

ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1959



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TO HIS WORSHIP THE MAYOR AND ALDERMEN
OF THE CITY OF FREDERICTON.

Madam and Gentlemen:

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

This report covers the period January 1, 1959 to December 31, 1959 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 work:

New Pavement (Atlas Construction Co. and Diamond Construction Co.)63 miles
Resurfacing and Surface Seal92 miles
Concrete Curb and Gutter	5.14 miles
Concrete Sidewalk95 miles
Grading and Gravelling	3.08 miles
Gravel Road Construction or Partial Construction88 miles
8" to 60" Surface Sewer	1.65 miles
8" Domestic Sewer	1.14 miles
4" to 12" C. I. Water Mains	1.32 miles

Contractors under contract with the Public Works Department of the City of Fredericton in 1959 completed construction, constructed or began construction on the following projects:-

- Ashfield Construction Co. Ltd. - To installing Domestic Sewer, Surface Sewer and Water on the following City Streets, namely:- Reid Street, Squires Street, Forest Acres Court and Spruce Terrace.
- Ashfield Construction Co. Ltd. -- To completion of 1958 contract to the laying and jointing of a 12" Water Main from the corner of Charlotte Street and University Avenue to the westerly entrance of the Experimental Farm, Lincoln Road.
- Atlas Construction Company - To laying asphalt pavement on City Streets.
- Canadian Fairbanks Morse Co. Limited - To supplying and installing Pumping Station equipment in a Booster Pumping Station on the Lincoln Road.
- Diamond Construction Co. - To construction of Booster Pumping Station on the Lincoln Road.

- International Water Supply Co. - To drilling Test Holes and Pilot Well.
- Maritime Engineering Ltd. - Continuation of 1957 contract to constructing 1,000,000 Imperial Gallon Reservoir in Carleton Ward.
- Department of Public Works Province of New Brunswick - To laying Asphalt Pavement on Forest Hill Road.

The regular expenditures for the twelve month period, January 1, 1959 to December 31, 1959 appear as follows:-

	<u>Appropriation</u>	<u>Net Expenditure</u>	<u>Debit</u>	<u>Credit</u>
Street Lights	37,500	39,907.64	2,407.64	
Public Works	22,900	23,985.50	1,085.50	
Roads and Streets	164,800	178,137.32	13,337.32	
Sanitation	58,500	56,573.11		1,926.89
Wilmot Park	2,750	4,042.16	1,292.16	
O'Dell Park	7,200	6,137.12		1,062.88
Carleton Park	900	1,328.19	428.19	
Paint Department	8,500	8,612.45	112.45	
Old Burial Ground	1,700	1,643.64		56.36

	<u>Revenue</u>	<u>Net Expenditure</u>	<u>Credit</u>
Water Pumping Station		47,669.85	
Water Ordinary	196,700.37	78,121.32	
Sewerage Domestic		13,992.22	38,026.98
Salaries		18,890.00	

The City of Fredericton occupies a total of some 23.5 square miles. This area excludes the water area occupied by the Saint John River within the boundaries of the City.

The preliminary report on the 1956 census shows the City's population as 18,303.

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 can be readily found by referring to the index on the preceding page.

Respectfully submitted,

City Engineer.

TOTAL YEARLY EXPENDITURE

The total yearly net expenditure under the direct supervision of the City Engineer in 1959 amounted to \$732,113.56. This expenditure will be taken up in detail under the various headings in this report. The total gross expenditure for 1959 amounted to \$876,172.78.

A graphic comparison of expenditures for Labor and Labor and Material for the year 1958 and the year 1959 is shown on the following graph.

The location of new construction completed or commenced in 1959 is shown on two maps inserted after page 3 of this report.

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

ROADS AND STREETS

In 1959 the appropriation for Roads and Streets was \$164,800.

There are in Fredericton some 60.06 miles of Roads and Streets; 12.00 miles being located on the north side of the Saint John River and 48.06 miles on the south side. In addition there are 40.12 miles of concrete sidewalks; 6.69 miles on the north side and 33.43 miles on the south side of the Saint John River.

The paved and unpaved Roads and Streets are divided between the Rural and Urban districts (Inside and Outside Tax Rate) as follows:-

	<u>Roads and Streets</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Total (Miles)</u>
Paved	35.91	4.76	40.67
Unpaved	<u>9.72</u>	<u>9.67</u>	<u>19.39</u>
TOTAL	<u>45.63</u>	<u>14.43</u>	<u>60.06</u>

Roads and Streets Expenditures - 1959

Gross Expenditure	\$ 234,825.70
Credits	<u>56,688.38</u>
Net Expenditure	178,137.32
1959 Appropriation	<u>164,800.00</u>
DEBIT	<u>\$ 13,337.32</u>

The above credits of \$56,688.38 are made up as follows:-

Irving Oil Co. Ltd. (Thawing Floor Drains at #158 Gibson Street)	\$ 113.93
Sussex Ginger Ale (Cleaning Floor Drain)	4.32
Waterloo Esso Service Station (17½ yds. sand @ \$1.35 per yard)	23.64
J. D. Creaghan Co. Ltd. (3 yds. Sand @ \$1.35 per yard).	4.05
Fredericton Tire Ltd. (215 Bags Calcium Chloride @ \$3.50 per bag and 7¾ yds. sand @ \$1.35 per yard)	814.22
Vet's Service Station (1 yard sand @ \$1.35 per yard)...	1.35
R.C.M.P. (3 yards sand @ \$1.35 per yard)	4.05
L. Budovitch & Sons (To 5790 lbs. scrap @ 60¢ per 100 lbs.)	34.74
Maritime Electric Co. Ltd. (Rental of Compressor)	27.00
J. S. Neill & Sons Ltd. (3 yards sand @ \$1.35 per yard)	4.05
Maritime Accessories Ltd. (2 Bags Salt)	2.50
University of New Brunswick (Repairs to Water Service at Students' Centre).....	<u>24.95</u>
Forward	\$ 1,058.80

Carried Forward.....	\$ 1,058.80
Wassons' Service Station, Smythe St. (Cleaning floor drain)	33.80
Nashwaaksis Local Improvement (Thawing manholes).....	99.32
N. B. Telephone Co. (Thawing manhole Bridge & Union Streets)	16.26
Elwood McMinniman (Thawing floor drain, Montgomery St.)	6.86
Nashwaaksis Local Improvement (Rental on Steam Thawing Machine)	26.00
Irving Oil Co. Ltd. (Thawing floor drains, Service Station - Barker and Union Streets)....	22.76
Abe Levine & Sons (9650 lbs. scrap iron @ \$15.00 per ton)	64.62
Weyman Construction Co. (Rental on Allis Chalmers Grader)	17.07
Nelson Adams (Grading Driveway)	3.00
Fredericton Exhibition Ltd. (Relocating Water and Sewer Services)	7.30
J. L. Simms & Sons Ltd. (Patching at Zellar's Parking Lot)	16.10
Dept. Public Works, Gov't. of Canada, Ottawa (Cleaning Wharf)	50.00
F'ton. Phalanx Club (Sweeping Drill Hall at Exhibition)	11.87
W. J. Gorman (Parts supplied for Shovel)	24.51
Ashfield Construction Ltd. (Rental on Welder).....	12.00
Paul Harris (Installation of Water and Sewer on Fenety Street)	15.00
Charles Biletsky (Sale of 45 Gallons RS-1)	14.61
Diamond Construction Co. Ltd. (Sale of 45 Gallons RC-3, Asphalt)	12.76
W. J. Gorman (Rental on Grader)	9.00
Town of Marysville (250 Bags of Calcium Chloride)	773.02
E. B. Billings (Installation of Storm Sewer)	63.23
F'ton. Exhibition Ltd. (Rental on Grader and Operator's Wages)	30.35
Charles Llewellyn (Rental on Grader at Connaught Street)	11.81
Abe Levine & Sons Ltd. (Sale of 1 Scrap Boiler @ \$10.00 per ton)	18.70
Lemont's Ltd. (Installation of Storm Sewer)	77.04
F'ton. Tire Ltd. (14 Bags Salt)	14.98
Bemrose and Kilburn (8 Bags Salt)	8.56
Fowler Bros. (Installation of Water and Sewer on lots on Smythe Street)	44.61
F'ton. Housing Ltd. (Installation of Water and Sewer on lots on Reid Street)	32.40
L and L Builders (Installation of Water and Sewer on lots on Windsor Street)	8.10
D. E. Wolsenholme (Installation of Water and Sewer on Fenety Street)	8.10
Wendall Harris (Installation of Water and Sewer on Squires Street)	4.05
Maritime Engineering Ltd. (Installation of Water and Sewer on Clark Building, Brunswick St)...	16.20
Industrial Leasehold Construction Ltd. (Installing Water, Sewer, Storm Sewer and Sprinkler System, Estey and Curtis)	28.35
J. Clark & Sons Ltd. (Sale of $\frac{1}{2}$ yard sand)68
Journal Voucher (Materials sold to other departments) ..	622.11
Journal Voucher (Machinery rental on other accounts)..	45,140.08
Journal Voucher (Labor)	267.55
Journal Voucher (Gas and Oil)	4,440.59
Journal Voucher (Holiday and Sick Leave Account).....	<u>3,556.32</u>
TOTAL	\$ 56,688.38

The Gross Expenditure is divided as follows:-

Labor -	Being the total of Roads and Streets Pay-Rolls, which includes the cost of hired trucks or any other machinery hired by the hour	\$ 115,150.32
Material- Charges	Which includes Workmen's Compensation, Unemployment Insurance and all material charges including purchase and repairs to City owned equipment	119,675.38

The labor charges of \$115,150.32 are divided into the following items. These items give a good idea of the amount and kind of work done by the Roads and Streets Department during the year.

Item 1.	<u>Snowploughing Sidewalks</u> :- 40.12 miles	\$ 1,324.35
2.	<u>Snow Control</u> :- Blowing, shovelling and hauling snow, ploughing or scraping roads, cleaning gutters, thawing catch basins of ice and snow and any other means of snow control, 60.06 miles	22,115.72
3.	<u>Sanding Streets and Walks</u> :- Storing sand in winter storage piles and spreading same on slippery streets and walks.....	10,657.40
4.	<u>Streets</u> :- General work of maintenance of streets and sidewalks and any other items such as building culverts, curbs and gutters or pavements which are not mentioned under some particular heading	34,627.85
5.	<u>Surface Sewers</u> :- Cleaning, flushing and repairing surface sewers and building new catch basins on existing streets	9,985.73
6.	<u>Yard</u> :- Men working in Blacksmith Shop and repair work in City Yard	3,417.00
7.	<u>Grading and Gravelling</u> :-Grading and application of gravel for maintenance on City Roads and Streets	1,037.11
8.	<u>Lincoln Road</u> :- All work done on the River Road from Alexandra Street to easterly City line, other than work done by the motor grader and pavement maintenance	275.63
9.	<u>Doak Road</u> :- All work done on the Road other than work done by the motor grader ...	412.34
10.	<u>Wilsey Road</u> :- All work done on the Wilsey Road other than work done by the motor grader	877.53
	Forward	\$ 84,730.67

	Carried Forward.....\$	84,730.67
Item 11. <u>New Maryland Road</u> :- Montgomery Street to southern City line. All work done on this road other than work done by the motor grader	54,82	
12. <u>Rural Roads</u> :- Hanwell Road, from C.N.R. Crossing to City line, portion of Forest Hill Road from Residence #812 to end of road; Smythe Street from Montgomery Street to Trans Canada Highway; Priestman Street, Flanagan Road and Dunn's Road. All work done on these roads other than work done by the motor grader	441.24	
13. <u>Street Cleaning</u> :- All cleaning and removing of dirt, leaves, etc. from streets	24,044.72	
14. <u>Tarvia Repairs</u> :- Patching and repairing Asphalt or Tar Pavement and applying seal coat or light tar or asphalt to pavements...	4,945.34	
15. <u>City Road Patrols</u> :-	843.59	
16. <u>Parking Lots</u> :- All cleaning and removing papers, rubbish, leaves, etc. on Parking Lots	<u>89.94</u>	
	TOTAL	<u>\$115,150.32</u>

Following is a table comparing Labor Expenditure in these items from 1956 to 1959:-

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS LABOR ITEMS

<u>ITEM</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>
1. Snowploughing Sidewalks	1,304.90	721.59	1,340.20	1,324.35
2. Snow Control	24,996.36	17,654.53	21,490.11	22,115.72
3. Sanding Streets and walks	5,360.02	4,093.77	9,055.78	10,657.40
4. Streets	16,656.23	25,934.35	24,424.49	34,627.86
5. Surface Sewers	1,762.75	2,864.58	4,085.76	9,985.73
6. Yard	5,093.97	5,338.31	3,876.29	3,417.00
7. Grading and Gravelling	2,146.68	1,668.43	1,298.49	1,037.11
8. Lincoln Road	149.61	189.52	785.45	275.63
9. Doak Road	137.02	1,497.87	17.12	412.34
10. Wilsey Road	----	----	75.54	877.53
11. New Maryland Rd..	254.70	102.30	1,113.52	54.82
12. Rural Roads	3.36	249.56	226.69	441.24
13. Street Cleaning	14,956.40	21,725.37	20,816.27	24,044.72
14. Tarvia Repairs	4,389.59	6,939.11	8,719.14	4,945.34
15. City Road Patrols	559.37	878.56	1,114.30	843.59
16. Parking Lots	----	----	8.68	89.94
TOTAL	\$ 77,770.08	89,857.85	98,447.83	115,150.32

Some of the above items for Labor may be better understood by the following explanations:-

Item 1 - 40.12 miles of sidewalks were kept ploughed this year. To the labor cost of \$1,324.35 must be added \$1,371.63 (Workmen's Compensation, Pension Fund, Gas, Oil, Repairs and Depreciation) giving a total cost of \$2,695.98 or a unit cost for ploughing of sidewalks of approximately \$67.19 per mile for 1959.

Item 2

<u>Snow Control</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>
Snowploughing Roads and Streets	4,059.22	3,778.67	4,339.59	4,078.30
Blowing, Shovelling & Hauling Snow	19,118.99	11,298.73	14,794.07	12,565.66
Catch Basins	968.01	1,700.65	1,502.68	3,921.80
Snow Fences	505.20	480.63	560.21	639.68
Keeping Drains on the Hills Open	254.14	250.05	230.60	723.68
Thawing Culverts	90.80	145.79	62.96	186.60
TOTAL	\$ 24,996.36	17,654.53	21,490.11	22,115.72

60.06 miles of Roads and Streets were ploughed and maintained during the winter months.

The unit cost per mile of ploughing and maintaining City Roads and Streets was \$1,321.00 and was calculated as follows:-

Labor (Snow Control)	\$ 22,115.72
(Sanding Roads)	10,657.40
Workmen's Compensation	983.19
Pension and Holiday Fund Paid by City	4,915.96
City Trucks (2,701½ hours @ \$2.00 per hour)	5,403.00
(760 hours @ \$1.50 per hour)	1,140.00
City Road Patrols (1518½ hours @ \$6.00 per hour)	9,111.00
Sicard Truck Plow (15 hours @ \$10.00 per hour)	150.00
City Bulldozers (434 hours @ \$4.50 per hour)	1,953.00
(233 hours @ \$7.00 per hour)	1,631.00
City Thawing Machines (816 hours @ \$2.00 per hour)	1,632.00
Front End Loader (575 hours @ \$10.00 per hour)	5,750.00
City Snow Blower, 144 hours	857.23
Sand	8,532.20
Rock Salt (230 tons @ 19.637)	4,516.51
TOTAL	\$ 79,348.21

It is interesting to note the account submitted to the Provincial Government for Snow Control. This account does not exactly coincide with this report as to dates, being the expenditure made from November 1, 1958 to May 1, 1959. It is a very exact account of Snow Control costs during the above period and is incorporated in this report for record purposes.

Department of Public Works
Province of New Brunswick.

In Account With
The City of Fredericton

City Pay Rolls charged to Snow Control	\$ 35,862.78
Workmen's Compensation	918.65
Holiday and Pension Fund - paid by City	4,593.24

City Trucks:-

1957 Chevrolet 3 T 811½ hrs. @ \$2.00	1,623.00
1956 Fargo 3 T 776 hrs. @ \$2.00	1,552.00
1955 Chevrolet 3 T 738 hrs. @ \$2.00	1,476.00
1958 G. M. C. 3 T 592 hrs. @ \$2.00	1,184.00
1957 International ½T 780 hrs. @ \$1.50	1,170.00
1953 Chevrolet 1 T 22 hrs. @ \$1.50	33.00

City Jeeps - Sidewalk Plow:-

Jeep #11 272 hrs. @ \$1.50	408.00
Jeep #12 243 hrs. @ \$1.50	364.50
Jeep #17 146 hrs. @ \$1.50	219.00

City Road Plow:-

Allis Chalmers Grader 557½ hrs. @ \$6.00	3,345.00
Austin Western Grader 502 hrs. @ \$6.00	3,012.00
Champion Grader 526½ hrs. @ \$6.00	3,159.00
Sicard Truck Plow 15 Hrs. @ \$10.00	150.00
Pettibone-Mulliken Front End Loader 613 hrs. @ \$10.00	6,130.00
City Thawing Machine 856 hrs. @ \$ 2.00	1,712.00

City Bulldozers:-

1953 D2 Cat. 103 hrs. @ \$ 4.50	463.50
1957 D2 Cat. 342 hrs. @ \$4.50	1,539.00
1953 D6 Cat. 237 hrs. @ \$7.00	1,659.00

City Snow Blower Sicard Jr.: -

Total hours in use - 144	
663.75 Gals. Gas @ 32¢	212.40
44 Qts. Oil @ 33¢	14.52
Insurance	17.70
Repairs	162.87
Depreciation - 10% of Depreciated Value (4,497.40) ..	449.74

Sand

Bemrose and Kilburn 1882 yards @ \$1.00	1,882.00
Bemrose and Kilburn 1008 yards @ \$1.15	1,159.20
S. S. Baird & Sons 918 yards @ \$1.00	918.00
Bemrose and Kilburn 2020 yards @ \$1.15	2,323.00

Highway Salt

270 tons @ \$19.637	<u>5,301.99</u>
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TOTAL	\$ 83,015.09
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NOTE:-

Wages of operators of City Machines do not appear as they are included in Pay Rolls charged to Snow Control Account.

Certified Correct,

City Engineer.

Snow Fall in Fredericton for the last five years was as follows:-

Dec. 1, 1954 to November 30, 1955	136-9/10 inches
Dec. 1, 1955 to December 31, 1956 (13 months) ...	139-6/10 inches
Jan. 1, 1957 to December 31, 1957	81-3/10 inches
Jan. 1, 1958 to December 31, 1958	111.25 inches
Jan. 1, 1959 to December 31, 1959	61-5/10 inches

Snow Fences:- Eleven thousand feet of lath and wire snow fencing was erected to control snow.

Item 3

Sanding Streets and Walks:- 7916 cubic yards of sand was used during the winter of 1959. Cost of the labor for sanding streets and walks during the winter was \$10,657.40.

Item 4

Streets:-

Repairs to Streets (Repairs to Curbs, driveways, sidewalks, bridges, culverts, erecting of guard rails, constructing barricades, rip-rapping, etc.)	\$ 4,650.30
Repairs to Machinery	9,878.85
Weather Account (Holidays)	19,500.89
Dust Control (Unloading and Spreading Calcium Chloride)	580.30
Compensation Adjustment (Retroactive Pay). .	17.52
TOTAL	<u>\$ 34,627.86</u>

In 1959, 170 tons of Calcium Chloride and 230 tons of Malagash Salt were purchased for dust control and de-icing.

Item 5

Surface Sewers:-

The Surface 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 or extensions needed to the sewer outlets.

Under this heading extensions were made on Campbell Street near the Armouries, on Woodstock Road near R.C.M.P. Barracks and at the Carleton Ward Park Grounds. Repair was made to the 24" Surface Sewer at the corner of Beaverbrook and Tweedsmuir Streets.

Item 7

Grading and Gravelling:-

4728.996 tons of crushed gravel was used in the maintenance and repairs to Gravel Roads under Roads and Streets.

The crushed gravel was purchased from Forbes and Sloat at a cost of 85¢ per ton, 10¢ per ton for loading and 40¢ per ton for hauling, making a total cost per ton of crushed gravel, delivered to the job of \$1.35.

Under this heading the following Roads were
gravelled:-

Edinburgh Street, Green Road, shoulders of Lincoln Road, Smythe Street, Bridge Street, Inglewood Drive, Campbell Street, College Hill Road, Dunn's Crossing Road and various driveways in the City where necessary. A stock pile was also placed in the City Yard for spring frost boils and excavation repairs.

Item 8

Lincoln Road:-

The labor cost under this heading amounted to \$275.63 and included replacing posts, cutting grass and bushes along the right of way to the eastern limits of the City of Fredericton and repairing the shoulders of the Lincoln Road at various locations.

Items 9 & 10

Doak and Wilsey Roads:-

The bushes were cut along the right of way of the above roads and sections of the Wilsey Road were gravelled.

Item 11

New Maryland Road:-

The labor charge of \$54.82 was made up of cleaning the refuse (paper, garbage, etc.) from this road.

Item 13

Street Cleaning:-

The labor expenditure charged to this account amounted to \$24,044.72. To this labor charge, to get the overall cost for cleaning streets must be added a material charge of \$14,548.96, thus making a total cost for cleaning streets of \$38,593.68.

The material charge of \$14,548.96 is made up as follows:-

Labor on repairs to Sweeper	\$ 638.86
Repair material to Elgin Sweeper (including Gutter Broom Wire and Elco Hickory Fibre, etc.) ...	4,677.19
Gas (1770½ Gallons @ 32¢ per Gallon)	566.56
Oil (110 Quarts @ 33¢ per quart)	36.30
Water (343,100 Gallons)	129.05
Insurance	59.00
Depreciation (Elgin Sweeper)	----
Sicard Flusher (Repairs)	319.50
Labor charge repairing Sicard Flusher	264.62
Sicard Flusher (Depreciation)	1,950.00
Water Sicard Flusher (4,491,000 Gallons)	812.83
Oil - Sicard Flusher (226 Quarts @ 33¢ per Quart)....	74.58
Gas - Sicard Flusher (2774 Gallons @ 32¢ per Gallon)..	887.68
Hand Brooms, Shovels, Repairs to Carts, etc.	732.79
Insurance - Sicard Flusher	68.00
City Machinery (Trucks)	<u>3,332.00</u>
TOTAL	<u>\$14,548.96</u>

The Elgin Street Sweeper worked 1141 hours during 1959. The actual cost for cleaning streets with the machine was \$8,140.19 and was computed as follows:-

Labor on repairs to Street Sweeper	\$ 638.86
Repair materials to Elgin Street Sweeper, including Gutter Broom Wire and Elco Hickory, etc.	4,677.19
Gas (1770½ Gallons @ 32¢ per Gallon).....	566.56
Oil (110 Quarts @ 33¢ per Quart)	36.30
Water (343,100 Gallons)	129.05
Insurance	59.00
Depreciation (Elgin Street Sweeper)	----
Labor (including Workmen's Compensation, Holiday and Pension Fund)	<u>2,033.03</u>
TOTAL	<u>\$ 8,140.19</u>

The operating dates for the above machine were from April 3, 1959 to December 3, 1959.

In 1955 the City of Fredericton purchased a Sicard Master Flusher with a capacity of 2250 Imperial Gallons. The price of this machine was \$19,435.00 and was paid for in 1956.

The operating dates for the above mentioned machine were from April 13, 1959 to December 3, 1959.

The Flusher worked 1002 hours. The actual cost for cleaning streets with this machine was \$6,056.16 and was computed as follows:-

Repair material to Sicard Flusher	\$ 319.50
Labor charges repairing Sicard Flusher.....	264.62
Gas (2774 Gallons @ 32¢ per Gallon)	887.68
Oil (226 Quarts @ 33¢ per Quart)	74.58
Water (4,491,000 Gallons)	812.83
Insurance	68.00
Depreciation	1,950.00
Labor (including Workmen's Compensation, Holiday and Pension Fund)	<u>1,678.95</u>
TOTAL	<u>\$ 6,056.16</u>

Item 14

Tarvia Repairs:-

Labor and Machinery	\$ 7,610.34
Materials	<u>10,054.77</u>
TOTAL	<u>\$ 17,665.11</u>

The labor expenditure charged to this account, amounted to \$4,945.34.

In 1958 a large aggregate dryer and aggregate conveyor belt was purchased to facilitate the mixing of patching material in the City Yard. This equipment has made a big improvement in the quality of the patching material produced at the yard and has also accelerated the operation. Practically all patching material used on the Streets was produced at the City yard in 1959 with a few tons of patching being obtained from paving contractors in the area.

The total expenditure for Patching City Streets for 1959 was \$17,665.11 and was computed as follows:-

Asphalt (3588 Gals. RC-3)	\$ 3,896.19
(2475 Gals. RS-1)	1,243.02
(1760 Gals. MC-4)	<u>750.24</u> \$ 5,889.45
Less Credit on return of Drums and sale of Material to private parties	<u>1,295.62</u> \$4,593.83
Cost of Asphalt material used in patching City Streets, patching material obtained from W. J. Gorman and Diamond Const. Co. Ltd.	1,097.15
Less Credit on patching material sold to Experimental Station, Lincoln Road and John L. Simms & Sons....	<u>121.10</u> 976.05
TOTAL ASPHALT MATERIAL COST FOR PATCHING CITY STREETS.....	\$ 5,569.88
Kerosene (2096 Gallons)	549.15
Sand and Gravel (770.465 tons)	<u>819.11</u>
Forward	\$ 6,938.14

	Carried Forward	\$ 6,938.14
Rock Dust and Chip (293.05 tons)	659.36	
Cost of Conveyor, Hopper and Dryer (\$6,526.86, Depreciation 10% of \$5874.17 Depreciated Value) ..	587.42	
Miscellaneous, materials, etc.	540.71	
Installation of vibrator on Gravel Hopper	283.02	
Repairs to Plant	100.79	
Maritime Electric Co. (Power)	61.65	
Labor (City employees including Pension Fund, Workmen's Compensation and Holiday Account)	5,793.02	
City Machinery, trucks, roller, loader, boiler, etc... <u>2,701.00</u>		
TOTAL	<u>\$ 17,665.11</u>	

Item 15

City Road Patrol:-

The total repair charges on our Road Patrols for the last three years were:-

<u>Date Purchased</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>
1950 Austin Western #99H	1,879.40	3,863.14	4,675.31
1953 Champion	1,731.33	2,324.45	2,647.18
1955 Allis Chalmers (AD-40)	1,590.93	1,992.45	3,365.60

The following were purchased this year and charged to Roads and Streets:-

1 - 1959 Chevrolet $\frac{1}{2}$ ton, P.V. Model 31-04 heater and defroster, H.D. Springs, Dual Horns, Air Cleaner - \$2,637.00, less special discount \$267.00 = \$2,370.00 plus tax \$71.10	\$ 2,441.10
1 - 1959 Willys Jeep, C.J.5, Serial No. 57548-92758 Motor No. 4J-227405, Wt. 2164, equipped with Western Snow Plow #500, 2 sets chains, dual vacuum wipers, jack, heater, oil filter, cab - \$3,395.89, less trade in on Jeep, \$895.89 = \$2,500.00, plus tax \$75.00	2,575.00
1 - 1959 International Model B 130, Serial No. C929B, Motor No. 3781-C, $8\frac{1}{2}$ Pick-up body, 6 cylinder, B 264 Engine, 4 Speed transmission, fresh air heater and defroster, full flow oil filter, dual electric windshield wipers, foam rubber seal cushions, directional signals, oil bath, air cleaner, 750x16, 6-ply goodyear tires and tubes (3T) Wt. 4400 lbs. - \$3,306.00, less trade-in on 1953 Chev. 1 ton, \$406.00 = \$2,900.00, plus tax \$87.00	<u>2,987.00</u>
Forward	\$ 8,003.10

	Carried Forward	\$ 8,003.10
1 - 1959 Ford F-600, 154" W.B., Serial #4816054YK59141, 6.5 wheels 7, 825 x 20, 10-ply nylon H. D. Springs, 2 speed axle, front shocks, heater, custom cab, turn indicators, 2 mirrors 6 x 9, mud flaps, power take off installing body, \$4,720.00, less trade-in on 1955 Chev. - serial #51643622227, \$620.00 = \$4,100.00, plus tax \$123.00	4,223.00	
1 - John Thompson Leonard 16 H.P. standard upright boiler, 34" diameter x 6' high, built for a designed working pressure of 100 lbs. under A.S.M.E. code and provincial regulations, complete with grates, fire and ash doors, smoke hood, safety valve, steam guage and siphon, water guage glass and try cocks, feed valve, check and blow down value \$1,512.50, plus Federal Tax \$166.38 = \$1,678.88, plus provincial tax \$50.37..	1,729.25	
1 - DA 300 Miller Electric Welder \$1,894.00, plus tax \$56.82	1,950.82	
1 - 10 Ton Hydraulic Jack	360.50	
2 - Circle D #163 Lamps, complete with 300 Watt Floods 50' Cord \$177.60, less 15%, plus Sales Tax	<u>155.49</u>	
TOTAL	<u>\$ 16,422.16</u>	

Following is the list of vehicles and machinery used and charged to Roads and Streets, showing a comparison of repair charges for 1958 and 1959, including tires and tubes.

Name of Vehicle or Machine	Year Purchased	Repairs 1958	Repairs 1959
Austin Western Grader #99H	1950	3,863.14	5,181.05
Champion Grader	1953	2,324.45	3,027.16
Allis Chalmers Grader AD-40	1955	1,992.45	3,835.23
Caterpillar D-6 Bulldozer	1953	1,920.74	4,927.52
Caterpillar D-6 2 Bulldozer	1954	1,766.41	1,501.92
Caterpillar D-2 Bulldozer	1957	729.19	1,614.33
Michigan T6K Shovel (3/8 Yard)	1947	2,324.88	2,358.69
Unit Shovel	1957	1,513.63	2,779.42
Sicard Jr. Snow Blower	1949	1,010.53	440.11
Sicard Flusher (2250 I.G.Capacity)	1955	545.71	584.12
Willys Jeep #12 (Traded in 1959)	1955	381.56	368.94
Willys Jeep #17	1957	288.03	400.12
Willys Jeep #11	1958	94.22	321.20
Willys Jeep #12	1959		118.07
Fargo 3 Ton Dump Truck	1956	122.32	283.62
Ford 3 Ton (Traded in May 1958)	1953	76.23	---
Chevrolet 3 Ton (Traded in 1959)	1955	772.60	249.61
Chevrolet 3 Ton (Dump Truck)	1957	<u>372.22</u>	<u>382.66</u>
Forward		20,098.31	28,373.77

	Year Purchased	<u>Repairs</u> <u>1958</u>	<u>Repairs</u> <u>1959</u>
Carried Forward		20,098.31	28,373.77
International $\frac{1}{2}$ Ton Pic-Up	1957	209.11	647.32
Chevrolet $\frac{1}{2}$ Ton Panel	1957	62.37	271.58
Chevrolet 1 Ton (Traded in 1959)	1953	399.16	76.57
G.M.C. 3 Ton	1958	134.45	147.63
Ford 3 Ton (Dump Truck)	1959	----	261.77
International 1 Ton	1959	----	124.48
Chevrolet $\frac{1}{2}$ Ton	1959	----	55.60
Arpic Compressor	1953	490.28	203.72
Ingersol Rand Compressor	1957	198.84	206.69
Elgin Street Sweeper	1953	4,370.37	5,316.05
Pettibone Mulliken Loader	1958	1,151.32	2,980.73
Tarvia Roller Model #157	1955	121.06	228.85
Ford-Tudor Coach	1957	<u>234.65</u>	<u>734.22</u>
TOTAL		\$27,469.92	39,598.98
		=====	=====

CAPITAL ACCOUNT CURB and GUTTER

The Net Expenditure under this heading amounted to \$ 36,441.09

For the above expenditure of \$36,441.09 concrete curbs and gutters were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Clark Street, C.P.R. tracks to MacLaren Avenue (both sides)	1,995
Miles Street, Barker Street to East limits (both sides). .	429
Union Street, Gibson Street to Underpass (east side)....	1,405
Gibson Street, C.P.R. tracks to approximately 800' west of City line (east side)	3,365
Hermitage Court (both sides)	591
Gibson Street, end of present curb to approximately 800' west of City line (west side)	1,090
Rookwood Avenue, end of curb to C.N.R. tracks (both sides)	699
Inglewood Drive, Rookwood Avenue to Elmwood Court (both sides)	830
Elmwood Court (both sides)	1,341
Edinburgh Street York Street to Smythe Street (both sides)	4,015
Smythe Street, Shamrock Terrace to Hawthorne Terrace (both sides)	1,608
Hanson Street - Green Road to Loyalist Court (both sides)	1,624
Valley View Court (both sides)	485
Loyalist Court (both sides)	484
Needham Street, York Street to Regent St. (both sides)..	2,576
Carleton Street, Needham Street to Aberdeen Street (both sides)	977
Brunswick Street, Allen Street to Barrack Lane (west side)	645
Miscellaneous	<u>88</u>
TOTAL	<u>24,247</u>

All the listed Curbs and Gutters were built by City Crews.

All the concrete poured was purchased ready-mixed on the job from the firm of Blakeny Concrete Products Ltd., who during the year sold to Elmtree Concrete Ltd. at a contract price of \$14.50 per cubic yard. A cubic yard of concrete poured 20.6 lineal feet of Curb and Gutter.

The unit cost of one lineal foot of Curb and Gutter, found by dividing the total length laid which equals 24,247 lineal feet into the total cost of \$36,441.09 is \$1.50 per lineal foot.

CAPITAL ACCOUNT PAVING

Gross Expenditure	\$ 21,161.78
Credits	<u>3,953.72</u>
Net Expenditure	<u>\$ 17,208.06</u>

The above Credit of \$3,953.72 was to over payment on 1958 Paving Contract to City of Fredericton by Atlas Construction Company Limited.

The net expenditure of \$17,208.06 was made up as follows:-

- (1) Resurfacing and Surface Seal
- (2) New Pavement

(1) Resurfacing and Surface Seal

The resurfacing and surface seal was laid by both the Atlas Construction Company Ltd. and Diamond Construction Company Limited.

Atlas Construction Company resurfaced the following streets:-

<u>Streets</u>	<u>Tons Asphalt</u>
Union Street (repairs on Union Street 1958 contract)...	57,875
Gibson Street, C.P.R. track to approximately 800' from City line	408.4625
Barker Street, Gibson Street to C.P.R. Crossing	121.1125
Tweedsmuir Street, Beaverbrook St. to Albert Street ...	34.400
Albert Street, Tweedsmuir Street to Regent Street	102.075
Needham Street, (Asphalt on sidewalk)	<u>51.950</u>
TOTAL	<u>775.875</u>

In addition 1745 Gallons RS-1 was supplied and applied by the Atlas Construction Company Ltd. on the above City Streets.

Brunswick Street, on the south side, between Allen Street and Barrack Lane was widened 6 feet to aid the traffic congestion in this area, namely through traffic on Brunswick Street and improve the flow of traffic on and off the Fredericton Highway Bridge. The Pavement for this construction was laid by the Diamond Construction Company Limited using the following material:-

$\frac{3}{4}$ " Dense mix Asphalt 86.8 tons @ \$10.00 per ton	\$ 868.00
Seal 23.2 tons @ \$11.00 per ton	<u>255.20</u>
TOTAL	<u>\$1123.20</u>

(2) Pavement

The laying of new pavement on City Streets was again done by Atlas Construction Company Ltd. and the Diamond Construction Company Ltd.

The following streets were paved with Asphalt pavement by the Atlas Construction Company Limited:-

<u>Streets</u>	<u>Tons Asphalt</u>
Gibson Street (near City line raised grade of existing Road and widened street from C.P.R. tracks to near City line)	472.925
Carleton Street, Needham Street to Aberdeen Street....	163.250
Needham Street, York Street to Regent Street (rebuilt)	<u>264.200</u>
TOTAL	<u>900.375</u>

The above pavements were laid to a thickness of 3". The street grading and preparatory work was done by regular City crews. The pre-mixed material was supplied and laid by the Atlas Construction Company Ltd. from its plant at Gagetown. The company charged the City of Fredericton for the pavement in place, \$7.51 for $\frac{3}{4}$ " Dense mix and \$8.31 per ton for $\frac{3}{8}$ " minus mix.

In addition the City of Fredericton entered into an agreement with the Provincial Government Department of Public Works to pay $\frac{1}{2}$ or the maximum of \$3,000 for Paving and laying of Curb and Gutters on Forest Hill from Trans Canada By-pass Road to Railway crossing of the Canadian Pacific Railway. The construction was done by the Diamond Construction Company Ltd. and the expense incurred was as follows:-

To Grading and raising Catch Basins and Manholes	\$ 568.00
1,567 lineal feet of concrete Curb and Gutter @ \$2.00 per foot	3,134.00
410 tons Asphalt	<u>2,870.00</u>
Total	\$ 6,572.00
Gov't. Share $\frac{1}{2}$ or maximum \$3,000.....	<u>3,000.00</u>
CITY'S SHARE..	<u>\$ 3,572.00</u>

CAPITAL ACCOUNT SEWER DOMESTIC

Gross Expenditure and Stocked Material	\$ 32,590.42
Less Inventory Dec. 31, 1959.	<u>1,073.97</u>
	31,516.45
Credit	<u>2,791.54</u>
Net Expenditure	<u>\$ 28,724.91</u>

The above credits are made up as follows:-

J. D. Creaghan Co. Ltd. (Sale of 1 Manhole frame and cover)	\$ 40.38
Imperial Oil Co. Ltd. (Sale of material for Sewer installation at Waterloo Service Station, Waterloo Row).....	60.57
Fredericton Exhibition Co. Ltd. (Relocating Water and Sewer at New Building)	459.62
E. M. Young Ltd. (Sale of 2 joints of 8" Pipe @ 79¢ per foot)	3.95
Province of N. B., Dept. of Public Works (3 Manhole Covers and Frames)	121.14
Diamond Construction Co. (Installing Sewer, Turnbull Court)	545.77
Journal Voucher (Material paid for by Capital Account Sewer and used by other City Departments)	1,240.59
Luke S. Morrison (1 Manhole Cover and Frame)	40.38
Diamond Construction Co. Ltd. (Sale of 200' of 8" T.C. Pipe and 3 Manhole Covers and Frames)	<u>279.14</u>
TOTAL	<u>\$2,791.54</u>

Domestic Sewers were laid at the following locations:-

<u>Location</u>	<u>8" T.C. Pipe Lineal Feet</u>
Bridge Street, C.P.R. Track to MacLaren Ave.	600
Forest Acres Court	1,906
Fenety Street, Windsor St. to Hanson Street	502
Montgomery Street, York Street to 980' west	980
Reid Street, Green Road to Regent Street	842
Squires Street	469
Spruce Terrace	<u>716</u>
TOTAL	<u>6,015</u>

An actual cost of installing the above listed Sewers at the above locations was kept, giving a unit price per foot of \$4.78 for labor and material.

<u>Location</u>	<u>Labor and Machinery</u>	<u>Material</u>	<u>Total</u>
Bridge Street	620.57	761.69	1,382.26
Forest Acres Court	8,543.76	2,770.81	11,314.57
Fenety Street	1,486.47	912.45	2,398.92
Montgomery Street	2,886.91	2,052.00	4,938.91
Reid Street	1,683.35	1,060.36	2,743.71
Squires Street	835.88	459.88	1,295.76
Spruce Terrace	3,711.37	939.41	4,650.78
TOTAL	<u>\$ 19,768.31</u>	<u>8,956.60</u>	<u>28,724.91</u>

Total lineal feet laid 6015, thus making the cost per lineal foot of \$4.78. To this must be added approximately 10% which includes Holidays for City workmen, Pension Fund, Workmen's Compensation, Unemployment Insurance and Engineering; thus making the overall cost of \$5.26 per lineal foot installed.

Material in stock December 31, 1959:-

1155 Lineal feet of 8" T.C.Pipe @ 79¢ per foot	\$ 912.45
4 Manhole Covers and Frames @ \$40.38 each	<u>161.52</u>
TOTAL.....	\$1,073.97

CAPITAL ACCOUNT INTERCEPTOR DOMESTIC SEWER

Expenditure\$ 3,992.57

The above expenditure is a 15% holdback on Ashfield Construction Company for constructing of an Interceptor Sewer in 1958. See 1958 Engineer's Report.

The total expenditure for the above construction was \$81,461.86, made up as follows:-

Ashfield Construction Co. (1958 & 1959)....	\$ 26,617.10
Material - (1958)	51,502.02
Labor (city) - (1958)	2,094.74
Machinery (City) - (1958)	<u>1,248.00</u>
TOTAL	<u>\$ 81,461.86</u>

CAPITAL ACCOUNT SURFACE SEWER

Gross Expenditure and	
Stocked Material	\$ 78,188.77
Less Inventory - 1959 ...	<u>4,052.50</u>
	74,136.27
CREDIT	<u>6,535.49</u>
Net Expenditure	<u>\$ 67,600.78</u>

The above Credit is made up as follows:-

Canadian Petrofina Ltd. (To labor and material for constructing Catch Basin and connecting line on Union Street Motors property as per contract).....	\$ 400.00
H. R. Clark (Sale of 200 Brick)	10.00
J. D. Creaghan Co. Ltd. (Material used installing Sprinkler System)	40.05
Imperial Oil Co. Ltd. (Material used installing Domestic Sewer, Waterloo Row Service Station)	83.79
Fredericton Exhibition Co. Ltd. (Material used relocating water and sewer mains)	157.73
R. B. McCormack (Material used installing Sewer on Lot #25, Green Road)66
Bergerville Estates Ltd. (Sale of 1 Catch Basin Cover and Frame)	42.69
Paul Harris (Material used installing Sewer on Fenety Street)	5.93
E. B. Billings (Material used installing Sewer Band A Service Station, corner Smythe and Dundonald Streets)	66.43
L and L Builders (Material used installing Sewer at Lot #22, Fenety Street)	6.60
E. B. Billings (Material used installing Surface Sewer at 816 York Street)	1.31
A. R. Clark (Material used installing Sewer at Forest Acres Court)45
Willard K. Timms (Material used installing Sewer at 274 Montgomery Street)	18.40
Lemont's Ltd. (Material used installing Surface Sewer, Queen Street)	70.06
Luke S. Morrison (Material used installing Sprinkler System)	38.41
Industrial Leasehold Construction Co. (Material used installing Storm Sewer and Sprinkler System, Estey and Curtis Building)	60.12
Diamond Construction Co. (Sale of 45' - 10" Concrete Pipe)	35.10
Journal Voucher (Materials paid for by Capital Account Surface Sewer and used by other City Departments)...	<u>5,497.76</u>
TOTAL	<u>\$ 6,535.49</u>

Under this heading, Surface Sewers were laid at the following locations:-

Location	CONCRETE										C.M. 48"	C.I. 8"
	60"	48"	36"	30"	24"	18"	15"	12"	10"			
Bridge Street								340	141			
Back Drain			120									
Back Drain												
Diversion	100											
Forest Acres Crt.					60	192	40	748	252	80		
Fenety Street					206				237			
Forest Hill									282			
Gibson Street									88	42		
Green Road									300			
Grieves Creek		356										
Inglewood Drive							112			6		
Montgomery St.			192							72		
Reid Street										105		
Squires Street										460	75	
Spruce Terrace									328	372	180	
Smythe Street				68								
Union Street											57	
Windsor Street					42						66	
Woodbridge St.											66	
York Street				1156							195	
TOTALS	100	356	312	4224	308	304	368	3972	1494	80	28	

Total Lineal Footage, all sizes - 8,546 feet.

An itemized account was kept of installing Surface Sewers at the above locations and expenditures were made as follows on the larger constructions:-

Location	Labor and Machinery	Material	Total
Bridge Street	490.18	792.19	1,282.37
Back Drain	1,151.96	1,252.50	2,404.46
Back Drain Diversion	643.11	2,682.35	3,325.46
Forest Acres Court	6,340.74	5,258.39	11,599.13
Fenety St. (100% Rock)	2,949.76	2,006.63	4,956.39
Forest Hill	449.99	766.53	1,216.52
Gibson Street	895.18	809.66	1,704.84
Green Road	720.22	1,017.72	1,737.94
Grieves Creek	1,936.97	7,517.46	9,454.43
Montgomery St. (Rock)	1,605.34	2,349.96	3,955.30
Reid Street	1,962.45	1,551.93	3,514.38
Squires Street	1,153.69	778.28	1,931.97
Spruce Terrace (50% Rock)	738.60	1,359.33	2,097.93
Smythe Street	318.40	468.12	786.52
Windsor Street	171.12	472.33	643.45
Woodbridge Street	798.38	1,197.34	1,995.72
York Street (75% Rock)	6,284.48	8,150.86	14,435.34
TOTAL	\$ 28,610.57	38,431.58	67,042.15

The following is the total cost for laying the various sizes of pipe in place:-

60" Concrete Pipe	\$33.63 per lineal foot
48" Concrete Pipe	26.86 per lineal foot
36" Concrete Pipe	20.55 per lineal foot
30" Concrete Pipe	12.60 per lineal foot
24" Concrete Pipe	12.00 per lineal foot
18" Concrete Pipe	7.53 per lineal foot
15" Concrete Pipe	6.90 per lineal foot
12" Concrete Pipe	5.84 per lineal foot
10" Concrete Pipe	4.23 per lineal foot

Stock on hand, December 31, 1959:-

255 feet of 10" Concrete Pipe @ 78¢ per foot	\$ 198.90
428 feet of 12" Concrete Pipe @ 94¢ per foot	402.32
40 feet of 15" Concrete Pipe @ \$1.35 per foot	54.00
76 feet of 18" Concrete Pipe @ \$1.91 per foot	145.16
16 feet of 24" Concrete Pipe @ \$4.65 per foot	74.40
200 feet of 30" Concrete Pipe @ \$5.36 per foot	1,072.00
28 feet of 36" Concrete Pipe @ \$8.28 per foot	231.84
4 feet of 42" Concrete Pipe @ \$10.04 per foot	40.16
44 feet of 48" Concrete Pipe @ \$14.58 per foot	641.52
Catch Basins, 18 Gratings and Frames @ \$42.69 each..	768.42
2 Gully Grates @ \$48.76 each	97.52
5000 Brick @ \$55.22 per thousand	276.10
38 Bags Cement @ \$1.32 per bag	<u>50.16</u>
TOTAL	<u>\$4,052.50</u>

CAPITAL ACCOUNT WATER

Gross Expenditure and Stocked Material	\$ 75,314.19
Less Inventory Dec. 31/59.	<u>25,360.62</u>
	\$ 49,953.57
CREDITS.....	<u>5,293.53</u>
Net Expenditure	\$ 44,660.04

The above Credits are made up as follows:-

No. 8 Works Co. R.C.E. Gagetown (2 Rubber Gaskets and rubber head tip for 12" Mechanical Joint Pipe)	\$ 5.40
Forbes & Sloat Ltd. (Sale of Bend and Tee for Mechanical Joint Pipe)	103.98
J. D. Creaghan Co. Ltd. (Installing Sprinkler System, Queen Street)	302.78
F'ton. Exhibition Co. Ltd. (relocating water mains, Exhibition Grounds)	430.25
Area Engineer's Office, St. Anne Pt. (Tapping Water Main)	124.97
Maritime Co-op. Services Ltd. (Installing 4" C.I. Water Main on Barker Street)	2,192.15
C. W. Ritchie & Sons Ltd. (Sale of Tapping Sleeve and Valve, reducer lead and 2 M. J. Bends).....	216.42
Lemont's Ltd. (Sale of 8" and 6" C.I. Water Pipe)....	164.56
Luke S. Morrison (Installing Sprinkler System, Queen Street)	309.36
Industrial Leasehold Construction Co. (Installing Sprinkler System, Estey & Curtis Building).....	230.67
Weyman Construction Co. Ltd. (Sale of 16' of 8" C.I. Water Pipe)	58.56
Journal Voucher (Material paid for by Capital Account Water and used by other City Depart- ments)	<u>1,154.43</u>
TOTAL	<u>\$5,293.53</u>

Installations were made at the following locations:-

Location	Size of C. I. Pipe				
	12"	10"	8"	6"	4"
Barker Street				176	1520
Forest Acres Court		675		803	
Fenety Street			16	512	
Montgomery Street	944			16	
Reid Street				911	
Squires Street				492	
Spruce Terrace				637	
Windsor Street		290		16	
TOTAL	944	675	306	3563	1520

Total lineal footage, all sizes - 7008 feet.

An itemized account was kept of installing water at the following locations and expenditures were made as follows:-

<u>Location</u>	<u>Labor and Machinery</u>	<u>Material</u>	<u>Total</u>
Barker Street	733.70	752.76	1,486.46
Forest Acres Court (25% Rock)	4,310.67	7,326.26	11,636.93
Fenety Street (100% Rock)	1,595.36	2,052.13	3,647.49
Montgomery St. (75% Rock)	3,094.42	8,766.79	11,861.21
Reid Street	1,762.81	3,383.84	5,146.65
Squires Street	904.06	1,792.43	2,696.49
Spruce Terrace (50% Rock)	2,192.70	2,880.08	5,072.78
Windsor Street	850.19	2,261.84	3,112.03
TOTAL	<u>\$15,443.91</u>	<u>29,216.13</u>	<u>44,660.04</u>

The following is the total cost for laying the various sizes of pipe in place:-

12" Mechanical Pipe.....	\$ 12.57 per lineal foot
10" Mechanical Pipe.....	9.25 per lineal foot
8" Mechanical Pipe.....	8.00 per lineal foot
6" Mechanical Pipe.....	6.50 per lineal foot
4" Mechanical Pipe.....	4.00 per lineal foot

Stock on hand December 31, 1959 was \$25,360.62.

In addition other projects were carried out under the heading Capital Account Water as follows:-

- (1) Water Pumping Station - Pumps
- (2) Water Pumping Station - Electrical
- (3) Carleton Ward Reservoir
- (4) Drilled Wells
- (5) Supply to Dominion Experimental Station,
Lincoln Road

(1) Water Pumping Station - Pumps

The expenditure under this heading amounted to \$483.28, which amount was a holdback on a contract to install a 100 H. P. Motor in 1958, plus new priming equipment and allied equipment.

The total expenditure was as follows:-

1958	\$ 10,688.05
1959 (Balance on holdback).....	<u>483.28</u>
TOTAL	<u>\$ 11,171.33</u>

Included in the above work was a new discharge header pipe with provisions made for the installation of two future pumps.

(2) Water Pumping Station - Electrical

Expenditure 1959 \$ 4,700.00

The above expenditure was made up as follows:-

Richards Electric Co. (Rewinding Motors)	\$ 1,460.00
John A. Kennedy Ltd. (Installing switchboard and rewiring Pumping Station)	<u>3,240.00</u>
TOTAL	<u>\$ 4,700.00</u>

A program for renovating the electrical system in the Fredericton Water Works was authorized in 1957 and tenders were called for a new switchboard to replace one installed in 1925, together with the rewinding of motors and rewiring of main pump room at the Waterworks. This work was commenced in 1958 and finished in 1959.

The total expenditure (1958 and 1959) on this project amounted to \$26,670.32 and was as follows:-

Canadian Westinghouse Supply Co. (Motor control Center)	\$ 13,158.20
John A. Kennedy Co. Ltd. (Rewiring)	8,340.00
Chronoflo Indicator Recorder (Control and Metering Ltd. \$582.00 plus cartage and freight) ...	585.56
Richards Electric Co. (Connecting recorder)	50.47
Richards Electric Co. (Rewinding motors)	1,460.00
Evershed and Vignoles Co. Ltd. (Cabinet, switches and relays \$510.00 plus freight)	522.58
James A. McLaren Associates (Service on revising pumps, etc.)	2,534.38
Miscellaneous (City labor and machinery)	<u>19.13</u>
TOTAL	<u>\$ 26,670.32</u>

(3) Carleton Ward Reservoir

Expenditure \$ 17,267.72

In 1957 the City of Fredericton entered into a contract with the Maritime Engineering Ltd. for the construction of a 1,000,000 Gallon Reservoir in Carleton Ward. This work was commenced in 1957 and completed in 1959 at a cost of \$101,140.95 made up as follows:-

Expenditure 1957	\$ 23,440.28
Expenditure 1958	60,432.95
Expenditure 1959	<u>17,267.72</u>
TOTAL	<u>\$101,140.95</u>

(4) Drilled Wells

Expenditure \$ 647.97

This above expenditure was City Labor and City Machinery charges for miscellaneous work on a new gravel wall well situated at the easterly end of Wilmot Park and at the rear of the Chamber of Commerce Building. This well is presently under construction as a permanent well, the exploratory expenditure follows later in this report under the heading "Water."

(5) Supply to Dominion Experimental Station, Lincoln Road

Gross Expenditure	\$ 32,837.11
Credits	<u>29,498.01</u>
Net Expenditure	<u>\$ 3,339.10</u>

In 1958 the City of Fredericton entered into an agreement with the Federal Government to supply water to the Dominion Experimental Station. The Federal Government is paying 90% of the cost, the City 10% and the City is to supply 30,000 gallons of water per day free of charge, while any water used over this rate per day, on a yearly basis, will be charged for at regular rate.

This project involved the laying of a 12" pipe line, 13,500 feet in length from the intersection of Charlotte Street and University Avenue, along University Avenue, Shore Street, Waterloo Row, the Flats to near the Princess Margaret Bridge, then along the Lincoln Road to the western entrance to the Experimental Station.

A Booster Pumping Station was required to force the water to the high ground on which the "Station" Buildings are located.

Ashfield Construction Co. Ltd. had the contract for the water main installation and Diamond Construction Company Ltd. had the contract for the Booster Pumping Station. The Pumps were supplied under contract from the Canadian Fairbanks Morse Co. Ltd.

All the above work was completed in 1959.

The total cost of the above construction, namely water main, Booster Pumping Station and Pumps amounted to \$172,154.08 and was made up as follows:-

To the supplying, laying and jointing of 12" Water Main from the corner of Charlotte Street and University Avenue to the westerly entrance of the Experimental Farm, Lincoln Road (1958-1959) ..	\$ 122,694.75
To Design & Construction of Booster Pumping Station on the Lincoln Road	<u>42,164.33</u>
Forward	\$ 164,859.08

	Carried Forward.....\$	164,859.08
To supplying and installing Pumping Station equipment on Lincoln Road, 1959	<u>7,295.00</u>	
Total Expenditure to December 31, 1959	172,154.08	
Less Federal Government Share to December 31, 1959	<u>152,723.56</u>	
Total Cost to City of Fredericton to December 31, 1959	\$ 19,430.52	<u> </u>

CAPITAL ACCOUNT GRAVELLED ROADS

Gross Expenditure	\$ 43,886.45
Credit	<u>258.88</u>
Net Expenditure	<u>\$ 43,627.57</u>

The above credit of \$258.88 was for work done and paid for by Dominion of Canada for winter work during the month of January.

Included in the above expenditures are:-

- (1) Grading newly curbed streets
- (2) New road construction and graveling
- (3) Grading and graveling streets

(1) The following newly curbed streets were gravelled:-

<u>Location</u>	<u>Lineal Feet</u>
Clark Street, C.P.R. track to MacLaren Avenue	1,020
Miles Street, Barker Street to east limits	220
Hermitage Court	260
Rookwood Avenue, End of Curb 1958 to C.N.R. tracks	230
Elmwood Court	580
Edinburgh Street, York Street to Smythe Street	2,000
Inglewood Drive, Rookwood Avenue to Elmwood Court	470
Smythe Street, Shamrock Terrace to Hawthorne Terrace....	600
Hanson Street, Green Road to Loyalist Court	930
Valley View Court	210
Loyalist Court	210
Carleton Street, Needham St. to Aberdeen Street	<u>520</u>
TOTAL	<u>7,250</u>

In addition to the above mentioned streets, gravel was also applied on Union Street, Gibson Street and Brunswick Street from the edge of the pavement to the newly constructed curbs and also on Gibson Street where the grade of the existing road was raised to meet the newly constructed curb.

- (2) Under this heading the following streets were constructed or partially constructed this year:-

<u>Location</u>	<u>Lineal Feet</u>
Forest Acres Court	1,475
Fenety Street	500
Windsor Street	700
Squires Street	500
Reid Street	870
Spruce Terrace	600
TOTAL	<u>4,645</u>

- (3) The following streets were gravelled under this heading:-

<u>Location</u>	<u>Lineal Feet</u>
Carleton Street, Needham Street to Aberdeen Street....	520
Green Road, Windsor Street to Graham Avenue and from Smythe Street towards York Street	1,280
Montgomery Street, York Street towards Smythe Street..	1,000
MacLaren Avenue, Bridge Street to Hughes Street	450
Bridge Street	500
Sherwood Court	510
York Street	1,500
Woodbridge Street	700
TOTAL	<u>5,460</u>

The gravel used under this heading was obtained from the following:-

	<u>Crushed Gravel</u>	<u>Base Gravel</u>	<u>Fill</u>
Forbes and Sloat	11,756.075 tons		
S. S. Baird		828.715 tons	
Wm. Thomas		6020.395 tons	1490 cu. yds.

The cost of crushed gravel was 85¢ per ton, plus 55¢ per ton for loading and hauling, making \$1.40 per ton delivered to the job.

The cost of Fill was 75¢ per yard and Base Gravel 75¢ per ton delivered to the site.

Also purchased under this heading was 64 loads of Loam from S. S. Baird and Sons at a price of \$9.00 per load.

CAPITAL ACCOUNT STREET LIGHTS

Gross Expenditure	\$ 8,205.66
Credit	<u>247.00</u>
Net Expenditure	<u>\$ 7,958.66</u>

The above credit of \$247.00 was made up as follows:-

Maritime Electric Co. Ltd. for Multiple Light Fixtures	20 heads @ \$5.65 each....	\$113.00
	20 reflectors @ \$6.70 each...	<u>134.00</u>
	TOTAL	<u>\$247.00</u>

The gross expenditure was as follows:-

Northern Electric Co. Ltd. (1-#63300 C Control).....	\$ 56.18
Canadian General Electric Co. Ltd. (68 G. 6 Luminaires with Brackets Ballasts and Lamps)	528.00
Provincial Secretary-Treasurer (Tax on above Fixtures)	15.84
Canadian General Electric Co. Ltd. (60-F48PG-17 C/W Improved Power Groove Fluor. Lamps and 12 F72PG-17 C/W Improved Power Groove Fluor. Lamps)	335.77
Canadian Westinghouse Co. Ltd. (446 lbs. Polyethylene Jacket Weatherproof Wire #6 Solid 91.07¢ per lb. net, plus 3% Sales Tax)	418.36
Canadian General Electric Co. Ltd. (36-668 WA 4, four foot 2" Mounting Bracket for Wood Pole Mounting, 13.20 each, plus 3% Sales Tax)	489.46
Canadian General Electric Co. Ltd. (30 Form 68 PG 4, Two Lamp Four Foot Fluor. Luminaires for 6.6 Amp. Series etc. @ \$163.35 each, plus sales tax and 5 Form 68 PG 6, Two Lamps Six Foot Fluor. Luminaires for 6.6 Amp. Series, etc. @ \$196.20 each, plus 3% Sales Tax)	6,057.95
Maritime Electric Co. (Labor, trucking and installing Series Lighting Transformer and making line changes for an additional 6.6 ampere series circuit in Carleton Ward. This 15 K.W. transformer was removed from Carleton Street Extension Sub-Station and a 7.5 Dry Type Transformer was set in its place).....	124.02
James S. Neill & Sons Ltd. (500 feet of #12 Solid Wire, plus tax)	9.21
Journal Voucher (City Pay-Rolls)	78.87
Journal Voucher (City Machinery)	<u>92.00</u>
	TOTAL
	<u>\$ 8,205.66</u>

The 30 four-foot fixtures and the 5 six-foot
Fluorescent fixtures were purchased as part of the 1959 Capital
Street Lights Program.

This program was authorized to improve street lighting
on Gibson Street, Barker Street and Union Street as another
phase in the plan to improve street lighting in the City on
major arteries.

The cost of installing the fixtures is not shown, since
Maritime Electric Co. Ltd. had not completed the project at the
time of writing of this report.

1959 - REPORT

LOCAL IMPROVEMENT

In 1959 services were installed at the following locations under the Local Improvement By-Law:-

<u>Location</u>	<u>Service</u>	<u>Cost</u>	<u>Subdivider's Share at By-Law Rates</u>	<u>Cost to City of Fredericton</u>
F'ton. Housing Limited	Water	5,146.65	1,723.03	3,423.62
	Domestic-Sewer	2,835.91	2,113.15	722.76
Reid Street	Storm Sewer	3,536.41	2,568.20	968.21
	Gravel Road	5,292.37	1,950.60	3,341.77
	TOTAL COST	<u>16,811.34</u>	<u>8,354.98</u>	<u>8,456.36</u>
F'ton. Housing Limited	Water	2,696.49	1,189.85	1,506.64
Squires Street	Domestic Sewer	1,335.75	1,459.25	- 123.50
	Storm Sewer	1,943.02	1,669.00	274.02
	Gravel Road	1,347.03	Incomplete 1,347.00	.03
	TOTAL COST	<u>7,322.29</u>	<u>5,665.10</u>	<u>1,657.19</u>
E.C. Atkinson Spruce Terrace	Water	5,072.78	928.56	4,144.22
	Domestic Sewer	4,734.60	1,138.80	3,595.80
	Storm Sewer	5,836.27	2,047.65	3,788.62
	Gravel Road	2,058.28	1,186.20	872.08
	TOTAL COST	<u>17,701.93</u>	<u>5,301.21</u>	<u>12,400.72</u>
A. R. Clark Forest Acres Court	Water	11,636.93	2,339.95	9,296.98
	Domestic Sewer	11,155.51	4,143.75	7,011.76
	Storm Sewer	11,230.65	3,442.50	7,788.15
	Gravel Road	10,223.65	2,799.00	7,424.65
	TOTAL COST	<u>44,246.74</u>	<u>12,725.20</u>	<u>31,521.54</u>
Burden Sub-division Fenety St.	1958 Water	and 1959 - Incomplete 12,379.61	12,379.61	9,893.38
	Domestic Sewer	5,569.77	3,049.15	2,520.62
	Storm Sewer	11,523.41	3,673.71	7,849.70
	Gravel Road	12,486.96	2,814.60	9,672.36
	TOTAL COST	<u>41,959.75</u>	<u>12,023.69</u>	<u>29,936.06</u>

Under Cost Column, Engineering, Pension, Workmen's Compensation, Holiday and Sick Leave costs have not been taken into consideration. For a more realistic cost figure, 10% should be added to include these items.

PUBLIC WORKS

Gross Expenditure	\$ 24,534.56
Credits	<u>549.06</u>
Net Expenditure	\$ 23,985.50
1959 Appropriation	<u>22,900.00</u>
DEBIT	<u>\$ 1,085.50</u>

The Credits of \$549.06 are made up as follows:-

Canadian Petrofina Ltd. (2 prints of City of Fredericton)	\$ 2.40
Anric Engineering Co. (1 - Sepia Print)	10.00
Chas. Smith (To rebate on dead trees - spring planting)	59.65
Harvey Studio (1 print of City of Fredericton)	1.20
Board of School Trustees (Cutting grass for football field at Race Track)	23.88
G. A. Smith (2 copies of Map of City of Fredericton)....	2.40
Harry T. Farris (Labor trucking and delivering waste wood)	8.40
Central Mortgage & Housing Ltd. (4 copies of City of Fredericton)	4.20
Journal Voucher (To general maintenance on Loyalist Cemetery)	200.00
Journal Voucher (Material)	227.31
Journal Voucher (Labor error)	<u>9.62</u>
TOTAL	<u>\$ 549.06</u>

The labor charge under the Public Works expenditure was incurred as follows:-

Trees	\$ 10,151.39
Surveying	124.71
Back Drain	807.75
Municipal Parking Lot	33.30
Unforseen	<u>3,131.84</u>
TOTAL	<u>\$ 14,248.99</u>

TREES:-

Expenditure

The above expenditure includes \$10,151.39 for labor, \$2,740.50 for Machinery (Jeeps, Trucks, Shovels, etc.) and \$1,381.43 for material charges.

In 1959 some seventy trees were removed on the recommendation of the Fredericton Tree Commission. The condemned trees were either in a decadent condition or were a menace to public safety.

The procedure followed at the present time is as follows:-

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

Trees on private property which are condemned as possible breeding places for the Elm Bark Beetle, which carries the fungus of Dutch Elm Disease, are also being removed by City Crews.

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

The system is working very well with a minimum of delay after the tree has been condemned.

Tree pruning was also carried out during the year as well as the usual planting program.

Trees were planted at the following locations:-

Connaught Street	Queen Street
Rookwood Avenue	Sewell Street
Woodstock Road	Old Burial Ground
Hillcrest Drive	Brunswick Street
Waterloo Row	Saunders Street
Carleton Park	

Tree work is an endless job, due to the fact that the Elm Trees are reaching a very mature age and die-back on branches is very rapid.

Trees from which dead wood was removed in the fall of 1958 required practically the same amount of pruning in 1959.

No spraying was needed in 1959 due to the excellent results obtained from the spraying program during 1958.

The chairman of the Fredericton Tree Commission is Mr. Charles Smith.

Under the above heading the following trees were purchased in 1959:-

15 - London Plane @ \$3.50 each	\$ 52.50
15 - Crimson King Maple @ \$4.00 each	60.00
25 - Silver Maple @ \$3.25 each	81.25
15 - Norway Maple @ \$3.25 each	48.75
15 - European Hornbeam @ \$3.00 each	45.00
10 - Lombardy Poplar @ \$1.75 each	17.50
6 - Mountain Ash @ \$3.00 each	<u>18.00</u>
	\$ 323.00
Freight	<u>27.00</u>
TOTAL	<u>\$ 350.00</u>

SURVEYING:-

Under this heading the expenditure amounted to \$816.27, made up of \$124.71 for wages for labor and \$691.56 for material charges.

The labor charge of \$124.71 was for wages for helpers with the Engineers during the course of their work during 1959, on other than programmed projects.

The material charge of \$691.56 was made up as follows:- Survey by H. H. Hoyt, rental on Level, purchase of wooden stakes and iron pins and miscellaneous items such as Frisco Rods, tapes, crayons, laths, etc.

BACK DRAIN:-

Expenditure \$ 2,016.70

The labor charge under this heading amounted to \$807.75 which was for cutting ice away from the culverts on York, Dundonald and the outlet at Phyllis Creek during the winter, flushing in the summer and for general maintenance to the Back Drain.

The material charges amounted to \$1,208.95 which includes machinery and material charges, such as fill, manhole covers and frames, brick, sand and cement.

MUNICIPAL PARKING LOT:-

Expenditure \$ 474.37

The above expenditure of \$474.37 is made up as follows:-

Atlas Construction Co. Ltd. (Building)	\$ 100.00
James S. Neill (1 Tube Cement)26
Journal Voucher (City Labor)	33.30
Journal Voucher (Machinery)	7.50
Journal Voucher (Material)	33.31
Journal Voucher (Lights, 5 lights @ \$60.00 per light per year)	<u>300.00</u>

TOTAL \$ 474.37

The operation of the Parking Lot is under the supervision of the Safety Committee and the maintenance, such as snow plowing, sanding, etc. is under the supervision of the Public Works Committee.

UNFORSEEN ACCOUNT:-

Christmas Tree	\$ 9.88
Tourist Information Bureau.....	12.39
Town Planning	39.64
Greens (Cutting, raking, seed-ing, fill, etc.)	2,042.80
Benches, (Repairs, painting, etc)	64.92
Repairing Fence	51.78
Cleaning River Bank, cutting bushes and repairing flats....	763.84
Repairing Steps	6.44
Spraying Swamps	20.40
Cleaning Regent St. Wharf	30.00
Fort Nashwaak Monument	2.56
Queen Street Fire (Sharkey Bldg.)	2.74
Beauty Queen Parade & Decorations	51.69
Band Stand	9.62
Speaker Stand	<u>23.14</u>
TOTAL	<u>\$3,131.84</u>

Under the above Public Works, 25 Concrete Park Benches were purchased at \$25.00 each, making a total cost of \$625.00. These new benches are practically vandal proof and will reduce maintenance costs. They were obtained from Arthur V. Woods.

O'DELL PARK

Expenditure	\$ 7,695.27
Less Federal Gov't. Share ..	<u>1,558.15</u>
Net Expenditure	<u>\$ 6,137.12</u>

In 1959 the Dominion Government instituted a Winters Work Program to alleviate the unemployment situation. Work at O'Dell Park, such as cutting trails, etc. was included under this arrangement and was partly paid for by the Dominion Government. The total cost of this project was \$4,332.51, less Federal Government share \$1,558.15, making City share \$2,774.36.

The above expenditure of \$7,695.27 is made up as follows:-

New Brunswick Telephone Company	\$ 50.64
Parlee Woodworking Shop (Filing saws)	15.25
Kilburn Equipment Co. Ltd. (Repairs to chain saw)	50.11
Workmen's Compensation Board	238.19
Ubsdell Printing Co. Ltd.	71.15
Forbes & Sloat Co. Ltd. (Crushed Gravel)	217.22
W. R. Thomas (Base Gravel)	140.55
J. S. Neill & Sons Ltd. (Files, saws, blades, handles, etc.).....	34.59
Journal Voucher (Gas and Oil)	25.01
Journal Voucher (Holidays)	204.80
Journal Voucher (Machinery)	463.00
Journal Voucher (Pay Roll)	<u>6,184.76</u>
TOTAL	<u>\$7,695.27</u>

CARLETON WARD PARK

Expenditure \$ 1,328.19

The expenditures in Carleton Park for 1959 were as follows:-

Forbes and Sloat (Crushed Gravel)	\$ 219.81
Irvine Saunders (Hauling Gravel)	11.54
Frank Smith (Hauling Gravel)	28.63
James S. Neill (Paint)	9.71
H. S. Gill (Lumber)	35.02
Canadian Pacific Railway Co. (Rent)	300.00
S. S. Baird & Sons Ltd. (Hauling Gravel)	76.20
Journal Voucher (Pay-Roll)	401.78
Journal Voucher (Machinery)	<u>245.50</u>
TOTAL	<u>\$ 1,328.19</u>

For the above expenditure, paths were scuffed, grass was kept mowed, trees were planted and in general the Park was kept in a clean and orderly condition. Most of the Gravel and Machinery charges was in preparation for the Fredericton Regatta held in July of 1959.

OLD BURIAL GROUND

The Old Burial Ground between Brunswick Street and George Street was kept in good condition in 1959.

The tombstones that could be repaired and were not too seriously damaged by vandals were repaired. The grass was kept mowed and sodding and seeding were done where necessary.

The expenditures on the Old Burial Ground were as follows:-

Phillips and Fringle (Repairs to mower)	\$.65
Maritime Accessories Ltd. (Repair to Mower)64
Harry Elder (Sharpening Lawn Mower)	3.75
James S. Neill & Sons (1-4" Pully and 1 Intake Valve for Mower)	3.16
Journal Voucher (Pay Roll)	1,461.49
Journal Voucher (Gas and Oil)	10.69
Journal Voucher (Holidays)	117.76
Journal Voucher (Machinery)	<u>45.50</u>
TOTAL	<u>\$1,643.64</u>

RECREATION

Expenditure \$ 494.65

The above expenditure does not include all playground expenditures, but only those which appear on department payrolls or costs of materials ordered through the office of the City Engineer. The salaries of the Recreation Director and Playground Supervisors hired for the summer months, is not in the above costs, nor does the cost of equipment on the playgrounds appear here.

The above cost is divided as follows:-

Playgrounds (Labor, machinery and material)	\$ 320.00
Journal Voucher (Gas and oil used by Recreation Truck)	<u>174.65</u>
TOTAL	<u>\$ 494.65</u>

CITY HALL

Expenditure \$ 842.50

The above cost is only the expenditure for City Hall made through the City Engineer's Department and is not the total expenditure made on City Hall.

The expenditure of \$842.50 is made up as follows:-

Labor at City Hall, including winding and repairs to clock, extra janitor and extra labor	\$ 588.90
Edward T. Moran (Repairs to Furnace)	3.29
James S. Neill & Sons Ltd. (Supplies)	50.05
Richard's Electric Co. (Installing Vent Fan)	85.61
Federal Hardware (Supplies)	3.25
J. L. Simms (Plywood)	7.55
H. S. Gill (Lumber)	8.76
S. S. Baird & Sons (Tile Paint)	66.59
Journal Voucher (Machinery)	3.50
Journal Voucher (Material)	<u>25.00</u>
TOTAL	<u>\$ 842.50</u>

MUNICIPAL HOME

Expenditure \$ 1,851.43

The above cost is of course, only part of the Municipal Home costs, but is the expenditure which was made through the office of the City Engineer and is therefore shown in this report.

The above expenditure is made up as follows:-

Journal Voucher (Pay Rolls)	\$ 208.09
Journal Voucher (Machinery)	348.18
Journal Voucher (Material)	<u>1,295.16</u>
TOTAL	<u>\$ 1,851.43</u>

For the above expenditure of \$1,851.43 a Sprinkler System was installed at the Municipal Home and a 12" Surface Sewer was laid from the southerly corner of York Street and Dundonald Street following the course of the old open drain to the intersection of the sideline of the City Yard and rear line of the Municipal Home properties.

SWIMMING POOL - QUEEN'S SQUARE

The expenditure of \$14.41 for the swimming pool which was made through the office of the City Engineer was labor charged for painting.

ROYAL VISIT

On July 28th and July 29th the City of Fredericton was visited by Her Royal Highness Queen Elizabeth and Prince Philip.

Expenditure \$ 2,346.25

The above expenditure was made up as follows:-

Atlas Building and Supplies Ltd. (Plywood)	\$ 15.86
H. S. Gill & Sons Ltd. (Lumber)	143.68
Dominion Signs Ltd. (Shields, Flags, etc.)	848.25
J. S. Neill & Sons Ltd. (Paint, Nails, Staples, Bunting, Flags, Wire)	34.45
Maritime Accessories Ltd. (Paint)	22.24
Canadian Pacific Express Co. (Express on flags, shields, etc.)	13.28
John L. King (Entrance Signs)	100.00
E. M. Young Ltd. (Chicken netting and staples)	19.66
Richard's Electric Co. (Rental on P. A. System)	55.00
Stan Cassidy (Brushes and Paint)	7.74
Journal Voucher (Labor)	688.59
Journal Voucher (Gas and Oil)	11.00
Journal Voucher (Machinery)	<u>386.50</u>
TOTAL	<u>\$ 2,346.25</u>

SANITATION

The Fredericton Incinerator and Dump on the Wilsey Road have been a source of complaints from residents of the area for years.

The Incinerator has not been able to burn all of the waste materials due to the design capacity consequently a great amount of the materials that should be burned is placed on the adjoining open Dump.

The whole operation has been very unsatisfactory from both the public point of view and in the opinion of the Public Works Department.

A decision was made, after several months of investigation, to proceed with a Sanitary Land Fill in Barker's Point, effective January 1, 1959.

The Land Fill program was carried out for the months of January and February when by a decision of Council the project was abandoned due to objections from the citizens of Barker's Point.

The Incinerator and Dump on the Wilsey Road were reactivated and have been used since March 1, 1959.

Approximately 130 Acres of land were acquired on the Wilsey Road for a Sanitary Land Fill operation at a cost of \$9,000.

This area is being cleared at the present time under a Winters Work Project agreement with the Federal Government. The Public Works Department planning is to have this area in operation around September 1, 1960 depending on progress of road construction by the Provincial Government in the area and on money made available for this purpose by the 1960 Fredericton City Council.

The present dump site will be levelled and covered with material from ditching excavation along the Wilsey Road and the whole area will be, in general, cleaned up so that it is presentable.

The old dump site, when completely restored should be reserved for City use as a stock pile area for gravel or sand or other relative requirements.

SANITATION EXPENDITURES - 1959

Sanitary Land Fill - Labor, Machinery, etc.	\$ 8,940.76
Incinerator - Labor and Materials, Machinery, etc.	8,817.07
Dump - Labor, Machinery, etc.	<u>3,806.44</u>
Total Expenditure	\$ 21,564.27
<u>Less</u> Insurance claim from fire at Incinerator	<u>3,216.16</u>
Net Sanitation Expenditure	<u>\$ 18,348.11</u>

The City Incinerator is tended by two men who work a daily shift of nine hours, starting at 7:30 A.M. and finished at 5:30 P.M. Besides these two attendants, extra city labor was used in bulldozing incinerator, dump, shifting tracks, etc.

The City Dump has one tender. One of the City's Bulldozers works on the Dump from time to time helping the dump tender keep the dump in order.

The Garbage Collection is operated by Mr. J. A. Coates. The amount paid in 1959 for this operation was \$38,225.00.

SEWERAGE DOMESTIC

Gross Expenditure	\$ 24,785.89
Credits	<u>10,793.67</u>
Net Expenditure	<u>\$ 13,992.22</u>

The above credits are made up as follows:-

Material and labor supplied for house connections.....	\$ 10,100.37
Nashwaaksis Local Improvement (Thawing Domestic Sewer Mains and rental on Thawing Machine)	207.37
W. E. Emerson and Sons Ltd. (Sale of 5" T.C.Pipe).....	27.03
Sussex Ginger Ale Ltd. (Cleaning Floor Drain).....	5.04
Province of N. B. Dept. of Public Works (Sale of pipe and sewerite)	358.38
Mr. Geoffrey Baker (Cleaning Floor Drain)	10.18
Lemont's Ltd. (Sale of Pipe and Pipe compound)	5.30
V. D. Ambrosio (Sale of Pipe)	5.80
Diamond Construction Co. Ltd. (Sale of Pipe)	56.41
J. Clark & Son Ltd. (Flushing Floor Drain)	9.56
Journal Voucher (Material)	<u>8.23</u>
TOTAL	<u>\$ 10,793.67</u>

New customers connected to City Sewer System this year were, 132.

No Domestic Sewer extensions were made this year under this heading but appear under "Capital Account Sewerage Domestic."

The Fredericton Domestic Sewer System consists of 44.83 miles (11.04 miles in Carleton Ward and 33.79 miles in the City proper) of Sewer Mains and are made up as follows:-

36" Armco Pipe	0.05 miles
36" Concrete Pipe	0.84 miles
30" Concrete Pipe	0.20 miles
24" T. C. Pipe	0.54 miles
18" T. C. Pipe	1.29 miles
15" T. C. Pipe	1.63 miles
12" T. C. Pipe	6.12 miles
10" T. C. Pipe92 miles
8" T. C. Pipe	<u>33.24</u> miles
TOTAL	<u>44.83</u> miles

CEMENT WALKS

Expenditure \$ 9,201.72

For the above expenditure of \$9,201.72 concrete side-walks were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
York Street, Edinburgh Street to Connaught Street, (west side)	940
Connaught Street, Northumberland St. to Westmorland Street (north side)	607
York Street, Edinburgh St. to Green Road (west side)..	281
Edinburgh St., Smythe St. to York St. (north side)....	1,965
St. Mary's St. C.P.R. track to Jaffrey St. (east side)	252
MacLaren Ave., Sewell St. to Gibson St. (south side)..	228
Bridge St., Union St. to Dedham St. (east side)	<u>736</u>
TOTAL	<u>5,009</u>

The cost of the above sidewalks was paid, one-half by the City and one-half by the property owner.

The concrete for the above construction of sidewalk was obtained from Blakeny Concrete Products Ltd. and Elmtree Concrete Ltd. @ \$14.50 per cubic yard.

The total cost for laying the above lineal feet of concrete sidewalks was \$1.84 and was obtained by dividing the total lineal feet 5009 into the total cost which was \$9,201.72.

CITY SCALES

Expenditure	\$ 511.61
Credits	<u>552.80</u>
Credit Balance	\$ 41.19

The above credit of \$552.80 was amount charged to Capital Account Gravel Roads and Roads and Streets and credited to City Scales for weighing Gravel.

The expenditure of \$511.61 was made up as follows:-

James S. Neill & Sons Ltd.	\$ 2.06
Fairbanks Morse	109.75
H. S. Gill & Sons Ltd.	4.65
Unemployment Insurance	2.08
Journal Voucher (City Labor)	344.57
Journal Voucher (City Machinery)	<u>48.50</u>
TOTAL	\$ 511.61

The wages of the Weigh Scale Operator do not appear in the above expenditure. The expenditure is not made through the office of the City Engineer and is therefor not shown in this report.

WILMOT PARK

Expenditure \$ 4,042.16

The above expenditure is made up as follows:-

Material used on Lawns and Flower Beds	\$ 8.75
Supplies and repairs to Lawn Mowers, etc.	41.32
Material and Labor charges expended on Caretaker's House and Band Stand)	105.76
Miscellaneous (tools, light bulbs, etc.)	32.58
N. B. Telephone Company	50.64
Journal Voucher (City Labor)	2,921.11
Journal Voucher (Machinery)	567.12
Journal Voucher (Holiday Account)	<u>314.88</u>
TOTAL	\$ 4,042.16

Included in the above expenditure is the cost of levelling the area formerly occupied by the Alexandra College Building.

CHILDREN'S HOME

Expenditure \$ 28.28

Due to the closing of the Children's Home, January 31, 1959, the above expenditure \$28.28 was labor expended maintaining the building during the month of February.

FIRE DEPARTMENT

Expenditure \$ 8,932.88

The above expenditure is made up as follows:-

Journal Voucher (1965.25 Gallons Gasoline @ 32¢ per Gallon)	\$ 628.88
Journal Voucher (346 Hydrants, rental)	<u>8,304.00</u>
TOTAL	<u><u>\$8,932.88</u></u>

ADMINISTRATION OF JUSTICE

Expenditure \$ 3,070.50

The above expenditure is made up as follows:-

Journal Voucher (7953.25 Gallons Gas and 16 Quarts Oil)	\$ 2,550.32
Journal Voucher (City Labor)	371.69
Journal Voucher (Machinery)	102.50
Journal Voucher (Material)	<u>45.99</u>
TOTAL	<u><u>\$ 3,070.50</u></u>

AIRPORT

The expenditure of \$85.38 for the Airport which was made through the office of the City Engineer was for two Catch Basin Covers and Frames.

ASSESSING and COLLECTING

The expenditure of \$13.23 for Assessing and Collecting was a labor charge to constructing two plywood boxes for the Assessment Department.

LOYALIST BURIAL GROUND

On the recommendations of the Park Committee of Fredericton Town Planning Commission, the Loyalist Cemetery on the Flats adjacent to the back of the lots in Elmcroft Place was improved in 1958.

In 1959 the expenditure amounted to \$200.00. It is intended that this area be used as a tourist attraction with pedestrian traffic only, from the Little League Ball Field on the "Flats."

J. T. CLARK MEMORIAL BUILDING

Under this heading the expenditure amounted to \$67.49 and was for labor and machinery spent in plowing the grounds around the Library Building and carrying books from the cellar to other parts of the building due to the high water conditions of the St. John River during the spring freshet.

PAINT DEPARTMENT

Gross Expenditure	\$ 8,835.61
Credits	<u>223.16</u>
Net Expenditure	\$ 8,612.45
1959 Appropriation	<u>8,000.00</u>
DEBIT	<u>\$ 612.45</u>

The above credit of \$223.16 is made up as follows:-

Victoria Public Hospital (Sale of Signs)	\$ 45.44
Town of Oromocto Development Corp. (Sale of No- Parking Signs)	35.00
Robin Kilburn (Sale of Paint and rental on Painting Machine)	33.49
Municipality of York (Sale of Signs)	96.00
Journal Voucher (Labor for work done for Assessing Department)	<u>13.23</u>
TOTAL	<u>\$ 223.16</u>

The above expenditure of \$8,835.61 is made up as follows:-

Atlas Building Supplies Ltd. (Plywood)	\$ 172.54
H. S. Gill and Sons Ltd. (Lumber)	100.77
J. L. Simms & Sons Ltd. (Plywood)	57.84
Dept. Public Works (Prov. Gov't.) Applying Scotchlite...	48.00
J. S. Neill & Sons Ltd. (Bolts, nails, paint, sandpaper, etc.)	540.22
Federal Hardware Ltd. (Paint)	4.64
J. C. Risteen Co. Ltd. (Lumber)	11.04
J. Walter Co. Ltd. (Saw Blades)	10.35
Horsnell's Ltd. (Repairing signs)	39.87
Provincial Secretary-Treasurer (3% Sales Tax)	34.28
H. W. Wilson Printing Co. (Cardboard)	43.03
C. J. Toner (Trucking)	1.50
Canadian National Express Co.	2.80
Radiator Specialty Co. (Safe T-Cones)	59.98
Lean Bros. Ltd. (Paint)	624.39
Lockhart Woodworkers Ltd. (Lumber, paint).....	80.57
York Structural Steel (Iron post)	2.63
Phillips and Pringle (Miscellaneous)	2.87
C. W. Hall and Co. Ltd. (Meter books)	11.12
E. M. Young Ltd. (Paint)	261.22
Canadian Tire Corporation (Paint Strippers)	1.43
Minnesota Mining and Manufacturing Co. (Scotchlite)....	1,029.90
Ashfield Ltd. (Truck Parts)	4.07
Andave Ltd. (Alum Sign Posts)	51.32
Auto Machinery & General Supply Co. Ltd.	3,80
Rosco Metal and Roofing Co. Ltd. (Street Signs)	52.00
Speedway Express Ltd. (Express)	3.00
Canadian Pacific Railway Co. (Freight)	2.44
Journal Voucher (City Labor)	4,751.92
Journal Voucher (Holiday and Sick Leave)	488.16
Journal Voucher (Material)	44.88
Journal Voucher (Machinery)	58.50
Journal Voucher (672.25 Gallons Gas and 53 Qts. Oil) ...	<u>234.53</u>
TOTAL	<u>\$8,835.61</u>

STREET LIGHTS

The City Street Lighting System on December 31, 1959 consisted of:-

- (1) A Series Lighting System which lights most of the City on the south side of the Saint John River
- (2) A Multiple Lighting system on the south side of the St. John River
- (3) A Multiple Lighting system in the C.N.R. Subway
- (4) A Series Lighting system in Carleton Ward
- (5) A Multiple Lighting system in Carleton Ward

SYSTEM NO. 1

The series lighting system consists of some 22.48 miles of line and 332 lamps. This system is divided into five circuits, one of which is controlled by a 25 K.W. constant current transformer, three by a 15 K.W. constant current transformer and one circuit controlled by a 7.5 constant current transformer. Four of these transformers, along with the main switchboard are housed in a building, the site of which was purchased from Willett Fruit Company on Carleton Street, south of Needham Street. The fifth transformer is on a pole situated on Regent Street, between Green Road and Albert Street and controls the rear circuit for Maryland Heights.

The five circuits are made up as follows:-

<u>Lower Front Circuit</u>	<u>Load</u>	<u>Transformer Size</u>
21-600 C.P.Lamps @ .350 K.W. demand	7.35 K.W.	
11-250 C.P.Lamps @ .160 K.W. demand	<u>1.76</u> K.W.	
	<u>9.11</u> K.W.	15 K.W.
<u>Lower Rear Circuit</u>		
48-250 C.P.Lamps @ .160 K.W. demand	7.68 K.W.	7.5 K.W.
<u>Upper Front Circuit</u>		
40-250 C.P.Lamps @ .160 K.W. demand	6.40 K.W.	
11 - Fluorescent Lamps @ .50 K.W. demand	<u>5.50</u> K.W.	
	<u>11.90</u> K.W.	15 K.W.
<u>Upper Rear Circuit</u>		
31-600 C.P.Lamps @ .350 K.W. demand	13.28 K.W.	
83-250 C.P.Lamps @ .160 K.W. demand	10.85 K.W.	
4 - Fluorescent Lamps @ .50 K.W. demand	<u>2.00</u> K.W.	
	<u>26.13</u> K.W.	25 K.W.
<u>Maryland Heights</u>		
4 - 600 C.P.Lamps @ .350 K.W. demand	1.40 K.W.	
79 - 250 C.P.Lamps @ .160 K.W. demand	<u>12.64</u> K.W.	
	<u>14.04</u> K.W.	15 K.W.

SYSTEM NO. 2 and NO. 5

The Multiple Lighting System as of December 31, 1959 was as follows:-

216-500 Watt Incandescent Units @ \$60.00 per light per year
158-200 Watt Incandescent Units @ \$40.00 per light per year
58 - 400 Mercury Vapor Units @ \$90.00 per light per year
21 - 4 feet Fluorescent Units @ \$60.00 per light per year
7 - 6 feet Fluorescent Units @ \$75.00 per light per year

Each of the above units, excepting the Fluorescents, consists of either a 500, 400 Mercury or 200 Watt .125 Volt Lamp set in a nouxalex luminas fixture and hung on a bracket,

attached to the pole. These units being controlled by a control switch which is energized by our series street lighting system. The system was installed and is maintained by the Maritime Electric Company, the City paying the Company \$60.00 per year for each 500 Watt Unit, \$40.00 per year for each 200 Watt Unit, \$90.00 per year for each 400 Mercury Vapor Lamp, \$60.00 per year for each 4' Fluorescent Lamp and \$75.00 per year for each 6' Fluorescent Lamp.

SYSTEM NO. 3

System #3 consists of four Multiple Lights, each of 150 Watt strength, located in the C.N.R. Subway. This system is also controlled by a control switch which is energized by the series lighting system.

SYSTEM NO. 4

System No. 4 is a series lighting system which had formerly been installed in the Town of Devon and consists of 8.59 miles of line and 179 lamps. The system is composed of three circuits which are controlled by three 15 K.W. constant current transformers located on a pole platform on Pine Street.

<u>Carleton Ward (Up)</u>	<u>Load</u>	<u>Transformer Size</u>
2 - 600 C.P.Lamps @ .350 demand	.70 K.W.	
37-250 C.P.Lamps @ .160 demand	5.92 K.W.	
15 - Fluorescent Lamps @ .50 demand	7.50 K.W.	
	<u>14.12 K.W.</u>	15 K.W.

Carleton Ward (Central)

60 - 250 C.P.Lamps @ .160 demand	9.60 K.W.
11 - Fluorescent Lamps @ .50 demand	5.50 K.W.
	<u>15.10 K.W.</u>
	15 K.W.

Carleton Ward (Down)

2 - 600 C.P.Lamps @ .350 demand	.70 K.W.
47-250 C.P.Lamps @ .160 demand	7.52 K.W.
5-Fluorescent Lamps @ .50 demand	2.50 K.W.
	<u>10.72 K.W.</u>
	15 K.W.

The power for systems 1, 3 and 4 is purchased from the Maritime Electric Company at a contract price as agreed upon in a contract between the Maritime Electric Company and the City of Fredericton, made in 1957. This contract also covers the maintenance cost of \$20.00 per year per mile of pole line which is paid for by the City to the Company.

All materials such as wire, poles, pole fixtures, lamps, lamp fixtures, transformers, etc. are paid for by the City, installed by the Maritime Electric Company under their contract price for maintenance. Any new installations that require an enlargement of circuits must be paid for by the City of Fredericton, both Labor and Material.

The Street Lighting costs for the year 1959 are as follows:-

Gross Expenditure	\$ 40,284.15
Credits	<u>376.51</u>
Net Expenditure	\$ 39,907.64
1959 Appropriation	<u>37,500.00</u>
DEBIT	<u>\$ 2,407.64</u>

The above credit of \$376.51 is made up as follows:-

Maritime Electric Co. (1-#6072547G2 Resistor charged in error)	\$ 60.05
Canadian Wire and Cable Co. (Return of Reel)	16.46
Journal Voucher (To lights for Parking Lot on Brunswick St., 5 lights @ \$60.00 per light)	<u>300.00</u>
TOTAL	<u>\$ 376.51</u>

The Street Lighting expenditure of \$40,284.15 is made up as follows:-

24 - F48T12/CW/HO Fluorescent Lamps	\$ 55.96
168-600 C.P. Series Lamps	176.20
768-250 C.P. Lamps	497.61
Current in Subways and Series Lighting, Jan. 1, 1959 to December 31, 1959 (439,100 K. W. Hours)	11,024.96
Charges on Multiple fixtures owned and operated by the Maritime Electric Co. @ \$40.00, \$60.00, \$75.00 and \$90.00 per light per year	24,263.90
Maintenance and contract of pole line	621.36
Maintenance of Lamp Fixtures, including only such articles as lamp standards, lamp brackets, heads, sockets, shades, cut-outs, time switches, etc.	618.77
Material and Labor used in major repairs and new installations	2,066.62
Light Bill, Fredericton Highway Bridge	688.65
Cenotaph Light Bill	157.52
Miscellaneous (Trucking, City Labor, City Machinery)	<u>112.59</u>
TOTAL	<u>\$40,284.15</u>

During the year 1959 various changes and extensions were made to the City of Fredericton Street Lighting System and are listed as follows:-

1. On Montgomery Street, 7-200 Watt Lights were installed replacing existing Series Lights.
2. On Reid Street, 3-200 Watt lights and 1 - 500 Watt light were installed.
3. 5 - 500 Watt Multiple lights were installed in the City Parking Lot off Brunswick Street.
4. 1 - 200 Watt light was installed in Dunn's Lane.

5. 1 - 200 Watt light was installed on Windsor Street, between Beaverbrook Street and Albert Street.
6. 4 - 200 Watt lights were installed on Green Road, off Smythe Street, replacing existing Series Lights.
7. 1 - 200 Watt light installed on Northumberland Street, between Dundonald Street and Connaught Street.
8. Extending Series Street Lighting on Beaverbrook Court, 1 - 250 C. P. Lamp.
9. At West end of Queen Street, 2 - 500 Watt lights were replaced with 2 - 400 Watt Mercury Lights.
10. Spruce Terracc installed 1 - 200 Watt light.
11. Hanwell Road, 2 - 250 Series Lights were replaced with 2 - 600 Watt lights.
12. All lights on King Street, from Smythe Street to St. John Street were changed from 500 Watt Multiples to 4' and 6' Fluorescent lights (21 - 4' and 7 - 6') making a total of 28 lights.
13. Along the section of Fredericton, between the Canadian National Railway track and York Street and between Brunswick Street and Charlotte Street, the lights were changed from 10 - 250 Watt and 14 - 600 Watt lights to 24 - 500 Watt Multiples.
14. In Avondale Court, 2 - 600 Watt lights were removed and replaced by 3 - 500 Watt Multiples.
15. George Street, York Street to Smythe Street, 10 - 500 Watt lights were installed, replacing existing Series Lights.

In addition to these changes, existing 250 Watt lights were changed to 600 Watt lights at various corners in the City.

The total per capita charge for Street Lighting for 1959 population of 18,303 as per 1956 census is
39,907.64 = \$2.06.
18,303

TABLE SHOWING COMPARATIVE YEARLY COST IN
STREET LIGHTING

<u>Year</u>	<u>Total Yearly Cost</u>	<u>Yearly Appropriation</u>
1945	10,682.22	10,000.00
1946	11,611.45	12,000.00
1947	12,530.94	15,000.00
1948	15,269.12	15,000.00
1949	15,720.93	16,000.00
1950	25,300.30	20,000.00
1951	23,848.42	20,000.00
1952	25,211.39	25,000.00
1953	25,487.71	27,000.00
1954	23,812.54	27,000.00
1955	28,542.77	27,00 .00
1956	31,877.10	27,700.00
1957	33,101.56	29,000.00
1958	36,038.79	33,500.00
1959	39,907.64	37,500.00

W A T E R

There are two separate water systems in the City of Fredericton.

(1) The south side derives its water from a Gravel Well located in Wilmot Park (No. 1) and from a test hole at the rear of the Fredericton Waterworks. The latter supply is of a temporary nature, equipped with a pump and motor on loan from International Water Supply Ltd. until a permanent well can be developed near the Chamber of Commerce Building in Wilmot Park.

No. 2 well on Saunders Street cannot be used in its present state because of the prohibitive manganese content, which causes "Red" water and stains linen, etc. and is objectionable for a Municipal supply.

For this reason a test hole program was carried out in 1959 in search of an acceptable supply of ground water.

Test holes were drilled at six locations, with acceptable water found at two locations. The locations were as follows:-

- #1 - 58 Rear of Children's Home, abandoned - High Iron and Manganese
- #2 - 59 Rear of Fredericton Waterworks - Test Hole being used through filters at Filtration to remove approximately .08 P.P.M. of Manganese.
- #3 - 59 Rear of V.P.H. abandoned - very little formation and quick sand.

- #4 - 59 Saunders Street - near No. 2 well - abandoned - rock at 138 feet.
- #5 - 59 River Bank at Shore Street - abandoned - high salt content and little water.
- #6 - 59 Wilmot Park at rear of Chamber of Commerce Building, presently under construction for permanent well.

The expenditures during 1959 on the above program were \$24,294.40.

From the information gathered during the test drilling program, a logical conclusion to arrive at is that the sub-surface formation on the Fredericton Flat is not consistent so that no theoretically planned approach can be made to acquiring a ground water supply of acceptable chemical characteristics. The other alternative is to drill the hole, test pump and analyze the water, with a resulting moderately high cost test drilling program.

The original (1906) filtration plant is activated once per week to assure that it will operate as standby, if any of the wells should become unserviceable.

(2) The water supply on the north side of the Saint John River is derived from three drilled wells. Two of these wells are outside the City limits and pump into open reservoirs or can be directed into the 1,000,000 I. G. Reservoir completed by Maritime Engineering Ltd. in 1959.

The third well is located on Bridge Street and has been used on several occasions, when the water level and pumping capacity of the other two wells has been lowered by lack of rainfall replenishment.

Several modifications have had to be carried out on the latter well, due to high water hammer, caused by the fact that the pump is a high capacity pump (600 I.G.P.M.) and the system in Carleton Ward is to a great extent small size pipe.

During the pumping period that this well has been in use, it has been found that the turbidity of the water has not been as desired, due to an open seam at a depth of approximately thirty feet.

This will be corrected by removing the pump and casing the well to a depth of forty feet and cement grouting between the casing and the rock wall of the well to seal off the undesirable water from entering the well.

It has been found necessary to apply Chlorine to the water in Carleton Ward, after receiving reports from the City Analyst of objectionable Coliforms in the water.

In order to save money on the cost of Chlorinating a Gas Type Chlorinator has been ordered for the Bridge Street well and the more expensive Chem-O-Feed Chlorination will be discontinued at the wells at Killarney Road and Range Reservoirs.

The water costs for the City of Fredericton are divided into two headings:-

"Water Ordinary" and "Water Pumping Station."

WATER ORDINARY

This account takes in all expenditures, other than Capital Expenditure for Water outside the Pumping Station and Pumping Station grounds and includes all current water expenditures in Carleton Ward. The expenditure under this heading is made up as follows:-

Gross Expenditure	\$ 96,405.45
Credits	<u>18,284.13</u>
Net Expenditure	<u>78,121.32</u>

The Credits are made up as follows:-

Work done for and materials sold to private parties when installing a water service over ground other than City property or when the material is to be used on parts of the system which do not belong to the City	\$ 9,265.51
Mr. Irvine W. Finnie (Repairs to Hydrant on Union Street)	42.71
Abe Levine and Sons Ltd. (14,440 lbs. Scrap Iron)...	128.92
Irving Oil Co. (Repairs to Hydrant, York and George Streets)	50.69
Fredericton Housing (Repair Clamps)	57.04
Ashfield Construction Co. Ltd. (Pipe and Fittings)..	114.82
Donald Leachman (Pipe and Fittings)	29.40
Diamond Construction Co. (1 drum #100 H.T.H. Granalar)	39.51
Diamond Construction Co. (Tapping Water Main).....	36.39
W. J. Bearisto (Copper Fittings)	4.20
International Water Supply Co. (City labor)	88.38
University of New Brunswick (Water Meter)	21.81
Area Engineer's Office, N.B. Area (Tapping Water Main)	54.18
Canadian Oil Co. Ltd. (Connecting hose to hydrant to flush Service Station)	3.97
Forbes and Sloat (Copper Pipe and Fittings).....	10.20
Mr. E. G. Perkins (Copper Pipe)	6.00
Mr. L. D. Smith (Copper Pipe and Fittings)	5.70
Edison Billings (1 - 5/8" Meter)	20.70
Journal Voucher (Rental on Hydrants)	<u>8,304.00</u>
TOTAL	<u>\$ 18,284.13</u>

The Gross Expenditure is made up as follows:-

City Pay Roll for Hydrants	\$ 3,412.93
City Pay Roll for Meters	3,440.19
City Pay Roll for Water Ordinary	<u>16,708.29</u>
Total Pay Rolls	\$ 23,561.41
Material and other charges	<u>72,844.04</u>
Gross Expenditure	<u>\$ 96,405.45</u>

No water extensions were laid under this heading but they appear under "Capital Account Water."

5 - 6" Sprinkler Systems were installed this year at the following locations:-

J. D. Creaghan Co. Ltd., Queen Street
Smythe Street School, Smythe Street
Luke Morrison and Sons, Queen Street
Industrial Leasehold Construction Co. (Estey and
Curtis Building) Beaverbrook Court
Hillcrest Home, York Street

There are at present 57 Sprinkler Systems in the City. The City charge for water supplied for Sprinkler Systems is \$25.00 per year.

HYDRANTS

There are in the City, 356 hydrants, 259 hydrants on the south side of the Saint John River and 97 on the north side. The credit for rental charge on these hydrants appear under credits of Water Ordinary.

New hydrants this year were installed at the following locations:-

<u>Number</u>	<u>Location</u>
1	Barker Street for new Co-Operative Building
2	Forest Acres Court
2	Montgomery Street, from York Street to Smythe Street
1	Reid Street, Green Road to Regent Street
1	Squires Street
2	Spruce Terrace
1	Windsor Street

In addition a number of old hydrants were this year, replaced with new McAvity hydrants. The location of these changes are as follows:-

- 1 McKeen Street, between Union Street and C.P.R. tracks
- 1 St. Mary's St., between Dedham Street and Highland Avenue
- 4 Waterloo Row, 2 between Grey Street and Alexandra Street
 - 1 corner Shore Street and Waterloo Row
 - 1 in front of Residence #28 Waterloo Row
- 1 Charlotte Street, near intersection of Charlotte Street and O'Dell Avenue
- 1 Aberdeen Street, near intersection of Church Street and Aberdeen Street
- 1 University Avenue, near intersection of George Street and University Avenue
- 1 Needham Street, between York Street and Carleton Street
- 1 Charlotte Street, near intersection of Charlotte Street and St. John Street
- 1 Brunswick Street, near Christ Church Cathedral
- 1 University Avenue, near intersection of Shore Street and University Avenue
- 1 Alexandra Street, between Winslow Street and Waterloo Row
- 1 King Street, near intersection of King Street and Secretary Lane
- 1 Saunders Street, near intersection Saunders Street and Northumberland Street
- 1 Smith Street, between Union Street and end of line
- 1 Jaffrey Street, near intersection of Jaffrey Street and Water St.

All hydrants in the City were inspected and winterized and repairs were made where necessary.

METERS

Of all the Water Services in the City, 825 are charged under flat rate and 3039 on meter rate, making a total of 3864 services.

The labor cost this year, per meter for installing, reading, repairing, etc. is \$1.13.

This year 12 old water services were dug out and shut off at the main.

All meters are read twice a year and bills are sent out twice a year. The meters of 144 customers are read once a month although they are billed twice a year. Those are such customers who ordinarily have large consumptions and where a stopped meter or meter digit turned over without being noticed, would mean considerable loss of revenue to the City. All meters on Military Buildings are included in the group of monthly meter readings.

Meters in Store Room, December 31, 1959 were:-

5/8" Meters, repairs and fit for service	46
New 5/8" Meters	43
5/8" Meters to be repaired	9
3/4" Meters fit for service	1
New 3/4" Meters	0
1" - New Meters	0
1" Meters repaired and fit for service	1
1 1/4" Meters repaired and fit for service	11
1 1/4" New Meters	1
1 1/2" New Meters	2
1 1/2" Meters repaired and fit for service	1
2" New Meters	1

DISTRIBUTION SYSTEM

New Services installed this year	131
Old Services relaid this year	23
Old Services repaired this year	4
Frozen Services that had to be thawed	71

The Fredericton distribution system consists of 46.84 miles of Water Main, made up of the following sizes:-

18" Main	0.98 miles
14" Main33 miles
12" Main	3.75 miles
10" Main	2.77 miles
8" Main	8.78 miles
6" Main	24.91 miles
4" Main	5.05 miles
3" Main27 miles

This does not include the water main installed by the National Defence at Exhibition Grounds, Military Depot #7, Woodstock Road and Army Garage on Wagoner's Lane.

The supply system consists of .47 miles of 14" Cast Iron Pipe, extending from the well sites at Wilmot Park and Saunders Street to the Pumping Station and .10 miles of 15" Steel Pipe extending from the Intake Pier in the Saint John River to the Pumping Station.

Also included in the above expenditure was the purchase of the following meters from the Neptune Meters Ltd.

250 - 5/8" x 3/4" Trident C.I.B. cold water meters, straight reading, imperial gallons, complete with couplings included.

1 - 2" Trident compound cold water meter, straight reading, imperial gallons, complete with flanges included.

1 - 3" Trident compound cold water meter, straight reading, imperial gallons, complete with flanges included.

2 - 4" Trident compound cold water meters, straight reading, imperial gallons complete with flanges included.

The number of meters installed in 1959 was 234.

WATER PUMPING STATION

Gross Expenditure	\$ 47,923.19
Credits	<u>253.34</u>
Net Expenditure	<u>\$ 47,669.85</u>

The above credit of \$253.34 is made up as follows:-

Mr. Ernest Dobbeltsteyn (Used conduit at Pumping Station)	\$ 10.00
Imperial Oil Co. (By cheque for Imperial Oil Co. Credit Note)	64.09
Journal Voucher (City material)	<u>179.25</u>
TOTAL	<u>\$ 253.34</u>

The above expenditure is divided as follows:-

City Pay-Rolls for Salaries of employees at Pumping Station	\$ 17,985.57
Work done by other City employees in and around the Pumping Station	<u>262.61</u>
Total City Pay Roll.....	\$ 18,248.18
Material & Workmen's Compensation Charge	<u>29,675.01</u>
TOTAL	<u>\$ 47,923.19</u>

The material cost of \$29,675.01 is itemized as follows:-

Item 1 -	Light and Power supplied by Maritime Electric Co. (895.800 K.W. Hours).....	\$ 19,158.18
Item 2 -	Light and Power supplied by Maritime Electric Co. at wells in Park	3,376.53
Item 3 -	Heating (6110.8 Gallons Furnace Oil) ..	1,005.50
Item 4 -	Gasoline (650 Gallons)	199.80
Item 5 -	Liquid Chlorine (900 lbs.)	138.87
Item 6 -	Oil (4 Cases HDX-10 and 45 Gallons Mobiloil)	92.39
Item 7 -	Maintenance and Repair to buildings, machinery and intake pier	1,922.13
Item 8 -	New installations	-----
Item 9 -	Supplies, Packing, Rags, Lamps, etc. ..	403.78
Item 10 -	Stationary, Forms, Charts, etc.	336.41
Item 11 -	Workmen's Compensation	398.40
Item 12 -	E. W. Hagerman	1,510.08
Item 13 -	Lime (100 Bags)	9.18
Item 14 -	Snowflake Air-Floated Spray Hydrate (400 Bags)	355.00
Item 15 -	Diesel Oil (1400 Gallons)	272.40
Miscellaneous - Telephone, trucking, expressage, machinery, materials.		
from other City Departments.....		<u>496.36</u>
TOTAL		<u>\$ 29,675.01</u>

The Pumping Station plant can be operated automatically on the ground water supply and manually on the Saint John River supply which must pass through the Filter Plant for purification and which will only be used in an emergency; that is, when the wells are not operating due to failure, etc. or when the demand for water is higher than the wells can produce or during a prolonged electrical interruption, probably longer than 24 hours.

During a 24 hour interruption the 2,000,000 Gallon Reservoir will supply the system unless there is a serious break or a fire where a high consumption of water is required.

The Coagulation Basin was cleaned this year.

COMPARISON OF WATER PUMPED AND COSTS
FOR SOUTH SIDE OF RIVER
FOR LAST NINETEEN YEARS

<u>Year</u>	<u>Water Pumped Imperial Gallons</u>	<u>Yearly Gross Expenditure at Pumping Station</u>	<u>Pumping Sta. Cost per 1000 Gals. used Gross Expenditure</u>
1941	222,255,000	19,474.56	8.8 cents
1942	257,205,000	23,400.09	9.1 cents
1943	280,115,000	26,338.50	9.4 cents
1944	295,945,000	22,926.61	7.7 cents
1945	321,355,000	23,900.14	7.7 cents
1946	338,979,000	25,640.43	7.5 cents
1947	319,243,000	37,123.42	11.6 cents
1948	322,339,000	31,050.97	9.6 cents
1949	345,320,000	30,513.39	9.8 cents
1950	372,412,000	44,548.09	11.9 cents
1951	367,130,000	35,058.57	9.5 cents
1952	339,330,000	40,476.10	11.9 cents
1953	351,310,000	36,179.74	10.3 cents
1954	388,540,000	40,403.81	10.4 cents
1955	376,591,000	48,063.07	12.7 cents
1956	448,096,000 (13 Months)	41,351.18	9.2 cents
1957	469,185,000	42,465.50	9.0 cents
1958	454,765,000	42,888.56	9.4 cents
1959	487,704,000	47,923.19	11.1 cents

The column in the preceding comparison, showing Imperial Gallons pumped, does not include water used from wells in Carleton Ward.

By taking the average consumption of Carleton Ward as 250,000 Gallons per day the estimated water pumped for twelve months from these wells was 91,250,000 Imperial Gallons.

The total amount of water pumped from January 1, 1959 to December 31, 1959 therefore, for the whole City, is 578,954,000 Imperial Gallons.

The total net Water Expenditure for the City from January 1, 1959 to December 31, 1959 is \$125,771.17.

Therefore the net cost to pump and deliver to the customer 1,000 Imperial Gallons of Water from January 1, 1959 to December 31, 1959 is 125,771.17 = 11.1 cents.
578,954

All the preceding costs shown under "Water Pumping Station" and "Water Ordinary" do not include the cost of billing and collecting water bills or any other overhead charge included in the City Government cost, nor do they include bond payment or sinking fund charges.

The Water Pumping Station was under the supervision of the Plant Superintendent, Mr. George Clark.

Accompanying this report is the report of Mr. E. W. Hagerman, City Analyst, on the Fredericton Water Supply from January 1, 1959 to December 31, 1959.

Respectfully submitted,

City Engineer.

FREDERICTON WATER SUPPLY

1959

The water supplied to that part of the City to the South of the St. John River is pumped from two wells. Filtered river water has not been used in the system since 1957.

The well water as it comes from the ground is free of harmful bacteria and could be used as it comes from the well, but it is necessary to carry a small chlorine residual of from 0.1 to 0.15 parts per million as a preventative of infection in case of breaks which occasionally occur in the distribution system.

Tests taken at points in the system this year have failed to indicate the presence of the Coliform group.

Some medicinal tastes have been reported from various points and at various times. They are generally of fairly short duration but are never general throughout the system nor noticeable at the Pumping Station.

It is known that a new water put into an old distribution system will sometimes dissolve old deposits from the pipes and thereby cause localized tastes and sometimes odors. This is the probable explanation of the occasional tastes in our system.

Water supplied to Carleton Ward on the North side of the River is pumped from two rock wells into open reservoirs.

Difficulties with sporadic appearances of Coliform bacteria in the system have been increasing over the last two years. This is a group of organisms that have the same characteristics and they are identified by the same test. They are found in the intestinal tract of man, other animals and birds, but are not harmful to man. It is one of the most prevalent organisms in sewerage. The group is easy to detect in a water supply, whereas the specific organism causing the disease is very difficult to find.

Because the coliform group is easy to detect its presence is taken as the measure of sewage pollution. When sewage is present typhoid and other harmful germs may be present.

The coliform population of the Carleton Ward water may come from the droppings of swallows in summer or from ducks that use the open water of the reservoirs in winter. On the other hand it may come from seepage into the reservoir of surface water draining off the rather heavily populated areas above the reservoir, (the case of the Killarney reservoir).

Because of the objection to the chlorinous tastes, which sometimes arise, treatment of the Carleton Supply has been intermittent.

When tests indicated the presence of the coliform group chlorine was added and its use continues just long enough to get negative tests.

Formerly coliform positive tests appeared in August, when treatment was started. After the "freeze-up" treatment was discontinued. No further positive tests occurred until the following August.

In 1959 positive results occurred in February and chlorination was started immediately. After the 10th of March, tests showing all negative results, the chlorine dose was cut to a minimum. Occasional positive samples began to appear in June and July, and in August considerable increase in the chlorine dose was necessary. This increase reduced the positive tests through the latter part of September and finally to nothing in October. One positive occurred in November because of too great a reduction in the chlorine dose.

Continuous chlorination of the Carleton supply with from 0.1 to 0.15 parts per million of chlorine should eventually clean up the system and result in a sterilized water relatively free of chlorinous tastes.

Tests for the detection of the coliform group were made on samples of about 100 millilitres which were collected from each of the sampling stations noted on the attached list.

From each sample five tubes, each containing a ten millilitre portion of the sample, were put on test.

Each tube must react either positive or negative. A positive reaction indicates the presence of the coliform group, negative its absence.

It is evident that the number of positives may vary from 0 to 5 and will be indicated as 1 plus, 2 plus up to 5 plus, and will be so written after the sampling stations listed. Absence of a plus indicates a negative result.

January	4	Union Motors, Union Street	
January	9	U.N.B. Engr. Building	
January	17	127 Charlotte Street	
January	23	127 Charlotte Street	
January	28	Union Motors, Union St.	
February	3	U. N. B. Engr. Building	
February	11	Fire Station, MacLaren Ave.	
February	18	127 Charlotte Street	
February	23	Union Motors	1 plus
February	25	Union Motors	3 plus Added Chlorine
February	28	Provincial Yard, St. Marys St.	2 plus Increased Chlorine
March	3	Union Motors	1 plus
March	10	Union Motors	
March	17	Fire Station, MacLaren Ave.	
March	24	Union Motors	
March	27	890 George Street	
April	3	Union Motors	
April	8	127 Charlotte Street	
April	13	#2, 1959 Test Well	
April	18	R. A. Malloy, McKeen Street	
April	26	R. A. Malloy, McKeen Street	
May	3	127 Charlotte Street	
May	8	Union Motors	1 plus
May	11	Union Motors	
May	18	Fire Station, MacLaren Ave.	
May	29	Union Motors	1 plus
June	1	R. A. Malloy, McKeen Street	
June	7	R. A. Malloy, McKeen Street	
June	14	R. A. Malloy, McKeen Street	
June	23	R. A. Malloy, McKeen Street	
July	1	U.N.B. Engr. Building	
July	8	Union Motors	
July	23	R. A. Malloy, McKeen Street	1 plus Increased Chlorine
July	26	R. A. Malloy, McKeen Street	
August	4	R. A. Malloy, McKeen Street	
August	12	R. A. Malloy, McKeen Street	2 plus
August	17	New Well, Bridge Street	
August	17	Fire Station, MacLaren Ave.	
August	17	R. A. Malloy, McKeen Street	5 plus Increased Chlorine
August	19	R. A. Malloy, McKeen Street	
August	22	R. A. Malloy, McKeen Street	
August	22	Fire Station, MacLaren Ave.	
August	24	New Reservoir	
Sept.	7	Greer & Lawson, Gibson St.	4 plus Increased Chlorine to .03 to .04 ppm
Sept.	11	Greer & Lawson, Gibson St.	
Sept.	11	New Well, Bridge Street	
Sept.	19	Greer & Lawson, Gibson St.	1 plus
Sept.	25	Greer & Lawson, Gibson St.	1 plus
Sept.	29	Greer & Lawson, Gibson St.	

October 6 Greer & Lawson, Gibson St.
October 10 R. A. Malloy, McKeen Street
October 13 Union Motors
October 19 D. D. Pringle, Gibson St.
October 23 D. D. Pringle, Gibson St.

November 2 Greer & Lawson
November 5 Union Motors
November 16 D. D. Pringle, Gibson St. 2 plus Raised Chlorine
November 19 D. D. Pringle, Gibson St.
November 25 Union Motors
November 30 Fire Station, MacLaren Ave.

December 7 Union Motors
December 12 D. D. Pringle, Gibson Street
December 19 Union Motors

(Signed) E. W. Hagerman