

ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1954



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

Gentlemen:

I submit herewith this report, which is a statement of the work done in the different City Departments under the direct supervision of the City Engineer and covers the period of time from the first of December, 1953 to the first of December, 1954.

This report is written with the purpose of reporting to the Council on the costs of the various Departments for the year. It is also written with the idea of having an accurate record on file of the different activities and costs under these departments. During the year, along with our regular maintenance work, the City crews and contractors constructed the following works:-

Seal (Diamond Construction Co.).....	1.63 miles
New Pavement (City crews and Diamond Construction Company)....	.68 miles
Gravel Roads	8.00 miles
Concrete Curb and Gutter	3.83 miles
Ditching, Widening and Gravelling shoulders of St. John Road	1.57 miles
8" to 42" Surface Sewer	1.69 miles
8" Domestic Sewer21 miles
6" to 14" Water Pipe63 miles

A contract was entered into by the City of Fredericton with the International Water Supply Co. to provide the City of Fredericton with one well; the capacity of which was to be a minimum of 700 Imperial Gallons per Minute and a maximum of 900 Imperial Gallons per Minute.

The location of the above listed work is shown on a map following page #3.

Our regular expenditures appear for 1954 as follows:-

		Net		
	<u>Appropriation</u>	<u>Expenditure</u>	<u>Debit</u>	<u>Credit</u>
Street Lights	27,000	23,812.54		3,187.46
Public Works	22,000	19,458.46		2,541.54
Roads and Streets	165,000	170,980.10	5,980.10	
Sanitation	44,000	43,733.66		266.34
Wilmot Park	2,000	2,729.38	729.38	
TOTAL	260,000	260,714.14	6,709.48	5,995.34

	<u>Revenue</u>	<u>Net Expenditure</u>	<u>Credit</u>
Water Pumping Station)		40,403.81	
Water Ordinary)	109,815.22	25,952.47	19,842.40
Sewerage Domestic)		15,806.38	
Salaries		7,810.16	

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

The preliminary report on the 1951 census shows the City's population as 16,018.

Following in the body of this report is a detailed statement of the work done, comparative expenditures and unit costs under the different 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 expenditures shown in this report cover the period of time from December 1st, 1953 to December 1st, 1954.

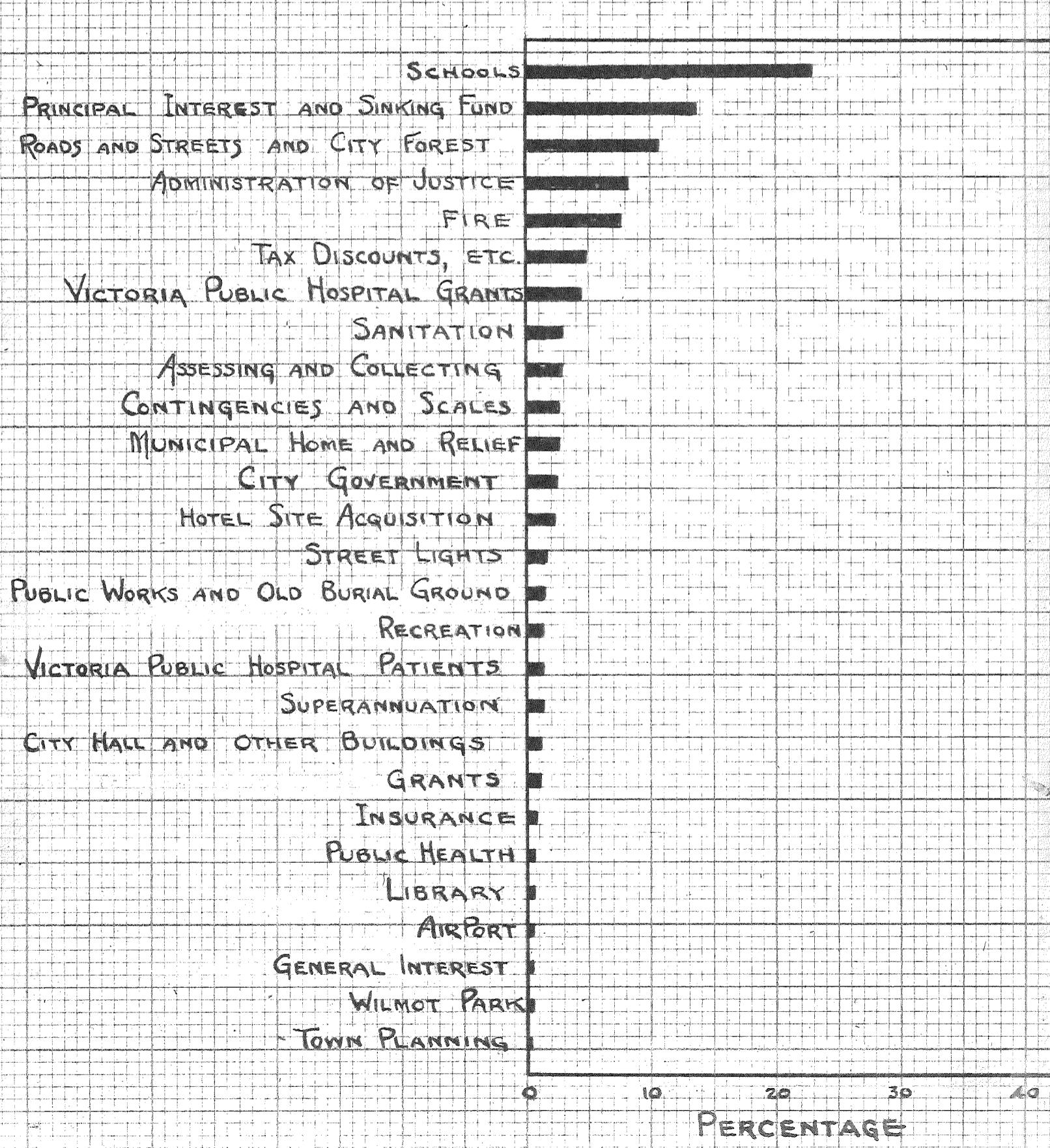
The Total Yearly Net Expenditure under the direct supervision of the City Engineer this year amounted to \$444,991.25. This expenditure will be taken up in detail under the different headings in this report. The Total Gross Expenditure for this period amounted to \$527,045.08.

A graphic comparison of expenditure for Labour and Material for the year 1954 and the year 1953 is shown on the following charts.

The location of new construction completed this year is shown on two maps inserted after this page (page 3) of this report.

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

DISTRIBUTION OF THE 1954 CITY DOLLAR



ROADS AND STREETS

This year we had an appropriation for Roads and Streets of \$165,000.00

We have, in Fredericton altogether, 55.30 miles of Roads and Streets. 10.50 miles being located on the north side of the Saint John River and 44.80 miles on the south side. In addition we have 37.64 miles of sidewalk; 6.51 miles on the north side of the Saint John River and 31.13 miles on the south side.

Our paved and unpaved streets are divided between the Rural and Urban Districts (inside and outside tax rate) as follows:-

Roads and Streets

<u>Urban</u>	<u>Rural</u>	<u>Total</u>
Paved... 26.33	6.54	32.87
Unpaved. <u>11.22</u>	<u>11.21</u>	<u>22.43</u>
TOTAL .. 37.55	17.75	55.30

Roads and Streets Expenditures 1954

Gross Expenditure	\$ 192,377.30
Credits Net Expenditure	21,397.20
1954 Appropriation	\$ 170,980.10
	<u>165,000.00</u>
DEBIT	\$ 5,980.10

The above Credits of \$21,397.20 are made up as follows:-

Maritime Electric Co, (Hire of Compressor)	\$ 25.93
Irving Oil Co. Ltd, (Thawing Floor Drain at Service Station corner Gibson & Barker)	24.07
Palatine Insurance Company	176.98
Willard Timms (1 Bag Calcium Chloride)	2.75
Leonard D. Stewart (63 sq. ft. concrete @ 50¢ per square foot).....	31.50
Addison H. Clark (27 sq. ft. concrete @ 50¢ per square foot)	13.50
Capital Theatre (199 sq. ft. concrete @ 40¢ per square foot)	79.60
Farraline Home (40 sq. ft. concrete @ 40¢ per square foot)	16.00
Fredericton Tire Service (30 bags Calcium Chloride)	87.00
Amos Anderson (Installation of Drain)	12.15
Town of Marysville (Rental of Grader & Operator). <u>56.00</u>	
Forward	\$ 525.48

	Carried Forward.....	\$ 525.48
Canadian National Railway (36 bags Calcium Chlo.	99.00	
Laboratory of Forest Biology (Rental of Grader).	7.00	
Fredericton Exhibition Co. Ltd. (Installation of Surface Sewer)	303.11	
Chestnut Canoe Co. (Rental of Shovel)	10.50	
Charles Llewellyn (Installation of Drain on Connaught Street)	45.00	
Journal Voucher (Wood - 15 loads)	155.86	
Journal Voucher (Material, Calcium Chloride, Square Cedar, Malagash Salt, Paint, etc)..	182.34	
Journal Voucher (Holiday Account)	1,941.80	
Journal Voucher (Fire Department)	286.72	
Journal Voucher (Air Port)	200.61	
Journal Voucher (Machinery, including use of Bulldozers, Power Shovels, Trucks, etc)... .	15,077.98	
Journal Voucher (Gas and Oil used by other departments)	<u>2,561.80</u>	
TOTAL	\$ 21,397.20	

The Gross Expenditure is divided as follows:-

Labour being the total of Roads and Streets Pay Rolls,
which include the cost of hired trucks
or any other machinery hired by the
hour \$ 76,509.69

Material Charges, which includes workmen's
compensation and unemployment insurance
and all material charges including
purchase and repairs of City owned
equipment \$115,867.61

X I have divided the Labour charges of \$76,509.69
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. Snowploughing Sidewalks: 37.64 miles.. \$ 818.18
 2. Snow Control:- 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
55.30 miles 16,940.16
 3. Streets:- 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
headings..... 22,192.68
 4. Surface Sewers:- Cleaning, flushing
and repairing surface sewers and
building new surface sewers within
street limits 4,052.17
- Forward \$ 44,003.19

	Carried Forward.....	\$ 44,003.19
5.	<u>Sanding Walks</u> :- Storing sand in winter storage piles and spreading same on slippery streets and walks	2,798.64
6.	<u>Yard</u> :- Men working in Blacksmith Shop and repair work in City Yard, taking out summer equipment and storing winter equipment	4,200.19
7.	<u>Gravel</u> :- Application of gravel for maintenance on City Roads and Streets.	2,259.22
8.	<u>St. John Road</u> :- All work done on the River Road from Alexandra Street to eastern City Line, other than work done by power maintainer and pavement maintenance	2,872.41
9.	<u>Doak and Wilsey Road</u> :- All work done on these roads other than work done by power maintainer	88.89
10.	<u>New Maryland Road</u> :- Montgomery Street to southern city line. All work done on this road other than that done by power maintainer or by special contract.	121.03
11.	<u>Killarney Road</u> :-	-----
12.	<u>Outlying Roads</u> :- Hanwell Road, Cross Roads lying between Smythe St. Ext. and College Hill and Forest Hill Road and the Golf Link Road. All work done on these roads other than work done by power maintainer	2,378.91
13.	<u>Street Cleaning</u> :- All cleaning and removal of dirt, leaves, etc. from streets	11,773.86
14.	<u>Tarvia Repairs</u> :- Patching and repairing asphalt or tar pavement and applying seal coat of light tar or asphalt to pavements	1,839.42
15.	<u>City Road Patrol</u> :-	1,276.49
16.	<u>Preparation and Paving</u>	416.33
17.	<u>City Forest</u>	<u>2,481.11</u>
	TOTAL	\$ 76,509.69

Following is a table comparing Labour Expenditure in these items from 1951 to 1954:-

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS LABOUR ITEMS

<u>Item</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
1. Snowploughing Sidewalks	347.32	849.71	301.63	818.18
2. Snow Control	9,357.68	23,077.47	11,557.12	16,940.16
3. Streets	10,280.99	11,612.92	15,325.70	22,192.68
4. Surface Sewers	2,826.10	2,075.21	1,613.93	4,052.17
5. Sanding Walks	2,030.36	3,656.30	3,747.46	2,798.64
6. Yard	3,674.26	3,825.92	3,971.01	4,200.19
7. Gravel	3,937.62	1,297.59	758.63	2,259.22
8. St. John River Road	455.93	590.27	109.99	2,872.41
9. Doak & Wilsey Roads	1,912.01	321.27	459.80	88.89
10. New Maryland Road	34.72	----	----	121.03
11. Killarney Road	58.36	----	----	----
12. Outlying Roads	792.31	142.80	2,422.36	2,378.91
13. Street Cleaning	16,356.33	19,831.53	15,440.11	11,773.86
14. Tarvia Repairs	3,990.16	2,691.59	2,626.40	2,626.40 1839.42
15. City Road Patrol	1,295.83	762.22	954.66	1,276.49
16. Preparation & Paving	----	----	----	416.33
17. City Forest	4,854.43	4,213.90	7,305.80	2,481.11
TOTAL	\$62,204.41	74,948.70	66,594.65	76,509.69

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Some of these above items for labour may be better understood by the following explanation:-

ITEM #1

37.64 miles of sidewalk were kept ploughed this year. To the labour cost of \$818.18 must be added an estimated material cost of \$500.00 (Gas, Oil, Repairs) giving a total cost of \$1,318.18 or a unit cost for ploughing of sidewalk of \$35.02 per mile for 1954.

ITEM #2

<u>Snow Control</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Snowploughing Roads and Streets	972.48	3,817.66	1,539.66	2,559.95
Blowing, Shovelling and Hauling Snow....	6,037.60	15,793.04	4,913.72	11,286.63
Catch Basins	415.04	1,995.12	1,425.51	1,078.51
Snow Fences.....	954.17	709.86	572.38	654.39
Keeping Drains on the hills open	968.01	761.79	2,991.25	1,143.42
Thawing Culverts	10.38	----	114.60	217.26
TOTAL	\$9,457.68	23,077.47	11,557.12	16,940.16

55.3 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 approximately \$657.00 and was calculated as follows:-

Labour (Snow Control)	\$ 16,940.16
(Sanding Roads)	1,312.82
Workmens' Compensation	547.59
Pension Fund paid by City	912.65
City Trucks (1606 hrs. @ \$1.70) -	\$2,730.20
City Jeeps (586 hrs. @ \$1.00) -	<u>586.00</u>
City Road Patrols	3,316.20
City Bulldozers	6,170.00
City Thawing Machine	2,377.00
City Shovels	117.00
City Snow Blower	386.00
Sand	2,516.45
Rock Salt	770.00
	<u>956.80</u>
TOTAL	\$ 36,322.67

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 expenditures made from November 1st, 1953 to May 1st, 1954. It is a very exact account of Snow Control costs during the above period and I am incorporating it in this report for record purposes.

Fredericton, N. B.
May 6, 1954.

Department of Public Works,
Province of New Brunswick.

In Account With
The City of Fredericton

City of Fredericton - Snow Control Account
Nov. 1, 1953 to May 1, 1954

City Pay Rolls charged to Snow Control
Nov. 1, 1953 to May 1, 1954 \$ 20,168.48
Workmen's Compensation 605.05
Pension Fund paid by City 1,008.42

City Trucks:-

1953 Ford, License #C12-867, 3 Ton Dump, 558 hrs. @ \$1.70	948.60
1953 G.M.C., License #C12-878, 3 Ton Dump, 508 hrs. @ \$1.70	863.60
1951 Chev., License #C10-027, 3 Ton Dump, 245 hrs. @ \$1.70	416.50
1951 Ford, License #C-10-029, 3 Ton Dump, 532 hrs. @ \$1.70	904.40
1952 Ford, License #C10-026, $\frac{1}{2}$ Ton Pick Up, 586 hrs. @ \$1.00	586.00

City Jeeps, Sidewalk Plows:

Jeep #1, License #C10-034, 219 hrs. @ \$1.00...	219.00
Jeep #2, License #C10-032, 142 hrs. @ \$1.00...	142.00
Jeep #3, License #C12-860, 220 hrs. @ \$1.00...	220.00

City Road Patrols:

Adams #412 - 306 hours @ \$5.00	1,530.00
Austin Western 99-H-461 hours @ \$5.00	2,305.00
Champion - 467 hours @ \$5.00	2,335.00

City Bulldozers:

TD6-1948 224 hours @ \$3.00	672.00
TD6-1949 272 hours @ \$3.00	816.00
D6-1953 127 hours @ \$7.00	889.00

City Thawing Machine:

65 hours @ \$1.80	117.00
-------------------------	--------

City Shovels:

T6K 3/8 yd. 9 hours @ \$5.00	45.00
C-16 1/2 yd. 106 hours @ \$7.00	<u>742.00</u>

Forward \$ 35,533.05

Brought Forward.....\$ 35,533.05

City Snow Blower - Sicard Junior
TOTAL HOURS IN USE --- 126

526.6 Gals. Gas @ .295	155.35
67 Qts. Oil @ .31	20.77
Insurance	153.89
Repairs	1,424.80
Depreciation - 10% of Depreciated Value (7616.38)	761.64

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

Sand: From Bemrose & Kilburn 1400 yds. @ \$1.10..... 1,540.00

Rock Salt:
 40 Tons @ \$23.00 per ton 920.00
 S. S. & E. Tax 4% 36.80
 TOTAL \$ 40,546.30

Certified Correct,

W. F. Baumel.
City Engineer.

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

Dec. 1, 1949 to Nov. 30, 1950	124 $\frac{1}{2}$ "
Dec. 1, 1950 to Nov. 30, 1951	93 "
Dec. 1, 1951 to Nov. 30, 1952	143 $\frac{1}{2}$ "
Dec. 1, 1952 to Nov. 30, 1953	53 $\frac{1}{2}$ "
Dec. 1, 1953 to Nov. 30, 1954	117-3/10"

Snow Fences:-

In our Snow Fencing this year we used 8,000 feet of lath made Snow Fence.

ITEM #3

Streets:-

Repairs to Streets (Repairs to Curbs, Driveways, sidewalks, bridges, widening streets, culverts, rip-rapping, etc.)....	\$ 4,375.32
Painting Traffic Lines and Streets Signs...	2,282.15
Repairs to Machinery	2,817.89
Weather Account (Holiday)	10,341.90
Unloading and spreading Calcium Chloride...	300.81
Rough Grading on City Streets	<u>2,074.61</u>

TOTAL.....\$ 22,192.68

Included in the above item of Repairs to Streets, 4,250 lineal feet of Concrete Sidewalk and 2,064 lineal feet of Concrete Curb and Gutter were relaid.

King Street from Carleton Street towards Regent Street, a distance of 330 feet was widened 5 feet. The Curb on the south side was ripped out and a new Curb laid. The distance from the edge of the old Pavement to the New Curb was filled with concrete and then covered with asphalt pavement.

This year we purchased 120 tons of Calcium Chloride and 40 tons of Malagash Salt.

The above Labour Expenditure of \$2,074.61 for Rough Grading was made on the following streets:- School Street, Hillcrest Drive, Clark Street, Forbes Street, Neill Street, York Street from Dundonald to Green Road, Green Road from Regent Street to York Street and Mitchell Street.

ITEM #4

Surface Sewer:-

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. A 36" reinforced concrete pipe was laid on Gibson Street, a 10" Surface Sewer was laid on MacLaren Avenue, a distance of 177 feet from Neill Street towards Carney Street. The total labour cost for these two jobs was \$405.70 and a 10" Surface Sewer laid on the Fredericton Exhibition Co. Ltd. lands, a distance of 207 lineal feet. This sewer was paid for by the Fredericton Exhibition Co. Ltd.

Sanding Walks:-

We have 1,000 cubic yards of sand at the City Yard on November 30, 1954. Cost of labour for sanding sidewalks during winter of 1953-1954 was \$2,798.64.

Gravel:-

This year the city purchased 14,044.81 cubic yards of Gravel for maintenance and repairs to gravel roads. Of this total amount some of the gravel was charged to "Capital Account Gravel Roads" which will appear later in this report.

The gravel was purchased from the following:-

	<u>Pit Run Gravel Cubic Yards</u>	<u>Crushed Gravel Cubic Yards</u>
Forbes and Sloat	508.70	5,233.52
Hauled by City trucks from Forbes and Sloat.....	139.69	26.90
Bemrose and Kilburn	<u>8,136.00</u>	
TOTAL	8,784.39	5,260.42

The following streets were gravelled under this heading:-

<u>Location</u>	<u>Lineal Feet</u>
Green Road, Regent Street to York Street	1,200
York Street, Dundonald to Green Road	1,702
Mitchell Street, Albert Street to Green Road	970
Neill Street, MacLaren Avenue to McEvoy Street ...	880
Forest Hill	4,528
Forbes Street	810
Clark Street, C.P.R. track to Hillcrest Drive	1,650
Shoulders of the St. John Road from Experimental Station to City Line	15,840
Parking Area, Campbell St. from rear of City Hall to Carleton Street	600
Forward	28,180

<u>Location</u>	<u>Lineal Feet</u>
Brought Forward	28,180
Hillcrest Drive, Clark St. to Forbes St.....	400
MacLaren Avenue, Clark St. to School St.....	800
School Street, MacLaren Ave. to Dobie St.....	925
Dobie Street, School St. to Neill Street	400
McEvoy Street.....	1,150
Pine Street, C.P.R. tracks to Dobie Street ...	200
Jaffrey Street, Union St. to C.P.R. track	390
McKeen Street, Union St. to C.P.R. Track	350
Killarney Road, C.P.R. track to Highland Avenue	730
Tamarack Terrace	400
Smythe St., Tamarack Terrace southerly	370
Medley Street, Coombes St. to Dobie Street....	740
MacLaren Avenue, Medley St. to Carney St.	<u>1,000</u>
TOTAL	36,035 Lin. Ft.

ITEM #8

St. John Road:-

This year the St. John Road from the Dominion Experimental Station main entrance to the City's easterly line, a distance of 1.50 miles was ditched and the shoulders of the road were widened and gravelled at a cost of \$8,196.32. This amount was made up as follows:-

Labour	\$ 2,748.66
Machinery	3,308.10
Material (Pipe, Gravel, etc.)....	<u>2,139.56</u>
TOTAL	\$ 8,196.32

ITEM #9

Doak and Wilsey Roads:-

The labour expenditure of \$88.89 is made up of maintenance incurred in repairing washouts on the Doak and Wilsey Roads.

ITEM #10

New Maryland Road:-

This road was rebuilt and paved in 1952 and 1953 from Albert Street to City Line. The labour charge of \$121.03 was made up of cleaning the refuse (paper, garbage, etc.) from the sides of the road and the construction of a short drain at Grandames to divert the water from a spring to a Catch Basin.

ITEM #12

Outlying Roads:-

The labour expenditure of \$2,378.91 was made up as follows:-

Forest Hill	\$ 2,295.21
Montgomery St.....	38.50
Higgins Cross Road....	16.24
Golf Club Road	<u>28.96</u>
TOTAL	\$ 2,378.91

This year Forest Hill was rebuilt from the Canadian Pacific Railway track to the residence of Mr. Fred Boone, a distance of 4,528 lineal feet at a cost of \$13,380.48 made up as follows:-

Labour	\$ 2,129.66
Machinery	3,701.88
Material (Pipe, cement, brick, dynamite, gravel, etc.)	<u>7,548.94</u>
TOTAL	\$ 13,380.48

The actual maintenance by Road Patrol on these Outlying Roads, does not appear in this item as it was charged under item "City Road Patrol."

ITEM #13

Street Cleaning:-

The labour expenditure charged to this account amounted to \$11,773.86. To this labour charge, to get the overall cost for cleaning streets, must be added a material charge of \$4,979.64, thus making a total cost for cleaning streets of \$16,753.60.

The above material charge of \$4,979.64 is made up as follows:-

Repairs (Elgin Street Sweeper)	\$ 766.61
Materials (Gutter Broom Wire and Elco Hickory Fibre, etc.)	1,449.20
Gas (1756.4 Gals. @ 28.6¢ per Gallon)	502.33
Oil (76 Quarts @ 30½¢ per Quart)	23.18
Water (351,300 Gallons)	85.00
Insurance	98.61
Depreciation	<u>2,054.71</u>
TOTAL	\$ 4,979.64

The Elgin Street Sweeper worked 1171 hours during 1954. The actual cost for cleaning streets with this machine was \$7,443.64 and was computed as follows:-

Repairs (Elgin Street Sweeper)	\$ 766.61
Materials (Gutter Broom Wire and Elco Hickory Fibre, etc.)	1,449.20
Gas (1756.4 Gallons @ 28.6¢ per Gallon)	502.33
Oil (76 Quarts @ 30½¢ per quart)	23.18
Water (351,300 Gallons)	85.00
Insurance	98.61
Depreciation	2,054.71
Labour (Operator & Helper making Brushes)	<u>2,464.00</u>
TOTAL	\$ 7,443.64

The operating dates for the above machine were from April 12th to November 23rd.

ITEM #14

Tarvia Repairs:-

Under this heading \$1,839.42 was expended in labour in patching streets.

In most of this pavement patching, we mixed the patching material used, in a concrete mixer at the City Yard using a cut back tar or asphalt and local pit run gravel which was dried out by gravel heaters. The holes in the pavements after having the edges painted were raked full of patching material and were left to be rolled into place by traffic. To make a permanent patch by this method, the holes must be treated more than once to get the patch to conform in elevation with the surrounding pavement. We also used in street patching this year, 51.675 tons of Seal and 48.75 tons of Base pre-mixed asphalt which was hauled by City trucks from the plant of the Diamond Construction Company situated below Oromocto. The Diamond Construction Company charged the City \$7.00 per ton for Seal and \$5.00 per ton for Base when hauled by City trucks.

ITEM #15

City Road Patrol:-

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

	<u>1952</u>	<u>1953</u>	<u>1954</u>
Adams #412 Grader	4,056.27	1,247.59	3,146.06
Austin Western Grader	4,598.68	2,358.22	1,685.16
Champion Grader			1,355.68

ITEM #16

Preparation and Paving:-

Under this heading \$745.73 was expended for street grading and preparatory work other than actual supplying and laying in place of pre-mixed asphalt. (Labour \$416.33 and Machinery \$329.40). The paving of various City Streets was done by the Diamond Construction Company whose plant is situated below Oromocto.

The following streets were paved:-

<u>Street Paved</u>	<u>Lin. Ft.</u>	<u>Sq. Yds.</u>
University Ave. - Alexandra St. to C.N.R. track	67	171
Windsor St. - Albert St. to Beaverbrook St.	370	1,110
Mitchell St. - Albert St. to Green Road..	965	2,895
York St. - Dundonald St. to Green Road, also 10' width from City Back Drain to Dundonald Street	1,702	5,295
Westmorland St. - C.N.R. track to Victoria St. (Strip 5' wide on each side)	548	608
	406	225
TOTAL	4,058	10,304

The cost of supplying and laying in place of pre-mixed asphalt was as follows:-

1949.950 tons Base @ \$7.50	\$ 14,624.62
286.750 tons Seal @ \$9.00	2,580.75
1,250 Gallons Prime @ \$0.25 per Gallon..	<u>312.50</u>
TOTAL	\$ 17,517.87

The above pavement was laid to a thickness of 4". The street grading and preparatory work other than the actual supplying and laying in place of the pre-mixed pavement was done by regular City Crews at a cost of 7¢ per square yard. Altogether some 10,304 square yards (.68 miles) of City Streets were laid at a unit price of \$1.77 per square yard for completed pre-mixed pavement 4" thick in place. This unit price includes all grading and preparatory work but does not include concrete curb and gutter in the price, nor is the concrete gutter included in this yardage.

The quantities used in this pavement were:-

Base Mix - 1 Ton spread, 5.27 square yards
Seal - 1 Ton spread, 40.50 square yards

In calculating the amount of seal spread in the above, the following streets were considered:-

Windsor Street - Albert St. to Beaverbrook Street
Mitchell Street - Albert Street to Green Road
York Street - City Back Drain to Green Road
Westmorland Street - C. N. R. track to Argyle Street

This year the St. John Road from the Experimental Station main entrance to the City of Fredericton easterly line, a distance of 1.50 miles and also on Regent Street from the C.P.R. track southerly, a distance of 400 feet were chip sealed by the Diamond Construction Company at an expenditure of \$3,335.33.

The following materials were used:-

To 343.385 tons Chips @ \$4.50	\$ 1,545.23
To 6630 Gals. R.C., 3 @ \$0.27 per Gal....	<u>1,790.10</u>
TOTAL	\$ 3,335.33

ITEM #17

City Forest:-

Included in our regular Roads and Streets costs is a labour expenditure for City Forest of \$2,481.11.

This labour item is subdivided as follows:-

Cutting Wood	\$ 202.54
Haying	43.08
Caretaker's Wages & Miscellaneous Expenses	<u>2,235.49</u>
TOTAL	\$ 2,481.11

Besides the Labour Cost the City Forest shows an expenditure for materials of \$251.45 making a total cost for the year of \$2,732.56.

The Roads and Trails in the City Forest proper were kept clean from fallen trees and bushes.

The following merchantable material was cropped from the City Forest this year:-

15 cords wood cut and split @ \$18.00 per cord.....	\$ 270.00
7 tons hay @ \$19.00 per ton	<u>133.00</u>
TOTAL	\$ 403.00

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

1-D2 Bulldozer from Tractors and Equipment	\$ 7,245.53
1-2 Door Chevrolet Sedan from J. Clark & Son Ltd. - \$2293.00 less \$1200.00 for trade in	1,093.00

All heavy City trucks were equipped with signal lights at a cost of \$26.27 per truck.

CAPITAL ACCOUNT CURB AND GUTTER

The Net Expenditure under this heading amounts to \$18,729.11.

For the above Net Expenditure of \$18,729.11, concrete curbs and gutters were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Acacia Court	490
Kensington Court (Both sides)	994
Mitchell Street, Albert to Green Road (Both sides)	1,979
Green Road, Regent St. Hill to York St. Hill (South Side)	1,193
York St. (Back drain to Green Road (East Side) (Victoria St. to Green Road, West Side).)	4,327
Westmorland St., C.N.R. track to Argyle Street (Both Sides)	391
Windsor St., Beaverbrook St. to Albert Street (Both Sides)	598
University Ave., Alexandra St. to C.N.R. track (Both Sides)	207
McKeen Street, Union St. to C.P.R. track (Both Sides)	704
Jaffrey Street, Union St. to C.P.R. track (Both Sides)	741
McEvoy Street (Both Sides)	1,984
Dobie St., Neill St. to School St. (South Side)..	354
School St. (Dobie St. to MacLaren Ave. (West side) (Elizabeth St. to MacLaren Ave. (East Side)..	1,284
MacLaren Avenue, (School St. to Clark Street) (Both Sides)	1,635
Forbes Street (Both Sides)	1,398
Clark Street (MacLaren Avenue to Hillcrest Drive (Both Sides)	916
TOTAL	19,195- ^{385'} 19580

CLARK ST ON TO CPR TRACKS WEST SIDE 385'
19580

CLARK ST ON TO CPR TRACKS WEST SIDE 385'

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 Bemrose and Kilburn at a price of \$14.50 per cubic yard. A cubic yard of concrete for Curb and Gutter poured 23.1 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 ~~19580~~ ~~19,195~~ lineal feet into the total cost of \$18,729.11 is ~~95.6~~ 97 cents per lineal foot.

Using this price, and having found from heading under "Roads and Street - Preparation and Paving", the unit price was \$1.77 per square yard for completed pre-mixed asphalt 4" thick in place. The cost therefore, for an average mile of City Street, with concrete Curb and Gutter, 30 feet wide and with 4" thickness of pre-mixed pavement, would this year be approximately \$32,000.00

CAPITAL ACCOUNT - SEWER DOMESTIC

Gross Expenditure &
Stocked Material \$ 4,494.22
Credits 1,639.18
Net Expenditure \$ 2,855.04

The above credits are made up as follows:-

Work done on Domestic Sewers for Private
Parties \$ 49.51
Journal Voucher (Materials paid for by
Capital Account Sewer and used by
other City departments) 1,589.67
TOTAL \$ 1,639.18

The above expenditure covers all New Domestic
Sewer construction in the City.

For this expenditure Sewers were laid at the
following locations:-

<u>Location</u>	<u>8" T. C.</u>
Connaught St., Westmorland St. towards York Street	463'
Smythe Street, Tamarack Terrace to McLenahan property	274'
Friel Street	214'
Waterloo Row (Rear of lots adjacent to Forest Hill)	<u>180'</u>
TOTAL	1,131'

An accurate cost of installing 8" T.C. pipe at the
above locations was kept giving a unit price per foot of
\$2.37 for Labour and Material. Labour cost was 61¢ per lineal
foot for digging, laying and backfilling.

The above price was obtained as follows:-

<u>Location</u>	<u>COST</u>			<u>Total</u>
	<u>Labour</u>	<u>Machinery</u>	<u>Material</u>	
Connaught Street ...	\$ 204.03	198.80	423.54	826.37
Friel Street	245.87	241.40	258.78	746.05
Smythe Street	182.19	251.00	308.04	741.23
Waterloo Row	<u>60.17</u>	<u>82.20</u>	<u>220.12</u>	<u>362.49</u>
TOTAL	\$ 692.26	773.40	1,210.48	2,676.14

Total Lineal Feet = 1,131

We have in stock, November 30th, 1954 the following material:-

20 Lineal Feet of 10" T.C. Pipe @ 98.7¢ per ft.....	\$ 19.74
100 Lineal Feet of 8" T.C. Pipe @ 75¢ per ft.....	75.00
2 Manhole covers & frames @ \$42.08 each	<u>84.16</u>
TOTAL	\$ 178.90

CAPITAL ACCOUNT - SURFACE SEWER

Gross Expenditure & Stocked	
Material	\$ 18,131.99
Credits	<u>4,153.81</u>
Net Expenditure	\$ 13,978.18

The above Credits are made up as follows:-

Charles Llewellyn (Sale of Brick for repairs to manhole)	\$ 1.02
Royal Mills Ltd. (Sale of Brick for manhole)	27.30
Diamond Construction Co. (Sale of 5 Catch Basins, complete @ \$48.38 each).....	241.90
Journal Voucher (Material paid for by Capital Account Surface Sewer and used by other departments.....	<u>3,883.59</u>
TOTAL	\$ 4,153.81

Under this heading surface sewers were laid at the following locations:-

Location	LINEAL FEET									TOTAL
	24" Concrete	18" Concrete	15" Concrete	15" T. C.	12" Concrete	10" Concrete	10" T. C.	8" T. C.	5" T. C.	
Albert St.										920
Connaught	230		111							718
Clark St.	268		325							656
Gibson St.										2199
Medley St.										105
McEvoy St.										259
TOTAL	498	325	831	15	2526	454	98	36	74	4857

rate 1/2 16.320736176 * 2.30.
the 117 152 * 92.04
rate 146 1.80 * 116.80
the 724 1.99 * 1440.16
do 348 1.19 * 414.12
mela 8' 17.83 * 62.64
Bam Cover & Frame 2 @ 43.99 * 87.98
10,000 @ 41.96 -- = 419.60

\$ 2636-24

Don't forget before leaving
Thank You Etta

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

COSTS				
Location	Labour	Machinery	Material	Total
Albert Street	\$ 571.44	577.20	1,373.50	2,522.14
Connaught Street..	468.90	440.20	1,617.53	2,526.63
Clark Street	439.17	419.20	1,922.19	2,780.56
Gibson Street.....	792.70	545.60	3,191.43	4,529.73
Medley Street.....	101.94	57.40	155.21	314.55
McEvoy Street.....	140.37	127.70	419.90	687.97
TOTAL	\$2,514.52	2,167.30	8,679.76	13,361.58

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

8" - 15" pipe \$2.50 - \$2.88 per lineal foot
 18" pipe - \$4.15 per lineal foot
 24" pipe - \$5.24 per lineal foot

We have in stock, November 30, 1954, the following:-

5 Lineal Feet of 15" Terra Cotta Pipe @ \$2.00 per foot	-	\$ 10.00
39 Lineal Feet of 12" Concrete Pipe @ \$.862 per foot	-	33.62
81 Lineal Feet of 12" Terra Cotta Pipe @ \$1.36 per foot	-	110.16
118 Lineal Feet of 24" Concrete Pipe @ \$2.89 per foot	-	341.02
9 Lineal Feet of 10" Concrete Pipe @ 74¢ per foot	-	6.66
21 Lineal Feet of 8" Concrete Pipe @ 52¢ per foot	-	10.92
2 Catch Basin Covers & Frames @ \$43.99 each	-	87.98
TOTAL		\$600.36

CAPITAL ACCOUNT - WATER

Gross Expenditure & Stocked	
Material	\$ 6,665.75
Credits	1,777.99
Net Expenditure	\$ 4,887.76

The above Credits are made up as follows:-

Herbert Chase (Portion of cost of installing Water Service)	\$ 3.00
Diamond Construction Co. (Sale of 4" Gate, 4" Bend, Oakum and Lead)	92.30
J. S. Neill (Refund overcharge on Pipe 1953)	75.34
Garland Greer (Sale of 9480 lbs. scrap iron @ \$18.00 per ton)	76.18
Forward	\$ 246.82

	Brought Forward.....	\$ 246.82
Sussex Ginger Ale (Portion of cost of installing Sprinkler System)	748.48	
Royal Mills Ltd. (Portion of cost of installing Sprinkler System)	269.35	
Fredericton Housing Ltd. (1 Joint 10" C. I. Pipe, 16' long @ \$4.00 per foot)	64.00	
Dominion Experimental Station (1-4" C. I. Sleeve)	7.66	
A. F. Schurman Co. Ltd. (1-6" C. I. $\frac{1}{4}$ Bend)	20.88	
Journal Voucher (10 Manhole Covers & Frames)	<u>420.88</u>	
TOTAL	\$ 1,777.99	

Installations were made at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Connaught Street, Westmorland to York St.....	690
York Street, Connaught St. towards Dundonald	115
Friel Street	<u>233</u>
TOTAL	1038

All above installations were 6 inch.

The cost of the preceding installations were as follows:-

<u>Location</u>	<u>Labour</u>	<u>Machinery</u>	<u>Material</u>	<u>Total</u>
Connaught St.	313.66	353.10	2,050.37	2,717.13
York Street	234.00	125.60	339.37	698.17
Friel Street	<u>268.94</u>	<u>241.40</u>	<u>866.84</u>	<u>1,377.18</u>
TOTAL	\$ 816.60	720.10	3,256.58	4,793.28

From the above figure the cost of laying 6" C. I., Water Pipe in place was \$4,61 per foot, labour charge being 78¢ per foot.

Value of Stock on hand, November 30, 1954 is \$11,342.19.

CAPITAL ACCOUNT - DRILLED WELLS

Expenditure \$ 42,271.16

In 1953 the City of Fredericton, endeavouring to improve the quality of its water supply, entered into a contract with the International Water Supply Co. Ltd. to have exploratory test holes drilled to ascertain the possibility and feasibility of developing a ground water supply.

Jas. F. MacLaren Associates were retained as Consulting Engineers on this project and from the results of exploratory drilling this Consulting Firm recommended the

development of a pilot well in Wilmot Park, before the development of a permanent well was undertaken.

The purpose of the pilot well was to determine the chemical quality of the ground water under high capacity pumping and also to determine the potential capacity of the aquifer or sub-strata formation.

The City of Fredericton on the recommendations of the Consulting Engineers, then entered into a contract with the International Water Supply Co. Ltd. for the development of a ground water supply, providing the supply was acceptable to the City of Fredericton.

The Capacity of the Well was guaranteed by the International Water Supply Co. Ltd. to be a minimum of 700 Imperial Gallons per minute with a maximum output of 900 Imperial Gallons per minute.

The International Water Supply Co. Ltd. then proceeded to drill a pilot well, which was test pumped continuously for a week at an output of approximately 500 Imperial Gallons per minute.

The Water pumped from this well was channeled into a 12" Concrete Sewer Line constructed by the City of Fredericton for this purpose.

From the results of chemical tests made on samples taken daily during the test pumping and from pumping level readings compared to static level readings of the water in the well, it was quite evident that a ground water supply had been found for the City of Fredericton.

The recommendations of the Consulting Engineers was that a permanent well should be developed and if satisfactory results were obtained by using the water from this well for the period of one year, then another well should be developed to augment and alternate with the first well,

At this date the permanent well has been developed and test pumped with good results obtained, both in quality and quantity. The Ph of the water is low which will necessitate the aeration of the water before entering the City mains, to raise the Ph to the neutral point.

To facilitate the aeration of the water a 14" pipe line was installed by the City from the clear water basin at the Water Works to the site of the permanent well. Provisions have been made in the size of this line and branches, so that the supply from several more wells may be utilized.

At the time of writing the International Water Supply Co. Ltd. have the estimated delivery date of the pump set for March 1, 1955, so that the new water supply should be in use by late spring or early summer of 1955.

The unit cost of laying 12" Surface Sewer 363 feet from well site to Catch Basin on Woodstock Road, was \$1.54 per foot, the excavation being all sand. The labour cost per foot was 40 cents.

At the time of writing this report, 1888 lineal feet of 14" C. I. Cement lined and 32 lineal feet of 12" C. I. Cement Lined pipe has been laid from the vicinity of the pumping station to the well site at Wilmot Park.

The cost of laying this above pipe is as follows:-

Labour	\$ 728.39
Machinery	828.50
Material	<u>13,827.39</u>
TOTAL\$ 15,384.28	

The unit cost per foot for laying the 14" and 12" C. I. Cement Lined Water Pipe was approximately \$8.00 per foot, labour charge being 75¢ per foot and the material charge \$7.20.

Included in the expenditure of \$42,271.16 under this heading, the International Water Supply Co. Ltd. were paid \$22,680.00 and James F. MacLaren Associates \$1,029.42.

CAPITAL WATER INTAKE

The expenditure under this heading amounted to \$1,629.32 for services rendered by James F. MacLaren Associates from June 1, 1953 to May 31, 1954 in connection with the well drilling and water supply problem, and proposed new intake and low lift pumps and extension to Water Works Plant.

CAPITAL ACCOUNT - GRAVEL ROAD

Expenditure\$ 4,253.40

Under this heading the following streets were gravelled:-

<u>Location</u>	<u>Lineal Feet</u>
Acacia Court	640
Albert St., Connaught St. towards York St.	900
Connaught St., York St. to Albert St.	1120
Friel Street	234
Green Road, York St. running west	120
Kensington Court	400
Mitchell Street Extension	190
Northumberland St., Dundonald St. to Back Drain	160
Rookwood Avenue	450
Westmorland St., Dundonald St. to Connaught St.	350
Woodfield Court	1000
Hanwell Road, Woodstock Road to Parkhurst Drive	<u>500</u>
TOTAL	6064 Lineal Feet

Also charged to this account was 1589 cubic yards of fill, obtained from Bemrose and Kilburn @ 50 cents per cubic yard and delivered on Albert Street from York Street to Connaught Street.

A total of \$6,064 lineal feet was gravelled at a cost of \$3,648.90 thus making the unit cost of gravelling per mile of approximately \$3,200.00.

CAPITAL ACCOUNT - BACK DRAIN DIVERSION

Expenditure \$ 23,619.56

During 1953 the course of the City Back Drain from the concrete culvert on York Street was changed and an open ditch was constructed from the culvert to Phyllis Creek, thus diverting the flow of the water to Phyllis Creek in the west end of the City. This year (1954) it was decided to lay pipe from York Street to Smythe Street and do away with this part of the open ditch. 1000 lineal feet of 42" reinforced concrete pipe and 1200 lineal feet of 36" reinforced concrete pipe was laid. Catch basins were installed along this sewer line wherever necessary.

The cost of laying the above 36" and 42" reinforced concrete pipe was as follows:-

Labour	\$ 1,239.14
Machinery	1,925.50
Material	<u>19,454.92</u>

TOTAL ... \$ 22,619.56

Total length of pipe laid was 2200 lineal feet.

The unit cost for laying the above sizes of pipe was \$10.28, labour charge being 56 cents per foot and the material charge \$9.72.

Included in the above expenditure of \$23,619.56 was the purchase of a piece of property from Mr. Ralph Wilson Sr., the purchase price being \$1,000.00.

CAPITAL ACCOUNT - STREET LIGHTS

Expenditure \$ 1,412.55

The above expenditure is made up as follows:-

Maritime Electric Co. (Installation of Series Lights)	\$ 598.02
Can. General Electric Co. (Purchase of Bracket insulators)	493.17
Canadian Line Materials (Purchase of Luminaries and Brackets)	309.00
Provincial Secretary-Treasurer (S.S. & E. Tax)	<u>12.36</u>
TOTAL	\$ 1,412.55

Under this heading the Maritime Electric Co.
installed Series Street Lights at the following locations:-

Neill Street	1
Jaffrey Street	1
Tamarack Terrace	2
Albert St., York St. to Connaught St.	4
Tweedsmuir Street	<u>1</u>
TOTAL	9

PUBLIC WORKS

Gross Expenditure	\$ 20,166.51
Credits	<u>708.05</u>
Net Expenditure	\$ 19,458.46
1954 Appropriation	<u>22,000.00</u>
CREDIT	\$ 2,541.54

The Credits of \$708.05 were made up as follows:-

F'ton. Board School Trustees (11 hrs. Bulldozing Albert St. School Grounds)	\$ 88.00
F'ton. Propane Gas Co. (2 prints of City of Fredericton 54 sq. ft. @ 10¢ per sq. ft.).....	5.40
Dept. of Public Works (1 new chain for Chipper chain saw)	21.89
Journal Voucher (50 Yds. 2nd grade loam to Fire Department @ \$1.25 per yard)	62.50
Journal Voucher (To grading and levelling at Fire Station, Carleton Ward)	513.80
Journal Voucher (Labour for Fire Department)	<u>16.46</u>
TOTAL	\$ 708.05

The labour charge under the Public Works expenditure was incurred for the following:-

Off Street Parking	\$ 282.91
Trees	3,220.39
Survey	943.70
Back Drain	21.97
Surface Sewer	81.79
Old Burial Ground	1,469.38
Unforseen Account	<u>4,394.91</u>

TOTAL \$10,415.05

Off Street Parking:-

The labour charge of \$282.91 was amount spent in constructing a Parking Lot for cars on Campbell Street from west side line of Phoenix Square to Carleton Street. To this labour amount must be added a Machinery charge of \$74.40 and a Material charge of \$715.92, thus making a total cost of \$1,073.23.

Trees:-

The labour cost of \$3,220.39 under this item was for cutting and pruning trees, \$3,026.05; for spraying trees, \$108.63 and \$85.71 for digging and planting new trees. The City purchased this year, from the Forest Nursery at Charlottetown, the following trees and these were planted by City workmen:-

10 Acer Platenoides, Norway Maple 6 to 7 ft., @ \$1.00 each	\$ 10.00
10 Acer Platenoides, Schwedleri, 6 to 7 ft. Crimson King Maple @ \$1.50	15.00
10 Acer Saccharinum, Silver Maple 6 to 7 feet @ \$1.00 each	10.00
10 Quercus Borealis Maxima, Red Oak 6 to 7 feet @ \$1.50 each	15.00
2 Quercus Flustris 8 to 10 feet @ \$2.50 each	5.00
20 Tilia Cordata Linden 6 to 8 feet @ \$2.00 each	40.00
10 Quercus Alba, English Oak @ \$1.00 each	10.00
20 Acer Platenoides, Norway Maple Whips @ \$1.00 each.	20.00
10 Acer Platenoides, Schwedleri, Norway Maple Whips @ \$1.50 each	15.00
20 Aesculus Hippocastanea, Horse Chestnuts @ \$1.10 each	22.00
5 Corylus Colurna, Turkish Fiblarts @ \$2.50 each	12.50
10 Salix, Golden Weeping Willow @ \$1.20 each	<u>12.00</u>

TOTAL \$ 186.50

The above trees were planted at the following locations; Green Road, Green from St. John Street to Alexandra Street, School Grounds Carleton Ward and at Queen's Square.

Considerable interest is being shown in the City shade trees by our citizens. During 1952 a committee of citizens under the chairmanship of a city alderman was formed

to act in an advisory manner. The Chairman of the committee this year was Alderman H. G. Hughson. This committee is made up mostly of foresters and others who have a professional knowledge of tree culture. Approximately 45 trees were cut and removed this year, some being marked by the Tree Committee and others that were found to be in a dangerous condition.

Surveying:-

The labour cost of \$943.70 under this heading was for wages for a helper with the Engineers during the course of their work during 1954.

Back Drain:-

The labour charge under this heading amounted to \$21.89. This amount was for cutting ice away from the culverts at York Street and Dundonald Street during the winter.

Surface Sewer:-

Under this heading the labour cost was \$81.79 for the construction of a 10" surface sewer from the brook that crosses MacLaren Avenue near Forbes Street to the back of the lots facing Forbes Street, a distance of 204 feet and the building of a catch basin at the rear of 639 MacLaren Avenue.

Old Burial Ground:-

The labour expenditure of \$1,469.38 was used in maintaining the old burial ground in the centre of the City.

Unforseen Account:-

This labour item is divided as follows:-

Preparing for Civic Election	\$ 58.52
Greens (Cutting, Raking, Seeding, Fill)	2,566.08
Christmas Tree	29.62
Cutting Bushes along River Bank	270.39
Benches (Repairs, Painting, etc.)	155.05
Albert Street School (Levelling Ground)	11.99
Spraying for mosquitoes	10.82
Salary Miss Moore (Attending Council Meetings)	150.00
Repairing and placing stand at Cenotaph	7.00
Moving Board of Health	8.48
Tumping out cellar Farraline Home	12.87
Sodding (Green Road)	130.38
Fire Station, Carleton Ward (Installing Pipe).....	129.22
Capital Ball Field (Repairing seats and surveying field)	97.07
Army Parade, June 19, 1954	2.21
Repairing and Painting Band Stand on the Green ...	124.26
Cleaning up from Storm, Hurricane Edna	593.88
Gravel Sidewalk to Acacia Court	20.61
Removing houses from Upper Green for Fire Department	<u>16.46</u>

TOTAL \$ 4,394.91

This year considerable attention was paid to the Green from Church Street to Alexandra Street. An accurate cost of this expenditure was kept and was as follows:-

Labour	\$ 807.02
Machinery	447.10
Material (1965 Cu. Yds. Fill @ 75¢ per Cu. Yd.).....	1,473.75
(1155 Cu. Yds. 2nd grade Loam @ 51.25 per Cu. Yd.)	1,443.75
(64 lbs. Alsac Clover @ 23¢ per lb.)	14.72
(8 bushels Timothy @ 8.30 per bushel)	<u>66.40</u>
TOTAL	\$ 4,252.74

The City this year purchased 12 Benches from Giant Manufacturing Company, Council Bluffs, Iowa at a price of \$10.22 per bench, F.O.B. Fredericton.

RECREATION

Net Expenditure \$ 2,710.35

The above expenditure does not include all playground expenditures, but only those which appear on department pay-rolls or costs of materials ordered through this office. 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 most of the equipment on the playgrounds appear here.

The above costs are divided as follows:-

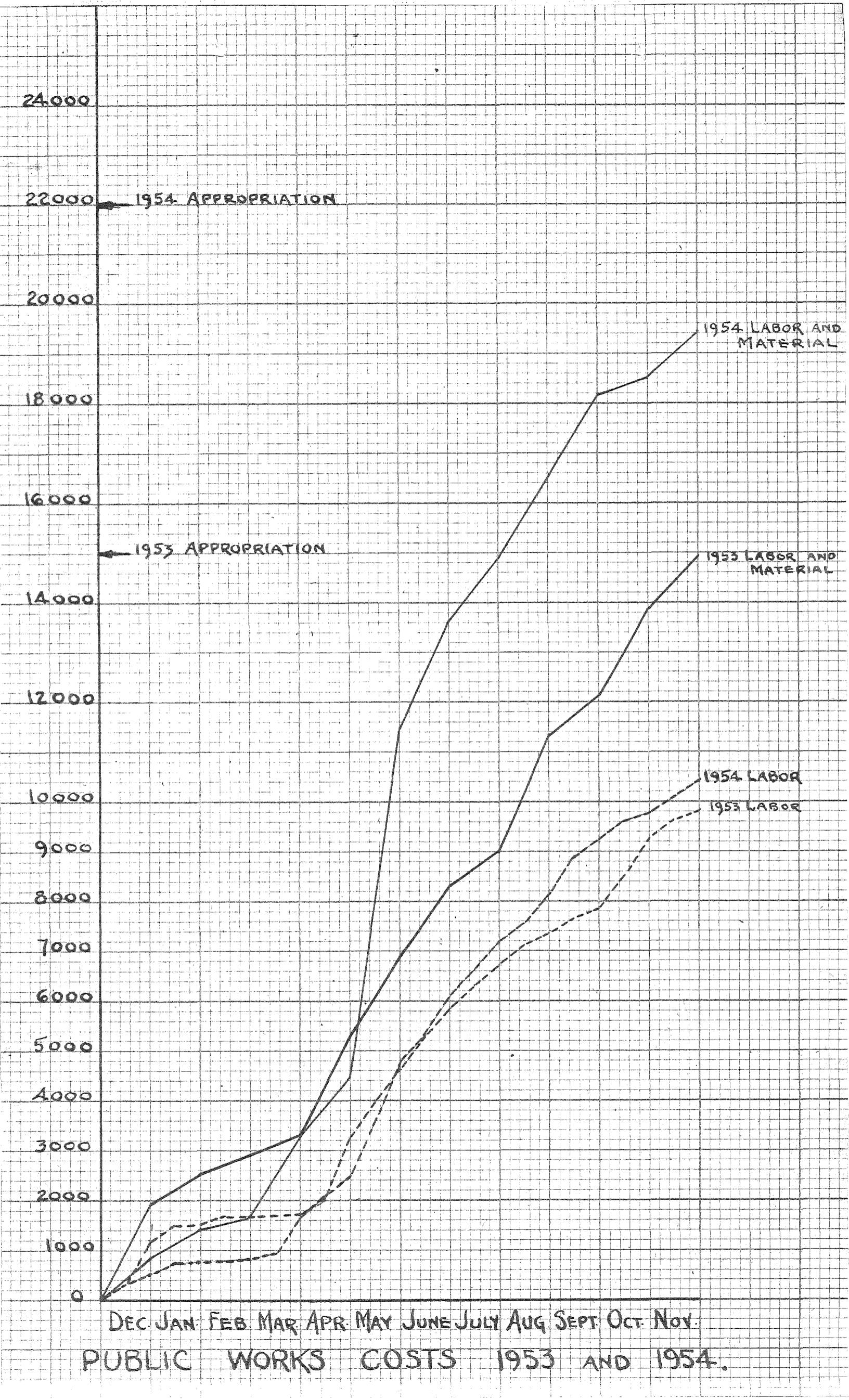
	<u>Labour & Machinery</u>	<u>Material</u>	<u>Total</u>
Playgrounds	1,038.20	965.93	2,004.13
Bathing Beaches	29.08	51.52	80.60
Rinks (Outside)	<u>539.70</u>	<u>85.92</u>	<u>625.62</u>
TOTAL	\$ 1,606.98	1,103.37	2,710.35

The Wading Pool in Carleton Ward was enlarged this year at a cost for labour and material of \$897.15. This work was done from June 14th to June 25th inclusive.

The Bathing Beaches were not opened for children swimming this year. The expense shown was for repairing and launching floats.

This year new iron posts were installed on the Queen Square Tennis Court replacing the old wooden posts.

The gas and oil used by the director's truck is also included in the above expenditure.



CITY HALL

Net Expenditure \$ 8,354.89

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

The expenditure of \$8,354.89 is divided as follows:-

Labour at City Hall, including winding and repairs to Clock, Night Fireman and extra Janitor Service	\$ 4,827.94
Water Bill for City Hall	100.00
Repairs	159.95
Light Bill for City Offices	1,310.40
Supplies, etc	95.76
Coal (166.7 tons)	<u>1,860.84</u>

TOTAL \$ 8,354.89

The Fountain in front of the City Hall was painted
as usual in 1954.

MUNICIPAL HOME

Net Expenditure \$ 342.33

This expenditure 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 on this report.

The above expenditure is divided as follows:-

Water Bill	\$ 50.00
14 Loads of Wood, delivered on orders of the Poor Commissioner to needy families of the City	140.00
Cost of delivering 14 loads of wood to needy families	71.23
Minor repairs to Municipal Home	<u>81.10</u>

TOTAL \$ 342.33

SANITATION

Expenditure \$ 10,733.66

This expenditure is only part of the total Sanitation costs. It is only the expenditure which was made through the office of the City Engineer and is therefore shown on this report.

The expenditure on Sanitation has been kept under two headings, namely; City Dump and City Incinerator.

The City Dump has one dump tender. One of the City Bulldozers works on the Dump from time to time helping the Dump tender keep the dump in order. The total expenditure on the Dump this year was \$3,208.34.

The City Incinerator is tended by two men who work a daily shift of nine hours, starting at 7:30 a.m. and finishing at 5:30 p.m. Besides these two attendants, extra City Labour was used in Bulldozing incinerator dump, shifting tracks, etc. The total expenditure for City Incinerator was \$7,525.32.

The contract for the Garbage is now held by Mr. J. Coates at a yearly cost of \$33,000.00.

SEWERAGE DOMESTIC

Gross Expenditure	\$ 20,952.91
Credits	<u>5,146.53</u>
Net Expenditure	\$ 15,806.38

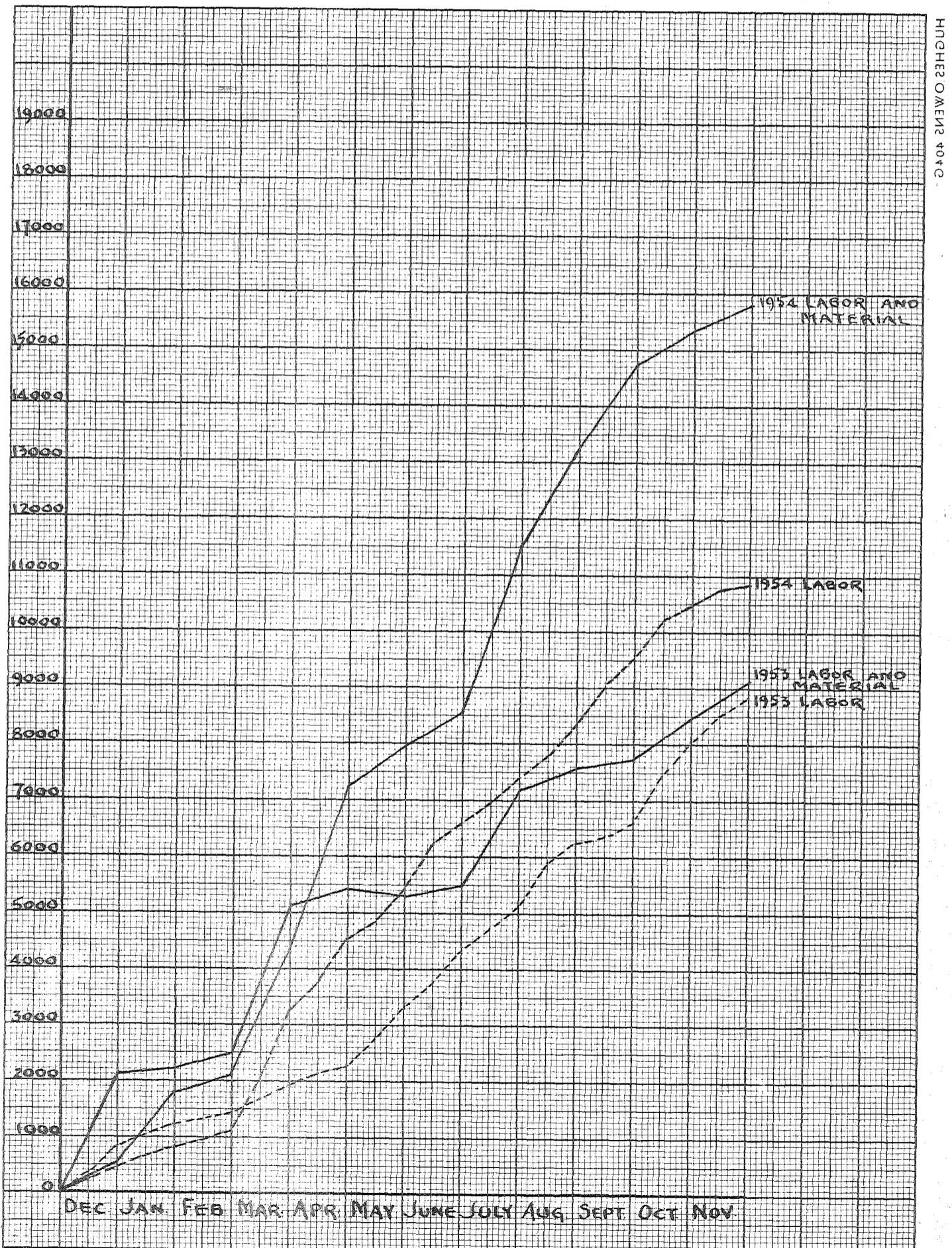
The above Credits are made up as follows:-

Material and Labour supplied for house connections ...	\$ 4,699.85
Journal Voucher (642' of 5" Terra Cotta Pipe @ \$0.54 per foot)	346.68
Journal Voucher (1 Set Sewer Rods)	<u>100.00</u>
TOTAL	\$ 5,146.53

New customers connected to City Sewer System this year were 69.

The Domestic Sewerage Systems on both sides of the Saint John River were flushed and cleaned this year. A considerable cost was incurred in cleaning the Domestic Sewer main at the rear of the City from the Saint John River to Rockwood Avenue. This sewer main was found to have a considerable quantity of sand in it.

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



SEWERAGE DOMESTIC COSTS 1953 AND 1954.

STREET LIGHTS

The City street lighting system at the present time consists of:-

1. A series lighting system which lights most of the City on the south side of the St. John River.
2. A multiple lighting system.
3. A multiple lighting system in C.N.R. Subway.
4. A series lighting system in Carleton Ward.

System No. 1:-

The series lighting system consists of some 23.40 miles of line and 423 lamps. This system is divided into five circuits two of which are controlled each by a 25 K. W. Constant Current Transformer, the other three of which are each controlled by a 15 K. W. Constant Current Transformer. Four of these transformers along with the main switchboard are housed in a transformer room in the old street lighting building on Carleton Street. The fifth transformer is on a pole on McLeod Street and controls the rear circuit for Maryland Heights.

The five circuits are made up as follows:-

<u>Lower Front Circuit</u>	<u>Transformer Size</u>
32-600 C.P. Lamps @ .350 K. W. demand	11.20
8-250 C.P. Lamps @ .160 K. W. demand	<u>1.28</u>
	<u>12.48</u> K. W. 15 K. W.
<u>Lower Rear Circuit</u>	
2-600 C.P. Lamps @ .350 K. W. demand	.70
131-250 C. P. Lamps @ .160 K. W. demand	<u>20.96</u>
	<u>21.66</u> K. W. 25 K. W.
<u>Upper Front Circuit</u>	
19-600 C. P. Lamps @ .350 K. W. demand	6.65
36-250 C. P. Lamps @ .160 K. W. demand	<u>5.76</u>
	<u>12.41</u> K. W. 15 K. W.
<u>Upper Rear Circuit</u>	
18-600 C. P. Lamps @ .350 K. W. demand	6.30
94-250 C. P. Lamps @ .160 K. W. demand	<u>15.04</u>
	<u>21.34</u> K. W. 25 K. W.
<u>Maryland Heights</u>	
4-600 C. P. Lamps @ .350 K. W. demand	1.40
79-250 C. P. Lamps @ .160 K. W. demand	<u>12.64</u>
	<u>14.04</u> K. W. 15 K. W.

System No. 2:-

The multiple lighting system consists of 196 Units made up of 173 Units of 500 Watts and 23 Units of 200 Watts.

The 173 Unit of 500 Watts are located as follows:-
14 on Waterloo Row, 145 on King Street, Queen Street, Brunswick Street and Cross Streets, including part of Campbell Street, Bridge Street and York Street; 9 on Woodstock Road and 5 on George Street.

The 23 Units of 200 Watts are located as follows:-
4 on Rookwood Avenue, 4 on University Avenue, 14 on St. John Road from Experimental Farm to W. MacFadgen's subdivision and 1 on Woodstock Road.

Each of the above units consists of either a 500 or 200 Watt 150 Volt Lamp set in a novalex luminar fixture and hung on a bracket attached to the pole; these units being controlled by a control switch which is energized by our series lighting system. This system was installed and is owned and maintained by the Maritime Electric Co., the City paying the company \$60.00 per year for each 500 Watt Unit and \$40.00 per year for each 200 Watt Unit.

System No. 3:-

System No. 3 consists of six 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 street 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 169 lamps. This system is composed of two circuits which are controlled by two 15 K. W. constant current transformers located on a pole platform on Pine Street.

The two circuits are made up as follows:-

Carleton Ward (Down)	<u>Transformer Size</u>
85-250 C. P. Lamps @ .160 K. W. demand	13.60
1-200 W. Lamp (East end of Union Street)	.20
	13.80 K.W. 15 K.W.

Carleton Ward (Up)

83-250 C. P. Lamps @ .160 K. W. demand	13.28 K.W.	15 K.W.
--	------------	---------

The power for systems 1, 3 and 4 is purchased from the Maritime Electric Co. at a contract price as agreed upon in a contract between the Maritime Electric Co. and the City made in 1927. This contract also covers the maintenance cost of \$20.00 per year per mile of pole line which is paid by the City to the Company.

All materials such as wire, poles, pole fixtures, lamps, lamp fixtures, transformers, etc. is paid for by the City installed by the Company under their contract price for maintenance. Any new installations which require an enlargement of circuits must be paid for by the City, both labour and material.

The Street Lighting costs for the year 1954 were as follows:-

Net Expenditure.....	\$ 23,812.54
1954 Appropriation	<u>27,000.00</u>
Credit Balance	\$ 3,187.46

The Street Lighting expenditure of \$23,812.54 is made up as follows:-

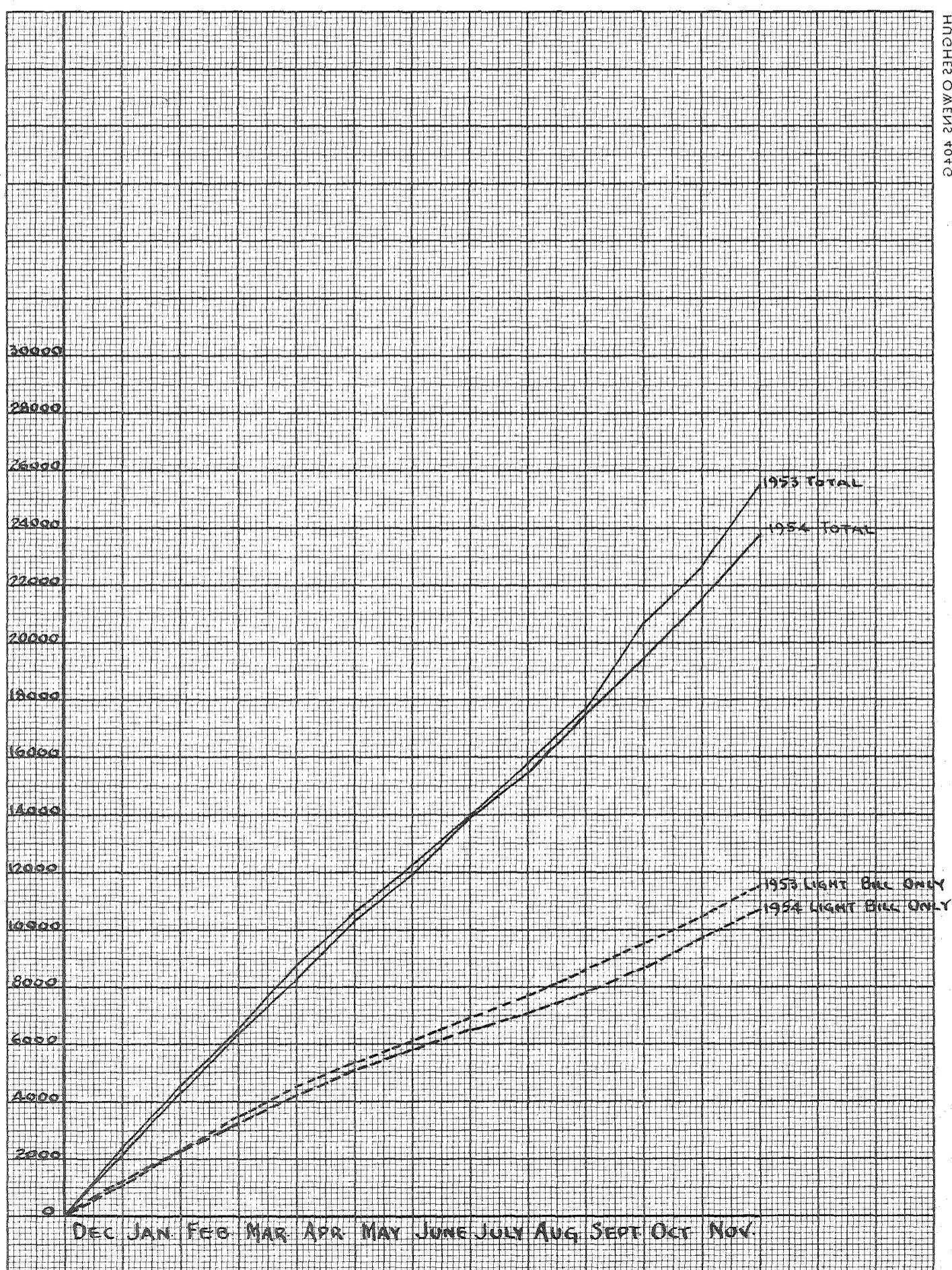
24-600 C.P. Series Lamps	\$ 30.50
936-250 C. P. Series Lamps	689.13
3-200 C. P. Lamps	1.46
14-150 C. P. Lamps	4.05
Current in Subway and Series Lighting, Nov. 27, 1953 to Nov. 28, 1954	10,751.82
Charges on multiple fixtures owned and operated by Maritime Electric Co. @ \$40.00 and \$60.00 per light per year..	10,773.06
Maintenance and contract of pole line	639.84
Maintenance of lamp fixtures (including only such articles as lamp standards, lamp brackets, heads, sockets, shades, time switches, etc.)	92.88
Material and Labour used in major repairs and new installations	518.10
Cenotaph Light Bill and Lamp replacements	119.38
Miscellaneous	<u>192.32</u>
TOTAL	\$23,812.54

The following new lights were installed and paid for under Street Lighting Ordinary:-

- 1 - Barker St. in front of entrance to York Arena
- 1 - Henry St. reset pole line adding an extra light
- 1 - Water St. between Hayes St. and St. Marys Street
- 6 - Parkhurst Drive
- 1 - Barker St. opposite Farmer's Cooperative Building
- 1 - Maryland Hill in front of Calvary Baptist Church
- 3 - Hughes St. between Union Street and MacLaren Avenue
- 4 - Rookwood Avenue
- 4 - University Avenue
- 14 - Saint John Road, Experimental Farm to McFadgen
development
- 10 - Woodstock Road
- 5 - George Street

The total per capita charge for Street Lighting for 1954 population of 16,018 as per the 1951 census is
$$\frac{23,812.54}{16,018} = \$1.48.$$

HIGHER OWNERS FEE



STREET LIGHT COSTS 1953 AND 1954.

TABLE SHOWING COMPARATIVE YEARLY
COST IN STREET LIGHTING

<u>Year</u>	<u>Total Yearly Cost</u>	<u>Yearly Appropriation</u>
1940	8,172.25	7,500.00
1941	9,888.78	8,500.00
1942	9,803.27	10,000.00
1943	11,033.89	10,000.00
1944	10,675.80	10,000.00
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

CEMENT WALKS

Expenditure \$ 156.32

This above expenditure was the cost incurred in the extensions of sidewalks at various corners in the City to meet the newly constructed curbs and gutters. The expenditure was made up of Labour \$40.32 and Material (Ready mixed concrete from Bemrose and Kilburn) of \$116.00 No concrete construction was done this year on permanent sidewalk abutting private property.

CITY SCALES

Expenditure \$ 6,154.80

Wages and Extra Help at City Scales	\$ 1,351.85
Repairs	32.68
New Installation	4,707.25
Light Bill	19.48
Supplies (Stove Oil)	43.54

TOTAL \$ 6,154.80

A new set of scales were installed in November at the City Scales, the cost of which was as follows:-

Labour and Machinery	\$ 625.72
H. Gill (forms for new scales)	129.78
Fairbanks Morse Co. (Scales)	2,841.77
Bemrose and Kilburn (Concrete)	334.50
Horsnell (Iron posts)	233.40
J. C. Likely (Lumber)	365.65
Phillips and Pringle	3.70
James S. Neill & Son	28.29
Fairbanks Morse Co. (time and wages to supervising installation)	104.53
Journal Voucher (Cement)	8.72
Journal Voucher (Brick)	25.18
Journal Voucher (Pipe)	4.32
Unemployment Insurance Commission	<u>1.69</u>
TOTAL	\$ 4,707.25

WILMOT PARK

Expenditure \$ 2,729.38

The above expenditure is made up as follows:-

Labour and trucking at Wilmot Park	\$ 1,753.84
Materials used on lawns and flower beds	54.24
Supplies & Repairs to Lawn Mowers, etc	175.04
Repairs to Band Stand, including labour and material (Labour - \$ 458.85)	
(Material - \$ 197.37)	656.22
Telephone	42.13
Water Bill	35.00
Miscellaneous (Tools, etc.)	<u>12.91</u>
TOTAL	\$ 2,729.38

The Band Stand at Wilmot Park was repaired and painted.

Included in the above expenditure was the purchase of 1 Power Driven Gasoline Lawn Mower from Federal Hardware at a price of \$154.50.

CHILDRENS HOME

Expenditure \$ 173.77

The above expenditure is made up as follows:-

Federal Hardware	\$ 21.55
J. S. Neill & Sons90
J. C. Risteen Co.	2.02
Journal Voucher (Labour)	144.20
Journal Voucher (Trucking)	<u>5.10</u>
TOTAL	\$ 173.77

FIRE DEPARTMENT

Gross Expenditure	\$ 8,990.75
Credits	<u>2,500.00</u>
Net Expenditure	\$ 6,490.75

The above Credits of \$2,500.00 are Journal Vouchers for hose purchased from the Fire Department for Domestic Sewer and Surface Sewer.

The Gross Expenditure is made up as follows:-

Journal Voucher (1506.2 Gallons Gasoline)	\$ 441.78
Journal Voucher (303 Hydrants @ \$2.00 per month)....	7,272.00
Journal Voucher (Improvement at Carleton Ward Fire Station)	1,176.97
Journal Vouchers (Water used at Fire Station)	<u>100.00</u>
TOTAL	\$ 8,990.75

Improvements at Carleton Ward Fire Station included the following:-

1. Labour, Trucking and use of machinery
2. Installation of 276' of 8" Surface Sewer
3. Purchase of Loam
4. Grading and Levelling Fire Station Grounds

ADMINISTRATION OF JUSTICE

Expenditure \$ 1,380.82

The above expenditure is made up as follows:-

Journal Voucher (4268.2 Gallons Gasoline)	\$ 1,251.86
Journal Voucher (Labour)	<u>128.96</u>
TOTAL \$ 1,380.82	

All Parking Meter Posts were painted during the year.

AIRPORT

Gross Expenditure	\$ 200.61
Credits	<u>32.00</u>
Net Expenditure	\$ 168.61

The above Credit is a Journal Voucher for deposit on 4 empty drums of coalas purchased from Roads and Streets.

The above expenditure is made up as follows:-

Journal Voucher (180 Gallons Coalas plus 4 drums and freight)	\$ 93.91
Journal Voucher (Labour in patching driveway, surveying and trucking)	<u>106.70</u>
TOTAL \$ 200.61	

CLARK MEMORIAL BUILDING
(LIBRARY)

Expenditure \$ 155.38

The above expenditure is made up as follows:-

Journal Voucher (Labour)	\$ 139.52
Journal Voucher (Wood)	<u>15.86</u>
TOTAL \$ 155.38	

The above labour charge of \$139.52 was cost of wages for city workmen cleaning up the building inside.

WATER

We have two separate and distinct water systems in the City of Fredericton.

1. The system which supplies the City of Fredericton lying on the South side of the St. John River and taking its water from the Saint John River.

2. The system which derives its water from two drilled wells and is situated on the North side of the St. John River and serves that part of the City of Fredericton known as Carleton Ward.

The water costs which follow in this report include the water costs of both systems or the total water costs. The water costs are divided into two headings, -namely;- Water Ordinary and Water Pumping Station.

Water Ordinary:-

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

Gross Expenditure	\$ 38,164.56
Credits	<u>12,212.09</u>
Net Expenditure	<u>25,952.47</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 systems which do not belong to the City	\$ 4,259.25
York Structural Steel Co. (5.65 Tons Scrap Iron at \$19.00 per ton)	95.84
Journal Voucher (Yearly rental on 303 Hydrants @ \$2.00 per month)	7,272.00
Journal Voucher (Water used in City Hall Building) ..	100.00
Journal Voucher (Water used at old street lighting building on Carleton Street)	25.00
Journal Voucher (Water used in City Alms House)	50.00
Journal Voucher (Water used at Wilmot Park)	35.00
Journal Voucher (Water used at Queens Square and Carleton Ward Playgrounds)	275.00
Journal Voucher (Water used by Fire Department at King Street and MacLaren Ave. Stations)	<u>100.00</u>
TOTAL	\$ 12,212.09

Hydrant rentals and water used by various City Buildings was credited to Water Ordinary this year instead of Water Pumping Station as was done in former years.

The Gross Expenditure is made up as follows:-

City Pay Roll for Hydrants	\$ 1,325.99
City Pay Roll for Meters	3,812.06
City Pay Roll for Water Ordinary	<u>8,105.04</u>
Total Pay Rolls	\$ 13,243.09
Material and other charges	<u>24,921.47</u>
Gross Expenditure	\$ 38,164.56

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

3 - 6" Sprinkler Systems were laid at (1) Fredericton Post Office Building, Queen Street (2) Royal Mills Ltd., Aberdeen Street and (3) Sussex Ginger Ale Building on Clark Street. The above installations were paid for by the owners and are included in the credits to Water Ordinary and Capital Account Water. No City charge is made for water supplied for sprinkler systems.

Hydrants:-

We have in the City, 306 Hydrants, 201 in the City proper, 9 on University property, 7 in Military Areas and 89 in Carleton Ward. The credit for rental of these hydrants appears under credits of Water Ordinary. As there were three added this year late in the fall, the rental charge on these three was not charged. They were installed at the following locations:-

Corner York and Connaught Streets
Corner Regent and Albert Streets
Northerly end of Friel Street

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

Meters:-

Of all the water services in the City, 1217 are charged under flat rate and 211⁴ on Meter, making a total of 3331 services.

The labour cost this year per meter for installing, reading, repairing, etc. is \$1.80.

All meters are read twice a year and bills are sent out twice a year. The meters of 123 customers are read once a month although they are billed only twice a year. Those are such customers who ordinarily have large consumptions and where a stopped meter or a meter 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 1st, 1954 are:-

5/8" Meter repaired and fit for service	24
New 5/8" Meters	121
3/4" Meters fit for service	3
New 3/4" Meters	4
1" New Meters	3
1 1/4" Meters fit for service	2
1 1/2" New Meters	3

Distribution System:-

New services installed this year	69
Old services relayed this year	29
Frozen services that had to be thawed,	
Rosborough - 259 St. Marys St.	
McCabe - St. Marys Street	
Superline Oil - Regent Street	
Services discontinued	3

The Fredericton distribution system consists of 37.65 miles of Water Main made up of the following sizes:-

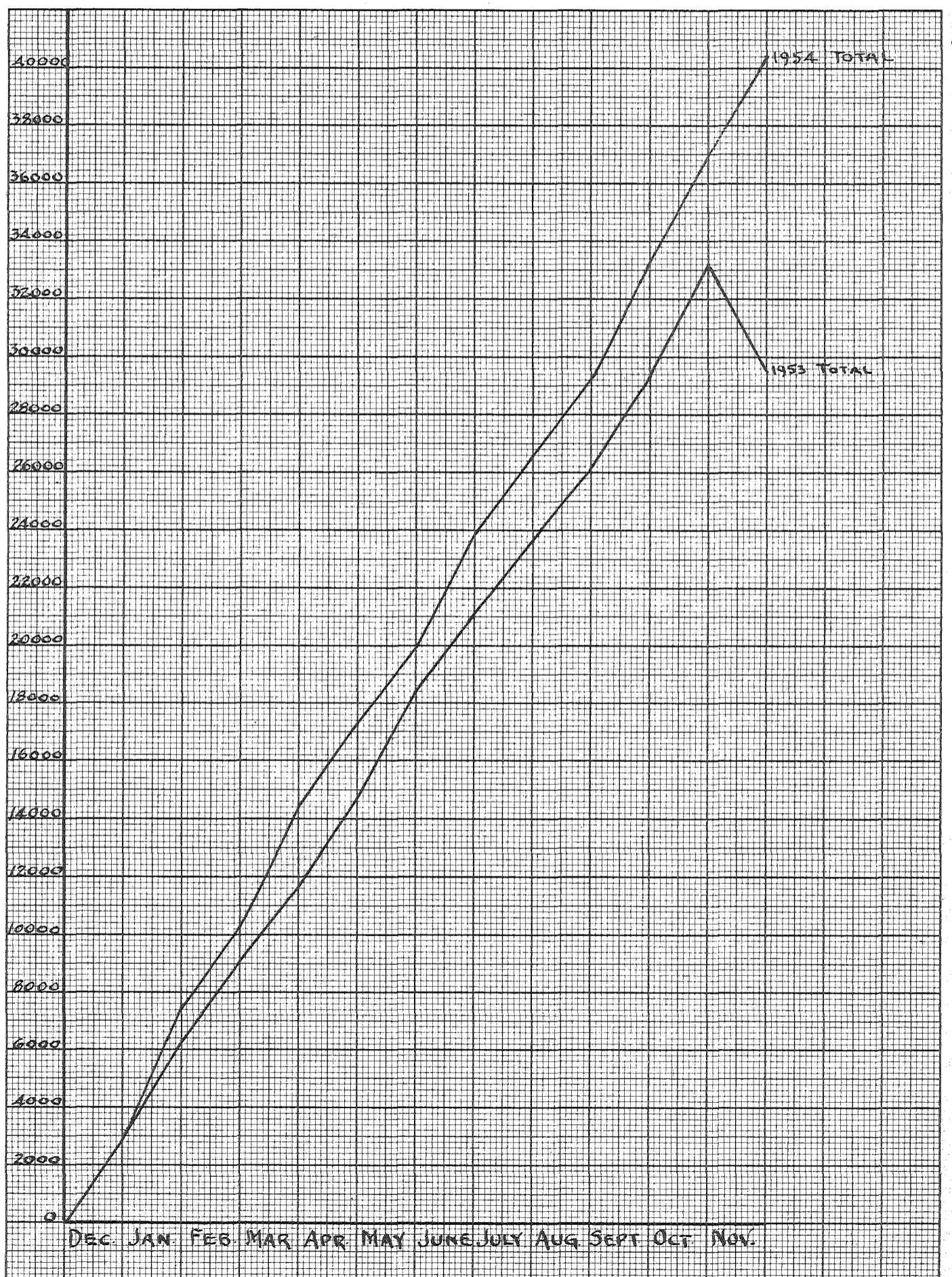
18 inch main	-	0.98 miles
1 1/4 inch main	-	0.36 miles
1 1/2 inch main	-	1.01 miles
10 inch main	-	1.56 miles
8 inch main	-	6.89 miles
6 inch main	-	22.35 miles
4 inch main	-	4.23 miles
3 inch main	-	.27 miles

This does not include the water mains installed by the National Defence at Military Training Center No. 70 (Exhibition Grounds) Military Depot #7 (Woodstock Road), Military Hospital (Wilmot Park) and Army Garage situated west of Rockwood Avenue.

Under this heading one new Rubber Tired Wagon was purchased at a cost of \$145.60 from John Jensen. This wagon was used for the Electric Thawing Machine.

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

200 - 5/8 x 3/4"	Trident, C.I.B. cold water meters, straight reading Imperial Gallons complete with couplings included.
6 - 3/4"	Trident C.I.B. cold water meters, straight reading Imperial Gallons complete with couplings included.
6 - 1"	Trident C.I.B. cold water meters straight reading, Imperial Gallons, complete with couplings included.
3 - 1 1/2"	Trident style 3, cold water meter flanged straight reading Imperial Gallons, complete with flanges included.



WATER PUMPING STATION COSTS 1953 AND 1954.

WATER PUMPING STATION

Expenditure \$ 40,403.81

The above expenditure is divided as follows:-

City Pay Roll for salaries of Employees at Pumping Station	\$ 15,194.72
Work done by other City employees in and around Pumping Station	<u>879.65</u>
TOTAL CITY PAY ROLLS	\$ 16,074.37
Material and Workmens' Compensation Charge	<u>24,329.44</u>
TOTAL	\$ 40,403.81

The material cost of \$24,329.44 is itemized as follows:-

Item # 1 Light and Power supplied by the Maritime Electric Co. (567,247 K.W. Hrs.)	13,521.71
2 Transformer charges	151.92
3 Liquid Chlorine (10,050 lbs.)	1,343.30
4 Alum (166,200 lbs)	4,204.88
5 Coal (133.02 tons)	1,483.53
6 Fuel Oil	----
7 Engine Oil	----
8 Motor Oil (83 Gallons)	90.06
9 Gasoline (10 Gallons)	4.48
10 Maintenance and repair of buildings and machinery and pier	507.95
11 New installations	----
12 Supplies, Packing Rags, etc.	135.85
13 Stationery, forms, charts, etc.	161.50
14 Workmens' Compensation Board	506.28
15 E. W. Hagerman's Salary	1,210.08
16 Lime (950 Bags)	734.35
17 Miscellaneous - Telephone, trucking, machinery, etc	<u>273.55</u>

TOTAL \$ 24,329.44

The Raw Water Well and the Goagulating Basin were both cleaned twice this year, namely:- Spring and Fall.

The Clear Water Well was this year cleaned for the first time since 1906, the year the Basin was built. The cleaning of this well had been attempted before but due to the inability of the pumps on hand the operation was unsuccessful. A pump was loaned to the City of Fredericton by the International Water Supply Co. Ltd. and through the use of this pump the Clear Water Well was cleaned and flushed.

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

Year	Imperial Gallons of Water Pumped	Yearly Gross Expenditure at Pumping Station	Pumping Station Cost per 1000 Gals., using Gross Expenditure
1936	197,641,000	16,251.61	8.8 cents
1937	187,008,000	19,678.21	10.5 cents
1938	181,558,000	19,239.49	10.6 cents
1939	199,662,000	18,144.43	9.1 cents
1940	203,975,000	22,503.35	11.3 cents
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	23,990.14	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

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

By taking our average daily consumption of Carleton Ward as 180,000 Gallons Per Day arrived at from a number of test runs, the estimated yearly water pumped from these wells for 1954 is 65,700,000 Imperial Gallons.

The total amount of water pumped during 1954 for the whole City is therefore, 454,240,000 Imperial Gallons.

Our total net water expenditure for the City for 1954 is \$66,356.28.

Therefore the net cost to pump and deliver to the customer, 1,000 Imperial Gallons of water in 1954 is
 $\frac{66,356.28}{454,240} = 14.6$ cents.

All of 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, as usual, under the supervision of the Plant Superintendant and Chief Filter Plant Operator, Mr. Fred Nason.

Accompanying this report is the report of Mr. E. W. Hagerman, City Water Analyst, on the Fredericton Water Supply from January 1, 1954 to December 31, 1954.

Respectfully submitted,



City Engineer.

44000

42000

40000

38000

36000

34000

32000

30000

1933 LABOR AND
MATERIAL

CITY OF FREDERICTON WATER SUPPLY

YEAR - 1954

The Bacteriological quality of the City water supply has been kept to "A" grade throughout the year. Unfortunately the same cannot be said of its Physical qualities.

Especially objectionable have been the Chlorinous tastes, due to Chlorine compounds formed between Chlorine and Organic compounds in the water. Equally offensive was the blueish colour due to post flocculated hydrate although not so noticeable as the taste.

Prior to November 1953 chlorinous tastes occurred occasionally but since this date they have become much more pronounced and objectionable. Also noticeable from this time is the rapidity with which the river can change in its action with the chlorine. One day all the chlorine added will go into combination with compounds in the water. (This combined chlorine does not kill bacteria effectively). The next day only a fraction of the same applied dose goes into combination, most of it remaining in a free state. (This free Chlorine kills rapidly and only a small amount is necessary). If the river water would remain in this condition, as it used to do for weeks at a time, much less chlorine would be necessary for satisfactory sterilization.

It would appear that if we should have to continue to use the river water that it would be necessary to install one of the processes for the dechlorination of our effluent before passing it into the mains.

Some 51 samples were collected in the year 1954. From each sample 5 portions of 5 cc. each were planted in Lactose Broth. This makes a total of 255 portions tested. Out of the 255 portions only 2 finally confirmed on Brilliant Green Bile as positive Coliform group. Quite a few portions gave gas in the second 24 hour period but failed to confirm on Brilliant Green Bile and so were classed as spore formers of no significance. It may be of interest to note that these harmless gas formers generally get through our system when the water is in that state where all the chlorine goes into combination and no free chlorine persists.

Following is a list of places, dates and results of tests made for the year 1954.

Date of Sample	Where Sample Collected	5 Portions in a sample Test divides into Positive and Negative as to Coliform Group	
1954.			
January 2	Pumping Station	5	Negative
January 10	Pumping Station	5	Negative
January 16	127 Charlotte St.	5	Negative
January 25	U.N.B. Eng. Bldg.	5	Negative
February 4	Pumping Station	5	Negative
February 10	Pumping Station	5	Negative
February 15	127 Charlotte St.	5	Negative
February 25	Pumping Station	5	Negative
March 4	127 Charlotte Street	5	Negative
March 11	Pumping Station	5	Negative
March 17	127 Charlotte Street	5	Negative
March 24	U.N.B. Eng. Bldg.	5	Negative
March 28	Pumping Station	5	Negative
April 4	127 Charlotte Street	5	Negative
April 9	Pumping Station	5	Negative
April 18	Pumping Station	5	Negative
April 20	Pumping Station	5	Negative
April 24	Pumping Station	5	Negative
April 29	127 Charlotte Street	5	Negative
May 9	Pumping Station	5	Negative
May 14	Pumping Station	5	Negative
May 19	127 Charlotte Street	5	Negative
May 25	U.N.B. Eng. Bldg.	5	Negative
June 5	Pumping Station	1	Positive
June 8	Pumping Station	4	Negative
June 17	127 Charlotte Street	5	Negative
June 22	Pumping Station	5	Negative
July 1	Pumping Station	5	Negative
July 8	Pumping Station	5	Negative
July 18	Pumping Station	5	Negative
July 24	127 Charlotte Street	5	Negative
August 4	Pumping Station	5	Negative
August 14	Pumping Station	5	Negative
August 29	Pumping Station	5	Negative
September 4	L. B. Hotel	5	Negative
September 6	661 Chestnut Street	5	Negative
September 11	Pumping Station	1	Positive
September 18	Pumping Station	4	Negative
September 27	Pumping Station	5	Negative

Date of Sample	Where Sample Collected	5 Portions in a sample Test divides into Positive and Negative as to Coliform Group
1954		
October 4	Pumping Station	5 Negative
October 10	U.N.B. Eng. Bldg.	5 Negative
October 18	Pumping Station	5 Negative
October 25	Pumping Station	5 Negative
November 5	Pumping Station	5 Negative
November 15	127 Charlotte Street	5 Negative
November 21	Pumping Station	5 Negative
November 26	127 Charlotte Street	5 Negative
December 8	U.N.B. Eng. Bldg.	5 Negative
December 15	Pumping Station	5 Negative
December 21	City Hall	5 Negative
December 28	Pumping Station	5 Negative

Respectfully submitted,

(Signed) Mr. E. W. Hagerman.

Fredericton, N. B.,

January 23, 1955.

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3 Peter Wren

ed St. 1 - 6 "

H. Hyatt S.

January 6th 1909 - 1000 hrs

Mark Turner 1-4

found "Dens 1-6" 1000 ft. above

units $306 + 6 = 312$ ~~and~~

blimping park

n of city

a University Property
of being described as intended to furnish
1 military area

89 Carleton West

for the purpose of

to web

edit basic

clf

