
- Diamond Construction (1961) Ltd. - To construction of concrete curb, gutter, and sidewalk in the Nashwaaksis area.
- Callaghan Contracting Ltd. - To construction of concrete curb, gutter, and sidewalk in the Nashwaaksis area.
- Eastland Construction Ltd. - To installation of storm sewer and watermain upgrading in the East Nashwaaksis area.
- Multi-Ventures Ltd. - To installation of storm sewer and watermain upgrading in the West Nashwaaksis area.
- Callaghan Contracting Ltd. - To installation of Sewage Pumping Station # 15 on Riverside Drive.
- Spade Construction Ltd. - To installation of storm sewer on Royal Road (Route # 620).
- John Kilburn & Sons Ltd. - To installation of domestic sewer and watermain on Golf Club Road and Woodstock Road.
- Callaghan Contracting Ltd. - To installation of domestic sewer and watermain on the Woodstock Rd.

- E.J. Ludford Line Construction Ltd. - To installation of domestic sewer and watermain on the Woodstock Road and along the Trans Canada Highway to Montieth Drive.
- Spade Construction Ltd. - To installation of domestic sewer and storm sewer to upgrade Jaffrey Street.
- Forbes & Sloat Ltd. - To supply and delivery of crushed rock.
- Dunham's Contracting Ltd. - To supply and delivery of crushed gravel.
- S.S. Baird & Sons Ltd. - To supply and delivery of crushed gravel and pit run gravel.
- Elmtree Concrete Ltd. - To supply and delivery of Ready-Mix Concrete.
- H.C. Smith & Sons Ltd. - To supply and delivery of topsoil.
- Hawkins Trucking Company Ltd. - To supply and delivery of pipe bedding sand.
- Petrofina Canada Ltd. - To supply and delivery of diesel fuel.
- Irving Oil Ltd. - To supply and delivery of gasoline.
- F. & F. Trucking Ltd. - To supply and delivery of winter sand.
- Canadian Salt Co. Ltd. - To supply and delivery of highway salt.
- Texaco Canada 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.
- Gorman Construction Co. Ltd. - To supply and placement of asphalt.
- Imperial Oil Ltd. - To supply and delivery of furnace oil.
- Multi-Ventures Ltd. for the Rocca Group - To installation of services in Lincoln Heights (Goodine St., Adams St., and Piercy Cres.)
- Multi-Ventures Ltd. for the Department of Regional and Economic Expansion - To installation of services in the Vanier Industrial Park.

The current expenditures for the twelve-month period January 1, 1977 to December 31, 1977 appear as follows:

Appropriation	Net Expenditures	Debit	Credit
Common Services \$626,677	\$624,393.79	\$ -	\$ 2,283.21
Road Transport(Adm) 17,900	10,679.00	-	7,221.00
Roads & Streets 323,500	353,128.37	29,628.37	-
Sidewalk Repairs 7,100	26,425.53	19,325.53	-
Ditches & Culverts 42,400	40,777.33	-	1,622.67
Storm Sewer 32,250	25,164.49	-	7,085.51
Street Cleaning 199,300	203,075.83	3,775.83	-
Snow & Ice Removal 570,800	499,815.36	-	70,984.64
Street Lighting 234,060	241,221.94	7,161.94	-
Traffic Services 15,300	13,836.87	-	1,463.13
Off-Street Parking 1,200	293.84	-	906.16
Garbage Collection 234,300	234,111.06	-	188.94
Sanitary Landfill 114,950	159,239.43	44,289.43	-
Old Burial Ground 5,710	6,150.16	440.16	-
Loyalist Burial Gr. 211	199.20	-	11.80
Wilmot Park 13,716	15,410.41	1,694.41	-
Odell Park 18,394	24,334.94	5,940.94	-
Carleton Park 9,730	9,120.63	-	609.37
Development of Park Areas 4,800	4,466.94	-	333.06
Other Parks 1,650	1,923.21	273.21	-
Public Works 108,230	108,002.20	-	227.80
TOTALS.....\$2,582,178	\$2,601,770.53	\$112,529.82	\$92,937.29

OVERALL DEBIT \$19,592.53

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.

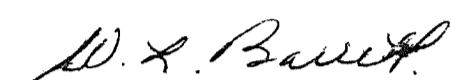
Following is a table giving total mileages of municipal roads and streets, provincial routes, and by-passes divided with respect to types of surface on the various streets.

Location	Municipal Roads & Streets				Designated Routes			T.C.H. & By- Passes
	Asphalt	Gravel	Chip Seal	Total	Asphalt	Gravel	Total	
Fredericton South	52.170	5.136	2.571	59.877	12.737	1.605	14.342	8.895
Fredericton North	10.674	1.402	0.246	12.322	2.836	-	2.836	-
Nashwaaksis	7.060	3.038	16.219	26.317	5.077	-	5.077	-
Marysville	8.467	1.045	3.150	12.662	5.105	-	5.105	2.150
Barkers Point	0.366	0.337	3.614	4.317	2.751	-	2.751	-
Silverwood	2.156	0.646	-	2.802	-	-	-	1.713
Garden Creek	2.990	1.113	4.973	9.076	3.911	-	3.911	5.450
Douglas	-	0.580	2.428	3.008	1.587	-	1.587	-
Lincoln	-	0.234	1.809	2.043	-	-	-	0.836
Lower St. Marys	-	0.750	0.607	1.357	-	-	-	-
Killarney Rd.	0.206	-	-	0.206	2.629	-	2.629	-
TOTALS	84.089	14.281	35.617	133.987	36.633	1.605	38.238	19.044

TOTAL MILEAGE (MUNICIPAL AND DESIGNATED ROUTES) = 172.225

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,



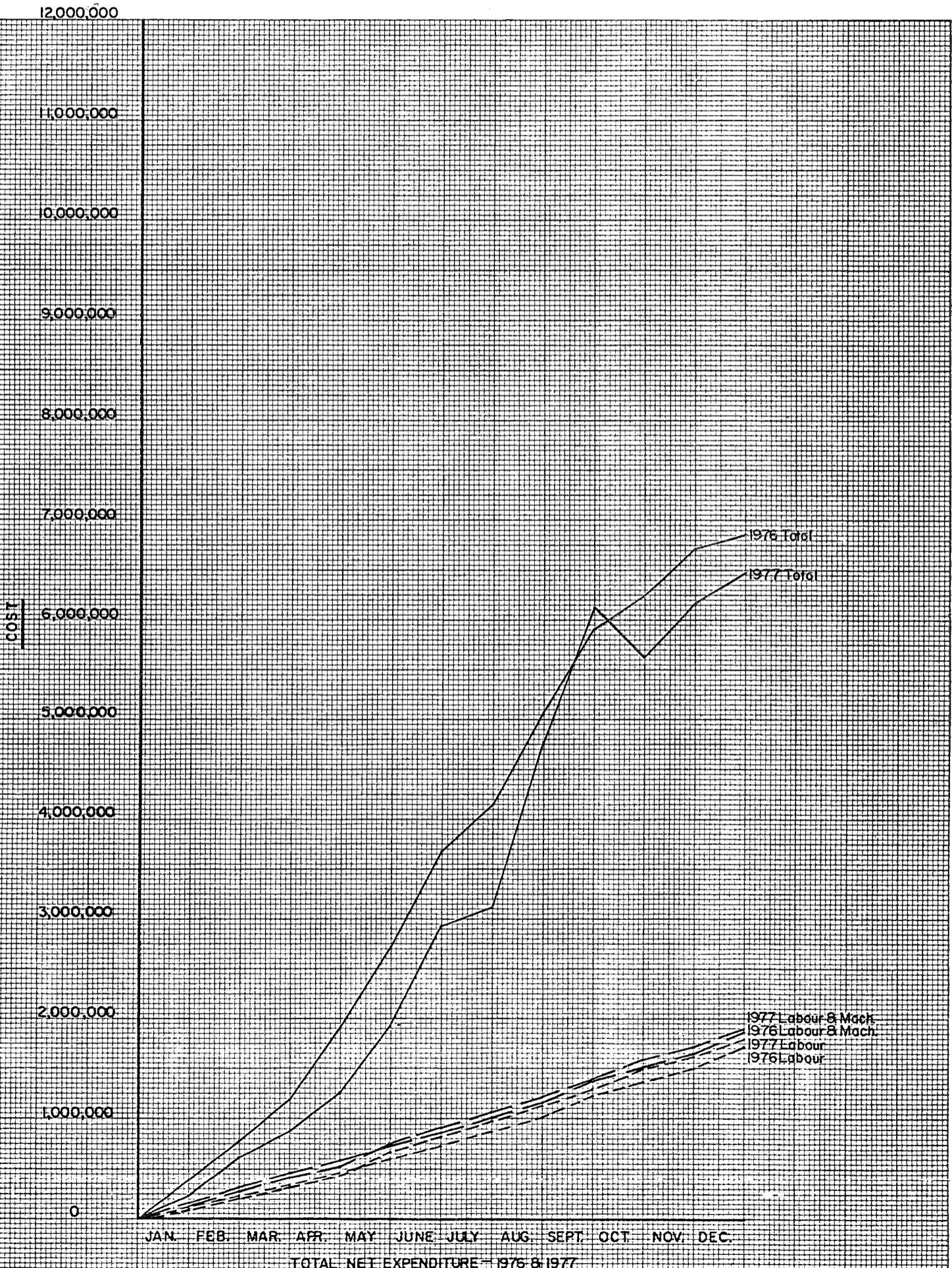
W.L. BARRETT
CITY ENGINEER

TOTAL YEARLY EXPENDITURE

The total yearly net expenditure under the direct supervision of the City Engineer in 1977 amounted to \$6,470,256.49, made up as follows:

Common Services.....	\$ 624,393.79
Road Transport.....	1,414,418.56
Environmental Health Services (Garbage & Waste Collection & Disposal).....	393,350.49
Public Health Services (Cemeteries).....	6,349.36
Cultural Services (Parks, Trees, Etc.).....	163,258.33
Water Department.....	772,753.68
Domestic Sewer.....	552,125.39
 <u>Capital Accounts</u>	
(a) Domestic Sewer.....	12,178.32
(b) Surface Sewer).....	33,270.56
(c) Curb & Gutter) Permanent..	344,929.39
(d) Gravel Roads) Streets....	101,078.34
(e) Paving).....	173,804.95
TOTAL PERMANENT STREETS.....	653,083.24
(f) Water.....	234,229.97
(g) Traffic Lights.....	11,841.26
(h) Tourism.....	1,920.14
(i) Recreation.....	3,854.21
(j) Industrial Park - Storm Sewer.....	265,380.24
 <u>Service Development Projects</u>	
(a) Water.....	244,340.52
(b) Domestic Sewer.....	17,100.20
(c) Storm Sewer.....	873,465.36
(d) Service Depot & Equipment.....	19,458.69
(e) New Equipment.....	146,862.61
(f) Solid Waste Disposal.....	17,605.61
 <u>Miscellaneous Accounts</u>	
(a) Cement Walks.....	4,574.84
(b) Campbell Street Parking Lots.....	1,936.31
(c) Charges to Other Departments (Recreation, Fire, Police, City Transit, Ambulance, Paint, Etc.).....	15,941.25
(d) Arenas (Beaverbrook, York, Nashwaaksis, Coliseum).....	480.53
(e) Industrial Park.....	4,710.86
(f) Flood Control.....	94.67
(g) Buildings & Maintenance.....	478.92
(h) Parking Lots - 1977.....	13,624.30
(i) Nashwaaksis Cemetery.....	409.61
(j) Public Library.....	35.23
(k) Canada Works Program.....	-
 TOTAL.....	<u>\$6,470,256.49</u>

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 1977 are shown on maps inserted after page 7 of this report.

Following the maps is a graph showing the distribution of the City of Fredericton Tax Dollar in 1977.

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 \$624,393.79 and is made up as follows:

GROSS EXPENDITURE:

Administration.....	\$ 19,327.29
Engineering Services.....	96,424.60
General Equipment.....	274,944.01
Workshops, Yards & Buildings.....	82,114.22
Research, Planning & Design.....	641.58
Other (Pensions, U.I.C. Workmen's Compensation, Etc.).....	<u>306,386.88</u>
TOTAL.....	\$779,838.58

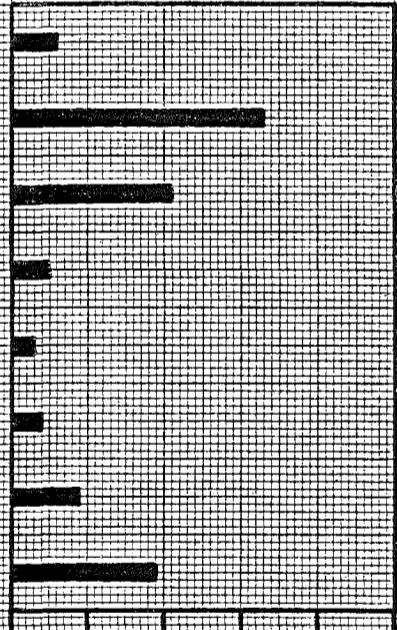
LESS CREDITS:

Engineering Services (Journal Vouchers).....	\$ 4,940.90
Fuels & Lubricants.....	40,791.21
Maintenance & Repairs.....	25,594.71
Expendable Accessories.....	67.51
Phoenix of Canada-Regarding Chain for #75 Essick Roller.....	416.97
Small Tools.....	66.42
Maintenance Depot (Journal Voucher - Space Rental).....	4,220.00
City Yard (Journal Voucher - Space Rental).....	4,220.00
North Side Depot (Materials and Space Rental)...	4,423.83
City Pension - Journal Vouchers (Inter. Dept. Charges).....	49,841.67
Canada Pension - Journal Vouchers (Inter. Dept. Charges).....	19,468.35
Jack Hanley - Overpayment (Fringe Benefits)....	56.65
Levine's Ltd. - Overpayment.....	1,321.24
Miscellaneous.....	15.33
	<u>\$155,444.79</u>

NET EXPENDITURE..... \$624,393.79

DISTRIBUTION OF THE 1977 TAX DOLLAR FOR THE CITY

GENERAL GOVERNMENT SERVICES



PROTECTIVE SERVICES

TRANSPORTATION SERVICES

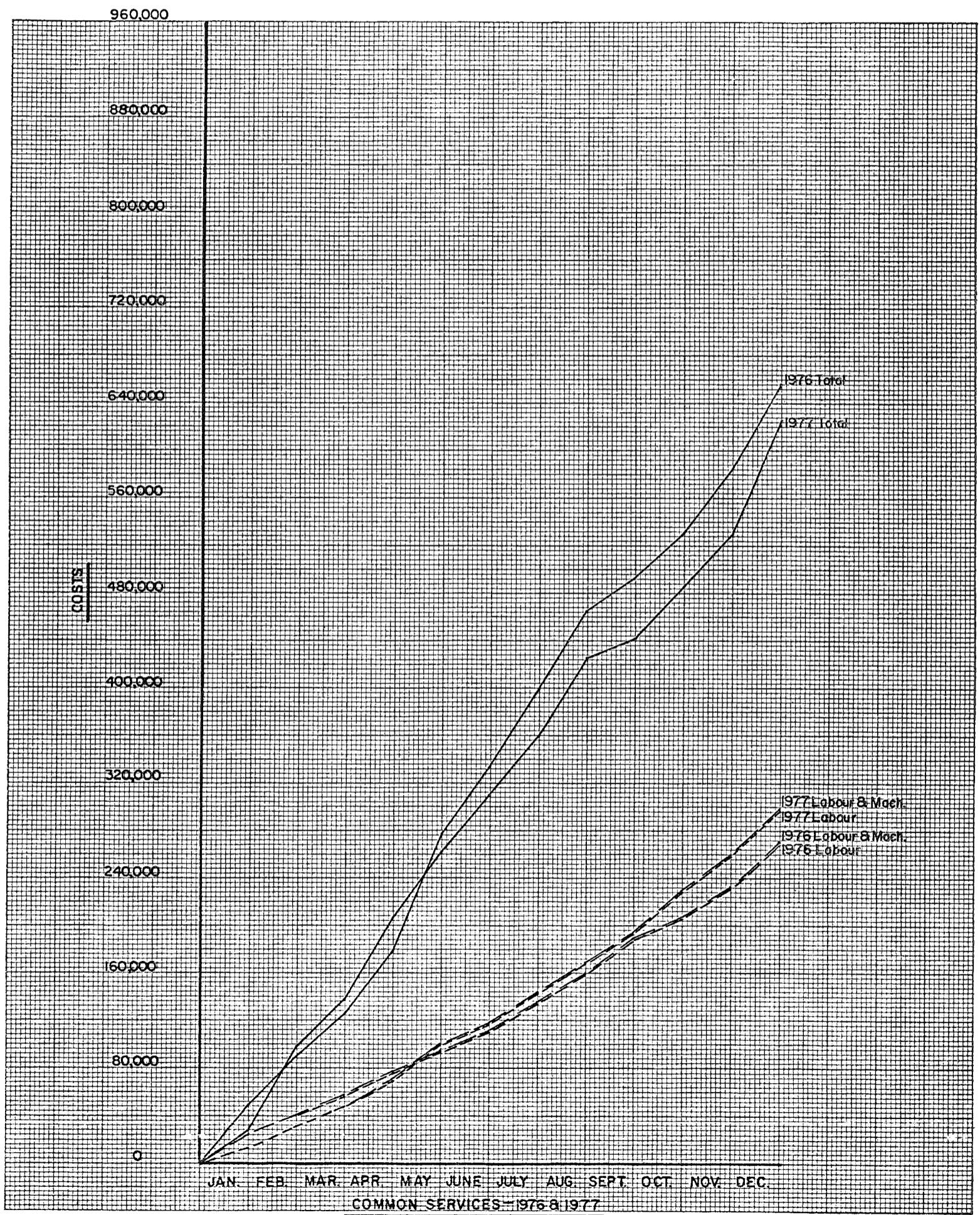
PUBLIC TRANSIT

ENVIRONMENTAL HEALTH SERVICES

ENVIRONMENTAL DEVELOPMENT SERVICES

RECREATION AND CULTURAL SERVICES

FISCAL SERVICES



(2) ROAD TRANSPORT:

(1) ADMINISTRATION: The total net expenditure under this heading was \$10,679.00.

(2) ROADS & STREETS:

Gross Expenditure.....	\$1,201,410.09
Less Credits.....	<u>53,936.34</u>
NET EXPENDITURE.....	<u>\$1,147,473.75</u>

The above credit of \$53,936.34 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).....	\$386,570.96
Sidewalk Repairs.....	29,548.82
Culverts & Ditches.....	44,887.29
Storm Sewer.....	25,734.09
Street Cleaning & Flushing.....	203,943.28
Snow & Ice Removal.....	352,786.18
Sanding and Salting.....	157,939.47
TOTAL.....	<u>\$1,201,410.09</u>

The NET EXPENDITURE of \$1,147,473.75 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)

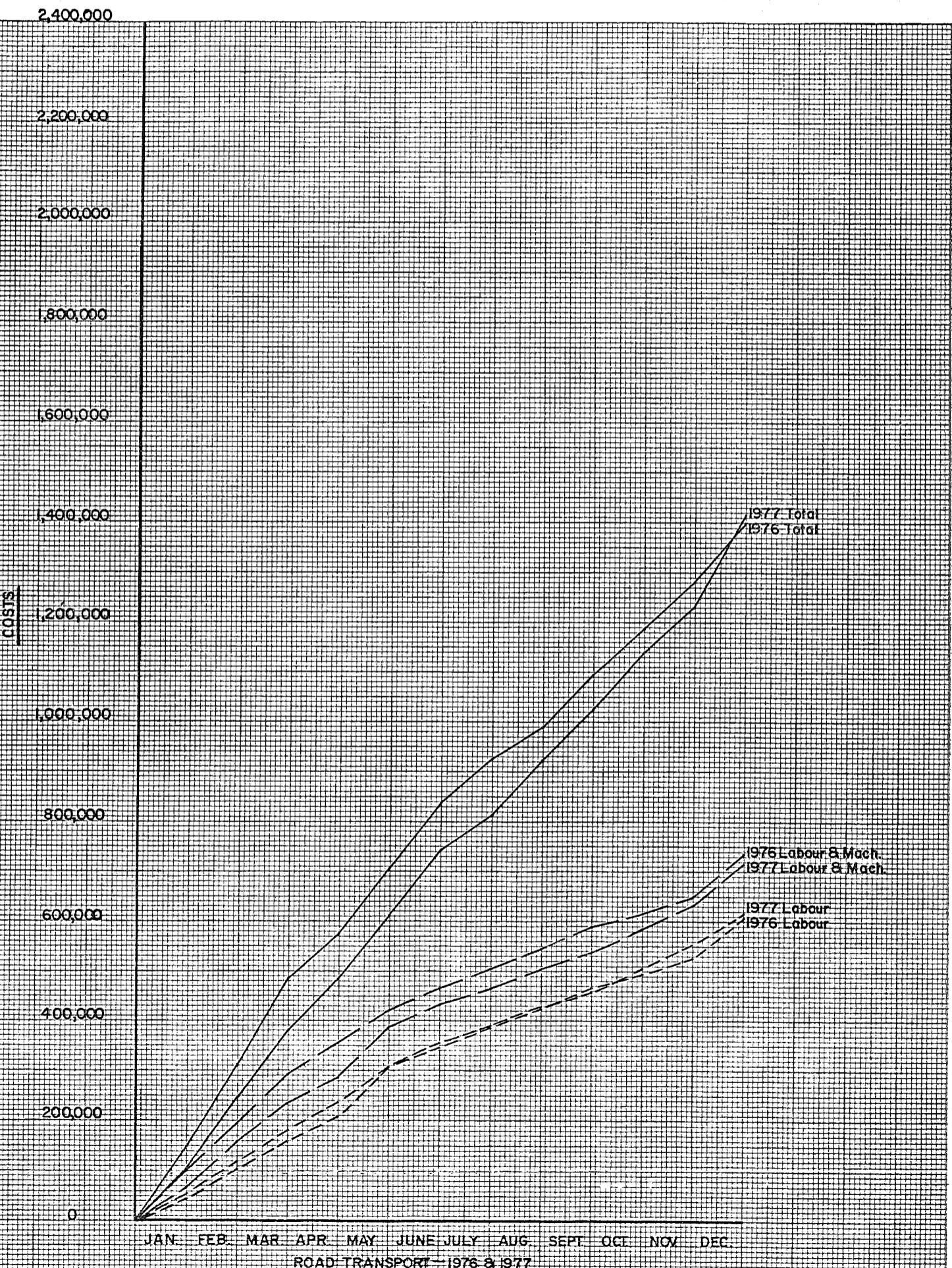
(1) Gravel Roads and Chip Seal

City Motor Grader: Road Patrol

Labour.....	\$ 4,351.71
City Machinery Charges.....	<u>4,559.50</u>
TOTAL.....	\$ 8,911.21

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

Labour.....	\$ 7,568.61
City Machinery Charges.....	15,117.50
Materials.....	<u>15,189.76</u>
TOTAL.....	\$ 37,875.87



5,323.33 Tons of Gravel and Crushed Rock was used in the maintenance and repairs to Gravel Roads under Roadway Surfaces. This was purchased from John Kilburn & Sons Ltd., Forbes & Sloat Ltd., Dunham's Contracting Ltd., and Diamond Construction Ltd.

CHIP SEAL:

The expenditure incurred under this heading was for street preparatory work and was made up as follows:

Labour.....	\$ 662.83
City Machinery.....	<u>410.00</u>
TOTAL.....	<u>\$1,072.83</u>

(2) PAVED STREETS

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

Tarvia Plant.....	\$ 749.22
Labour.....	105,444.58
City Machinery.....	46,374.00
Materials.....	<u>124,650.38</u>
GROSS EXPENDITURE.....	<u>\$277,218.18</u>

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

The total net expenditure for Pavement Repairs for 1977 including Workmen's Compensation, Pension Fund, Holiday and Sick Leave amounted to \$266,106.96 and was computed as follows:

Asphalt: Stock From 1976

450 Gallons RS-2.....	\$ <u>300.00</u>	\$ 300.00
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Plus Stock Purchased in 1977

7,245 Gallons RS-2.....	\$ <u>6,289.55</u>	<u>6,289.55</u>
		\$ 6,589.55

Less Stock Dec. 31, 1977

270 Gallons RS-2.....	\$ 240.30	
900 Gallons R-800.....	<u>779.85</u>	<u>1,020.15</u>
NET COST OF LIQUID.....		\$ 5,569.40

Expenditures:

Cost of Hot Mix Asphalt.....	\$ 99,612.00
Liquid Asphalt (Including Winter Asphalt).....	11,742.16
Crushed Rock & Crusher Dust....	3,255.86
City Labour (Payroll, Pensions, Etc.).....	105,444.58
City Machinery.....	46,374.00
Miscellaneous.....	10,040.36
Tarvia Plant.....	<u>749.22</u>

GROSS EXPENDITURE..... \$ 277,218.18

Less Credits:

Sundry Journals.....	\$ 6,635.15
Journal Vouchers (Rock Dust, Etc.).	<u>4,476.07</u>
	\$ 11,111.22
NET EXPENDITURE.....	\$ 266,106.96

(3) ASPHALT SEALING PROGRAM

NET EXPENDITURE	\$ 53,853.22
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Under this heading the following streets were surface sealed with 3/8" Minus Asphalt by Gorman Construction Limited at \$16.50 per Ton in Place.

<u>Location</u>	<u>Lineal Feet</u>
*York St.-George St. to Saunders St.	775
Winslow St.-Lansdowne St. to Alexandra St.	1,088
Albert St.-Regent St. to York St.	1,320
Mitchell St.-Albert St. to Kings College Rd.	990
Barker St.-Gibson St. to C.N.R. Tracks	1,275
Brunswick St.-Carleton to Regent (1 Lane)	<u>300</u>
TOTAL.....	<u>5,748</u>

5,748 Lineal Feet = 1.08 Miles

*Shared Cost under Neighbourhood Improvement Program.

Slurry Seal

The following Roads and Streets were Slurry Sealed in 1977 by Flintkote Company of Canada Limited under this heading:

<u>Location</u>	<u>Lineal Feet</u>
George St.-Smythe St. to University Ave.	5,399
University Ave.-George St. to C.N.R. Tracks	2,461
Smythe St.-Brunswick St. to Saunders St.	1,146
Kings College Rd.-York St. to Regent St.	1,280
Alexandra St.	1,360
Northumberland St.-Queen St. to King St.	303
Westmorland St.-Queen St. to King St.	346
Westmorland St.-George St. to Charlotte St.	<u>355</u>
TOTAL.....	<u>12,650</u>

12,650 Lineal Feet = 2.40 Miles

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

Labour.....	\$ 3,967.93
City Machinery.....	1,765.00
Materials.....	<u>49,462.97</u>
GROSS EXPENDITURE....	\$ 55,195.90

Less Credit:

Flintkote Company of Canada (Extra Area)	<u>1,342.68</u>
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NET EXPENDITURE.... \$ 53,853.22

(4) CURB AND GUTTER REPAIR

NET EXPENDITURE.... \$ 12,085.65

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

Labour.....	\$ 13,316.31
City Machinery Charges.....	3,257.50
Materials.....	<u>7,611.13</u>
TOTAL.....	\$ 24,184.94
<u>Less Credit:</u>	<u>12,099.32</u>
NET EXPENDITURE....	<u>\$ 12,085.65</u>

The above credit of \$12,099.32 was for Sundry Journals and Journal Vouchers regarding curb repairs. Included in the \$12,099.32 is the N.I.P. share of \$9,839.58 for the upgrading of York Street from George Street to Saunders Street.

(5) DRIVEWAY ENTRANCES (MAINTENANCE)

NET EXPENDITURE.... \$ 30,885.25

The total net expenditure was made up as follows:

Labour.....	\$ 14,658.01
City Machinery Charges.....	6,829.00
Materials.....	<u>9,398.24</u>
TOTAL.....	\$ 30,885.25

(6) RIGHTS-OF-WAY, GUARD POSTS, ETC.

Item	Labour Hired Trucks & Machinery	City Machinery Charges	Materials	Credits	Totals
Sodding & Seeding	\$ 2,357.89	\$ 461.50	-	-	\$2,819.39
Rip Rapping	1,880.06	77.00	-	-	1,957.06
Cutting Grass	4,560.66	2,617.00	-	-	7,177.66
Guard Rails	5,467.13	1,388.50	899.60	451.41	7,303.82
Clearing Rt.- of-Ways	-	-	-	-	-
TOTALS	\$14,265.74	\$4,544.00	\$899.60	\$451.41	\$19,257.93

(b) SIDEWALKS (MAINTENANCE)

The expenditure under this heading amounted to \$31,702.53 and was made up as follows:

Labour.....	\$ 17,810.49
City Machinery Charges.....	5,277.00
Materials.....	<u>11,738.33</u>
GROSS EXPENDITURE.	\$ 34,825.82
LESS CREDITS.....	3,123.29
NET EXPENDITURE...	<u>\$ 31,702.53</u>

The credits were for the following:

Sundry Journals.....	\$ 2,592.91
Journal Vouchers.....	530.38
	<hr/>
	\$ 3,123.29

(c) STREETS (GENERAL MAINTENANCE)

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

The total net expenditure under this heading was \$66,462.83 and is made up as follows:

Labour (Ditching).....	\$ 11,308.47
Labour (Culverts).....	15,032.18
City Machinery (Ditching).....	13,143.00
City Machinery (Culverts).....	12,542.50
Journal Vouchers (Pensions).....	1,370.40
Workmen's Compensation Board -	
Assessment.....	750.00
Materials.....	<hr/> 16,426.24
	GROSS EXPENDITURE.. \$ 70,572.79
	LESS CREDITS..... <hr/> 4,109.96
	NET EXPENDITURE.... \$ 66,462.83

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

(d) STORM SEWER

GROSS EXPENDITURE..	\$ 32,210.59
LESS CREDITS.....	<hr/> 569.60
NET EXPENDITURE....	\$ 31,640.99

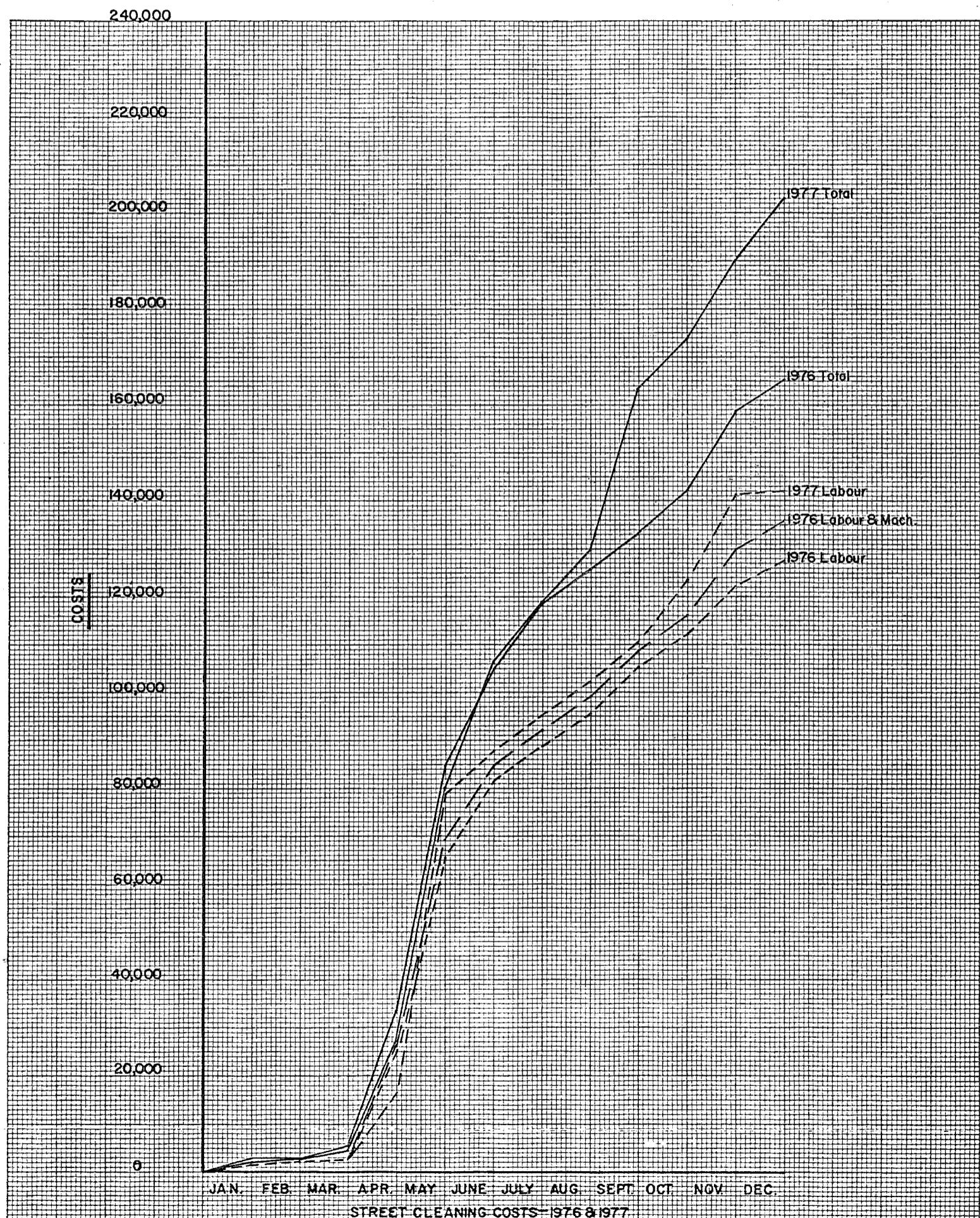
The above credits were for Sundry Journals and work done and materials used for private parties.

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 \$31,640.99 made up as follows:

Labour.....	\$ 17,541.40
City Machinery.....	6,476.50
Materials Less Credits.....	<hr/> 7,623.09
TOTAL.....	\$ 31,640.99

(e) STREET CLEANING AND FLUSHING

GROSS EXPENDITURE..	\$ 234,027.78
LESS CREDITS.....	<hr/> 867.45
NET EXPENDITURE	\$ 233,160.33



The GROSS EXPENDITURE is made up as follows:

Personnel-Labour, Pensions, Compensation....	\$ 132,226.14
General Services - Trucking & Repairs.....	44,374.60
Gas, Oil, Grease.....	3,400.62
Brooms-Main & Gutter.....	8,441.28
Brooms - Hand.....	1,682.73
Anti-Litter Cans & Waste Collection.....	7,571.08
Dust Control.....	6,254.83
City Machinery.....	30,076.50
TOTAL.....	<u>\$ 234,027.78</u>

Two Wayne Sweepers, #50 and #52, and a Vacuum-Sweep, #53-75, carried out the cleaning of City Streets. These machines worked a total of 3114.5 hours from March 28, 1977 to November 24, 1977.

The following is a list of machinery used in street cleaning and dust control (gravelled roads) together with their repair costs for 1976 and 1977, including tires and tubes:

Name of Machine	Year Purchased	1976 Repairs	1977 Repairs
Wayne Sweeper #50	1975	\$ 3,252.30	\$ 4,606.77
Sicard Flusher #51	1955	829.31	6,743.85
Wayne Sweeper #52	1968	6,818.76	8,752.37
Vacuum-Sweep #53-75	1975	1,465.81	4,520.89
TOTALS.....		<u>\$12,366.18</u>	<u>\$24,623.88</u>

(f) SNOW AND ICE REMOVAL

(a) Salting and Sanding Streets & Sanding Sidewalks

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

Streets:

Personnel (Labour, Pensions, Compensation)...	\$ 37,214.13
General Services (Repairs & Maintenance)....	6,515.21
Expendable Accessories.....	5.00
City Machinery Charges.....	30,676.00
Materials.....	<u>105,985.21</u>
TOTAL EXPENDITURE	\$180,395.55
LESS CREDITS	<u>8,371.70</u>
NET EXPENDITURE	<u>\$172,023.85</u>

Sidewalks:

Labour.....	\$ 5,212.86
City Machinery Charges.....	1,106.50
Materials.....	<u>3,007.06</u>
TOTAL NET EXPENDITURE.	<u>\$ 9,326.42</u>

15,090 Cubic Yards of sand was purchased during the Fall of 1977. The sand was supplied by F. & F. Trucking Ltd. at a price of \$1.61 per Cubic Yard, delivered to the City Stock Piles at Maintenance Depot, Regent St. and Services Depot, Killarney Rd. (St. Marys St.).

In 1977, 3,446.06 Tons of salt was used for ice control. The cost and distribution charges are included under the above heading. The City purchased 3,446.06 tons of salt in 1977.

In stock as of December 31, 1977..... 100 Tons.

(b) 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 \$518,838.83 and was made up as follows:

Personnel (Labour, Pensions, Compensation)...	\$ 168,296.09
General Services (Repairs & Maintenance, Hired Trucks & Machinery, Etc.).....	125,320.32
City Machinery Charges.....	190,647.50
Expendable Materials.....	30,359.47
Miscellaneous Materials.....	4,215.45
TOTAL	<u>\$ 518,838.83</u>

The following table shows comparative labour (including hired trucks, & machinery) costs of snow control for the year 1975 to 1977 inclusive:

	1975	1976	1977
Snow Plowing Roads & Streets	\$ 122,970.26	\$ 119,134.63	\$ 129,684.40
Blowing, Hauling & Shovelling	56,253.11	84,482.92	82,476.60
Catch Basins	23,998.42	36,566.77	32,623.80
Snow Fences	1,104.62	994.99	1,573.71
Plowing Parking Lots	665.02	462.15	327.71
Repairs (Labour- Equipment)	2,991.17	5,213.38	12,579.35
Repairs (Flood)	-	2,341.88	6,844.71
TOTALS.....	\$ 207,982.60	\$ 249,196.72	\$ 266,110.28

The City of Fredericton was responsible for plowing, sanding and salting 172.225 Miles of Roads and Streets during 1977.

The overall cost for plowing, sanding and salting City Roads and Streets was \$699,234.38 and was made up as follows:

Personnel (Labour, Pensions, Compensation)...	\$ 205,510.22
General Services (Hired Trucks & Machinery, Repairs, Etc.).....	131,835.53
City Machinery Costs.....	221,323.50
Materials (Sand & Salt, Fuels & Lubricants)..	110,200.66
Expendable Materials.....	30,364.47
TOTAL.....	<u>\$ 699,234.38(1)</u>

Therefore, the unit cost of plowing, sanding, and salting one mile of road (street) was \$4,060.

Sidewalks:

79.35 Miles of sidewalk were plowed during the winter months of 1977.

The total expenditure for plowing amounted to \$32,288.85 and was made up as follows:

Labour.....	\$ 18,438.85
Hired Machinery.....	6,156.00
City Machinery.....	<u>7,694.00</u>
TOTAL.....	
	\$ 32,288.85

The unit cost per mile for plowing and sanding sidewalks was \$524.45 and was made up as follows:

Labour.....	\$ 23,651.71
Hired Trucks & Machinery.....	6,156.00
City Machinery Charges.....	8,800.50
Materials (Sand, Etc.).....	<u>3,007.06</u>
TOTAL.....	
	\$ 41,615.27(2)

Unit Cost per Mile \$41,615.27 79.35 = \$524.45.

GROSS COST OF SNOW CONTROL - ADD (1) AND (2)....	\$ 740,849.65
LESS CREDITS.....	<u>10,910.29</u>
NET COST (Including City Machinery).....	\$ 729,939.36

NET COST OF SNOW CONTROL
(LESS City Machinery Charges \$230,124.00)..... \$ 499,815.36

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

1973.....	62.0 inches (157.48 cm)
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)

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

Name of Vehicle	Ins. No.	Year Purchased	1976 Repairs	1977 Repairs
G.M.C. 3 Ton	24	1975	\$ 137.70	\$ 20.63
G.M.C. 3 Ton	25	1975	364.60	122.05
Ford 3 Ton	26	1975	25.73	227.57
Dodge 3 Ton	27-76	1976	-	9.20
Dodge 3 Ton	28-76	1976	-	15.42
Chevrolet 3 Ton	63	1971	37.89	547.97
Chevrolet 3 Ton	64	1974	326.15	836.81
Sicard Snow Blower	86	1949	713.95	353.01

Name of Vehicle	Ins. No.	Year Purchased	1976 Repairs	1977 Repairs
Sicard Snow Blower	87	1961	\$ 285.12	\$ 37.46
Sicard Snow Blower	88	1963	3,216.86	477.43
SMI Snow Blower	89	1974	1,126.67	5,983.71
Chevrolet 5 Ton	101	1975	180.08	215.87
Ford 5 Ton	102	1975	815.47	141.91
G.M.C. 5 Ton	103	1975	541.06	372.76
G.M.C. 5 Ton	104	1975	22.73	281.46
G.M.C. 5 Ton	105	1975	627.58	643.88
Ford 3/4 Ton	120	1975	-	26.46
Bombardier	124	1977	-	-
Bombardier	125	1976	54.65	396.50
Bombardier	132	1974	357.84	178.70
Bombardier	133	1974	187.43	580.30CR
Bombardier	134	1968	137.32	1,613.99
Dodge 3 Ton Spreader	215	1966	1,266.30	-
Trailer 15.H.P. Boiler	256	-	21.56	74.97
TOTALS			\$ 10,446.69	\$ 11,997.46

(3) STREET LIGHTING;

The Multiple Lighting System for the City of Fredericton as of December 31, 1977 consisted of:

35 - 400 Watt H.P. Sodium @ \$154.20 per light per year
 10 - 125 Watt M.V. Wood @ \$65.90 per light per year
 2 - 175 Watt M.V. Conc. @ \$95.80 per light per year
 199 - 175 Watt M.V. Wood @ \$79.00 per light per year
 354 - 175 Watt Ref. M.V. @ \$60.10 per light per year
 14 - 250 Watt M.V. Conc. @ \$121.30 per light per year
 9 - 250 Watt M.V. Wood @ \$104.50 per light per year
 1,677 - 250 Watt Ref. M.V. @ \$85.60 per light per year
 571 - 400 Watt Ref. M.V. @ \$115.00 per light per year
 1 - 500 Watt Ref. M.V. @ \$91.60 per light per year
 2 - 400 Watt Flood Light @ \$0.34 per light per year

The total street lighting costs for 1977 were as follows:

Multiple Lighting System Contract.....	\$ 230,573.94
New Installations.....	<u>10,648.00</u>
NET EXPENDITURE...	\$ 241,221.94

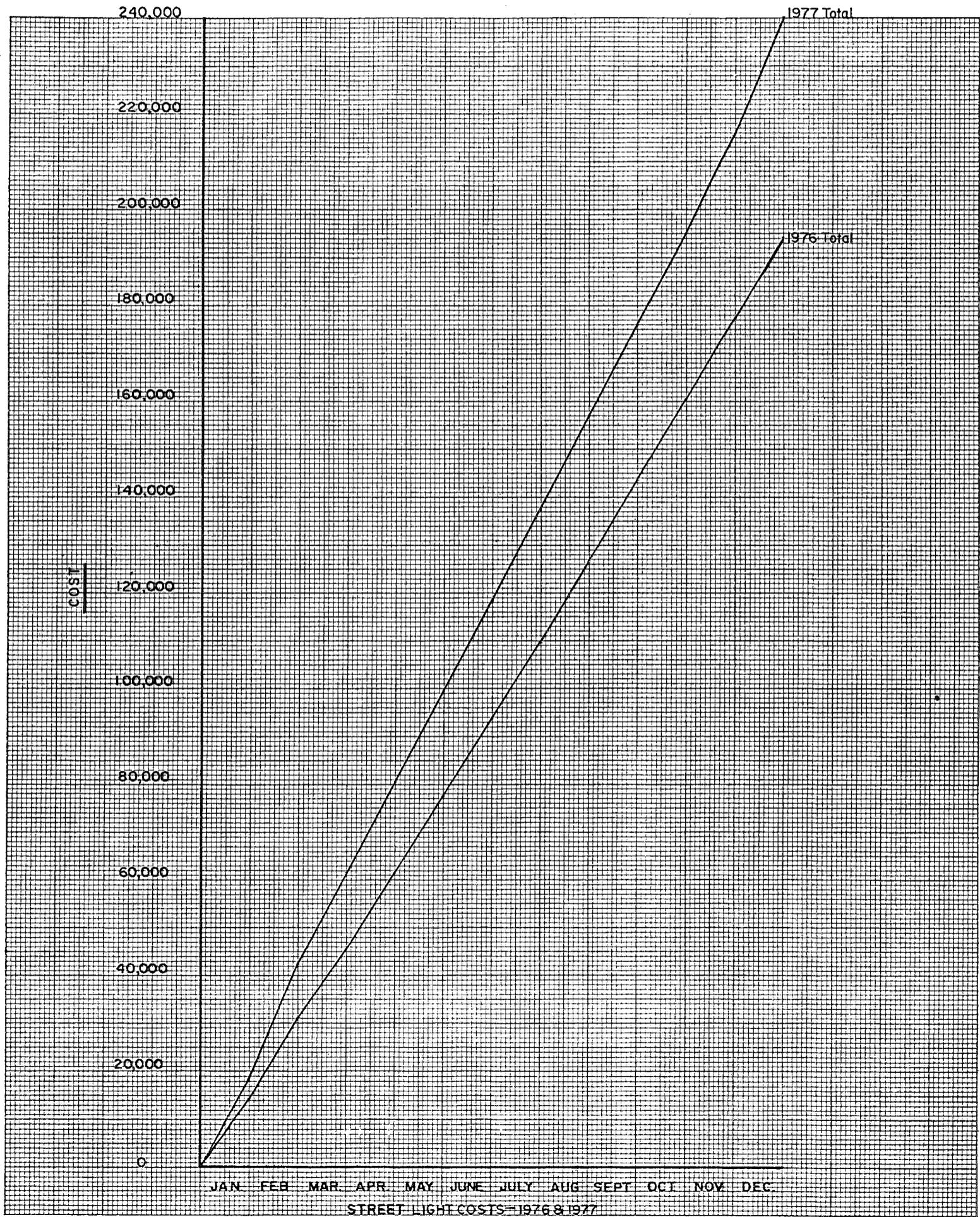
(4) TRAFFIC SERVICES:

The expenditure under this heading is made up as follows:

- (1) Street Signs
- (2) Off-Street Parking

(1) Street Signs:

Purchasing, repairing and installing Street Signs on City Streets.



The expenditure under this heading amounted to \$13,836.87 and was made up as follows:

Personnel (Labour, Pensions, Workmen's Compensation, Etc.).....	\$ 3,237.64
Repairs and Maintenance.....	1,302.51
Materials.....	9,947.14
	<u> </u>
GROSS EXPENDITURE...	\$ 14,487.29
LESS CREDITS.....	650.42
	<u> </u>
NET EXPENDITURE.....	\$ 13,836.87
	<u> </u>

The above credit of \$650.42 was for Journal Vouchers regarding City Decals and a cash receipt for sign damages.

(2) Off-Street Parking:

The expenditure under this heading amounted to \$293.84 and was made up as follows:

Personnel (Labour, Pensions, Workmen's Compensation).....	\$ 171.37
Repairs and Maintenance.....	122.47
	<u> </u>
NET EXPENDITURE.....	\$ 293.84
	<u> </u>

The following is a list of vehicles and machinery used in COMMON SERVICES, together with the repair costs for 1976 and 1977, including tires and tubes:

Name	Ins. No.	Year	1976 Repairs	1977 Repairs
Chevrolet	1	1976	\$ 75.12	\$ 441.23
Dodge 1/2 Ton	3	1975	224.68	586.08
Chevrolet 1/2 Ton Panel	4	1974	228.27	393.79
Chevrolet 1/2 Ton	6	1976	130.53	266.43
Chevrolet 1/2 Ton	8	1972	579.14	328.76
Dodge 1/2 Ton	15	1975	-	517.51
G.M.C. 3 Ton Dump	16	1973	1,384.21	732.56
Dodge 3 Ton Dump	17	1969	1,735.04	1,232.30
Chevrolet 3 Ton Dump	18	1971	598.22	697.11
Ford 3 Ton Dump	19	1970	1,621.77	1,376.53
International 3 Ton Dump	20	1968	-	623.55
Ford 3 Ton Dump	21	1972	1,082.79	607.53
Dodge 3 Ton	22-76	1976	54.17	306.01
Dodge 3 Ton Dump	23	1974	83.56	2,125.06
G.M.C. 3 Ton Dump	24	1975	888.53	270.97
G.M.C. 3 Ton Dump	25	1975	1,311.53	612.57
Ford 3 Ton Dump	26	1975	810.35	493.66
Dodge 3 Ton Dump	27-76	1976	62.45	427.46
Dodge 3 Ton Dump	28-76	1976	620.84	284.95
Chevrolet 3 Ton Dump	29	1977	-	72.20
Chevrolet 3 Ton Dump	30	1977	-	8.12
Chevrolet 3 Ton Dump	31	1977	-	280.97
Galion Grader 118	36	1966	3,185.37	1,245.02
Austin Western 300 Pacer	37	1962	5,381.89	1,097.60

Name	Ins. No.	Year	1976 Repairs	1977 Repairs
Galion Grader T-400	38	1972	\$ 6,799.77	\$ 1,388.68
Caterpillar 120 Grader	39	1974	4,065.53	1,986.95
Caterpillar 120 Grader	40	1974	10,754.60	3,222.16
Caterpillar 120 Grader	41	1974	3,658.80	2,697.87
Caterpillar 120 Grader	42	1974	1,879.49	7,493.37
Galion T-500 A Grader	43-76	1976	38.51	542.39
Galion T-500 A Grader	44-76	1976	38.50	337.76
Galion T-600 A Grader	45-76	1976	53.11	7,329.96
Galion T-500 A Grader	46-77	1977	-	142.70
Galion T-500 A Grader	47-77	1977	-	75.11
Dodge Vacall	54	1971	716.10	550.09
Hy-Hoe Backhoe	55	1964	2,607.86	2,993.39
Hopto Backhoe	57	1973	27.47	-
Ingersol Rand Compressor	58	1969	321.70	435.11
Hy-Hoe Backhoe	59	1974	5,265.96	5,071.85
Dodge 3 Ton	60	1967	-	40.75
Ingersol Rand Compressor	67	1957	24.66	1,486.80
Atlas Copco Compressor	68	1964	405.93	72.09
Atlas Copco Compressor	70	1974	32.22	267.04
Littleford Roller	71	1956	-	95.16
Essick Roller	72	1970	1,174.59	432.62
Essick Roller	73	1971	632.01	69.09
Mikasa Roller	74-76	1976	-	148.64
Ford Tractor	78	1967	-	62.26
Ford Tractor	82	1974	58.28	186.61
Essick Roller	84-76	1976	-	101.36
Chevrolet 5 Ton	101	1975	414.95	417.41
Ford 5 Ton	102	1975	11.39	656.44
G.M.C. 5 Ton	103	1975	919.52	1,691.43
G.M.C. 5 Ton	104	1975	1,050.96	1,157.36
G.M.C. 5 Ton	105	1975	1,807.38	483.46
Ford 1/2 Ton Crew Cab	111	1974	1,207.49	656.79
Ford 1/2 Ton Crew Cab	112	1974	1,622.13	783.80
Ford 3/4 Ton	120	1974	238.00	299.87
International Scout II	121	1975	169.94	450.91
International Scout II	122	1975	115.34	264.16
Kaiser Jeep	126	1970	-	-
Kaiser Jeep	127	1971	349.00	-
Ford Bronco	128	1969	291.45	-
International Scout	129	1972	117.97	900.39
International Scout	130	1973	368.48	463.72
International Scout	131	1974	429.67	334.10
Michigan 55 A Loader	135	1974	2,799.54	3,680.58
Michigan 55 A Loader	136	1974	4,098.33	4,712.66
Michigan 55 A Loader	137	1974	3,736.69	4,012.90
Michigan 55 A Loader	138	1974	1,334.40	2,006.36
John Deere Loader	141	1975	492.04	255.07
Allis Chalmers Loader(Traded)	142	1970	4,284.63	1,302.32
Ford Loader	142	1977	-	75.69
Case W-18 Loader	143	1974	293.98	5,296.93
Caterpillar D5 Bulldozer	146	1969	12,675.84	9,192.09
International TD8C Bulldozer	147	1971	124.13	2,334.07
Case 850 Bulldozer	148	1968	244.54	443.34
Case 750 Bulldozer	149	1965	707.39	1,312.25
Dodge 1/2 Ton	201	1973	2,495.55	740.71
Chevrolet 3 Ton	202	1974	392.77	1,328.09
Ford 5 Ton	203-75	1975	437.93	720.03
Ford 1 Ton	204	1969	637.58	1,112.68
Dodge 3 Ton	205	1972	4,771.95	342.73
Case 680 Backhoe-Loader	207	1972	5,181.33	3,097.93
Essick Roller	75	1974	817.63	236.30

Name	Ins. No.	Year	1976 Repairs	1977 Repairs
Case 310 Bulldozer	208	1968	\$ 2,521.84	\$ 161.66
Essick Roller	214	1974	23.48	-
Case 780 Backhoe	253	1976	489.00	3,106.61
Case 450 Bulldozer	254	1973	2,154.36	1,249.24
Gardner Denver Compressor	255	1968	389.15	27.14
TOTALS			\$118,831.30	\$107,565.00

The following items of machinery were purchased in 1977 and charged to TRANSPORTATION SERVICES:

3 - Chevrolet 3 Ton Trucks - Asset No.'s 29, 30, 31

Cost.....	\$ 28,713.36
Plus 8% S.S.&E. Tax.....	2,297.04
License & Registration.....	18.00
Rustop.....	450.00
TOTAL COST..	\$ 31,478.40

3 - Truck Bodies for Asset No.'s 29, 30, 31

Cost.....	\$ 2,700.00
Plus 8% S.S.&E. Tax.....	216.00
TOTAL COST..	\$ 2,916.00

CAPITAL ACCOUNT CURB & GUTTER

The net expenditure under this heading amounted to \$327,566.32.

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

<u>Location</u>	<u>Lineal Feet</u>
Burnham Ct.-Both Sides	1,884
Matthews Ct. - Both Sides	1,091
Downing St.-Existing to Rice St. - Both Sides	385
Rice St. - Both Sides	655
Perry Ct. - Both Sides	840
Bunker St.-Rice St. to Perry Ct. - Both Sides	585
Hollybrook St.-Existing to Hallett St. - Both Sides	515
William St.-Calder Ave. to Haines Cres. - Both Sides	1,460
Haines Cres.-Calder Ave. to William St.-Both Sides	1,455
Shibu Ct. - Both Sides	670
Barton Cres.-Royal Rd. to Jenning Dr. - Both Sides	930
Jenning Dr. - Both Sides	1,420
Dickson St. - Both Sides	1,815
*Brookside Dr.-Westview St. to Oakland St. - Both Sides	1,648
*Cedar Ave.-Fulton Ave. to Maple St. - Both Sides	2,790
*Teak Dr. - Both Sides	1,190
*Hilltop Dr. - Both Sides	1,080
*Bird Ave. - Both Sides	1,808
*Willow Ave.-Hilltop Dr. to Maple St. - Both Sides	1,084

<u>Location</u>	<u>Lineal Feet</u>
Douglas Ave.-Maple St. to Broad St. - Both Sides	2,295
Arlington St. - Both Sides	1,166
Islandview Dr. - Both Sides	1,836
Oriole Ct. - Both Sides	556
Mountain Dr. - Both Sides	1,611
Silverwood Rise - Both Sides	571
Silverwood Ct. - Both Sides	807
Colonial Heights - Both Sides	352
Brunswick St.-Regent St. to Carleton - North Side & South Side (Partial)	748
TOTAL.....	<u>33,247</u>

33,247 Lineal Feet = 6.29 Miles

*Constructed by Callaghan Contracting Ltd.

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 Elmtree Concrete Ltd. at a price of \$31.94 per cubic yard. Callaghan Contracting Ltd. 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 23,647 lineal feet into the total cost of \$179,670.56 was \$7.60 per lineal foot.

The unit cost of one lineal foot of curbing placed by Callaghan Contracting Ltd., found by dividing the total length laid, which equalled 9,600 lineal feet into the total cost of \$108,967.31 was \$11.35 per lineal foot.

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

TOPSOILING COSTS:

Callaghan Contracting Ltd. topsoiled all boulevards on streets which they constructed curb and gutter. All other boulevards were topsoiled by City Crews.

Callaghan Contracting Ltd.:

Total Cost of Topsoiling, Fertilizer, Etc.....	\$ 10,437.00
Lineal Feet of Curb Constructed.....	9,600
Cost/Foot (Topsoiling).....	\$ 1.09
Therefore, cost/foot of Curbing only.....	\$ 10.26

City Crews:

Labour.....	\$ 24,728.51
Hired Trucks & Machinery.....	60.00
City Machinery Charges.....	6,618.00
Materials.....	21,795.48
TOTAL.....	<u>\$ 53,201.99</u>

Total Cost of Curbing, including Topsoiling.. \$ 179,670.56
Less: Cost of Topsoiling..... 53,201.99

TOTAL COST OF
CURBING..... \$ 126,468.57

Cost/Lin. Ft. in Place = \$126,468.57 = \$ 5.35
23,647

Cost/Lin. Ft. of Topsoiling = \$53,201.99 = \$ 2.25
23,647

Labour cost of constructing 1 Lineal Foot of Curb and Gutter,
minus topsoiling was..... \$ 61,542.81 = \$ 2.60
23,647

CAPITAL ACCOUNT PAVING

In 1977, Gorman Construction Co. Ltd., was awarded a contract to lay pavement and resurface a number of City Streets. Also, Flintkote Company of Canada armour coated a number of City Streets.

The material cost amounted to \$291,360.36 and was made up as follows:

Gorman Construction Co. Ltd.

212.55 Tons Sand Seal @ \$17.00 per ton	\$ 3,613.35
5,055.20 Tons 3/8" Minus Asphalt @ \$16.50 per ton.	83,410.80
563.00 Tons 1/2" Seal @ \$16.25 per ton.....	9,148.75
469.90 Tons 1/2" Minus Asphalt @ \$16.50 per ton.	7,753.35
7,655.65 Tons 3/4" Dense Mix Asphalt @ \$16.50 per ton.....	126,318.22
32,073.50 Gallons of N.B. Primer @ \$0.55 per gallon.....	17,640.42

Flintkote Company of Canada Ltd.

333.25 Tons of 3/4" Chips @ \$10.00 per ton....	3,332.50
193.00 Tons of 1/2" Chips @ \$10.90 per ton....	2,103.68
218.00 Tons of 3/8" Chips @ \$11.40 per ton....	2,485.20
16,622.00 Gallons of Colas Asphalt Emulsion @ \$0.74 per gallon..	12,300.28
8% S.S.&E. Tax on Emulsion Only.....	727.38

Diamond Construction (1961) Ltd.

194.70 Tons 0-3/8" Rock @ \$2.40 per ton.....	467.28
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Miscellaneous - Journal Vouchers, Asphalt Testing, Etc.....	<u>22,059.15</u>
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TOTAL..... \$ 291,360.36

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 \$53,301.48 made up as follows:

City Labour.....	\$ 33,526.89
City Machinery.....	<u>22,968.50</u>
TOTAL....	\$ <u>56,495.39</u>

The total net expenditure under this heading amounted to \$191,168.02 and was made up as follows:

City Labour.....	\$ 33,526.89
City Machinery.....	22,968.50
Gorman Construction Co. Ltd...	247,884.89
Flintkote Company of Canada Ltd..	20,949.04
Diamond Construction (1961) Ltd..	467.28
Miscellaneous.....	<u>22,059.15</u>
GROSS EXPENDITURE.....\$347,855.75	
LESS CREDIT.....	<u>156,687.73</u>
NET EXPENDITURE.....\$191,168.02	

The above credit of \$156,687.73 was made up of \$147,554.18 for paving Provincial Routes and of \$9,133.55 for paving at the Regent Street Mall for Begg and Daigle (1972) Ltd.

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

- (1) New Pavement - 3/4" Dense Mix @ \$16.50/Ton in place
- (2) Recap 1/2" Minus @ \$16.50/ton in place
- (3) Surface Seal - 3/8" Minus @ \$16.50/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 Gorman Construction Ltd. in 1977.

<u>Location</u>	<u>Lineal Feet</u>
✓ Matthews Ct.	412
✓ Downing St.-Existing to Rice St.	190
✓ Rice St.	280
✓ Bunker St.-Rice St. to Perry Ct.	322
✓ Perry Ct.	396
✓ Hollybrook St.-Existing to Hallett St.	301
✓ Barton Cres.-Royal Rd. to Jenning Dr.	554
✓ Dickson St.	998
✓ Jenning Dr.	702
✓ William St.-Calder Ave. to Haines Cres.	660
✓ Haines Cres.-Calder Ave. to William St.	750
✓ Shibu Ct.	364
✓ Arlington St.	554
✓ Islandview Dr.	913
✓ Oriole Ct.	232
✓ Mountain Dr.	818
✓ Silverwood Ct.	232
✓ Silverwood Rise	301
✓ Burnham Ct. & Part of Colonial Heights	1,078
✓ Douglas Ave.-Maple St. to Broad St.	1,299
✓ Cedar Ave.-Fulton Ave. to Maple St.	1,383
✓ Willow Ave.-Hilltop Dr. to Maple St.	554
✓ Hilltop Dr.	528
✓ Teak Dr.	565
✓ Bird Ave.	903
TOTAL	<u>15,289</u>

15,289 Lineal Feet = 2.90 Miles

For the above, the following materials were used:

32,073.50 Gallons N.B. Prime @ \$0.55 per Gallon.....	\$ 17,640.42
7,655.65 Tons 3/4" Hot Mix Asphalt @ \$16.50 per Ton....	<u>126,318.22</u>
TOTAL.....	<u>\$143,958.64</u>

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

(2) Recap 1/2" Minus

The following street was recapped by Gorman Construction Ltd. in 1977:

<u>Location</u>	<u>Lineal Feet</u>
Brookside Dr.-Westview to Oakland Ave.	910

910 Lineal Feet = 0.17 Miles

The following material was used for the above street:

469.90 Tons 1/2" Minus Asphalt @ \$16.50 per ton.....	\$ 7,753.35
563.00 Tons 1/2" Asphalt @ \$16.25 per Ton.....	<u>9,148.75</u>
TOTAL.....	<u>\$16,902.10</u>

(3) Surface Seal - 3/8" Minus

The following City Streets were surface sealed by Gorman Construction Ltd. under "Capital Account" with 3/8" Minus Hot Mix Asphalt:

<u>Location</u>	<u>Lineal Feet</u>
*Regent St.-Prospect St. Intersection	100
*Regent St.-End of Median Barrier to Southerly Exit from Regent Mall	1,300
Parkside Dr.-Smythe St. to Meadow Green Ct.	1,180
Parklyn Ct.	549
Foley Ct.	850
Oxford Ct.	248
Oxford St.-Eglinton (West) to Eglinton (East)	2,300
Woodbridge St.-#190 to Canterbury Dr.	3,080
*Canada St.-Perley Ave. to Young St.	17,160
*Lincoln Rd.-Section Near Vanier Hwy.	1,430
**Church St.-Aberdeen St. to McLeod Ave. (1 Lane)	300
**Union St.-Gibson St. to Hughes St. (1 Lane)	1,700
***York St.-Campbell St. to Queen St. (1 Lane)	115
TOTAL.....	<u>30,312</u>

30,312 Lineal Feet = 5.74 Miles

*Expenditures Charged to Designated Routes
**Expenditures Charged to Capital Water (N.I.P.)
***Expenditures Charged to Capital City Hall

For the above streets, the following materials were used:

212.55 Tons Sand Seal @ \$17.00 per Ton.....	\$ 3,613.35
5,055.20 Tons 3/8" Minus Asphalt @ \$16.50 per Ton.....	<u>83,410.80</u>
TOTAL.....	\$ <u>87,024.15</u>

(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 1977 by Flintkote Company of Canada Ltd.

<u>Location</u>	<u>Lineal Feet</u>
Ross Terrace	2,402
Nashwaak Dr.	998
Glengarry Place (Gravelled Area)	2,070
St. Andrews Dr.	206
Clanfield St.	961
Curtis St.	797
TOTAL.....	<u>7,434</u>

7,434 Lineal Feet - 1.40 Miles

Materials Used:

333.25 Tons 3/4" Chips @ \$10.00 per Ton.....	\$ 3,332.50
193.00 Tons 1/2" Chips @ \$10.90 per Ton.....	2,103.68
218.00 Tons 3/8" Chips @ \$11.40 per Ton.....	2,485.20
16,622 Gallons Colas Emulsion @ \$0.74 per Gallon.....	<u>12,300.28</u>
TOTAL.....	\$ <u>20,221.66</u>

CAPITAL ACCOUNT DOMESTIC SEWER

GROSS EXPENDITURE.....	\$ 192,756.30
LESS CREDIT.....	<u>180,577.98</u>
NET EXPENDITURE.....	\$ <u>12,178.32</u>

Included in the Gross Expenditure of \$192,756.30 is the amount of holdback from jobs completed in 1976 paid in 1977 accounts.

The above credit is made up as follows:

Journal Vouchers (materials paid for by Capital Account Domestic Sewer & Charged to other City Departments).....	\$ 34,492.53
Work done and materials sold to Private Parties..	5,015.18
Khoury Real Estate - Forest Hill Estates).....	9,428.64
Chippin's Ltd. - Vanier Subdivision).....	26,462.76
N.B. Housing Corp.-Vanier Subdivision).....	6,515.28
Hill Brothers Ltd.-Sewell Street Ext.).....	32,302.61
Metro Builders Ltd. - Manor Place)Local	
Subdivision)Improvement. 9,847.36	
Chippin's Ltd. - Dunn Acres Sub-)Charges	
division).....	30,946.14
D.Q.R. Cowperthwaite-Tower Road).....	11,264.72
N.B. Housing Corp.-MacPherson Street).....	13,830.05
E.J. Ludford Ltd.-Broken Materials.....	367.80
Frecon Ltd.-Broken Materials.....	104.91
TOTAL.....	\$ <u>180,577.98</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.	18" A.C.	20" A.C.	24" A.C.	4" F.M.	6" F.M.	8" F.M.	10" F.M.
Forest Hill Est.- Boyne Ct.	486	40									
Sewell St.- Lawson Ct.	2682										
Dunn Acres	1763	454									
*Holland St.- McMann St.	961										
Manor Place Subdivision	975										
Tower Rd.	722										
*Mill St.	497										
MacPherson St. (Incomplete)	1044										
Jaffrey St.	351										
Vanier-Sub-division (1977)	2826										
*Woodstock Rd. #1	2945	803	921			4178		40		700	
*Woodstock Rd. #2	301	65	428		2619	5596	514		102		3866
*Woodstock Rd. #3	5713	1367	47	470							
Lincoln Heights	3498	1429			2184						
*Riverside Dr. Vanier Ind. Park	50		325								
	1004		585	2194							
TOTALS	25818	4158	2306	2664	4803	9774	514	40	102	700	3866

*See Capital Service Development Projects for Costs.

Total Lineal Feet of Main Installed in 1977 = 54,745 = 10.36 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
Forest Hill Est.- Boyne Ct.	\$ 6,088.50	\$ 1,010.93	\$ 2,681.11	\$ 9,780.54
Sewell St.-Lawson Ct.	19,250.00	797.25	12,256.36	32,303.61
Dunn Acres	19,254.00	1,168.87	10,010.87	30,433.74
Holland St.-McMann St.	8,546.50	1,655.18	5,124.42	15,326.10
Manor Place Subdivision	6,356.25	-	4,833.93	11,190.18
Tower Rd.	7,153.00	879.26	3,232.46	11,264.72
Mill St.	5,209.90	1,020.89	735.13	6,965.92
MacPherson St.(Incomplete)	8,843.54	566.55	4,715.89	14,125.98
Jaffrey St.	5,976.64	754.31	2,223.94	8,954.89
Vanier Subdivision(1977) (Chippins)	15,009.09	910.70	9,243.97	25,163.76
Vanier Subdivision(1977) (N.B. Housing)	3,367.10	247.91	2,689.29	6,304.30

TOTALS	\$105,054.52	9,011.85	\$57,747.37	\$171,813.74
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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 manholes by Contractors in the following locations in 1977:

<u>Location</u>	<u>8" A.C.</u>	<u>10" A.C.</u>
Forest Hill Est.-Boyne Ct.	\$19.40	
Sewell St.-Lawson Ct.	12.04	
Dunn Acres	13.36	\$13.13
Holland St.-McMann St.	15.94	
Manor Place Subdivision	11.48	
Tower Rd.	15.60	
Mill St.	14.01	
Jaffrey St.	25.51	

Materials in stock as of December 31, 1977:

2,076 Lin. Ft. of 8" A.C. @ \$2.74 per foot.....	\$ 5,688.24
631 Lin. Ft. of 10" A.C. @ \$2.46 per foot.....	1,552.26
60 Lin. Ft. of 12" A.C. @ \$2.60 per foot.....	156.00
8-8" Special "B" St. Thru Sections @ \$132.77 each.	1,062.16
9-10" Special "B" St. Thru Sections @ \$117.44 each.	1,056.96
4-8" 3-Way-Rt. Special "B" Sections @ \$146.48 each.	585.92
12-8" 3-Way-Lt. Special "B" Sections @ \$125.38 each.	1,504.56
24-"A" Sections @ \$31.98 each.....	767.52
2-"C" Sections @ \$102.64 each.....	205.28
50-"D" Sections @ \$25.67 each.....	1,283.50
16-Flat Top "Dx" Sections @ \$21.17 each.....	338.72
 TOTAL.....	 <u>\$14,201.12</u>

CAPITAL ACCOUNT SURFACE SEWER

GROSS EXPENDITURE.....	\$ 466,491.71
LESS CREDITS.....	<u>433,221.15</u>
NET EXPENDITURE.....	<u>\$ 33,270.56</u>

The above total credit is made up as follows:

Government of Canada - Rebate on Federal Sales Tax on Brick.....	\$ 1,290.60
Province of New Brunswick - 1977 Improvements to Designated Routes.....	100,733.34
Journal Vouchers (Materials paid for by Capital Account Surface Sewer & Charged to other City Departments).....	69,980.28
Work Done & Materials sold to Private Parties.....	5,949.60
Khoury Real Estate Ltd. - Forest Hill Estates).....	12,638.56
Chippin's Ltd. - Vanier Subdivision.....)	24,679.04
N.B. Housing Corp. - Vanier Subdivision.....)	2,172.84
Hill Brothers Ltd. - Sewell St. Ext.....)	LOCAL.....
Metro Builders Ltd. - Manor Place Subdivision.).....	IMPROVEMENT.....
Elbridge Wilkins - Willis St.-Elm Ct.....)	CHARGES.....
Chippins Ltd. - Dunn Acres Subdivision.....)	83,819.99
D & R Cowperthwaite - Tower Rd.....)	20,436.36
N.B. Housing Corp. - MacPherson St.....)	22,203.48
Multi-Ventures Ltd. - Re Damaged Materials.....	165.26
Spade Const. Ltd. - Re Damaged Materials.....	46.38
E.J. Ludford Line - Re Damaged Materials.....	180.40
TOTAL.....	\$ 433,221.15

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

Location	Lineal Feet - Concrete Pipe										Corru-gated 15"
	10"	12"	15"	18"	21"	24"	30"	36"	42"	48"	
Forest Hill Est.-											
Boyne Ct.	67	130	300			55					
Sewell St-Lawson Ct.	462	1,067	579	807							
Dunn Acres	266	60	342	1,552		415					
Willis St.	61	599			658						
Brunswick St.											
Church St.		44									
**Holland St.-											
McMann St.	165	190	270			193					
**Corbett Ave.-											
Carman Ave.	252	380	450	1,146		422					
Manor Place Subdivision	142	547	331	156							
Tower Rd.	84	269	44				566				
MacPherson St. (Incomplete)				858	666						
Jaffrey St.	21	463									
Vanier Subdivision (1977)	282	1,078									
Beaverbrook St. (600 Block)	40										
*Royal Road	1,063	643	212								
Wetmore Rd.	100										
**Legere St.						160					
**East Nash- waaksis-128-16	716	3,282	227	1,154							
**West Nash- waaksis-128-17	793	2,078	1,641	737		546		819	448		
**Nashwaaksis- 128-20	192										
**Haines Cres.- William St.	54		160		216		200				
**Canada St.											
**Hanwell Rd.											

Location	Lineal Feet - Concrete Pipe										Corruga-ted 15"
	10"	12"	15"	18"	21"	24"	30"	36"	42"	48"	
**Riverview Ct.		174		32							30
**Woodstock Rd. #1				189				60			
**Woodstock Rd. #2			40	214	270			582			
**Woodstock Rd. #3						234		190			
**Route 105-Douglas						64					
Lincoln Heights	434	1,229	888	898		557	340	329	1,741		
Vanier Ind. Park	152		1,408		1,086					4,004	
Offtake-Rochester St.	125										
New Bridge Job	37										
TOTALS	5,508	12,433	7,764	8,481	1,086	2,846	906	1,980	2,189	4,004	30

*Expenditures charged to upgrading of Designated Routes

**See Capital Service Development Projects for Costs.

Total Lineal Feet of Main Installed in 1977 = 47,227 = 8.94 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
Forest Hill Est.-				
Boyne Ct.	\$ 8,557.25	\$ 298.23	\$ 3,783.08	\$ 12,638.56
Sewell St.-Lawson Ct.	37,618.00	1,500.82	20,961.73	60,080.55
Dunn Acres	60,949.00	619.55	21,240.52	82,809.07
Willis St.	5,070.15	347.78	4,371.21	9,789.14
Brunswick St.	17,072.20	4,232.54	7,345.41	28,650.15
Holland St.-McMann St.	13,033.60	830.47	7,339.72	21,203.79
Corbett Ave.-Carman Ave.	65,184.25	7,634.69	21,519.71	94,338.65
Manor Place Subdivision	9,605.25	-	9,450.08	19,055.33
Tower Pd.	11,863.25	515.55	8,057.56	20,436.36
MacPherson St.	10,887.84	1,055.19	9,986.76	21,929.79
Jaffrey St.	6,142.00	1,491.51	4,930.94	12,564.45
Vanier Subdivision (1977) - Chippin	11,429.92	432.58	10,200.84	22,063.34
Vanier Subdivision (1977) - N.B.H.C.	1,276.61	123.35	425.92CR	974.04
TOTALS	\$258,689.32	\$19,082.26	\$128,761.64	\$406,533.22

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"
Forest Hill Est.-Boyne Ct.	\$23.63	\$24.92	\$25.36	\$	\$	\$
Sewell St.-Lawson Ct.	19.11	20.40	20.84	21.60		
Dunn Acres	28.95	30.24	30.36	31.44	33.72	
Willis St.	13.66	14.95			44.56	
Brunswick St.						
Holland St.-McMann St.	23.92	25.21	25.65		28.69	
Corbett Ave.-Carman Ave.	33.28	34.57	35.01	35.77	38.05	
Manor Place Subdivision	14.79	16.08	16.52	17.28		
Tower Rd.	19.21	20.50	20.94			21.99
Jaffrey St.	23.23	24.52				

Stock on hand December 31, 1977:

560 Lin. Ft. of 10" Concrete @ \$ 2.30 per foot.....	\$ 1,288.00
1,232 Lin. Ft. of 12" Concrete @ \$ 3.59 per foot.....	4,422.88
688 Lin. Ft. of 15" Concrete @ \$ 4.03 per foot.....	2,772.64
672 Lin. Ft. of 18" Concrete @ \$ 4.79 per foot.....	3,218.88
504 Lin. Ft. of 24" Concrete @ \$ 7.07 per foot.....	3,563.28
112 Lin. Ft. of 30" Concrete @ \$ 10.17 per foot.....	1,139.04
120 Lin. Ft. of 36" Concrete @ \$ 18.58 per foot.....	2,229.60
33 C.B. Frames & Covers @ \$158.65 each.....	5,235.45
20 M.H. Frames & Covers @ \$158.65 each.....	3,173.00
TOTAL.....	\$ 27,042.77

CAPITAL ACCOUNT WATER

GROSS EXPENDITURE.....	\$ 602,031.48
LESS CREDITS.....	<u>367,801.51</u>
NET EXPENDITURE.....	<u>\$ 234,229.97</u>

The above credit is made up as follows:

Journal Vouchers (Materials Paid for by Capital Account Water & Charged to other City Departments).....	\$ 16,545.44
Work done & materials sold to Private Parties.....	8,206.78
Khoury Real Estate Services - Forest Hill Estates.....	37,225.18
N.B. Housing - MacPherson Street.....	19,768.69
Chippins Ltd. - Vanier subdivision.....	47,751.49
N.B. Housing - Vanier Subdivision.....	8,961.16
Hill Brothers Ltd. - Sewell St. Extension.... LOCAL ..	47,207.65
Metro Builders Ltd. - Manor Place Subdivision) .. IMPROVEMENT	20,672.85
Elbridge Wilkins - Willis Street..... CHARGES	7,764.37
Chippins Ltd. - Dunn Acres subdivision.....	77,142.55
D.G.R. Cowperthwaite - Tower Road.....	2,446.67
Neighbourhood Improvement Program - Regarding Work on Church St.....	11,639.35
Neighbourhood Improvement Program - Regarding Work on Union St.....	62,469.33
TOTAL.....	\$367,801.51

Watermain Installations were made at the following locations
in 1977:

Location	Lineal Feet					
	4"	6"	8"	10"	12"	14"
Forest Hill Est.-Boyne Ct.		40		1,186		
Sewell St.-Lawson Ct.		600	2,311			
Dunn Acres		84		2,262		
Willis St.		11	319			
Union St.	4	146	78		3,436	
Church St.		63	659			
*Holland St.-McMann St.		286	332			
Manor Place Subdivision		315	1,013			
Forest Hill System		65	5	2,383		
*Mill St.		510				
MacPherson (Incomplete)		40	1,036			
Vanier Subdivision (1977)		1,098	2,155			
*Woodstock Rd. #1		25	1,079	50	6,489	
*Woodstock Rd. #2		409			57	
*Woodstock Rd. #3			5,713	1,367	47	
Lincoln Heights		177	1,779		677	2,854
Vanier Ind. Park					5,732	471
East Nashwaaksis (128-16)		262	122			
Tower Road		13				
TOTALS	4	4,144	16,601	7,248	16,438	3,325

*See Capital Service Development Projects for Costs.

TOTAL LINEAL FEET OF MAIN INSTALLED IN 1977 = 47,760 = 9.04 MILES

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

Location	Payments to Contractors Including Reserve for Holdbacks	City Labour & Machinery	Materials	Total
Forest Hill Est.-Boyne Ct.	\$12,185.12	\$ 7,494.86	\$ 17,545.20	\$ 37,225.18
Sewell St.-Lawson Ct.	17,138.00	895.07	29,174.58	47,207.65
Dunn Acres	45,304.60	2,485.16	29,352.79	77,142.55
Willis St.	2,995.70	507.99	4,260.68	7,764.37
Union St.	52,121.52	13,636.58	73,073.72	138,831.82
Church St.	11,720.20	2,946.40	11,283.50	25,950.10
Holland St.-McMann St.	5,701.88	1,178.43	7,618.65	14,498.96
Manor Place Subdivision	8,736.00	-	14,755.88	23,491.88
Forest Hill System	66,542.80	5,456.45	31,695.70	103,694.95
Mill St.	5,047.90	921.49	2,256.56	8,225.95
MacPherson St.(Incomplete)	8,353.16	926.80	11,426.34	20,706.30
Vanier Subdivision(1977) - Chippin	17,264.10	1,101.48	28,110.91	46,476.49
Vanier Subdivision(1977) - N.B.H.C.	4,004.10	208.42	4,748.64	8,961.16
Tower Road	638.00	302.32	1,506.35	2,446.67
TOTALS	\$257,753.08	\$38,061.45	\$266,809.50	\$562,624.03

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"	12"
Forest Hill Est.-Boyne Ct.	\$26.07	\$	\$30.51	\$
Sewell St.-Lawson Ct.	14.54	16.65		
Dunn Acres	28.60		33.04	
Willis St.	21.49	23.60		
Union St.	31.32	33.43		38.29
Church St.	32.07	34.18		
Holland St.-McMann St.	22.32	24.43		
Manor Place Subdivision	16.08	18.19		
Forest Hill System	37.95	40.06	42.39	
Mill St.	16.12			
Vanier Subdivision	14.84	17.10	19.28	

Total Inventory Value as of December 31, 1977..... \$ 43,844.76

Cost of Well Water Supply To Date (South Side)

Total Cost to December 31, 1976.....	\$ 1,261,121.70
<u>Plus: Expenditures for 1977.....</u>	<u>-</u>
TOTAL COST TO DECEMBER 31, 1977.\$	<u>1,261,121.70</u>

Cost of Well Water Supply to Date (North Side)

Total Cost to December 31, 1976.....	\$ 968,808.16
<u>Plus: Expenditures for 1977.....</u>	<u>\$ 69,110.74</u>
TOTAL COST TO DECEMBER 31, 1977.\$	<u>1,037,918.90</u>

The expenditures for 1977 were for the following:

Water Exploration.....	\$ 58,534.00
Killarney Reservoir.....	8,823.11
Marysville Reservoir.....	1,753.63
	\$ 69,110.74

Cost of Developing Water Supply for Silverwood to Date

Total Cost to December 31, 1976.....	\$ 175,278.23
<u>Plus: Expenditures for 1977.....</u>	<u>\$ 10,725.89</u>
TOTAL COST TO DECEMBER 31, 1977\$	<u>186,004.12</u>

The expenditures for 1977 were for the following:

30 H.P. Submersible Turbine Plus Starter & Cable.....	\$ 5,786.15
T.R.W. Pleuger Submersible Pump.....	4,166.64
Installation of Phase Protector for #3 Well.	773.10
	\$ 10,725.89

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 1977 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 and 1976 were \$1,500,000, \$1,250,000, and \$1,000,000 respectively.

Following is a summary of C.S.D.P. Costs from 1974 to 1977:

Service	GROSS EXPENDITURES				
	1974	1975	1976	1977	Totals
Water Domestic Sewer	\$ 563,987.05	\$1,570,278.37	\$ 827,814.68	\$ 786,027.11	\$ 3,748,107.21
Storm Sewer Service	169,761.70	1,051,072.99	468,296.19	1,165,312.06	2,854,442.94
Depot & Equipment	494,027.15	792,489.97	588,338.30	903,921.97	2,778,777.39
Equipment Acquisition	13,873.23	366,636.81	556,806.34	19,458.69	956,775.07
Solid Waste Disposal	479,053.44	165,149.47	189,961.50	146,862.61	981,027.02
TOTALS	\$1,723,855.91	\$3,954,353.03	\$2,646,338.11	\$3,039,188.05	\$11,363,735.10

Projects whether commenced or completed in 1977, will be dealt with individually below.

NOTE: Expenditures will be dealt with only. For any projects 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 - Bird Ave., & Teak Dr. - 128-13

This project included the upgrading of watermains on Bird Ave. and Teak Dr., including the connection of house services to the new mains and also the construction of manholes around gate valves, formerly protected by standpipe, on various streets in the Nashwaaksis area. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 47,481.28
1977 NET EXPENDITURE.....	<u>305.12</u>
TOTAL NET EXPENDITURE OF PROJECT... \$ TO DATE	<u>47,786.40</u>

(2) C.S.D.P. - Storm Sewer - Cedar Ave., Bird Ave., Teak Dr., Hilltop Dr., Willow Ave., Lynn St., Douglas Ave., Brookside Dr. - 128-13

This project involved the installation of storm sewer mains and connection of storm sewer house laterals for the above streets, the relocation of Friels Creek in the Douglas Ave. Area and the construction

of a storm sewer outfall on Lynn St. The expenditure in 1977 was for holdback, progress payments, and engineering fees.

1976 NET EXPENDITURE.....	\$ 417,773.55
1977 NET EXPENDITURE.....	<u>10,550.18</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 428,323.73</u>

(3) C.S.D.P. - Domestic Sewer - Douglas Ave. - 128-13

This project involved the installation of 15" Concrete Domestic Sewer Pipe under the C.P.R. Crossing on Douglas Ave. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 2,977.67
1977 NET EXPENDITURE.....	<u>25.67</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 3,003.34</u>

(4) C.S.D.P. - Storm Sewer - Silverwood

This project involved the installation of storm sewer mains on Mountain Dr., Islandview Dr., Arlington St., Oriole Ct., Silverwood Rise, and Silverwood Ct. including the connection of any existing storm sewer house drains. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 59,279.70
1977 NET EXPENDITURE.....	<u>3,555.65</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 62,835.35</u>

(5) C.S.D.P. - Water - Silverwood Supply Line

This project involved the installation of an 8" water supply main from the new well location to the Silverwood Reservoir. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 72,306.04
1977 NET EXPENDITURE.....	<u>2,622.00</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 74,928.04</u>

(6) C.S.D.P. - Domestic Sewer - Killarney Rd. - 75605

This project involved the installation of domestic sewer mains from existing to the end of gravity grade on Killarney Rd. The expenditure in 1977 was for balance of holdback.

1975 NET EXPENDITURE.....	\$ 110,984.04
1976 NET EXPENDITURE.....	<u>15,883.32</u>
1977 NET EXPENDITURE.....	<u>4,569.32</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 131,436.68</u>

(7) C.S.D.P. - Water - Killarney Rd. - 75605 & 75606

This project involved the installation of water mains from the former City of Fredericton line to the new reservoir near Killarney Lake. The expenditure in 1977 was for progress payments, holdback payments and professional service payments.

1975 NET EXPENDITURE.....	\$ 516,738.60
1976 NET EXPENDITURE.....	255,522.50
1977 NET EXPENDITURE.....	<u>27,999.96</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE....	<u>\$ 800,261.06</u>

(8) C.S.D.P. - Water - Killarney Rd. Reservoir - 75607

This project involved the construction of a new reservoir near Killarney Lake to service Killarney Rd. and the second level supply system, North Fredericton. The expenditure in 1977 was for holdback and professional service payments.

1975 NET EXPENDITURE.....	\$ 219,523.64
1976 NET EXPENDITURE.....	42,041.26
1977 NET EXPENDITURE.....	<u>8,823.11</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE....	<u>\$ 270,388.01</u>

(9) C.S.D.P. - Water - Power Line Right-of-Way - 75608

This project involved the extension of watermains from Killarney Rd. to service the new Nashwaaksis Junior High School and the Nashwaaksis Second Level Water System. It also included a short section of domestic sewer main for connection of the high school system. The expenditure in 1977 was for holdback.

1975 NET EXPENDITURE.....	\$ 4,936.75
1976 NET EXPENDITURE.....	222,352.66
1977 NET EXPENDITURE.....	<u>7,694.90</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE....	<u>\$ 234,984.31</u>

(10) C.S.D.P. - Water - Killarney Rd. Service Connections - 76607

This project involved the installation of service lines from the main lines to the property lines on Killarney Rd. The expenditure in 1977 was for Journal Vouchers (Payroll), progress payments and professional service payments.

1976 NET EXPENDITURE.....	\$ 38,925.39
1977 NET EXPENDITURE.....	<u>8,433.83</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE....	<u>\$ 47,359.22</u>

(11) 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. This work was finalized in 1977.

1974 NET EXPENDITURE.....	\$ 45,591.47
1975 NET EXPENDITURE.....	717,558.67
1976 NET EXPENDITURE.....	374,182.87
1977 NET EXPENDITURE.....	<u>48,216.31</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$1,185,549.32</u>

(12) 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. This work was finalized in 1977.

1974 NET EXPENDITURE.....	\$191,390.23
1975 NET EXPENDITURE.....	372,077.90
1976 NET EXPENDITURE.....	63,836.98
1977 NET EXPENDITURE.....	<u>8,246.88</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$635,551.99</u>

(13) C.S.D.P. - Domestic Sewer - Nashwaaksis Stream Siphon

This project involved work to increase the capacity of the existing siphon across the Nashwaaksis Stream. The expenditure in 1977 was for professional services and holdback.

1975 NET EXPENDITURE.....	\$ 3,700.77
1976 NET EXPENDITURE.....	26,687.51
1977 NET EXPENDITURE.....	<u>3,635.64</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 34,023.92</u>

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

The expenditure incurred under this project was for a preliminary survey done by J.E. Brooks & Associates regarding 1977 construction in Nashwaaksis.

1977 NET EXPENDITURE.....	\$ <u>350.34</u>
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(15) C.S.D.P. - Storm Sewer - Charles Ave.

This project involved the installation of storm sewer on Charles Ave. and the construction of a headwall at the Nashwaak River. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 12,570.94
1977 NET EXPENDITURE.....	<u>562.82</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 13,133.76</u>

(16) C.S.D.P. - Storm Sewer - Edgewood Dr.

This project involved the installation of storm sewer on a portion of Edgewood Dr. beginning at Brookside Dr. The expenditure in 1977 was for holdback.

1976 NET EXPENDITURE.....	\$ 10,309.09
1977 NET EXPENDITURE.....	<u>678.66</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 10,987.75</u>

(17) C.S.D.P. - Storm Sewer - Legere St.

The purpose of this project was to connect the drainage ditch on Legere St. to existing pipe near L.&A. Machine Works. This was done by installing 24" Conc. pipe.

1977 NET EXPENDITURE.....	<u>\$ 3,126.22</u>
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(18) 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 1977 was for progress payments and professional services.

1977 NET EXPENDITURE.....	<u>\$ 356,929.37</u>
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(19) 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 1977 was for materials and progress payments.

1977 NET EXPENDITURE.....	<u>\$ 35,887.87</u>
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(20) 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 1977 was for progress payments and professional services.

1977 NET EXPENDITURE.....	<u>\$ 343,034.16</u>
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(21) C.S.D.P. - Water - West Nashwaaksis - 128-17

This project involved the installation of hydrants on the existing main on Burpee St. and also the construction of manholes around gate valves, formerly protected by standpipe, on various streets in the West Nashwaaksis Area. The expenditure in 1977 was for materials and progress payments.

1977 NET EXPENDITURE..... \$ 20,612.37

(22) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-20

This project involved the correction of property drainage problems on MacDonald Ave., Lawrence Cres., and Bird Ave. The expenditure in 1977 was for progress payments, materials, and professional services.

1977 NET EXPENDITURE..... \$ 5,200.27

(23) C.S.D.P. - Storm Sewer - Preston Dr.

The expenditure for this project was for ditching on Preston Dr. by City Forces.

1977 NET EXPENDITURE..... \$ 335.74

(24) C.S.D.P. - Water - Haines Cres.

This project involved the construction of manholes around gate valves, formerly protected by standpipe by City Forces.

1977 NET EXPENDITURE..... \$ 1,289.67

(25) C.S.D.P. - Storm Sewer - Haines Cres.

This project involved the installation of piping to drain the City of Fredericton Park Area located between Haines Cres. & William St. by City Forces.

1977 NET EXPENDITURE..... \$ 3,170.80

(26) C.S.D.P. - Storm Sewer - Douglas Ave.

This project involved ditching along Route 105 and also the installation of storm sewer along a portion of Route 105 and Spencer St. to provide drainage and to help eliminate ice build-up during winter conditions.

1977 NET EXPENDITURE..... \$ 13,511.80

(Cost Recovered under Designated Routes)

(27) C.S.D.P. - Storm Sewer - Canada St.

This project involved the intercepting of an outfall near the Gulf Station on Canada St. and installing pipe along Canada St. to bring the drainage to another location. Piping was also placed in the area of 493 Canada St. to eliminate water from a low lying lot which was a hazard to public safety.

1977 NET EXPENDITURE..... \$ 9,384.28
(Cost Recovered Under Designated Routes)

(28) C.S.D.P. - Water - Marysville Area

This project involved the upgrading of house services on portions of Canada St., Bridge St., and River St., and the installation of hydrants and construction of gate valve manholes on various streets.

1977 NET EXPENDITURE..... \$ 12,691.60

(29) C.S.D.P. - Water - Marysville Reservoir

The expenditures incurred under this account were for the demolition of the old reservoir and for the connection of the old reservoir piping to the new reservoir piping.

1977 NET EXPENDITURE..... \$ 1,753.63

(30) C.S.D.P. - Domestic Sewer - Marysville Area

The expenditure incurred for this project was for material used in upgrading of services.

1977 NET EXPENDITURE..... \$ 612.36

(31) C.S.D.P. - Water and Domestic Sewer - Mill St.

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. The purpose of this project was to construct new mains to prevent this and to connect the house services to the new system.

NET WATER EXPENDITURE.....	\$ 8,225.95
NET DOMESTIC SEWER EXPENDITURE.....	<u>6,965.92</u>
TOTAL NET EXPENDITURE FOR PROJECT.....	<u>\$15,191.87</u>

(32) 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.

GROSS EXPENDITURE.....	\$ 96,497.31
LESS CREDITS.....	<u>2,158.66</u>
1977 NET EXPENDITURE.....	<u>\$94,338.65</u>

(33) 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.

NET WATER EXPENDITURE.....	\$14,498.96
NET DOMESTIC SEWER EXPENDITURE.....	15,326.10
NET STORM SEWER EXPENDITURE.....	<u>21,203.79</u>
TOTAL NET EXPENDITURE FOR PROJECT.....	<u>\$51,028.85</u>

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

The project involved the rebuilding of lift station # 15 on Riverside Dr. together with supplying and installing any piping required. The 1977 expenditure was for property surveys, property appraisals, progress payments and professional services.

1977 NET EXPENDITURE.....	\$51,163.43
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(35) C.S.D.P. - Storm Sewer - Hanwell Rd.

This project involved the piping of the ditch in the area of Greer & Son Ltd. to intercept a water course running across the Greer property.

1977 NET EXPENDITURE.....	\$ 1,926.26
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(36) C.S.D.P. - Storm Sewer - Riverview Ct.

This project involved the installation of storm sewer in a portion of the ditched area along Riverview Ct. to provide drainage which was hindered due to a breakdown of a wooden culvert.

1977 NET EXPENDITURE.....	\$ 3,087.82
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(37) C.S.D.P. - Water - Woodstock Rd. - Garden Creek Area - 75613, 75614, 75615

This project involved the installation of watermains on a section of the Golf Club Rd., Riverside Ct., Woodstock Rd. and a section along the Trans Canada Highway to Montieth 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.

GROSS EXPENDITURE - 1977.....	\$593,314.65
PREVIOUS GROSS EXPENDITURE.....	<u>20,095.81</u>
TOTAL GROSS EXPENDITURE TO DATE.....	613,410.46
LESS CREDITS: GOV'T STIMULATION	
GRANT.....	\$407,180.24
CAN. BRIT. LTD. -	
OVERPAYMENT.....	<u>127.96</u>
NET EXPENDITURE OF PROJECT TO DATE.....	<u>407,308.20</u>
	\$206,102.26

(38) 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 Trans Canada Highway to Montieith 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.

GROSS EXPENDITURE -1977.....	\$988,217.72
PREVIOUS GROSS EXPENDITURES.....	<u>164,907.54</u>
TOTAL GROSS EXPENDITURE TO DATE.....	\$1,153,125.26 ➔
LESS CREDITS: GOV'T STIMULATION	
GRANT.....	\$592,819.76
CAN. BRIT. LTD. -	
OVERPAYMENT.....	179.75
	592,999.51
NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$560,125.75</u>

SUMMARY OF PROJECT TO DATE

GROSS WATER & DOMESTIC SEWER EXPENDITURES -	
1977.....	\$1,581,532.37
PREVIOUS GROSS WATER & DOMESTIC SEWER EXPENDITURES.....	<u>185,003.35</u>
TOTAL GROSS EXPENDITURE OF PROJECT TO DATE...	\$1,766,535.72
LESS CREDITS: GOV'T STIMULATION	
GRANTS.....	\$1,000,000.00
CAN. BRIT. LTD. -	
OVERPAYMENTS.....	307.71
	1,000,307.71
TOTAL NET EXPENDITURE OF PROJECT TO DATE.....	<u>\$1,766,228.01</u>

(39) C.S.D.P. - Water - Silverwood

The expenditure for this account was for the purchase of a 30 H.P. submersible turbine plus starter and cable, the purchase of a T.R.W. Pleuger submersible pump and for the supply and installation of a phase protector for the #3 well.

1977 EXPENDITURE.....	\$10,725.89
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(40) C.S.D.P. - Domestic Sewer - Silverwood

The expenditure under this account was for the purchase of a SA 75 Quantum Series Aerator.

1977 EXPENDITURE.....	\$ 2,784.00
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(41) C.S.D.P. - Storm Sewer - New Bridge Job

This project involved the installation of storm sewer to drain the area around the pumping station once fill was placed from the dredging operation.

1977 EXPENDITURE.....	\$ 4,622.73
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(42) C.S.D.P. - Service Depot - North Fredericton

The expenditure under this account in 1977 was holdback payment and professional services for the construction of the Depot.

1977 NET EXPENDITURE.....	\$12,826.19
1976 NET EXPENDITURE.....	528,098.51
1975 NET EXPENDITURE.....	366,636.81
1974 NET EXPENDITURE.....	<u>13,873.23</u>
TOTAL NET EXPENDITURE OF PROJECT TO DATE.	<u>\$921,434.74</u>

(43) C.S.D.P. - Equipment Acquisition

In 1977, the City purchased such equipment as graders, sidewalk plows, sand spreaders, etc. under Service Development. (See List of Machinery purchased and charged to Capital Service Development Equipment.)

1977 NET EXPENDITURE.....	\$146,862.61
1976 NET EXPENDITURE.....	189,961.50
1975 NET EXPENDITURE.....	165,149.47
PREVIOUS EXPENDITURES.....	<u>101,148.32</u>
TOTAL EXPENDITURE TO DATE.....	<u>\$603,121.90</u>

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

Expenditures incurred for this project in 1977 were for professional service by MacLaren Atlantic Ltd. and for a Bond Discount.

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 EXPENDITURE OF PROJECT TO DATE.....	<u>\$ 44,605.47</u>

(45) C.S.D.P. - Water - Nashwaaksis - 128-11

The expenditure incurred under this account in 1977 was for a 1% holdback payment regarding 1975 construction.

1977 EXPENDITURE.....	\$ 917.05
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(46) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-11

The expenditure incurred under this account in 1977 was for a 1% holdback payment regarding 1975 construction.

1977 EXPENDITURE.....	\$ 1,565.18
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(47) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-21

1977 EXPENDITURE..... \$ 14,284.40

The above expenditure was for professional services regarding a preliminary survey for 1978 construction and for electrostatic prints for 1978 construction.

(48) C.S.D.P. - Storm Sewer - Nashwaaksis - 128-22

1977 EXPENDITURE..... \$ 9,090.00

The above expenditure was for professional services regarding a preliminary survey for 1978 construction.

(49) C.S.D.P. - Salt Storage Shed

The expenditure incurred for this project in 1977 was for progress payments. Construction began in 1976 and finalized in 1977.

1977 NET EXPENDITURE..... \$ 6,632.50

1976 NET EXPENDITURE..... 28,667.93

TOTAL NET EXPENDITURE OF PROJECT..... 35,300.43

(50) C.S.D.P. - Storm Sewer - Foster St.

The expenditure incurred under this account was for the installation of storm sewer to eliminate a drainage problem caused by runoff from the City of Fredericton Park Area.

1977 NET EXPENDITURE..... \$ 615.68

(51) C.S.D.P. - Domestic Sewer - Crocket St.

This work involved the location of the end of existing domestic sewer main on Crocket St. for future development.

1977 NET EXPENDITURE..... \$ 602.04

(52) C.S.D.P. - Storm Sewer - Greenwood Drive

This work involved the installation of storm sewer offtake from Greenwood Drive, through property at #222 Greenwood Drive.

1977 NET EXPENDITURE..... \$ 1,266.00

(53) C.S.D.P. - Water - Woodstock Rd. - 75616

The expenditure for this account was for professional services.

1977 NET EXPENDITURE..... \$ 2,200.00

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

The expenditure for this account was for professional services.

1977 NET EXPENDITURE..... \$ 3,211.91

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

The expenditure for this account was for professional services.

1977 NET EXPENDITURE..... \$ 1,151.82

(56) C.S.D.P. - Domestic Sewer - Woodstock Rd. - 77853

The expenditure for this account was for professional services regarding 1978 construction.

1977 NET EXPENDITURE..... \$ 837.60

(57) C.S.D.P. - Water - Corbett Ave. and Carman Ave.

This project involved the construction of valve chambers around gate valves originally protected by standpipe.

1977 EXPENDITURE..... \$ 5,069.24

(58) C.S.D.P. - Water and Domestic Sewer - Northwest Fredericton

ADI Limited was commissioned by the City of Fredericton to prepare a preliminary engineering report for ultimate water and sewer servicing of Northwest Fredericton. The study area consisted of the areas of Douglas, West Nashwaaksis, Royal Road, McLeod Hill Road, Brookside Drive and Killarney Road north of the N.B.E.P.C. power lines. The expenditure in 1977 was for ADI's services.

1977 EXPENDITURE..... \$ 15,958.56

DESIGNATED ROUTES

The City of Fredericton has a total of 38.238 miles of provincial designated highways within its boundaries. In 1977 the provincial government paid \$1452 and \$366 per lane mile towards winter and summer maintenance of these 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 1977:

	<u>Location and Type of Construction</u>	<u>Cost of Construction</u>
1.)	Storm Sewer Installation on Route 620-Royal Road.....	\$ 56,508.83
2.)	Preparation by City Crews for re-sealing Route 101, Regent St. at T.C.H. overpass.....	93.14
3.)	Storm Sewer Installation, Route 12, Woodstock Rd.....	44,224.51
4.)	Storm Sewer Installation, Route 105, Douglas.....	13,511.80
5.)	Curb and Gutter Installation, Route 12, Lincoln Rd....	18,365.61
6.)	Storm Sewer Installation, Route 10, Greenwood Dr.....	1,266.00
7.)	Storm Sewer Installation, Route 8, Canada Street (2 locations).....	9,384.28
8.)	Storm Sewer Relocation at Fredericton Water works to provide drainage affected by Riverfront dredging....	4,622.73
9.)	Recap Route 8, Canada Street.....	72,641.64
10.)	Re-seal Route 12, Lincoln Road.....	10,291.25
11.)	Re-seal Route 101, Regent St. at Prospect St. intersection, T.C.H. overpass barrier to Regent Mall entrance.....	6,824.06
	TOTAL COSTS INCURRED.....	\$ 237,733.85

The following items of machinery were purchased in 1977 and charged to CAPITAL SERVICE DEVELOPMENT (EQUIPMENT):

1 - Model SW-48FA Sidewalk Plow - Asset No. 124

Cost.....	\$ 15,221.00
Less Federal Sales Tax.....	<u>1,309.32</u>
Sub-Total.....	\$ 13,911.68
Plus 8% S.S.&E. Tax.....	<u>1,112.93</u>
Sub-Total.....	\$ 15,024.61
Less Payments.....	<u>6,156.00</u>
Balance Total...	\$ 8,868.61

2 - Galion Model T-500A Graders - Asset No.'s 46-77 & 47-77

Cost.....	\$ 97,800.00
Plus 8% S.S.&E. Tax.....	<u>7,824.00</u>
Total Cost.....	\$ 105,624.00

2 - Blade Tilt Assemblies for Above Graders

Cost.....	\$ 2,400.00
Labour.....	<u>450.00</u>
Sub-Total.....	\$ 2,850.00
Plus 8% S.S.&E. Tax.....	<u>192.00</u>
Total Cost.....	\$ 3,042.00

1 - Ford Model A-64 Loader - Asset No. 142-77

Cost.....	\$ 54,488.00
Less Trade: Allis Chalmers Loader #142..	<u>32,488.00</u>
Sub-Total.....	\$ 22,000.00
Plus 8% S.S.&E. Tax.....	1,760.00
Plus License.....	6.00
Total Cost.....	<u>\$ 23,766.00</u>

1 - Model 0-560-10 Fox Sand Spreader

Cost.....	\$ 5,150.00
Plus 8% S.S.&E. Tax.....	<u>412.00</u>
Total Cost.....	<u>\$ 5,562.00</u>

CAPITAL ACCOUNT GRAVEL ROADS

GROSS EXPENDITURE.....	\$ 295,931.05
LESS CREDITS.....	<u>194,852.71</u>
NET EXPENDITURE.....	<u>\$ 101,078.34</u>

The above credits are made up as follows:

Journal Vouchers (Gravel, Grade Stakes, Etc.).....	\$ 25,391.48
N.B. Housing Corp. - Bunker St., Elliott St.,)	
Page St., Tapley Ct.....)	4,472.60
Khoury Real Estate Services - Forest Hill)	
Estates.....)	6,926.55
Chippin's Ltd. - Vanier Subdivision.....)	38,230.28
N.B. Housing Corp. - Vanier Subdivision....) LOCAL..	8,980.94
Hill Brothers Ltd. - Sewell Street)	
Extension.....)	IMPROVEMENT 38,105.13
Metro Builders Ltd. - Manor Place)	CHARGES
Subdivision	16,116.33
Elbridge Wilkins - Willis St. - Elm Ct.....)	3,699.05
Chippin's Ltd. - Dunn Acres Subdivision.....)	34,753.42
D. & R. Cowperthwaite - Tower Road.....)	14,195.27
N.B. Housing Corp. - MacPherson St.....)	424.05
Materials Used on Service Installations.....	<u>3,557.61</u>
TOTAL.....	<u>\$ 194,852.71</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 & Gutter" which is found in the body of this report on page 19. The expenditure for gravelling curbed streets amounted to \$82,492.96.

(2) Gravel Road Construction

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

Location	Lineal Feet	Expenditure
Boyne Ct.	222	\$ 6,926.55
Sewell St.-Lawson Ct.	2,809	38,105.13
Dunn Acres (Incomplete)	2,292	34,753.42
Willis St.	338	3,699.05
Holland St.-McMann St.	681	12,819.79
Manor Place Subdivision	1,257	16,116.33
Tower Rd.	755	14,195.27
Vanier Subdivision	2,966	47,125.37
TOTALS	11,320	\$173,740.91

The total mileage for new street construction under Capital Account Gravel Roads for 1977 = 3.08 Miles.*

*Includes Lincoln Heights Subdivision.

CAPITAL ACCOUNT TRAFFIC LIGHTS

EXPENDITURE..... \$ 11,841.26

The above expenditure is made up as follows:

Journal Vouchers (Payroll, Pensions, Machinery, etc.).....	\$ 691.26
Stan Cassidy Ltd. (Final Payment - Regent St. & Priestman St.).....	1,150.00
Stan Cassidy Ltd. (Payment # 1 - Smythe- Parkside-Priestman).....	<u>10,000.00</u>
TOTAL.....	\$ 11,841.26

CAPITAL ACCOUNT TOURISM

EXPENDITURE..... \$ 1,920.14

The above expenditure was for Journal Vouchers regarding payrolls, city machinery, materials, pensions, and superannuation.

CAPITAL ACCOUNT RECREATION

EXPENDITURE..... \$ 3,854.21

The above expenditure was for Journal Vouchers regarding payrolls, city machinery, materials, pensions, and superannuation.

CAPITAL ACCOUNT INDUSTRIAL PARK - STORM SEWER

In 1977, construction began on servicing a new industrial park off the Vanier Highway. This is a project being 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 cost 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 1977 of \$265,380.24 was for the City of Fredericton's portion regarding storm sewer construction and is made up as follows:

Multi-Ventures Ltd. (Progress Payments)..	\$ 238,941.21
Neill and Gunter Ltd. (Engineering & Technical Services).....	<u>26,439.03</u>
TOTAL.....	\$ <u>265,380.24</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.

LOCAL IMPROVEMENT - 1977

The following summary of Local Improvement Projects undertaken in 1977 or continued from 1976, shows the actual cost of construction charged to the Subdivider, including holdback payments.

Location	Service	Cost	No. of Lots
Chippins Ltd. - Vanier Subdivision (Emmerson St. & Ct., Blair St., & Hatheway St.) Contract No. 11-76	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk <u>Total</u>	\$ 49,506.47 44,430.96 64,653.04 38,448.49 9,000.00 <u>206,038.96</u>	58 Single
N.B. Housing Corporation Portion of Emmerson St. Contract No. 11-76	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk <u>Total</u>	\$ 10,668.77 6,736.02 8,769.15 9,183.32 3,240.00 <u>38,597.26</u>	2 Multiple
Khoury Real Estate Services Ltd. Forest Hill Estates Boyne Ct. Contract No. 1-77	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk <u>Total</u>	\$ 37,225.18 9,428.64 12,638.56 6,926.55 1,560.00 <u>67,778.93</u>	3 Multiple

Location	Service	Cost	No. of Lots
Hill Brothers Ltd. Sewell St. & Lawson Ct. Contract No. 2-77	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk Total	\$ 47,207.65 32,302.61 60,080.55 38,105.13 13,512.00 <u>\$ 191,207.94</u>	56 Single
Chippins Ltd.-Dunn Acres Subdivision Biggs St. & Forest Hill Ext. Contract No. 3-77 (Incomplete)	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk Total	\$ 77,142.55 30,946.14 83,819.99 34,753.42 13,200.00 <u>\$ 239,862.10</u>	18 Multiple
Elbridge Wilkins Sub- division Willis St. & Elm Ct. Contract No. 4-77 Domestic Sewer Installed Prior to Amalgamation	Water Domestic Sewer Storm Sewer Gravel Road Total	\$ 7,764.37 - 9,789.14 3,699.05 <u>\$ 21,252.56</u>	8 Single
Metro Home Builders* Ferris St., Portions of Jewett St. & Kent St. Contract No. 11-77	Water Domestic Sewer Storm Sewer Gravel Road Total	\$ 20,672.85 9,847.36 19,055.33 16,116.33 <u>\$ 65,691.87</u>	11 Single 4 Multiple
D.G.R. Cowperthwaite Housing Ltd. Tower Rd. Contract No. 13-77 Waterline existed- Charges for Hydrant Installations	Water Domestic Sewer Storm Sewer Gravel Road Total	\$ 2,446.67 11,264.72 20,436.36 14,195.27 <u>\$ 48,343.02</u>	20 Single
N.B. Housing Corporation Portion of MacPherson St. - Murray Ave. To Existing Contract No. 15-77 (Incomplete)	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk Total	\$ 19,768.69 13,830.05 22,203.48 424.05 6,600.00 <u>\$ 62,826.27</u>	19 Single 1 Multiple
Rocca Group Ltd. Lincoln Heights - Adams St., Piercy Cres., Portion of Goodine St. Installed by Developer Under City Supervision - Costs are estimates	Water Domestic Sewer Storm Sewer Gravel Road Sidewalk Total	\$ 170,000.00 110,000.00 210,000.00 102,000.00 29,310.00 <u>\$ 621,310.00</u>	72 Single 12 Multiple 1 Commercial

*Engineering costs and 12% of Water and Domestic Sewer costs to City of Fredericton by prior agreement with Village of Nashwaaksis.

SUMMARY OF COSTS TO SUBDIVIDERS FOR SERVICES - 1977

WATER.....	\$ 442,403.20
DOMESTIC SEWER.....	268,768.50
STORM SEWER.....	511,445.60
GRAVEL ROAD.....	263,851.61
SIDEWALK.....	76,422.00
TOTAL.....	<u>\$ 1,562,908.91</u>

Number of Lots Developed.....	244 Single
	40 Multiple
	1 Commercial

ENVIRONMENTAL HEALTH SERVICES

GROSS EXPENDITURE.....	\$ 393,350.49
LESS CREDITS.....	-
NET EXPENDITURE.....	<u>\$ 393,350.49</u>

Under the above heading, the following items are included:

(1) Garbage & Waste Collection

(2) Sanitary Landfill - Disposal

(1) Garbage & Waste Collection

In 1977, Garbage and Waste Collection was operated by Maritime S.&S. Ltd. The amount paid for the above operation was \$234,111.06 and is made up as follows:

Maritime S.&S. Ltd. - Collection Contract.	\$ 220,500.00
City of Fredericton - Security Deposits...	13,500.00
The Daily Gleaner - Advertisement.....	<u>111.06</u>
TOTAL.....	<u>\$ 234,111.06</u>

(2) Sanitary Landfill - Disposal

The expenditure under this section was for the following:

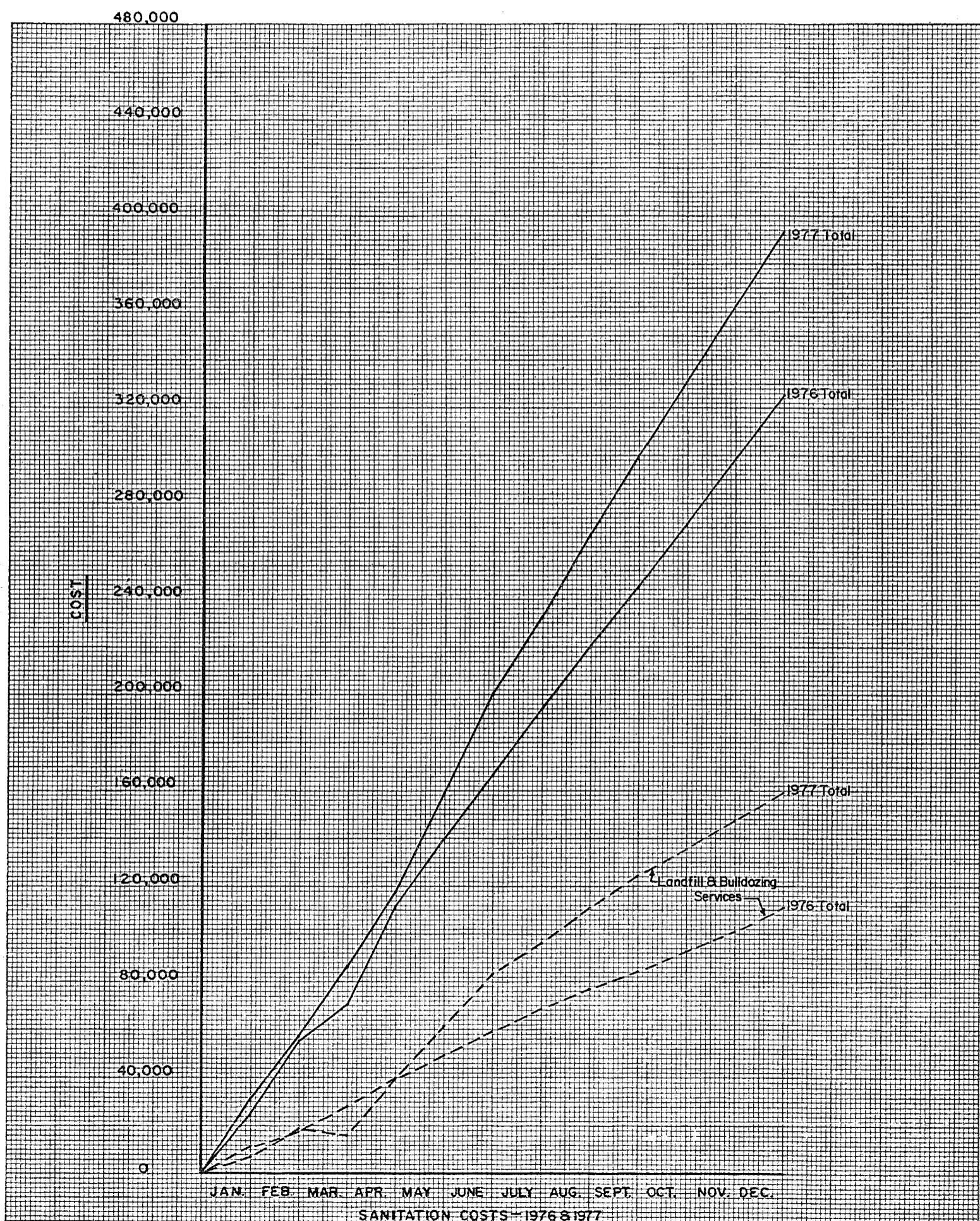
Bulldozing Services (Contract).....	\$ 62,400.00
Gravel & Cover Material.....	69,213.54
Journal Vouchers (Payroll, Pensions, City Machinery).....	27,370.18
Workmen's Compensation Board - 1977 Assessment.....	150.00
Miscellaneous - Plywood, Bolts, Etc.....	<u>105.71</u>
NET EXPENDITURE.....	<u>\$ 159,239.43</u>

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.....	\$ 9,585.10
LESS CREDIT.....	<u>3,434.94</u>
NET EXPENDITURE.....	\$ 6,150.16

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation) ..	\$ 5,241.23
General Services (Machinery, Lighting, Etc.) ..	4,277.42
Goods (Materials, Tools, Etc.)	<u>66.45</u>
	GROSS EXPENDITURE.....\$
	<u>9,585.10</u>
Less Credits: Central and Eastern Trust	
(Trust Fund)	369.50
Old Burial Ground Restoration	
Fund (Extra Materials)	<u>3,065.44</u>
	NET EXPENDITURE.....\$
	<u>6,150.16</u>

(2) The Loyalist Burial Ground

GROSS EXPENDITURE.....	\$ 199.20
LESS CREDITS.....	-
NET EXPENDITURE.....	\$ 199.20

The above expenditure was made up as follows:

Personnel (Payroll and Compensation).....	\$	135.20
General Services (City Machinery).....		64.00
TOTAL.....	\$	<u>199.20</u>

CULTURAL SERVICES

(a) WILMOT PARK

EXPENDITURE..... \$ 15,410.41

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation).....	\$ 11,394.60
General Services (Insurance, Repairs & Maintenance, Lighting, Machinery).....	3,325.37
City Government Services (Water & Sewer Rates).....	117.32
Goods (Materials, Gas & Oil).....	<u>573.12</u>
TOTAL.....	\$ 15,410.41

(b) ODELL PARK

GROSS EXPENDITURE.....	\$ 24,427.77
LESS CREDITS.....	<u>92.83</u>
NET EXPENDITURE.....	\$ 24,334.94

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation).....	\$ 18,550.59
General Services (Telephone, Insurance, Repairs & Maintenance, Machinery).....	3,361.00
City Government Services (Water & Sewer Rates).....	82.00
Goods (Materials, Fuels & Lubricants)....	<u>2,434.18</u>
GROSS EXPENDITURE.	\$ 24,427.77
Less Credits: John Doherty - Payment of Long Distance Calls.....	60.83
Journal Voucher - Use of Tractor.....	<u>32.00</u>
NET EXPENDITURE.	\$ <u>24,334.94</u>

(c) CARLETON PARK

EXPENDITURE.....	\$ 9,120.63

The above expenditure was made up as follows:

Land Rental.....	\$ 1,200.00
Personnel (Labour, Pensions, Compensation).....	5,910.59
General Services (Machinery).....	1,660.50
Goods (Materials, Gas & Oil).....	<u>349.54</u>
TOTAL.....	\$ <u>9,120.63</u>

(d) DEVELOPMENT OF PARK AREAS

GROSS EXPENDITURE.....	\$ 5,180.03
LESS CREDITS.....	<u>713.09</u>
NET EXPENDITURE.....	\$ <u>4,466.94</u>

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation).....	\$ 2,114.01
General Services (Machinery).....	1,753.00
Goods (Materials, Gas & Lubricants).....	<u>1,313.02</u>
GROSS EXPENDITURE.	\$ 5,180.03
Less Credit: Journal Vouchers (Cedar Posts).	<u>713.09</u>
NET EXPENDITURE..	\$ <u>4,466.94</u>

(e) OTHER PARKS

EXPENDITURE.....	\$ 1,923.21

The above expenditure was made up as follows:

Personnel (Labour, Pensions, Compensation).....	\$ 951.39
General Services (Repairs & Maintenance, Machinery).....	848.97
Goods (Materials).....	<u>122.85</u>
TOTAL.....	\$ <u>1,923.21</u>

(f) PUBLIC WORKS

GROSS EXPENDITURE.....	\$ 163,679.77
LESS CREDITS.....	<u>55,677.57</u>
NET EXPENDITURE.....	\$ 108,002.20

The above total credits of \$55,677.57 were made up as follows:

Workmen's Compensation - Re D. Urquhart.....	\$ 346.16
N.B.E.P.C. - Trimming Trees.....	455.44
Dept. of Natural Resources - Tree Removal Costs.....	40,000.00
David Urquhart - Return of Advance Expenses.....	50.00
Valley Forest Products - Purchase of dead elms.....	3,339.32
N.B.E.P.C. - Supplying and Planting Trees.....	204.00
Journal Vouchers - Mobile Radio.....	7,148.57
Journal Vouchers - Inter Dept. Rental of Machinery.....	3,292.00
Journal Vouchers - Regular Gasoline (out).....	735.08
Government of Canada - Gasoline Rebate.....	<u>107.00</u>
TOTAL.....	\$ <u>55,677.57</u>

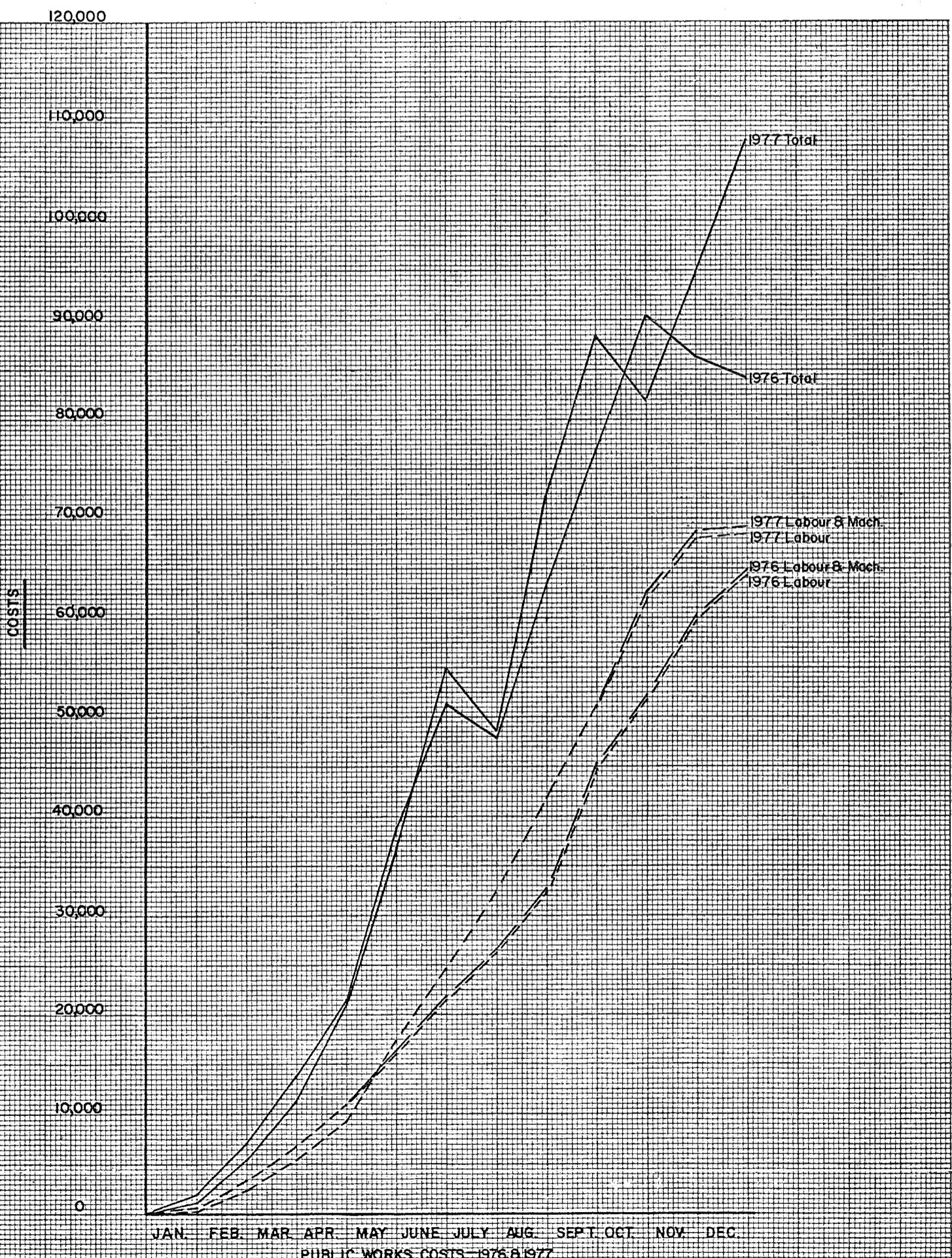
The hired trucks, labour and City Machinery charged under Public Works Expenditure were incurred as follows:

Item	Labour & Supervision	Hired Trucks	City Machinery
Trees	\$ 56,665.24	\$ 680.00	\$ 31,922.00
Back Drain	893.22	-	62.00
Surface Sewer	-	-	-
Unforeseen	10,441.69	-	836.50
Back Drain Diversion	427.83	-	475.00
Casual's Vacation Pay	34,917.60	-	-
TOTALS	\$103,345.58	\$ 680.00	\$ 33,295.50

The net expenditure for the above was made up as follows:

Personnel (Labour, Pensions, U.I.C., Compensation, Honorarium).....	\$ 54,173.80
General Services (Equipment Maintenance, Small Tools & Equipment, Machinery & Trucking, etc.).....	39,569.92
Goods (Materials, Gas & Oil, New Tires)....	<u>14,258.48</u>
TOTAL.....	\$ 108,002.20

The Provincial Government allocated a maximum of \$40,000.00 in their fiscal year from April 1, 1977 to March 31, 1978 as their share towards removal of diseased elm trees in the amalgamated area.



In 1977, 894 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 1977:

<u>Species</u>	<u>Number Removed</u>
Elm.....	872
Maple.....	10
Manitoba Maple.....	3
Pine.....	2
Poplar.....	3
Willow.....	2
Birch.....	1
White Birch.....	1
TOTAL.....	894

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 of the Commission 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 1977, 681 trees were removed with Dutch Elm Disease at various locations within the Pre-Amalgamated Fredericton Area.

Following is a list of trees (Elm) removed from 1964 to 1977 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
TOTALS	1,380	44.2	1,740	3,120

*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 1977:

<u>Location</u>	<u>Number of Trees</u>
Weyman St.	30
McKeen St.	23
Fletcher Ct.	11
Mansfield St.	11
Tilley Dr.	1
Wetmore Rd.	18
Chandler Dr.	16
Bliss St.	26
Doyle St.	12
Colebrook Ct.	4
Flemming Rd.	4
Elgin St.	14
Lawrence Cres.	22
Lilac Cres.	59
Longwood Dr.	45
Park St.	16
MacDonald Ave.	15
Wallace Ave.	31
Hawkins St.	27
Hartt St.	28
Jewett St.	10
Berwick St.	19
Kent St.	8
William St.	35
Calder Ave.	13
Haines Cres.	9
Aberdeen St.	8
Carleton St. Ext.	7
Waterloo Row Green	2
45 Tilley Dr.	1
412 Canada St.	2
Saunders St. - 313, 249, 263	4
Brunswick St. between Westmorland & Northumberland	2
3 Hawthorne Terrace	1
George St. opposite Old Burial Ground	6
269 Dundonald St.	1
Charlotte St. by St. Anne's Church	2
Downing St.	16
 TOTAL	 559
	=====

184 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 1977 from John Connell Nurseries LTD., Waterdown, Ontario, Lansdowne Nursery, Fredericton, N.B. and David Urquhart, Fredericton, N.B.

John Connon Nurseries Ltd:

375 Tilia Cordata 8' - 10' @ \$7.50 each...	\$ 2,812.50
100 Acer Schwedleri 8' - 10' @ \$9.00 each..	900.00
50 Acer Crimson King 8'-10' @ \$11.50 each.	575.00
Freight.....	\$ 4,287.50
550.00	
Total.....	\$ 4,837.50
	<u> </u>

Lansdowne Nursery:

88 Norway Maple 8'-10' @ \$8.50 each.....	\$ 748.00
15 Norway Maple 12'-15' @ \$10.00 each.....	150.00
43 Schwedler Maple 8'-12' @ \$11.00 each...	473.00
1 Crimson King 10' @ \$10.00 each.....	10.00
47 Sugar Maple 10'-15' @ \$11.00 each.....	517.00
1 Mountain Ash 10' @ \$8.00 each.....	8.00
1 Elm 9' @ \$5.00 each.....	5.00
TOTAL.....	\$ 1,911.00
	<u> </u>

David Urquhart:

25 Lindens @ \$7.50 each.....	\$ 187.50
	<u> </u>

TOTAL TREES PURCHASED & DONATED	-	755
LESS STOCK		12
TOTAL TREES PLANTED		743

A number of trees were also trimmed in 1977. The number and class of trees are as follows:

- (a) Large Trees (45' and over) - Approximately 20 mixed species
- (b) Medium Trees (20'-45') - Approximately 18 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> </u>	189
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CONCRETE SIDEWALK CONSTRUCTION

GROSS EXPENDITURE.....	\$ 68,756.84	
LESS CREDITS.....	<u> </u>	64,182.00
NET EXPENDITURE.....	\$ 4,574.84	
	<u> </u>	

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

<u>Location</u>	<u>Lineal Feet</u>
Colonial Heights - Existing to Burnham Ct.	155
Burnham Ct. - Colonial Heights to Hanwell Rd.	555
Crockett St.	670
Downing St. - Existing to Rice St.	210
Rice St. - Downing St. to Bunker St.	305
Bunker St. - Rice St. to Perry Ct.	310
Brookside Dr. - C.P.R. to Oakland St.	
- Diamond Const.	1,724
- Callaghan Const.	874
Douglas Ave. - Maple St. to Broad St.	1,243
Carmen Ave. - Watters Dr. to In front of School	610
TOTAL.....	6,656

6,656 Lineal Feet = 1.26 Miles

The above expenditure was made up as follows:

Materials - Fibreen, Polyethelene, Stakes, Bedding Sand, Etc.).....	\$ 1,803.55
Car Allowances (Timekeepers).....	269.12
Diamond Construction (1961) Ltd. - Nashwaaksis Sidewalks.....	29,952.77
Callaghan Contracting Ltd. - Nashwaaksis Sidewalks.....	9,558.84
Elmtree Concrete Ltd. - Ready-Mix Concrete.	10,031.30
Journal Vouchers - Payroll, Pensions, Superannuation, Machinery.....	16,852.86
N.B.E.P.C. - Removal of Pole for Construction.....	199.60
Minister of Finance - S.S.&E. Tax Re 1976 Invoices.....	88.80
GROSS EXPENDITURE. \$ 68,756.84	

LESS CREDITS:

Rocca Group Ltd. - Lincoln Heights..)	29,310.00
Khoury Real Estate Services - Forest Hill Estates.....)	1,560.00
Hill Brothers Ltd. - Sewell St. Ext.) Local	13,512.00
Chippin's Ltd. - Dunn Acres) Improve-	
Subdivision.....)	ment
N.B. Housing Corp. - MacPherson St..)	Charges 13,200.00
	6,600.00
NET EXPENDITURE.. \$ 4,574.84	

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 Elmtree Concrete Ltd. at \$31.95 per cubic yard.

The actual cost for laying one lineal foot of sidewalk by City Crews was \$7.21 which includes Compensation, Pensions and Holiday Funds.

RECREATION

EXPENDITURE.....	\$	<u>6,468.24</u>
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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 salaries of recreation personnel are not in the above costs, nor does the cost of equipment on the playgrounds appear here.

The above expenditure was made up as follows:

Journal Vouchers (Payroll).....	\$	271.43
Journal Vouchers (Pensions).....		8.17
Journal Vouchers (Machinery).....		181.00
Journal Vouchers (Gasoline, Cement, Decals, Sand, Salt, Etc.).....		<u>6,007.64</u>
TOTAL.....	\$	<u>6,468.24</u>

MUNICIPAL PARKING LOTS - CAMPBELL ST.

In 1966, the City Council authorized the changing of the free parking area at the rear of City Hall in order to give better parking facilities to the shopping public. In 1973 the system was changed to attendant-type control from the original gate-type control.

In 1977, the expenditure for snow control and fence repairs for the above amounted to \$811.11 and was made up as follows:

Journal Vouchers (Payroll).....	\$	335.78
Journal Vouchers (Pension).....		10.58
Journal Vouchers (Machinery).....		446.00
Journal Vouchers (Materials).....		<u>18.75</u>
TOTAL.....	\$	<u>811.11</u>

In addition, a new Parking Area on Campbell Street, east of Westmorland Street was constructed in 1970.

In 1977, the expenditure for snow control, etc. amounted to \$1,125.20 and was made up as follows:

Journal Vouchers (Payroll).....	\$	654.77
Journal Vouchers (Pensions).....		22.43
Journal Vouchers (Machinery).....		403.00
Journal Vouchers (Materials).....		<u>45.00</u>
TOTAL.....	\$	<u>1,125.20</u>

PARKING LOTS - 1977

In 1977, due to the dredging operations for the new bridge, new parking lots had to be established to help make up for loss of parking spaces. The expenditures incurred were for labour and materials for the construction of these lots (Kileel Properties).

Journal Vouchers (Payroll, Pensions, Machinery, Materials).....	\$ 7,230.57
Dunhams Contracting (Gravel).....	2,478.05
Gorman Construction Ltd. (Asphalt).....	533.24
Wages for Gordon Hickey Crew.....	1,653.60
Miscellaneous - Paint, Lumber, Cedar Posts, Etc.....	<u>1,728.48</u>
TOTAL.....	\$ 13,624.30

BEAVERBROOK RINK

The expenditure under this heading was \$240.55 and was made up as follows:

Journal Vouchers (Regular Gasoline & Finasol).....	\$ 240.55
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COLISEUM

EXPENDITURE.....	\$ 154.00
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The above expenditure was made up as follows:

Journal Vouchers (Regular Gasoline).....	\$ 154.00
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YORK ARENA

EXPENDITURE.....	\$ 54.98
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The above expenditure was made up as follows:

Journal Vouchers (Regular Gasoline & Finasol).....	\$ 54.98
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NASHWAAKSIS ARENA

EXPENDITURE.....	\$ 31.00
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The above expenditure was made up as follows:

Journal Voucher (City Decals).....	\$ 31.00
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TOURIST AND INDUSTRIAL PROMOTION

EXPENDITURE.....	\$ 525.23
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The above expenditure was made up as follows:

Journal Vouchers (Payroll).....	\$ 357.58
Journal Vouchers (Pension).....	6.65
Journal Vouchers (Machinery).....	68.00
Journal Vouchers (City Decals).....	<u>93.00</u>
TOTAL.....	\$ 525.23

CITY HALL

EXPENDITURE.....	\$	481.86
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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).....	\$	451.72
Journal Vouchers (Pensions).....		15.89
E.M. Young (Christmas Tree Decorations)....		<u>14.25</u>
TOTAL.....	\$	<u>481.86</u>

PAINT & TRAFFIC DEPARTMENT

EXPENDITURE.....	\$	813.26
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The above expenditure was made up as follows:

Journal Vouchers (Cement, Crushed Rock, Gravel).....	\$	813.26
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INDUSTRIAL PARK - LAND ACCOUNT

EXPENDITURE.....	\$	4,710.86
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The above expenditure was made up as follows:

Journal Vouchers (Payroll).....	\$	925.96
Journal Vouchers (Pensions).....		39.63
Journal Vouchers (Machinery).....		788.50
Journal Vouchers (Pipe and Gravel).....		1,040.01
E.J. Ludford Ltd. (Progress Payment Re. Contract 11-76).....		605.97
Seaboard Surveys Ltd. (Work Re Lots P-18 & P-18A).....		<u>1,406.05</u>
GROSS EXPENDITURE. \$		4,806.12

LESS CREDIT:

Journal Voucher (Material Returned from Jobs). .		<u>95.26</u>
NET EXPENDITURE... \$		<u>4,710.86</u>

FIRE DEPARTMENT

NET EXPENDITURE.....	\$	584,889.15
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The above expenditure was made up as follows:

Journal Vouchers (Hydrants & Sprinklers)...	\$	578,664.00
Journal Vouchers (Gasoline & Diesel Fuel)..		5,123.16
Journal Vouchers (Payroll, Pensions, Machinery).....		983.04
Journal Vouchers (Decals, Prints of Water Maps, Etc.).....		<u>118.95</u>
TOTAL.....	\$	<u>584,889.15</u>

POLICE DEPARTMENT

EXPENDITURE.....	\$	2,105.66
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The above expenditure was made up as follows:

Journal Vouchers (Payrolls, Pensions, Machinery).....	\$	504.66
Journal Voucher (Rental of Space at Yard)..		1,260.00
Journal Voucher (City Decals).....		<u>341.00</u>
TOTAL.....	\$	<u>2,105.66</u>

PUBLIC TRANSIT

EXPENDITURE.....	\$	26.85
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The above expenditure was made up as follows:

Journal Vouchers (Payroll).....	\$	26.85
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AMBULANCE

EXPENDITURE.....	\$	592.09
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The above expenditure was made up as follows:

Journal Vouchers (Gasoline).....	\$	592.09
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FLOOD CONTROL

EXPENDITURE.....	\$	94.67
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The above expenditure was made up as follows:

Journal Vouchers (Payroll, Pensions).....	\$	94.67
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BUILDINGS & MAINTENANCE

EXPENDITURE.....	\$	478.92
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The above expenditure was made up as follows:

Journal Vouchers (Gasoline).....	\$	447.92
Journal Vouchers (City Decals).....		<u>31.00</u>
TOTAL.....	\$	<u>478.92</u>

NASHWAAKSIS CEMETERY

EXPENDITURE.....	\$	409.61
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The above expenditure was made up as follows:

Journal Vouchers (Payroll, Pensions, Machinery).	\$	409.61
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PUBLIC LIBRARY

EXPENDITURE.....	\$	35.23
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The above expenditure was made up as follows:

Journal Vouchers (Payroll, Machinery).....	\$	9.28
Journal Vouchers (Crushed Rock, Sand).....		<u>25.95</u>
TOTAL.....	\$	<u>35.23</u>

CANADA WORKS TREE PROGRAM

In 1977, the City of Fredericton made application for a Canada Works Program to be applied to its tree removal program.

The expenditures in 1977 were as follows:

Journal Vouchers (Payroll, Pensions).....	\$	8,925.65
Unemployment Insurance Commission.....		179.84
Journal Voucher (City Machinery).....		<u>2,324.00</u>
GROSS EXPENDITURE.		\$ 11,429.49

LESS CREDITS:

Journal Voucher (Overexpenditure).....		4,728.50
Gov't of Canada (Advance Re Program).....		<u>16,845.00</u>
BALANCE.....	\$	<u>10,144.01CR</u>

The balance of the Gov't of Canada Advance will be applied to the 1978 Tree Program.

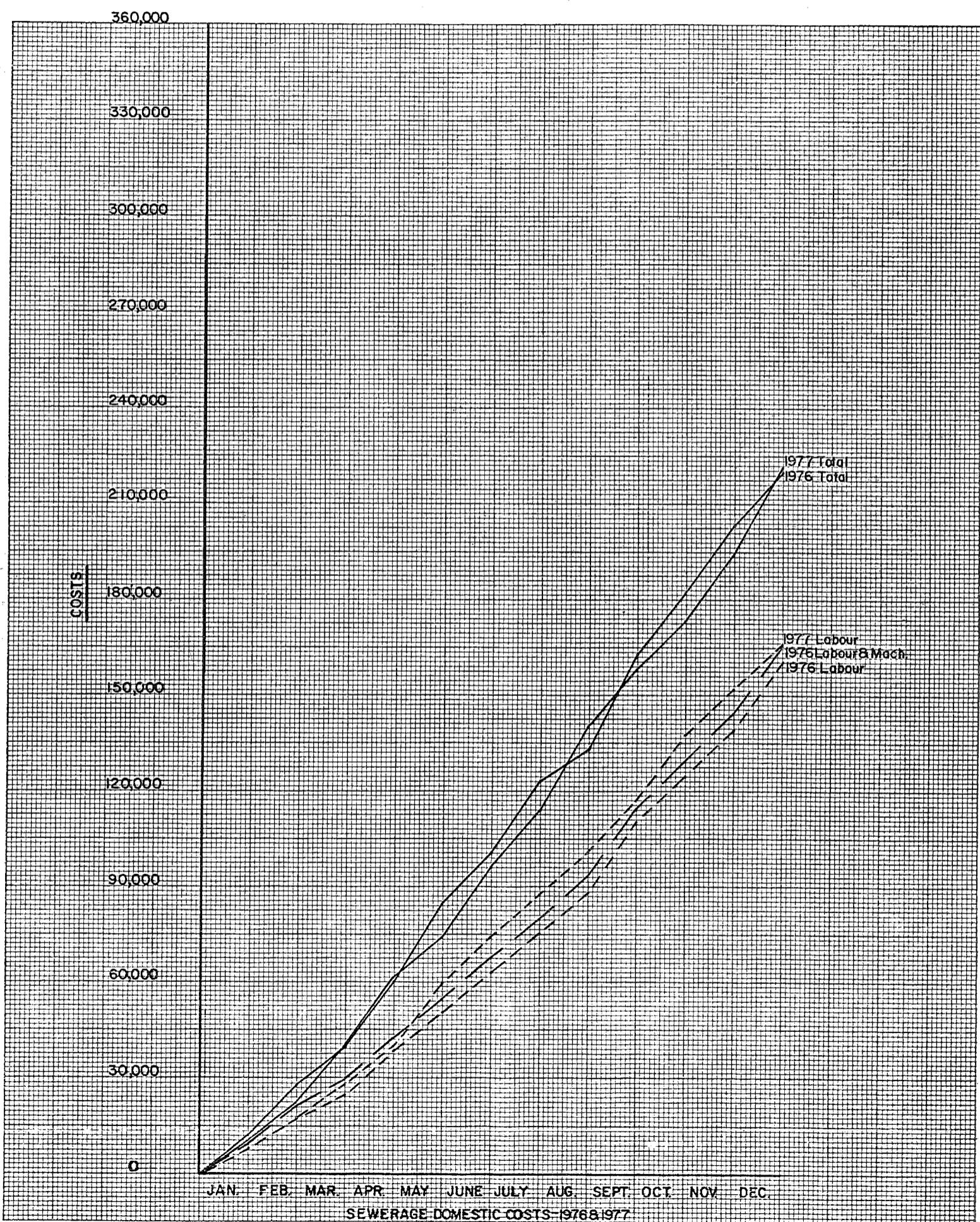
DOMESTIC SEWER

GROSS EXPENDITURE.....	\$	886,320.81
LESS CREDITS.....		<u>85,523.42</u>
NET EXPENDITURE.....	\$	<u>800,797.39</u>

The above expenditure was made up as follows:

Labour.....	\$	166,833.05
Hired Trucks & Machinery.....		-
City Machinery Costs.....		45,296.75
Machinery Repairs.....		7,251.84
Material Costs.....		85,242.65
Pollution Control - Lincoln.....		6,274.14
F.A.P.C. Sewerage Treatment.....		326,603.44
Principal & Interest Charges.....		<u>248,672.00</u>
TOTAL.....	\$	<u>886,320.81</u>

The credit of \$85,523.42 was made up as follows:



Materials, Labour & Supplies for		
Service Installations.....	\$ 80,935.60	
Province of New Brunswick - Re Sewage		
Treatment Facilities.....	1,768.05	
Sansom Equipment Ltd. - Return of Parts....	21.06	
Diamond Construction - Flushing Sewer Main.	51.76	
Town of Oromocto - Sewer Cleaning Nozzle...	150.00	
Journal Vouchers (Materials).....	2,250.79	
Workmen's Compensation Board - Re		
G. Gaudet.....	<u>346.16</u>	
TOTAL.....	\$ 85,523.42	

New Customers connected to the City Sewer System in 1977 - 302

All Dead End Sewer Mains were cleaned and flushed in 1977.

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.

The Fredericton Domestic Sewer System consists of 137.137 Miles of Sewer Mains and is made up as follows:

Size	Silverwood Garden Creek	Nashwaak- sis	Marys- ville	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	-	1.742	2.096
8"	4.439	17.799	10.001	4.649	62.885	99.773
8" F.M.	0.133	-	0.195	-	0.040	0.368
10"	0.513	1.791	0.377	0.176	4.889	7.746
10" F.M.	0.732	-	-	-	-	0.732
12"	0.264	1.904	0.625	1.139	7.670	11.602
12" F.M.	-	-	-	-	0.459	0.459
14"	0.089	0.426	-	-	0.416	0.931
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	8.641	24.302	13.206	6.072	84.916	137.137

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	<u>LENGTH - MILES</u>		
	*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 1976 and 1977, including tires and tubes:

Name of Vehicle	Year Purchased	1976 Repairs	1977 Repairs
Ford 1/2 Ton Van #5	1971	\$ 1,157.57	\$ 546.67
John Bean Sewer Cleaner #83-75	1975	-	3,166.48
John Bean Sewer Cleaner #85-77	1977	-	318.20
Ford 1/2 Ton Crew Cab #114	1974	1,959.89	1,169.74
Chevrolet 3/4 Ton Crew Cab #115	1975	134.81	1,457.99
Chevrolet 1/2 Ton Crew Cab #116	1977	-	345.17
Dodge 3/4 Ton #252-76	1976	172.80	247.59
TOTALS		\$ 3,425.07	\$ 7,251.84

The following item of machinery was purchased in 1977 under "Domestic Sewer":

1 - John Bean Sewer Cleaner Model 3510 - Asset No. 85-77

Cost.....	\$ 15,000.00
Plus 8% S.S.&E. Tax.....	<u>1,200.00</u>
TOTAL COST...,,	\$ 16,200.00

WATER

There are at present 24 wells in the City of Fredericton Water System (22 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 St. 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 Avenue
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 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 Drive 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
Barkers Pt. #1	250 yards east of intersection of Greenwood Dr. and Victory Ave. on Greenwood Dr.
Barkers Pt. #2	100 yards east of intersection of Greenwood Dr. and Dewitt Acres on Greenwood Dr.
Killarney Rd. #1	2790 yards north of Maple St. and St. Mary's St. intersection on the west side of Killarney Rd.
Killarney Rd. #2	3013 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

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
SUB-TOTAL.....	12	7,818,000

FREDERICTON NORTH:

Location	Number of Reservoirs	TOTAL Capacity (I.G.)
Nashwaaksis	2	630,000
Barkers Pt.	1	250,000
Marysville	1	625,000
Carleton Ward	1	1,000,000
Killarney Rd.	1	820,000
SUB-TOTAL.....	6	3,325,000
OVERALL TOTALS.....	18	11,143,000

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)...	\$ 133,755.77
(2) Water Ordinary.....	519,170.95
(3) Water Pumping Station & Well Production Costs.....	218,500.41
(4) Amortization Costs (Principal).....	365,463.00
(5) Interest Charges.....	490,552.00
GROSS EXPENDITURE..	\$ 1,727,442.13
*LESS CREDITS.....	<u>98,673.45</u>
NET EXPENDITURE....	\$ 1,628,768.68

*Credits will be found under individual headings.

(1) WATER ADMINISTRATION:

GROSS EXPENDITURE...	\$ 133,755.77
LESS CREDITS.....	<u>11,025.00</u>
NET EXPENDITURE....	\$ 122,730.77

The above credit was made up as follows:

Journal Voucher - Portion of L.P. MacNeill Salary.....	\$ 5,000.00
Journal Voucher - Portion of E.L. Coy Salary.....	6,000.00
Walter Flinn - Re Purchase of dehumidifier.....	25.00
TOTAL.....	\$ 11,025.00

The expenditure for Billing and Collecting was \$85,806.32 and was made up as follows:

Salaries.....	\$ 54,324.71
Rental of Office Space.....	3,828.00
Equipment & Supplies.....	22,218.86
Telephones.....	1,284.00
Postage.....	4,150.75
TOTAL.....	\$ 85,806.32

METERS:

On December 31, 1977 there were 8,788 water services on meter and 1,642 on Flat Rate, making a total of 10,430.

The labour cost per meter for installing, reading, etc. was \$4.31 for 1977.

666 meters were installed in 1977, 379 regular meters changed to TRT, and 27 ARB meters changed to TRT.

In 1977, 44 discontinued services were excavated and shut off at the main, 79 stopped meters replaced and 39 frozen meters replaced.

In 1977, all meters were read quarterly and billed quarterly during the year.

METERS IN STOCK DECEMBER 31, 1977

Size	ARB	Regular	TRT	To be Repaired			Total
				ARB	Regular	TRT	
1/2"	1	2	21	-	1	-	25
5/8"	2	4	38	3	8	-	55
3/4"	1	-	6	-	12	-	19
1"	-	4	4	-	8	-	16
1-1/4"	-	2	-	-	1	-	3
1-1/2"	-	2	7	-	-	-	9
2"	-	1	6	-	-	-	7
TOTALS	4	15	82	3	30	-	134

(2) WATER ORDINARY:

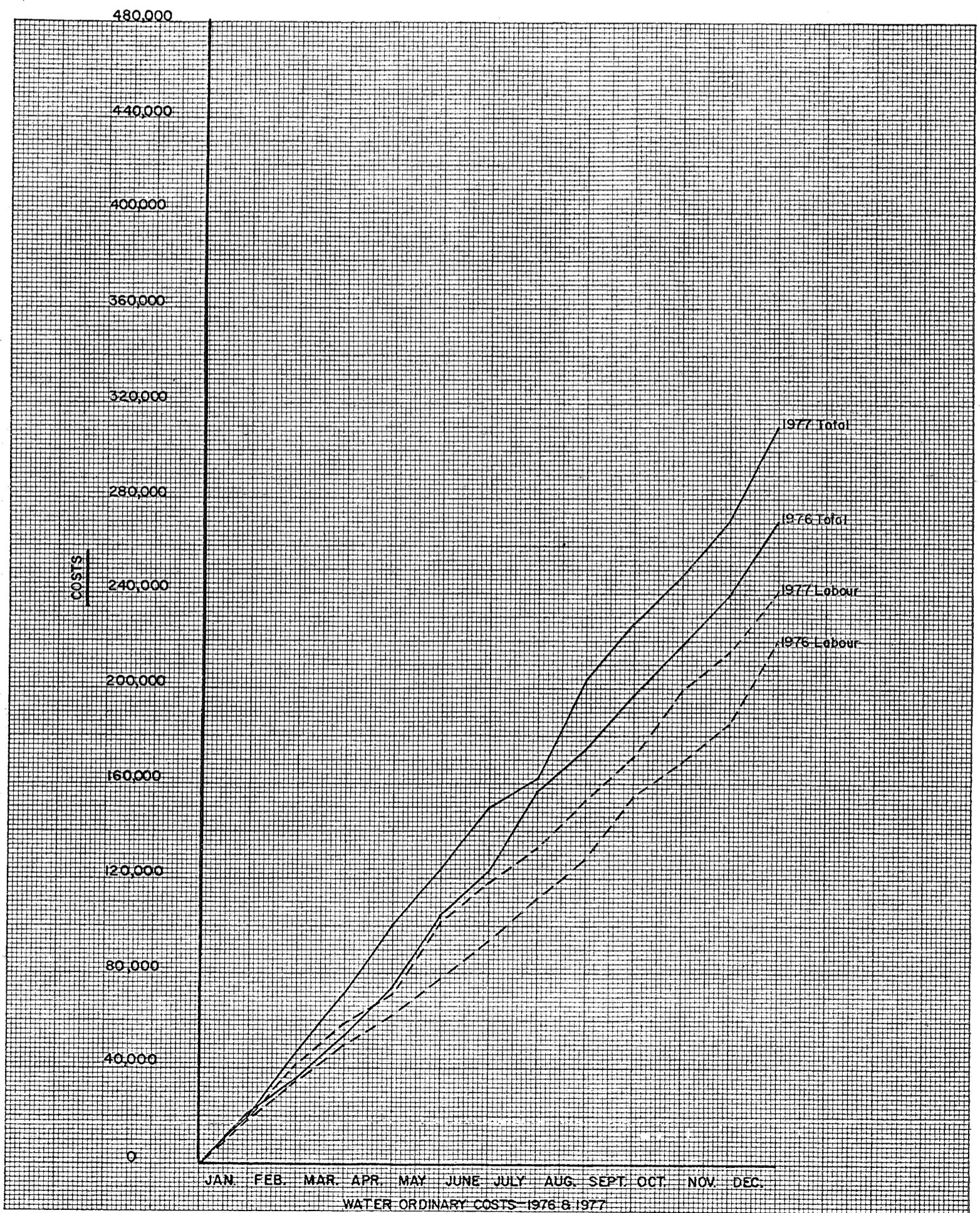
The expenditure under this heading was as follows:

*GROSS EXPENDITURE...	\$ 519,170.95
LESS CREDITS.....	<u>84,831.20</u>
NET EXPENDITURE.....	\$ 434,339.75

*Includes Meters.

The above credits were made up as follows:

Service Installations.....	\$ 75,392.84
Repairs to Water Services, Hook-up Charges, Thawing Services, Etc.....	163.20
Relaying Water Services.....	244.67
Journal Vouchers (Materials, Inter. Dep't Use of Machinery, Etc.).....	3,275.11
Workmen's Compensation Board.....	865.40
Damages Claims for Hydrants.....	3,263.99
Meter Repairs.....	535.91
Geocon (1975) Ltd. - Use of Hydrant for Water..	60.52
Gov't of Canada - Gasoline Rebate.....	20.00
Sale of Scrap Parts and Metal.....	559.03
Emco Ltd. - Statement Correction.....	53.43
Crane Supply Ltd. - Credits on Purchases...	397.10
TOTAL.....	\$ 84,831.20



The GROSS EXPENDITURE was made up as follows:

City Payrolls for Hydrants (Labour).....	\$ 31,241.07
City Payrolls for Hydrants (Maintenance)...	7,663.28
City Payrolls for Meters (Repairs).....	9,298.27
City Payrolls for Meters (Reading).....	10,056.37
City Payrolls for Meters (Installations)...	25,694.85
City Payrolls for Water (Maintenance).....	101,105.58
City Payrolls for Water (Installation).....	38,914.23
City Payrolls for Boosters (Labour - Outside Operators).....	17,169.60
City Payrolls for Boosters (Maintenance)....	-
 TOTAL PAYROLLS	 <u>\$ 241,143.25</u>
Hired Machinery Charges.....	-
Vehicle Repair (Excluding Shop Labour)....	4,644.55
City Machinery Charges.....	60,253.50
Materials.....	127,127.51
Hydrants (Maintenance & Installation Materials).....	7,640.59
Meters (Maintenance & Installation Materials).....	<u>78,361.55</u>
 GROSS EXPENDITURE..	 <u>\$ 519,170.95</u>

The following sprinklers were installed in 1977:

- (1) Brunswick Books Ltd. - 74 Cliffe St.
- (2) Postal Station "B" - 35 Hughes St.
- (3) M. & B. Holdings - 377 York St.
- (4) Levine's Ltd. Warehouse - 403 Regent St.
- (5) Fredericton Sports Club - Exhibition Grounds
- (6) Federal Building - 633 Queen St.
- (7) Harvey Studios - 372 Queen St.
- (8) Henderson's Transfer - 60 MacKenzie Rd.

There are at present (December 31, 1977) 132 Sprinkler Systems in the City.

There are in the City as of December 31, 1977, 1,143 Hydrants, broken down in the following areas:

Fredericton South.....	581
Fredericton North.....	134
Nashwaaksis.....	221
Marysville.....	121
Barkers Point.....	63
Silverwood.....	<u>23</u>
 TOTAL.....	 1,143
Located on Private Property.....	<u>91</u>
 GRAND TOTAL....	 <u>1,234</u>

Hydrants were installed at the following locations in 1977:

<u>Location</u>	<u>Number</u>
Boyne Ct.	2
Lawson Ct.	1
Sewell St.	4
Biggs St.	3
Willis St.	1
McMann St.	1
Ferris St.	2
Hallett St.	1
Mill St.	1
MacPherson St.	2
Emmerson St.	2
Emmerson Ct.	1
Hatheway St.	1
Glasier Rd.	5
Burpee St.	3
Broad St.	1
Golf Club Rd.	1
Woodstock Rd.	23
Goodine St.	1
Adams St.	4
Piercy Cres.	3
	63
	==

DISTRIBUTION SYSTEM:

New Services Installed in 1977.....	308
Old Services Relayed in 1977.....	63
Frozen Services that had to be thawed.....	39

The Fredericton Distribution System Consists of 144.298 miles of Watermain, made up as follows:

LENGTH OF MAINS - MILES

Size	Marysville	Nashwaaksis	Barkers Point	Silverwood Garden Creek	Fredericton	Total
1"	-	-	-	-	-	-
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	1.376	-	1.301	6.456	9.601
6"	7.239	12.555	2.433	2.125	34.315	58.667
8"	2.864	9.548	0.593	2.059	20.564	35.628
10"	1.360	3.038	3.208	0.268	11.103	18.977
12"	0.383	1.038	0.019	1.249	13.997	16.686
14"	-	-	-	-	1.510	1.510
16"	-	-	-	-	1.588	1.588
18"	-	-	-	-	0.980	0.980
Unknown	0.155	-	-	-	-	0.155
TOTAL	12.469	27.695	6.253	7.098	90.783	144.298

Mileages for Marysville, Nashwaaksis, Barkers 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. This latter supply had not been used for Domestic Consumption from 1957, until 1974 when power failures caused by the Queen St. fire in March, required the use of the emergency supply.

Following is a list of vehicles used and charged to "Water Ordinary" showing a comparison of repair charges for 1976 and 1977, including tires and tubes:

Name of Vehicle	Year Purchased	1976 Repairs	1977 Repairs
G.M.C. 1/2 Ton #2	1975	\$ 993.31	\$ 1,447.28
G.M.C. 1/2 Ton #7	1972	762.47	295.32
G.M.C. 1/2 Ton Van #9	1971	751.69	278.23
Ford 3/4 Ton #10-73	1974	173.21	915.39
Dodge 1/2 Ton #12	1974	2,056.58	1,093.93
Miller Welder #91	1971	76.28	33.67
Ford 1/2 Ton #251	1974	1,646.09	946.34
Dodge 1/2 Ton #301	1974	153.94	88.34
Fargo Tanker #302	1953	101.93	73.47
TOTALS		\$6,715.50	\$5,171.97

The following item of machinery was purchased in 1977 and charged to "Water Ordinary":

1 - Chevrolet 1/2 Ton Crew Cab - Asset No. 116

Cost.....	\$ 6,689.57
Plus 8% S.S.&E. Tax.....	535.16
License & Registration.....	6.00
Rustop.....	125.00
TOTAL.....	\$ 7,355.73

(3) WATER PUMPING STATION:

GROSS EXPENDITURE.....	\$ 218,500.41
LESS CREDITS.....	2,817.25
NET EXPENDITURE.....	\$ 215,683.16

The above expenditure was made up as follows:

240,000

220,000

200,000

180,000

160,000

140,000

120,000

100,000

80,000

60,000

40,000

20,000

0

COST

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

WATER PUMPING STATION & WELL COSTS-1976 & 1977

1977 Total
1976 Total

335-5131

335-5131

City Payrolls for employees at Fredericton Pumping Station (including Carleton Pumps).....	\$ 71,306.06
Labour charged to City Wells.....	17,842.95
Labour for Well Repairs - Source (Outside Operation).....	10,329.33
City Labour for Plant Maintenance.....	592.46
Maintenance of Plant Equipment (By Others).....	989.87
Material Charges.....	106,829.17
City Analyst.....	3,516.24
Taxes & Insurance.....	7,094.33
 GROSS EXPENDITURE.	 \$ 218,500.41

LESS CREDITS:

Canadian Industries - Returned Cylinders...	1,800.00
Howard Paul - Fence Damages.....	30.00
Petrofina Canada Ltd. - Credit on S.S.G.E. Tax..	1.25
Canadian General Insurance - Damage to Silverwood Well.....	986.00
 NET EXPENDITURE...	 \$ 215,683.16

The material cost of \$106,829.17 is made up as follows:

N.B.E.P.C. (Power at Wells).....	\$ 61,381.20
N.B.E.P.C. (Power at Plant).....	24,531.09
Materials (Wells).....	4,749.26
Heating (Plant).....	2,176.81
Supplies (Plant).....	2,021.95
Diesel & Lubricants (Plant).....	783.14
Workmen's Compensation (Plant).....	1,500.00
Miscellaneous (Plant).....	1,040.78
Materials used in Maintenance of Equipment (Plant).....	3,513.84
Chlorine for Purification & Treatment.....	2,909.90
Chlorinator Parts.....	1,367.05
H.T.H. Crystals & Tablets.....	543.80
Other Chemicals for Purification & Treatment.....	310.35
 TOTAL.....	 \$ 106,829.17

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
1968	6,121.5	\$ 837.63
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

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
1968	735,296,000	\$ 64,617.14	8.8 cents
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
*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

*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, 1977 to December 31, 1977 for the entire City was 1,421,803,820 Imperial Gallons divided as follows:

Fredericton South.....	951,444,500
Fredericton North.....	116,477,620
Nashwaaksis.....	143,581,900
*Marysville.....	105,120,000
Barker's Point.....	43,351,300
Silverwood.....	13,463,900
Killarney.....	48,364,600
TOTAL.....	1,421,803,820

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

The total net water expenditure (operating) for the City from January 1, 1977 to December 31, 1977 was determined from the following:

Source of Supply.....	\$ 93,315.49
Power & Pumping.....	103,329.83
Maintenance of Equipment.....	5,096.17
Purification & Treatment.....	6,847.34
Transmission & Distribution (Operation)....	42,596.15
Transmission & Distribution (Maintenance)..	264,824.40
Other (Taxes & Insurance).....	9,901.28
TOTAL.....	\$ 525,910.66

Therefore, the net operating cost to pump and deliver to the customer 1,000 Imperial Gallons of Water from January 1, 1977 to December 31, 1977 was:

$$\frac{\$ 525,910.66}{1,421,803.82} = \$ 0.37$$

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.	\$ 772,753.68
Principal and Interest.....	<u>856,015.00</u>
TOTAL COSTS.....	
	<u><u>\$1,628,768.68</u></u>

Total Cost of Water per Thousand Gallons:

$$\frac{\$1,628,768.68}{1,421,803.82} = \$1.14$$

Principal and Interest Costs:

$$\frac{\$856,015.00}{1,421,803.82} = \$0.60$$

Administration and Operating Costs:

$$\frac{\$772,753.68}{1,421,803.82} = \$0.54$$

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 1977:

Year	COSTS PER 1,000 GALLONS IN CENTS			
	Net 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

*Total Cost = Administration & Operating + Principal & Interest

**Values from 1968 to 1973 are for pre-amalgamated City only while values from 1974 to 1977 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 amount to \$578,664.00 in 1977.

WATER AND SEWER REVENUE - 1977

WATER:

Item	Net Expenditure	Revenue
<u>Water Office Administration</u>	\$	\$
(a) Administrative (Eng. Dep't Staff)	36,924.45	-
(b) Billing & Collecting (Office)	85,806.32	-
<u>Water Ordinary</u>		
(a) General-Operation & Maintenance	264,124.05	1,012,865.02
(b) Meters	124,112.25	40,993.40
(c) Hydrants	46,103.45	578,664.00
<u>Water Pumping Station</u>		
(a) General Costs - Wells, Plant, Purification & Treatment, Etc.	205,072.59	-
(b) City Analyst	3,516.24	-
(c) Taxes & Insurance	7,094.33	-
<u>Principal & Interest</u>	856,015.00	-
TOTALS.....	\$ 1,628,768.68	\$ 1,632,522.42

SURPLUS: \$ 3,753.74

DOMESTIC SEWER:

Item	Net Expenditure	Revenue
Sewerage Domestic - Maintenance & Installation	\$ 221,015.86	\$ 872,516.91
Pollution Control - Lincoln	6,274.14	-
F.A.P.C.C. Sewage Treatment	324,835.39	-
Principal & Interest	248,672.00	-
TOTALS.....	\$ 800,797.39	\$ 872,516.91

SURPLUS: \$ 71,719.52

The Water and Sewer Rates were increased 30%, effective July 1, 1977.

Accompanying this Report is the Report of Mr. E.W. Hagerman, City Analyst, on the Fredericton Water Supply from January 1, 1977 to December 31, 1977.

FREDERICTON WATER SUPPLY

1977

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 effluent 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 connected 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 high 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 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 constant use. 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

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) and a rock well (Hanwell) in Cameron Court, off the Hanwell Road.

These wells were developed as follows:-

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

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 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.

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, recently drilled, 3000 feet southerly along a wood road leading to Hanwell Road. The average daily demand on the system is approximately 37,000 Imperial Gallons Per Day.

The effluent 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 at 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 1977 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 - 1977

- 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	M.P.N. Per 100 ml. Sample
Feb. 12	Maple-McKeen Well	0
Mar. 26	Maple-McKeen Well	0
Mar. 26	Carleton Well	0
Mar. 26	St. Marys Well	0
Mar. 27	Cliffe or Bridge St. Well	0
May 18	116 Jaffrey St.	0
May 29	Carleton Well (Highland Ave.)	0
May 29	St. Marys Well	0
May 29	Maple-McKeen Well (Confirmed B.G.B)	2.2
May 31	Cliffe or Bridge St. Well	0
July 11	Cliffe or Bridge St. Well	0
July 11	St. Marys Well	0
July 11	Carleton Well	0
July 11	Maple-McKeen Well	0
Sep. 12	Maple-McKeen Well	0
Sep. 12	Carleton Well	0
Sep. 12	St. Marys Raw Well	16
Sep. 16	St. Marys Raw Well	16
Sep. 18	St. Marys Raw Well	0
Oct. 8	St. Marys Raw Well	9.2
Oct. 14	Cliffe or Bridge St. Well	0
Oct. 15	New 12" Main on Union near Neill St.	0
Oct. 14	Maple-McKeen Well Sample Bottle Running Over	+16
Nov. 13	Maple-McKeen Well	0
Nov. 13	St. Marys Well	0
Nov. 13	Cliffe or Bridge St.	0
Nov. 14	Carleton Well	0
Dec. 27	St. Marys Well	9.2

FREDERICTON NORTH: NASHWAKSIS

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Feb. 14	#1 Maple Well	
Feb. 14	#2 Maple Well	0
Feb. 14	#3 Maple Well	0
Mar. 26	#1 Maple Well	0
Mar. 26	#2 Maple Well	0
Mar. 26	#3 Maple Well	0
May. 13	#592 Maple St. - Mould Growth (Chlorinated)	0
May 14	#592 Maple St. - Mould Caps - More Mould Than Usual in Chlorinated Water (May be the Taste)	0
May 29	#2 Maple Well	0
May 29	#3 Maple Well - Mould Caps	0
June 3	All 5 Tubes - Bad Taste #1 Maple Well - Late formers after 48 hrs. They were plus to B.G.B.	?
July 11	#2 Maple Well	0
July 11	#3 Maple Well	0
July 11	#1 Maple Well	0

NASHWAAKSIS CONTINUED:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
July 14	#130 Hemlock Ave.	0
Aug. 8	#227 Noble St. (Specks in Water)	0
Sep. 12	#2 Maple Well	0
Sep. 12	#3 Maple Well	0
Sep. 19	#58 Lombardi Lane (Maple St. Well Water)	0
Oct. 4	#308 Maple St.	0
Nov. 13	#2 Maple Well	0
Nov. 13	#3 Maple Well	0
Nov. 14	#1 Maple Well	0

FREDERICTON NORTH: KILLARNEY

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Dec. 14	K10 Well	0
Mar. 28	K10 Well	0
May 29	#481 St. Marys St. (From High Level System)	0
July 11	K10 Well	0
July 12	K1 Well	0
Sep. 12	K1 Well	0
Nov. 13	K1 Well	0

FREDERICTON NORTH: BARKER'S POINT

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Mar. 26	#1 Well	0
Apr. 24	#1 Well	0
May 29	#1 Well	0
July 11	#1 Well	0
July 11	#2 Well	0
Sep. 12	#1 Well	0
Sep. 12	#2 Well	0
Oct. 26	McMann St. - Sample From Blowoff in Domestic Sewer Manhole Contract 9-77	16+ Indeterminate
Oct. 28	#295 Greenwood Dr.	5.1
Nov. 2	Howard Johnson Motel	0
Nov. 2	#1 Well	0
Nov. 2	#2 Well	0
Nov. 2	#295 Greenwood Dr.	0
Nov. 14	#2 Well	0
Nov. 14	McMann St. - Sample From Blowoff in Manhole	2.2
Nov. 25	Holland and McMann New Line	0

FREDERICTON NORTH: MARYSVILLE

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Feb. 12	#2 Marysville Well	0
Mar. 26	#2 Marysville Well	0
Mar. 26	#3 Marysville Well	0
Mar. 28	#1 Marysville Well	0
May 29	#2 Marysville Well	0
May 29	#5 Hallett St.	0
May 30	#3 Marysville Well	0

MARYSVILLE CONTINUED:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
June 1	#1 Marysville Well	0
July 11	#1 Marysville Well	0
July 11	#2 Marysville Well	0
Sep. 12	#3 Marysville Well	0
Sep. 12	#5 Hallett St.	0
Nov. 14	#3 Marysville Well	0
Nov. 14	#2 Marysville Well	0
Nov. 14	#1 Marysville Well	0

FREDERICTON SOUTH:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Jan. 6	#936 Smythe St.	0
Jan. 7	#936 Smythe St.	0
Jan. 12	#936 Smythe St.	0
Jan. 12	#928 Smythe St.	0
Jan. 18	#936 Smythe St.	0
Feb. 27	Hanwell Well	0
Feb. 27	#1 Well	0
Mar. 2	#4 Well	0
Mar. 2	#5 Well	0
Mar. 4	Pony Club, Odell Park	0
Mar. 14	Hanwell Well	0
Mar. 14	Flemming Road Booster	0
Mar. 14	City Tire (Lincoln)	0
Apr. 24	Hanwell Well	0
Apr. 24	#4 Well	0
Apr. 24	Montgomery Booster	0
Apr. 24	Flemming Road Booster	0
Apr. 24	#5 Well	2.2
May 12	#3 Well	0
May 12	#4 Well	0
May 12	#5 Well	0
June 1	#18 Flemming Road	0
June 27	#1 Well	0
June 27	#3 Well	0
June 27	#4 Well	0
June 27	#5 Well	0
June 27	Hanwell-Mould All 5 Tubes	0
July 21	#5 Well - Confirmed B.G.B. (Well Pulled & Cleaned)	2.2
July 24	#5 Well	0
July 27	#5 Well	0
July 30	Hanwell	0
July 30	#5 Well	0
Aug. 1	#3 Well	0
Aug. 1	#4 Well	0
Aug. 21	#3 Well	0
Aug. 21	#4 Well	0
Aug. 22	Hanwell - Confirmed B.G.B.	5.1
Aug. 22	#1 Well	0
Aug. 22	#5 Well	0
Aug. 25	#4 Well	0
Aug. 25	Hanwell	0
Sep. 2	#4 Well	0
Sep. 5	#3 Well	0
Sep. 5	#4 Well	0
Sep. 18	Hanwell	16+ Indeterminate

FREDERICTON SOUTH CONTINUED:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Sep. 18	#1 Well	0
Sep. 18	#3 Well	0
Sep. 18	#4 Well	0
Sep. 18	#5 Well	0
Sep. 21	Montgomery Reservoir After Cleaning & Chlorination	0 Heavy Growth No Gas
Sep. 30	Hanwell Well	0
Oct. 5	Beaverbrook Hotel - Smell Reported at one set tub Probably from Drain	0
Oct. 13	Boyne Ct. 1st Hydrant	16+ Indeterminate
Oct. 14	Boyne Ct. Forest Hill Area	16+ Indeterminate
Oct. 14	#8 Woodbridge St.	0
Oct. 27	#1 Well	0
Oct. 27	#3 Well	0
Oct. 27	#4 Well	0
Oct. 27	#5 Well	0
Oct. 28	Hanwell Well (Raw)	0
Nov. 4	New Hydrant - South Side Woodstock Rd. 100 Ft. + S.E. Golf Club Rd. Forks	0
Nov. 24	#1 Well	0
Nov. 24	#5 Well	0
Nov. 25	New 10" Line (Biggs St.) Sample From 3/4" B.O. Kimble Rd. & Forest Hill Rd.	0
Nov. 25	New 10" Line (Forest Hill Reservoir) - Sample from Hydrant on Boyne Ct.	0
Nov. 30	#5 Well	0 Mould
Dec. 2	Hydrant (Montieth & T.C.H.) - Halfway to Springhill South of River	16+ Indeterminate
Dec. 2	First Hydrant Above Riverside Cabins on Woodstock Rd.	0
Dec. 14	Montieth & T.C.H. - New Pipe	0
Dec. 14	Woodstock Rd. & T.C.H.	2.2
Dec. 14	Woodstock Rd. Opposite Montieth Motors	2.2
Dec. 19	Woodstock Rd. - New System	0

FREDERICTON SOUTH - SILVERWOOD:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample
Jan. 14	#1 Well	9.2
Jan. 14	#2 Well	0
Jan. 14	#3 Well	0
Apr. 24	#1 Well	0
Apr. 24	#2 Well	0
Apr. 24	#3 Well	0
June 3	#2 Well	0
June 27	#2 Well	0
June 27	#3 Well	0
Aug. 8	#3 Well	0
Aug. 22	#2 Well	0
Aug. 22	#3 Well	0

SILVERWOOD CONTINUED:

Date of Sample	Origin of Sample	M.P.N. Per 100 ml. Sample		
Sep. 18	#2 Well	0		
Sep. 18	#3 Well	0		
		COLI 100 ml.		
		FECAL COLI 100 ml.		
Oct. 19	#3 Well	Dept. of Health	Nil	Nil
Oct. 19	#2 Well	Dept. of Health	Nil	Nil

**THE CITY OF FREDERICTON
INSTALLATION OF SERVICES-1977**

DOMESTIC SEWER,STORM SEWER,WATER

WATER ONLY

STORM SEWER ONLY

STORM SEWER & WATER


DOMESTIC SEWER & WATER

DOMESTIC SEWER ONLY

DOMESTIC SEWER & STORM SEWER

NOTE:(I) SEE EITHER "CAPITAL WATER", "CAPITAL DOMESTIC SEWER", "CAPITAL STORM SEWER", FOR INDIVIDUAL FOOTAGES .

(2) FOOTAGES FOR OFFTAKES (NOT SHOWN ON PLAN) CAN ALSO BE FOUND IN THE ABOVE MENTIONED ACCOUNTS.



PAVING & SURFACE TREATMENT PROGRAM - 1977

CAPITAL RECAP - 1/2" MINUS

CAPITAL PROGRAM - 3/8" MINUS

MAINTENANCE PROGRAM - 3/8" MINUS

CAPITAL PROGRAM - 3/4" DENSE MIX

SLURRY SEAL - X

CHIP SEAL - X

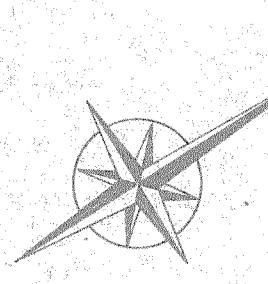
ARMOUR COAT - X

NEW STREET CONSTRUCTION -



CONSTRUCTION-1977
CONCRETE CURB & GUTTER
CONCRETE SIDEWALK

1977



FEET (300)

0

1500

2500

3500

4500

5500

6500

7500

8500

9500

10500

11500

12500

13500

14500

15500

16500

17500

18500

19500

20500

21500

22500

23500

24500

25500

26500

27500

28500

29500

30500

31500

32500

33500

34500

35500

36500

37500

38500

39500

40500

41500

42500

43500

44500

45500

CITY OF FREDERICTON
ST MARY'S PARISH

PERTHIANE ST.

CLAUDETTE ST.

HILLIER ST.

MCKEEAN ST.

PAUL ST.

VALISEET DR.

WALTER ST.

WILSON ST.

KILARNEY LAKE

KILARNEY BRIDGE

NEHEMIAH CREEK

NEHEMIAH CREEK