

ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1952



INDEX

	<u>Page</u>
Letter of Transmittal	1
Total Yearly Expenditure	3
Roads and Streets	4 - 11
City Forest	11
Capital Account Paving	12
Capital Account Sewer Domestic	13 - 14
Capital Account Water	15
Capital Account Surface Sewer	15
Capital Account Water Feeder Mains and Reservoir	16
Capital Account Gravel Roads	17
Capital Account New Maryland Road	17
Capital Account Saint John Road	17
Capital Account Street Lighting	18
Public Works	18 - 19
Recreation	20
City Hall	20
Municipal Home	21
Sanitation	21
Sewerage Domestic	22
Street Lighting	22 - 24
Cement Walks	25
City Scales	25
Wilmot Park	26
Children's Home	26
Water	27 - 30
Water Ordinary	27
Water Meters	28
Distribution System	28
Water Pumping Station	29 - 30
Report of E. W. Hagerman, City Analyst	a - c

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 1951 to the first of December 1952.

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.

This year along with our regular maintenance work the City crews constructed the following new works:

C	Pavement.....	0.59 miles
	Gravel Road Construction.....	1.85 miles
	Concrete Curb and Gutter.....	2.41 miles
	Concrete Sidewalk.....	1.99 miles
	8" to 24" Surface Sewer.....	0.74 miles
	5" to 18" Domestic Sewer.....	1.85 miles
	6" Water Main.....	0.44 miles

Contractors under contract with the City this year built the following works:-

Forbes and Sloat - Reinforcing floor of 2,000,000 Gal. Reservoir situated on Brick Kiln Road.

Forbes and Sloat - Laying 12" Cast Iron Water Main from Smythe Street to University Ave. on Charlotte St. a distance of 5343 Lin. Ft.

Forbes and Sloat - Rebuilding St. John Road from Ketchum Bridge on ~~University Ave.~~ to Lower or East Entrance *Water Rv* to Experimental Station 2.18 miles.

Diamond Construction Co. - Laying 1442 Lin. Ft. of 8" C. I. Water Main on Union St. from Gibson St. to C.N.R. Right of Way on Union St.

Diamond Construction Co. - Laying of Asphalt or Black Base on City Streets only. The grading etc. being done by City Workmen.

The location of the above listed work is shown on a map following Page 2.

Our regular expenditures and expenditures made with money obtained by bond issues, appear for 1952 as follows:

	<u>Appropriation</u>	<u>Net Expenditures</u>	<u>Debit</u>	<u>Credit</u>
Street Lights	25,000.00	25,211.39	211.39	
Public Works	13,000.00	14,156.07	1156.07	
Roads & Streets	115,000.00	127,859.52	12859.52	
Sanitation	8,000.00	8,523.27	523.27	

	<u>Revenue</u>	<u>Net Expenditures</u>	<u>Credit</u>
Water Pumping Station		24,741.08	34,236.10
Water Ordinary	90764.74	34,286.10	24,741.08
Sewerage Domestic		9,135.67	22,601.89

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 16018.

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 readily be found by referring to the Index on the preceeding page.

Respectfully submitted,

J.D. Mackay
City Engineer.

per L.E.C.

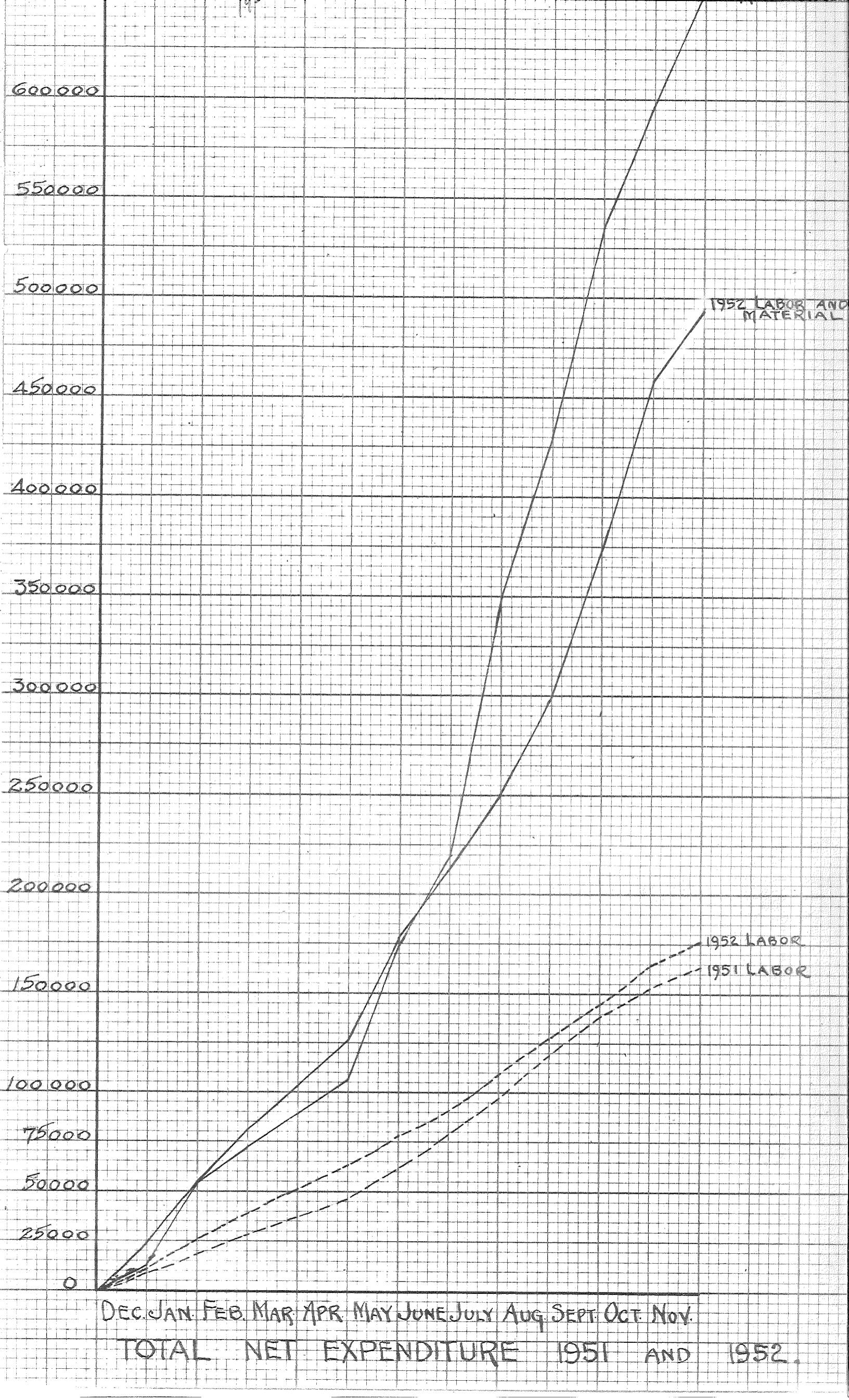
TOTAL YEARLY EXPENDITURE

The expenditures shown in this report cover the period of time from December 1st, 1951 to December 1st, 1952.

The Total Yearly Net Expenditure under the direct supervision of the City Engineer this year amounted to \$493,995.49. This expenditure will be taken up in detail under the different headings in this report. The total Gross Expenditure for this period amounted to \$604,517.96.

A graphic comparison of expenditure for labour and material for the year 1952 and the year 1951 is shown on following charts.

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



ROADS AND STREETS

This year we had an appropriation for Roads and Streets of \$115,000.00. We over-expended this appropriation by \$12,859.52.

We have in Fredericton altogether 54.61 miles of roads and streets. 10.61 miles being located on the North side of the Saint John River and 44.0 miles on the South side.

Our paved and unpaved streets are divided between the Rural and Urban Districts as follows:-

Roads and Streets

	<u>Urban</u>	<u>Rural</u>	<u>Total</u>
Paved.....	22.30	2.45	24.75
Gravel.....	14.47	15.39	29.36
Total.....	36.77	17.84	54.61

Roads and Streets Expenditures 1951:

Gross Expenditures.....	\$ 151,196.48
Credits.....	23,336.96
Net Expenditures.....	127,859.52
1952 Appropriation.....	115,000.00
Debit.....	\$ 12,859.52

The above Credits are made up as follows:-

Department of Public Works Provincial Gov't

(6 Tons Calcium Chloride 120 Bags @ 48.05 per ton).....	\$ 288.30
Caldwell Construction Co. (1 Manhold Cover and Frame).....	46.85
Charles McCoy (1 steel Body).....	25.00
Fredericton Tire Service (6 Bags Calcium Chloride @ \$2.77 per bag)	16.62
Tractor and Equipment (7 Bags Calcium Chloride @ \$2.77 per bag.)	19.39
Cyril Barchard (Cedar 128 ft. @ \$57.20 per M).....	7.32
Bemrose and Kilburn (To Hire T-6K Power Shovel 31 hrs. @ \$7.00 per hour....)	217.00
Ashfield Bros. (To Hire C-16 Shovel 54 hrs. @ \$7.00 per hr.....)	405.00
Journal Voucher (Fredericton Airport including use of Snow Blower Calcium Chloride and Materials for patching runways...)	227.31
Journal Voucher (Wood, 60 loads @ \$10.00 per load).....	600.00
Journal Voucher (St. John Road 6x6x10 Cedar 600 ft. @ \$55.00 per M. 33.00)	
Journal Voucher (Cement walks 3 bags Calcium Chloride @ \$2.53 per bag).....	7.59
Journal Voucher (Gas and Oil used by other Departments.....)	899.88
Journal Voucher (Holiday Account).....	2217.60
Journal Voucher (Capital Acct. Gravel Roads 700 ft. Cedar @ \$57.20 per M.).....	400.40
Journal Voucher (Lumber, 44637 ft. Spruce and Hemlock @ \$45.00 per M).....	2008.66
Journal Voucher (Machinery, including use of Bulldozers Power Shovels, trucks, etc.).....	15564.95
Journal Voucher (Repairs to Dodge Panel Truck).....	<u>352.09</u>
	\$ 23336.96

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.....	\$74,948.70
Material Charges which includes workmen's compensation and unemployment insurance and all material charges including purchase and repairs of City owned equipment.....	76,247.78

I have divided the Labour Charges of \$74948.70 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> 36 Miles.....	\$ 849.71
2.	<u>Snow Control:-</u> Shovelling and hauling snow, ploughing or scraping roads, cleaning gutters, thawing catch basins of ice and snow and any other means of snow control. 38 Mile Road...23077.47	
3.	<u>Streets:-</u> General work of maintenance of streets and sidewalks and any other items as building culverts, curbs and gutters or pavements which are not mentioned under some particular headings.....	11612.92
4.	<u>Surface Sewers:-</u> Cleaning, flushing and repairing surface sewers and building new surface sewers within street limits.....	2075.21
5.	<u>Sanding Walks:-</u> Storing sand in winter storage piles and spreading same on slippery walks and streets.....	3656.30
6.	<u>Yard:-</u> Men working in blacksmith shop and repair work in City Yard, taking summer equipment out and storing winter equipment.....	3825.92
7.	<u>Gravel:-</u> Used for maintenance on City Roads and Streets.....	1297.59
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.....	590.27
9.	<u>Doak and Wilsey Roads:-</u> All work done on these roads other than work done by power maintainer.....	321.27
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.....	-----
11.	<u>Killarney Road:-</u>	-----
12.	<u>Outlying Roads:-</u> Hanwell Road, Cross Roads lying between Brick Hill and College Hill and Forest Hill Road and the Golf Club Road, All work done on these roads other than work done by power maintainer.....	142.80
13.	<u>Street Cleaning:-</u> All cleaning and removal of dirt, leaves, etc. from streets.....	19831.53
14.	<u>Tarvia Repairs:-</u> Patching and repairing asphalt or tar pavement and applying seal cost of light tar or asphalt to pavements.....	2691.59
15.	<u>City Road Patrol:-</u>	762.22
16.	<u>City Forest:-</u>	4213.90
	Total.....	\$74948.70

Following is a table comparing Labour Expenditure in these items from 1949 to 1952:

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS
LABOUR ITEMS

<u>Item</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
1. Snowploughing sidewalks	197.26	319.59	347.32	849.71
2. Snow Control	7,130.54	11,348.98	9,357.68	23,077.47
3. Streets	5,945.38	6,182.19	10,280.99	11,612.92
4. Surface Sewers	1,627.19	3,426.24	2,826.10	2,075.21
5. Sanding Walks	2,403.32	2,067.79	2,030.36	3,656.30
6. Yard	1,734.12	1,973.93	3,674.26	3,825.92
7. Gravel	2,594.78	5,246.41	3,937.62	1,297.59
8. St. John River Rd.	72.65	92.27	455.93	590.27
9. Doak & Wilsey Roads	83.61	216.15	1,912.01	321.27
10. New Maryland Road	182.01	162.44	34.72	-----
11. Kilarney Road	-----	-----	58.36	-----
12. Outlying Roads	90.42	925.21	792.31	142.80
13. Street Cleaning	11,757.46	13,431.84	16,356.33	19,831.53
14. Tarvia Repairs	1,508.48	2,835.38	3,990.16	2,691.59
15. City Road Patrol	670.56	804.04	1,295.83	762.22
16. City Forest	3,719.00	3,122.05	4,854.43	4,213.90
Total	39,716.78	52,154.51	62,204.41	74,948.70

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

Item 1.

36 Miles of sidewalks were kept ploughed this year. To the labour cost at \$849.71 must be added an estimated material cost of \$850.00 giving a total cost of \$1699.71 or a unit cost for ploughing per mile of sidewalk of \$47.20

Item 2.

<u>Snow Control:-</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Snowploughing roads and Streets	707.68	1,279.89	972.48	3,817.66
Shovelling and Hauling snow	3,738.13	8,098.56	6,037.60	15,793.04
Catch Basins	663.11	632.83	415.04	1,995.12
Snow Fences	670.99	483.81	954.17	709.86
Keeping Drains on hills open	1,162.01	801.29	968.01	761.79
Thawing Culverts	164.76	52.60	10.38	-----
General Expenses	23.86	-----	-----	-----
	\$7,150.54	11,348.98	9,357.68	23,077.47

38 Miles of Roads and Streets were ploughed and maintained during the winter months under this cost item. To the labor cost of \$23077.47 must be added the estimated material cost of \$24,000.47 giving a total cost of \$47077.47 or a unit cost per mile of road maintained under winter conditions of \$1239.00.

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 expenditures made from October 29th, 1951 to April 28, 1952. It is however, 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 19, 1952.

Department of Public Works,
Province of New Brunswick,

In account with,
The City of Fredericton.

City of Fredericton -- Snow Control Account
October 29, 1951 to April 28, 1952.

City Pay Rolls charged to Snow Control
October 29, 1951, to April 28, 1952.....\$27,037.37
Workmen's Compensation..... 811.12
Pension Fund paid by City..... 1,351.86

City Trucks:

Chevrolet 1951 - 3 Ton Dump, License #C-16933
Ford 1951 - 3 Ton Dump, License #C-16931
International 1948 - 2 Ton Dump, License #C-16927
Total Hours City Trucks -- 2168 Hours @ \$1.70.... 3,685.60

City Jeeps--Sidewalk Plows:

License # C-16926
License # C-16928
Total Hours City Jeeps -- 1050 Hours @ \$1.00.... 1,050.00

City Road Patrols:

Adams Diesel #412
Austin Western Diesel #99H.
Total Hours City Road Patrols -- 1103 Hours @ \$5.00 5,515.00

City Bulldozers:

International T.D.6 -- 1948
International T.D.6 -- 1949
Total Hours City Bulldozers -- 637 Hours @ \$3.00.... 1,911.00

City Thawing Machine:

Total Hours City Thawing Machine -- 218 Hours @ \$1.80.... 392.40

City Shovel:

Michigan T-6-K
Total Hours City Shovel -- 84 Hours @ \$5.00 420.00

City Snowblower:

Sicard Junior.
Total Hours in use -- 285 Hours.
1200 Gals. Gas @ \$0.285..... 3,420.00
42 Qts. Oil @ \$0.305..... 12.81
Insurance (1 year)..... 172.82
Storage..... 28.00
Repairs..... 1,567.73
Depreciation (10% of Depreciated Value, \$9,402.93).. 940.29

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

Forward..... 48,316.00

- 2 -

Brought forward.....\$48,316.00

Forbes & Sloat Ltd. Grader:

Rental Charges.....	2,000.00
Repairs.....	543.46

Sand:

From City Pit -- 2250 Cubic Yards @ \$1.00.....	2,250.00
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Calcium Chloride:

15 Tons @ \$44.45 per ton.....	666.75
--------------------------------	--------

Rock Salt:

30 Tons @ \$14.56 per ton.....	436.80
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Gov't Charges for Plowing Lincoln Road..... 951.30

Total.....\$55,164.31

Certified Correct,

City Engineer.

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

Dec. 1st 1946 to Nov. 30th 1947.....	76"
Dec. 1st 1947 to Nov. 30th 1948.....	83"
Dec. 1st 1948 to Nov. 30th 1949.....	64"
Dec. 1st 1949 to Nov. 30th 1950.....	124 $\frac{1}{2}$ "
Dec. 1st 1950 to Nov. 30th 1951.....	93"
Dec. 1st 1951 to Nov. 30th 1952.....	143 $\frac{1}{2}$ "

Snow Fences:

In our Snow Fencing this year we used 8,000 feet of lathmade snow fence.

Item 3.

Streets:-

Repairs to Streets (Repairs to Curbs, Bridges, Widening Streets, Culverts, etc.).....	1458.38
Painting Traffic Lines and Street Signs.....	2287.62
Repairs to Machinery.....	1023.42
Weather Account (Holidays).....	5995.65
Unloading and Spreading Calcium Chloride.....	310.69
Surveying.....	537.16
Total.....	\$11612.92

This year we purchased $\frac{160}{700}$ tons of Calcium Chloride and 30 tons of Malagash Salt.

The above Weather Account of \$5995.65 is made up chiefly of wages paid to workmen when they were on their holidays.

Item 4.

Surface Sewers:-

All the Surface Sewers in the City were flushed and all Catch Basins were cleaned and repaired during the summer. A considerable portion of the above amount was expended in cleaning and flushing the main Surface Sewers on the Maryland Heights Project. Records show 1952 to have been a very dry year.

Item 7.

Gravel:-

This year we hauled from our city gravel pit at Barker's Point 1,884 cubic yards of gravel, and 1076 cubic yards were delivered by Forbes and Sloat from their pit in Marysville.

Item 8.

St. John Road:-

The labour expenditure of \$590.27 was made in cutting bushes on the side of the road, putting in posts, repairing culverts.

Item 12.

Outlying Roads:-

The labour expenditure of \$142.80 is made up of maintenance expenditures incurred in repairs on the Brick Kiln Road, York Street Hill, Hanwell Road, Cross Roads, Forest Hill and College Hill.

The actual maintenance by road patrol on these outlying roads does not appear in this item as it was charged under item headed "City Road Patrol".

Item 13.

Street Cleaning:-

The labour cost of \$19,831.53 shows an increase of \$3,475.20 over last year.

Item 14.

Tarvia Repairs:-

Under this heading \$2,691.59 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 pavements after having 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 some 158 tons of premixed asphalt pavement which was hauled by city trucks from the plant of the Diamond Construction Co. while they were set up near Barker's Point.

The Woodstock Road from R.C.M.P. Barracks entrance to the Hanwell Road was resurfaced with a 2" layer of pre-mixed asphalt with a pre-mixed asphalt seal coat. This work was done by the Diamond Construction Co. from their plant set up below Oromocto.

The following tonnage was required:-

729.19 tons base in place @ \$8.50.....	6,198.12
184.88 tons seal in place @ \$9.40.....	1,737.87
Total.....	\$7,935.99

This job on the Woodstock road was 3229 ft. long with an average width of 21.8 ft. giving a square yardage of 7821 square yards and a unit cost per square yard of \$1.02 and a unit cost per mile of about \$13,000.00

This year we sealed with a surface treatment of R.C. 3 the following Streets:-

Albert St. (Windsor to Regent).....	1240 Lin. Ft.
Regent St. (Albert to C.N.R. Valley Tracks).....	970 " "
Carleton St. (Queen to Brunswick).....	750 " "
York St. (Queen to Argyle).....	2680 " "
Saunders St. (York to Westmorland).....	670 " "
Westmorland St. (Queen to Brunswick).....	800 " "
Brunswick St. (York to Westmorland).....	600 " "
Total.....	7710 Lin. Ft.

Item 15

City Road Patrol.

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

	1950	1951	1952
Caterpillar #10 Grader.....	694.92	21.26	-----
Adams #412 Grader.....	5,488.66	2,361.05	4056.27
Austin Weston #99 Grader...	---	2,738.93	4598.69

Item 18.

City Forest:-

Included in our regular Roads and Streets Costs is a labour expenditure for City Forest of \$4,213.90

This labour item is sub-divided as follows:

Logging.....	\$ 518.90
Cutting Wood.....	1541.00
Sawing Wood (machine).....	423.46
Haying.....	76.78
Splitting Wood.....	266.16
Caretakers wages and Miscellaneous Expenses.....	1387.60
Total.....	<u>\$4213.90</u>

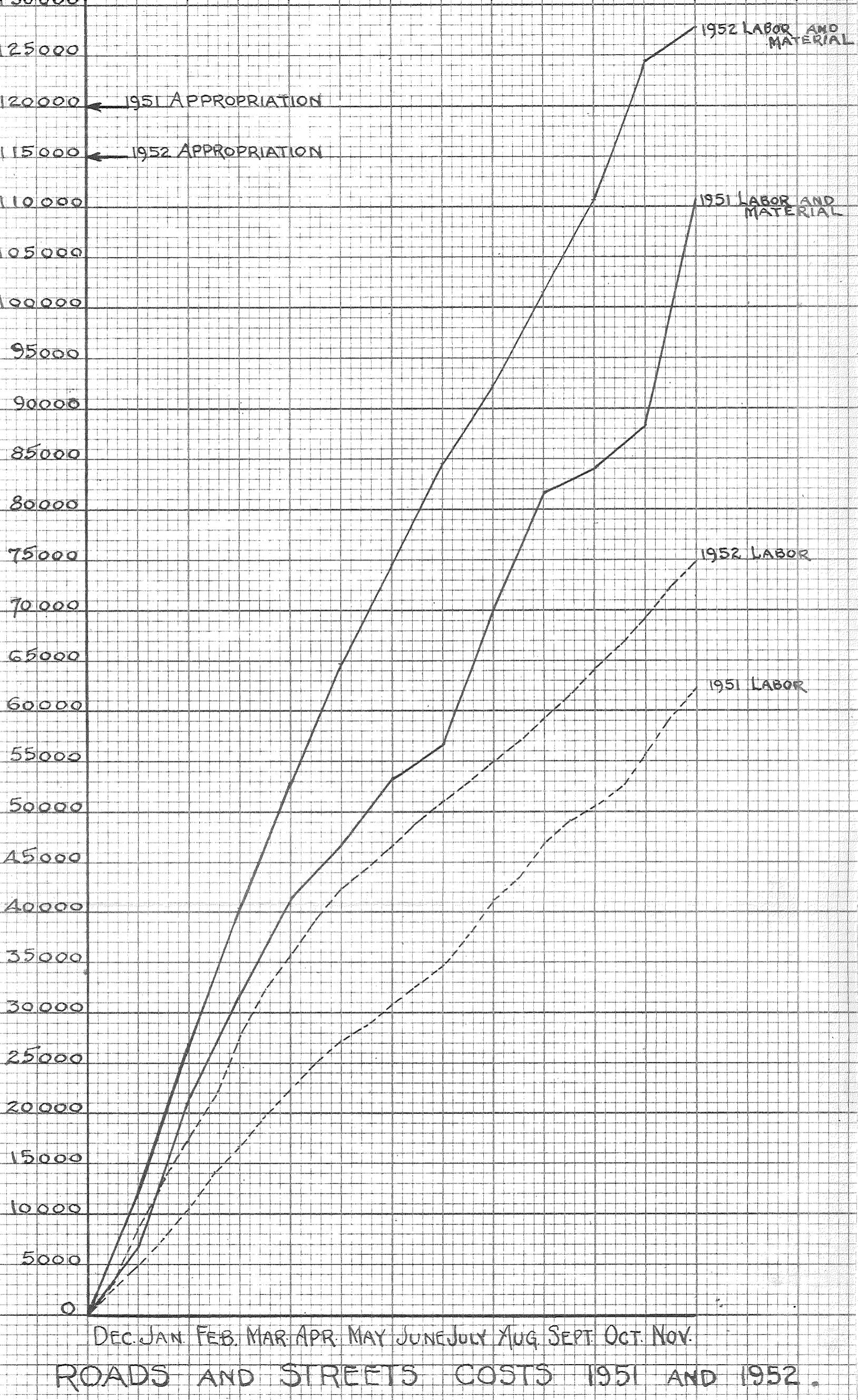
Besides this labour cost, the City Forest shows an expenditure for material of \$1254.04 making a total cost for the year of \$5467.94.

The roads and trails in the City Forest proper were kept clear from fallen trees and brush.

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

95 cords wood cut and split this year @ \$18.00.....	\$1,710.00
7 tons hay @ \$19.00.....	133.00
44637 feet of Spruce and Hemlock @ \$45.00 Per M.....	<u>2,008.66</u>
Total.....	\$3,851.66

Roads and Streets bought this year for \$1,825.12 one-1952 Ford $\frac{1}{2}$ Ton Pick-up truck Yosemite Green from Wood Motors Ltd. including Heater, Defroster and Spare tire. Serial No. BDA83AHP-24131.



CAPITAL ACCOUNT PAVING

The Net Expenditure under this heading amounts to \$39,959.44.

Included in above are:-

(1) Capital Account Curb and Gutter.....	\$22,226.20
(2) Capital Account Paving.....	17,733.24
	Total.....
	\$39,959.44

For the above net expenditure of \$22,226.20 concrete curbs and gutters were laid at the following locations:-

<u>Concrete Curb and Gutter</u>	<u>Lin. Ft.</u>
1. Smythe St. - Charlotte St. to Queen St. (East Side)	1338
2. Driveways on Smythe St. - Charlotte St. to Queen Street from Curb to Sidewalk Across Green (East Side)	542
3. Gibson St. - Union St. to C. P. R. Track on Gibson St. (Both Sides)	1930
4. Pine St. - Union St. to C.P.R. Track on Pine St. (Both Sides)	1296
5. Dobie St. - Neill St. to School St. (North Side)	388
6. School St. - Dobie St. to Devon School on School St. (East Side)	399
7. Curb laid in front of Devon School (Both Sides of Driveway)	786
8. Union St. - Bridge St. to St. Mary's St. (Both Sides)	967
9. Bridge St. - Water St. to Union St. (Both Sides)	703
10. Parkhurst Drive - Haviland St. to approx. Hanwell Road (Both Sides)	1834
11. Fairlawn Court	502
12. Londale Court	494
13. Woodbine Court	536
14. Driveways on University Ave. Charlotte St. to George Street (West Side)	691
15. Corner Woodstock Road and O'Dell Avenue	<u>44</u>
Total	12450

All the above listed Curbs and Gutters laid 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 contract price of \$14.00 per cu. yd. A Cu. Yd. of cement for Curb and Gutter poured approx. 24 Lineal Feet of Curb.

In addition to the above locations of Curb and Gutter Laid Cement was laid 6" thick between the new curb and gutter and the pavement then in place at the following locations:-

	<u>Average Length in Ft.</u>	<u>Width</u>	<u>Sq. Ft.</u>
Gibson St. - Union St. to C.P.R. Track (East Side)	875	3.0'	2625
Gibson St. - Union St. to C.P.R. Track (West Side)	877	4.4'	3859
Union St. - Bridge St. to St. Mary's St. (East Side)	483	2.8'	1352
Union St. - Bridge St. to St. Mary's St. (West Side)	409	5.0'	2045
Bridge St. - Water St. to Union St. (East Side)	267	2.5'	667
Total	2911		10548

As this 10548 Sq. Ft. of cement was laid 6" thick it would make up 195 cu. yds. of cement and would represent 4680 Lin. Ft. of Curb and Gutter.

The Unit cost of one Lin.. Ft. of Curb and Gutter found by dividing the total length laid which equals 12450 Lin. Ft. & 4680 or 17130 Lin. Ft. into the total cost of \$22,226.20 is \$1.29 a lin. ft.

With the above net expenditure of \$17,733.24 the following Streets were paved.

<u>Streets Paved</u>	<u>Lin.Ft.</u>	<u>Sq. Yds.</u>
Graham Avenue (Albert St. to Green Road)	1407	3504.0
Palmer Street (Albert St. to Green Road)	1091	3374.0
Pine Street (Union St. to C.P.R. Track)	<u>657</u>	<u>1747.5</u>
Total	3155	8625.5

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 premixed pavement was done by regular City Crews at a cost of ~~\$1.74~~ per sq. yd. The premixed pavement was supplied and laid by the Diamond Construction Company from their plant located below Oromocto. The Company charged the City for this pavement in place \$8.50 a ton for base and \$9.40 a ton for Seal. Altogether some 8625.5 sq. yds. (.59 miles) of City Streets were laid at a unit price of \$2.07 per sq. yd. for completed premixed 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.

Using these above prices the cost for an average mile of City Streets with concrete curb and gutter and with 4" thickness of a premixed pavement would be this year \$46305.00.

The quantities used in this pavement were:-

Base Mix.....one ton spread 5.15 sq. yds. 4
Sealone ton spread 40.12 sq. yds.

CAPITAL ACCOUNT SEWER DOMESTIC

Gross Expenditure.....	\$38,768.81
Credits.....	<u>2,038.26</u>
Net Expenditures.....	\$36,730.55

The above Credits are made up as follows:-

Work done on Domestic Sewer System for private parties, mostly house connections....	\$ 145.60
Sale of pipe and Man Hole Castings to Caldwell Const. Co.....	296.80
Sale of pipe to Mr. Harry Barr.....	5.58
Journal Vouchers (Material paid for by Capital Account Sewer and used by other City Departments.....)	<u>1590.28</u>
Total.....	\$ 2038.26

The above expenditure covers all new domestic sewer construction in the city. For this expenditure sewers were laid at the following locations:- Reliever Sewer from Regent St. to Rookwood Ave. via Union freight yards, York, St. Victoria St. Through Tractor Equipment property and Fredericton Exhibition property to Rookwood Avenue.

This Sewer consist of 18" C.I. Pipe 192'
15" T.C. Pipe 3708'
12" T.C. Pipe 1218'
Total 5118' Lin. Ft.

This sewer was laid through sandy soil overlying clay but in most cases the invert was above the clay. The extra dry summer had lowered the water table in the ground and made the laying conditions at this location as good as could be expected. About one half the job was on a built up street with the other half being off the highway work. In the Railway yards we crossed under the C.N.R. Tracks (Valley Road). The average depth of this sewer between Regent and Smythe St. was 10 ft. and from Smythe Street to Rookwood Ave. the average depth was 7 ft. No shoring was used but on account of the width of cut we lost about 600 lin. ft. of curb and gutter on Victoria Street.

The total cost of this 5118 ft. of sewer was \$27,000.00 giving a unit cost per lin. ft. of \$5.28.

Eight inch sewer extensions were made at the following location:-

Rookwood Ave.	700	Lin.	Ft.
York Street	333	"	"
Mitchell St.	670	"	"
Lane over Hayes Property			
Union St. to C.P.R. Tracks	287	"	"
Lansdowne Court	460	"	"
Byng Street	189	"	"
Prince Street	215	"	"
MacLaren Avenue	318	"	"
Total	3172	Lin.	Ft.

CAPITAL ACCOUNT WATER

Gross Expenditure.....	\$ 17150.44
Credits.....	3178.18
Net Expenditure.....	<u>\$ 13972.26</u>

The above Credits are made up as follows:-

Work done on Water System for private parties, mostly house connections.....	\$ 436.30
Diamond Construction Co. (material supplied for Science Building).....	1387.95
Diamond Construction Co. (material supplied to install sprinkler system over company Property to Company Hanger, Carleton Ward)	1001.37
Ashfield Bros. (Rental of C-16 Shovel)	306.00
Journal Voucher Material (Pipe)	<u>46.56</u>
Total	\$3178.18

Installations were made at the following locations:-

<u>Location</u>	Lin. Ft.			
	<u>8</u>	<u>6.</u>	<u>$\frac{1}{4}$</u>	
Union St. - Gibson St. to C.N.R. Track	1442'	79'		
Extension from Union St. to A. Colter Property		400'		
Mitchell St. - Albert to Green Road		690'		
Lansdowne Court		420'		
Northumberland St. - Victoria to Dundonald Sts.		466'		
Prince St.		368'		
Dundonald St. between York & Westmorland Sts.		260'		
York St. between Green Road and Montgomery St.	—	—	200'	
	Total	1442'	2683'	200'

Purchased in the above expenditure is the following stock on hand:
at 1st. January 1957:-

1297 Ft. of 8" pipe @ \$3.09 per ft.....	\$4007.73
545 Ft. of 6" pipe @ \$2.15 per ft.....	1171.75
126 Ft. of 4" pipe @ \$1.37 per ft.....	<u>172.62</u>
Total.....	\$5352.10

CAPITAL ACCOUNT SURFACE SEWER

Gross Expenditure.....	\$ 5065.03
Credit.....	1573.78
Net Expenditure.....	\$ 3491.25

The above Credits are made up as follows:-

University of New Brunswick (10 ft. of 10" Concrete pipe @ 55¢ per ft...)	\$ 5.50
W. E. Emerson and Sons Ltd. (1-8 x $\frac{3}{4}$ " Tee @ 3.85 $2\frac{1}{2}$ " x 15" T.C.Pipe @ 1.72 per ft.).....	8.15
Journal Vouchers (Material),.....	<u>1560.13</u>
Total.....	\$1573.78

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

<u>Location</u>	<u>15" Concrete</u>	<u>10" Concrete</u>	<u>8" T.C.</u>
Woodbine Court		160'	30'
Gibson St., near Marysville Line	168'	411'	-
	-	-	-
	168'	571'	30'

Capital Account Water Feeder Mains and Reservoir

Last year under this heading the City built a two million gallon reservoir and installed 5180 lin. ft. of 18" supply main from the water pumping station to the reservoir.

This year a 12" main was laid on Charlotte St. from Smythe St. to University Ave. a distance of 5343 Lin. Ft. This work was done under contract by Forbes and Sloat. Under the contract the City supplied all material and also repatched the cut in the street pavement. The contractor doing only the excavation, pipe laying and back filling. The contractors price for this work for the 12" Main on Charlotte St. was \$1.94 per lin. ft. and for the 18" Main laid last year "2.04 per lin. ft.

The work of laying the 12" Main on Charlotte St. was started this year April 28th and finished May 23rd.

This year on account of a leak which developed in the floor of the Reservoir it was necessary to lay over the total floor, a three ply membrane water proofing covered by a two inch layer of concrete. This leak in the floor was considered by our consulting engineers not to the fault of the contractor, so Forbes and Sloat were paid an additional sum of \$8884.00 to install the above mentioned water proofing floor with the two inch cover of concrete. This reservoir floor consisted of some 2200 sq. yds. making a unit price for this floor installation of \$4.04 a sq. yd.

The total costs of the construction of this two million gallon reservoir and the installation of 5180 lin. ft. of 18" Main and 5343 lin. ft. of 12" Main are the total costs set up against these items in the 1950, 1951 and 1952 city costs. These costs include all labor and material costs, the costs of repatching pavements are included, as are the engineering and inspection costs of both the City's own engineering staff as well as the costs of the consulting engineer 'James F. MacLaren Associates'. The cost of land purchased for Reservoir site is also included.

The total costs were expended as follows:-

<u>Year</u>	<u>Reservoir</u>	<u>Mains</u>
1950	405.14	
1951	93,702.10	120,095.25
1952	32,243.46	21,904.21
	\$126,350.70	\$141,999.46
MacLaren's Estimate	\$138,000.00	\$213,000.00

CAPITAL ACCOUNT GRAVEL ROADS

Net expenditures \$14,988.43.

The following streets were surveyed, redesigned, graded and gravelled for the above expenditure:-

Mitchell St. - Albert to Green Road.....	960 Lin. Ft.
Smythe St. - Dundonald St. to Montgomery St.....	4000 Lin. Ft.
Hawthorne Terris is	<u>400</u> Lin. Ft.

Total.....5360 Lin. Ft.

On these above newly made streets some 1946 Cu. Yds. of gravel were used for road material.

CAPITAL ACCOUNT NEW MARYLAND ROAD

Gross Expenditure.....	\$17136.00
Credit.....	<u>8568.00</u>
Net Expenditure.....	\$ 8568.00

The New Maryland road from Green Road to the Southern City Line was given a coat of gravel to prepare it for pavement in 1953. This gravel was delivered and spread by Forbes and Sloat \$1.36 per Ton, which price was agreed upon and was the price used in contract for Saint John Road. Some 12600 Tons of crushed gravel were so used.

The above credit of \$8568.00 is one half of the cost which as per agreement was paid back to the City by the Provincial Government.

CAPITAL ACCOUNT SAINT JOHN ROAD

Gross Expenditure.....	\$ 54,985.60
Credit.....	<u>28,386.73</u>
Net Expenditure.....	\$ 26,598.87

The above credits are made up as follows:-

Forbes & Sloat (140 Bags Cement).....\$ 140.00

N. B. Government ($\frac{1}{2}$ Cost Aug. 15/52-Nov. 30/52).....28,246.73

Total.....\$28,386.73

Tenders were called for in July at this year for the reconstruction of the Saint John Road from Ketchums Bridge to the Dominion experimental Farm front entrance, a distance of 2.2 miles. The contract was awarded to the firm of Forbes and Sloat the low bidders.

The City had entered into an agreement with the Provincial Government providing that the City and Province would each pay one half the cost of this job. The Province, agreeing to do the preliminary engineering and also to supervise construction. In the agreement it was understood that the total cost of their engineering and supervision would be paid by the City.

The Provincial Government has made available by an order in council the sum of \$50,000.00 for this piece of work. When the job

had been measured and estimated it was evident that this \$50,000.00 would not be sufficient to pay for the provinces half share of any pavement construct. It was decided to go ahead this year and complete all construction in readiness to pave in 1953, and the Forbes and Sloat contract covers only this pre pavement work.

The contractor started work in August and the gross expenditure of \$54,985.60 shown above in the cost of the work done up until 30th Nov. 1952.

This work has been continuing through December but there will probably be some small portion of this pre pavement construction left to be completed in the spring of 1953.

CAPITAL ACCOUNT STREET LIGHTING

Expenditure.....\$3402.14

This above expenditure is made up as follows:-

To Maritime Electric Co. for labour, trucking and material for new street lighting extensions

Dunn's Crossing Road (so called)

9 - 250 C. P. Lamps..... 149.54

Regent St. - Montgomery St. to Ranger
School - 8 - 250 C. P. Lamps..... 301.45

Rerouting Series Street Lighting
System (Work during this year)..... 1153.72

Dundonald St. in front of
Forestry Garage - 2 - 250 C. P. Lamps..... 124.51

Hanwell Road - Parkhurst Drive to
City Line - 5 - 250 C. P. Lamps..... 681.13

Journal Voucher (Material purchased by the
City and charged to Street Lighting ordinary but
used on the above listed capital expenditures)..... 991.79

3402.14

PUBLIC WORKS

Gross Expenditure.....	\$ 15058.08
Credits.....	<u>902.01</u>
Net Expenditure.....	14156.07
1952 Appropriation.....	<u>13000.00</u>
Deficit.....	1156.07

The Credits of \$902.01 are made up as follows:-

Cutting trees on private property.....	\$ 28.46
Federal Dept. Public Works (Cleaning Wharf)....	40.97
Fredericton Exhibition Ltd. (Grading grounds, and installing surface sewer).....	311.78
Government of Canada (Repairs to 104 th Monument)	20.80
Car expenses (proportion to other City Depts) ..	<u>500.00</u>
Total.....	\$902.01

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

Back Drain.....	\$2245.46
Trees.....	906.53
Old Burying Ground.....	1301.01
Unforseen Account.....	<u>2472.10</u>
Total.....	\$6925.10

Back Drain:- The City back drain this year was cleaned out to grade by the City crews from Ketchum Bridge to Northumberland St. excluding the drain through the Canadian Pacific and Canadian National Railway lands. Considerable work on this part of the drain was done by the Railway crews.

Repairs were made to bridges over the drain on York and Victoria Street.

A 24" Surface Sewer was laid on York St. to the Back drain from a location on York St. 934 ft. South of the Back Drain. This new sewer catches water coming down York St. and runs the water directly to the Back drain on the east side of York St. instead of permitting the water to cross under York St. and enter the back drain before it crosses under Dundonald St.

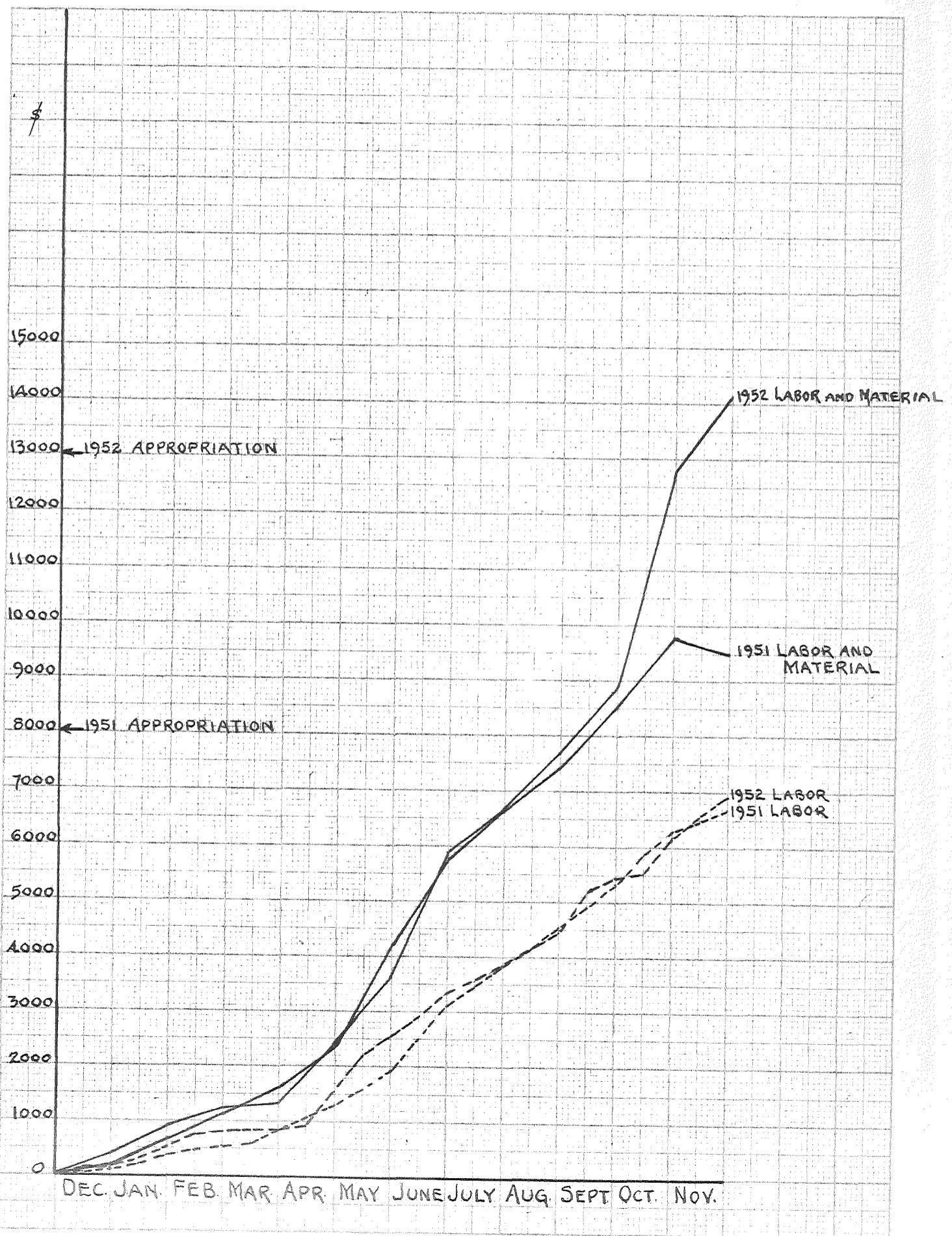
Trees:- The labour cost of \$906.53 under this item was for cutting and pruning city trees and also covered a small tree planting program. 17 Norway Maple, 6 Weeping Willow, 3 Horse Chestnut and 3 Cut Leaf Maple were purchased from the Fredericton Nurseries. These being all the stock they had fit for transplanting. The Maples were planted on McEvoy Street, the Willows and Horse Chestnut were planted on the green from C.N.R. Bridge to Alexander St. This year we also planted at Queen's Square six elms each about 15' high which were dug up from vacant land in the City.

Considerable interest is being shown in the City shade trees by our citizens. This year a committee of citizens under the Chairmanship of Alderman Brawn was formed to act in an advisory manner. This committee is made up mostly of foresters and others who have a professional knowledge of tree culture. This committee will be, I believe, of great assistance in keeping the city shade trees in as good condition as possible.

Unforseen Account:- This labor item is divided as follows:-

Preparing for Civic Election.....	\$ 115.60
Greens: Cutting, Raking, Seeding, etc...	1680.90
Repairs to Fence Post Office Parking Lot	17.40
Work at Fredericton Exhibition.....	375.63
Spraying for mosquitoes.....	30.44
Cleaning Wharf.....	35.87
Typing City Engineers report.....	21.20
Miscellaneous.....	<u>195.06</u>
	\$2472.10

Old Burying Ground:- The labor expenditure of \$1301.01 was used in maintaining the old burial ground in the centre of the City.



PUBLIC WORKS COSTS 1951 AND 1952.

RECREATION

Gross Expenditure.....	\$3221.14
Credits.....	<u>100.00</u>
Net Expenditure.....	<u>\$3121.14</u>

The above credit of \$100.00 is a Journal Voucher to overcharge by Roads and Streets in cleaning Queen's Square as most of the dirt was deposited on Queen's Square by roads and Streets Dept. during snow removal.

The above costs do not include all play ground expenditures but only those which appear on my pay rolls or costs of materials ordered through my office. The salarys of the recreation director and play ground 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:-

	Labour	Material	Total
Playgrounds	1492.56	1395.69	2885.25
Bathing Beaches	67.51	15.00	82.51
Rink (Outside)	<u>98.47</u>	<u>52.00</u>	<u>150.47</u>
Totals	1658.54	1462.69	3121.23

At Wilmot park the old curb around the fountain was replaced with a new concrete curb backed up by a four ft. cement sidewalk. The water service going to this fountain was renewed and enlarged.

At the carleton ward playgrounds a concrete platform with a spray fountain was installed.

The bathing beaches were not opened for children's swimming this year. The expense shown was for repairing and launching floats.

The expense on Rinks is not heavy as because of the heavy snow fall the rink was discontinued early in the season.

CITY HALL

Gross Expenditure.....	\$6630.91
Credit.....	<u>228.50</u>
Net Expenditures.....	<u>\$6402.41</u>

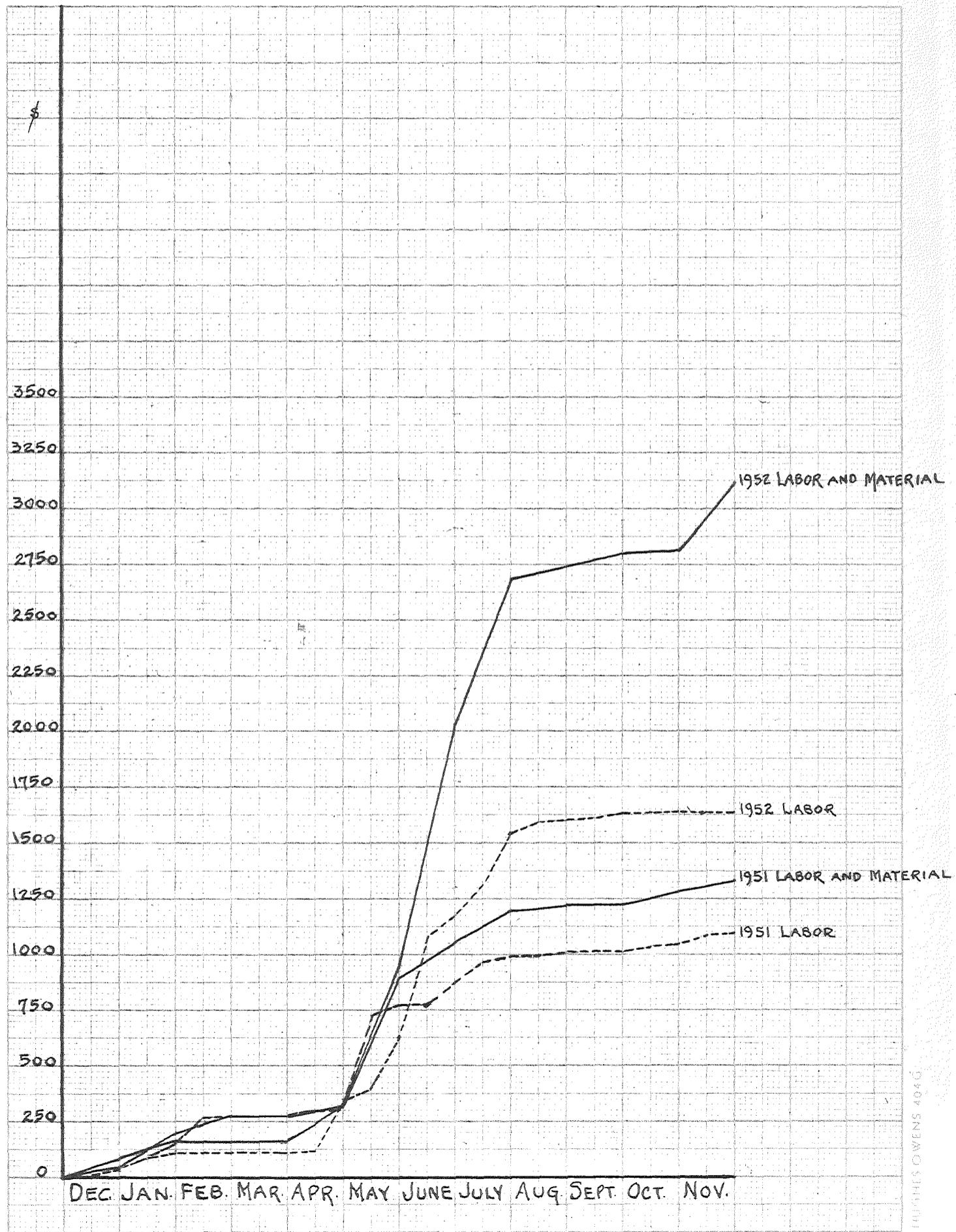
This above cost is only the expenditure for City Hall made through the City Engineer's Department and is not the total expenditures made on City Hall.

The credit of \$228.50 is labor charged to City Hall in error and which was removed and recharged to Town Planning.

The expenditure of \$6402.41 is divided as follows:-

Labour at City Hall including winding and repairs to clock, night fireman and extra janitor service....	\$3414.76
Water bill for City Hall.....	100.00
Repairs.....	98.70
Light Bill for City Offices.....	922.30
Supplies, etc.....	32.91
Coal (174 Tons).....	<u>1833.74</u>

Total.....\$6402.41



MUNICIPAL HOME

Expenditures \$1702.56

This expenditure is of course only part of the Municipal Home costs but is the only 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
60 loads of wood delivered on orders of the Poor Commissioner, to needy families of the City.....	600.00
Cost of delivering 60 loads of wood to needy families.....	318.60
Minor repairs to Municipal Home.....	12.04
Cost of painting Municipal Home.....	<u>721.92</u>
	\$1702.56

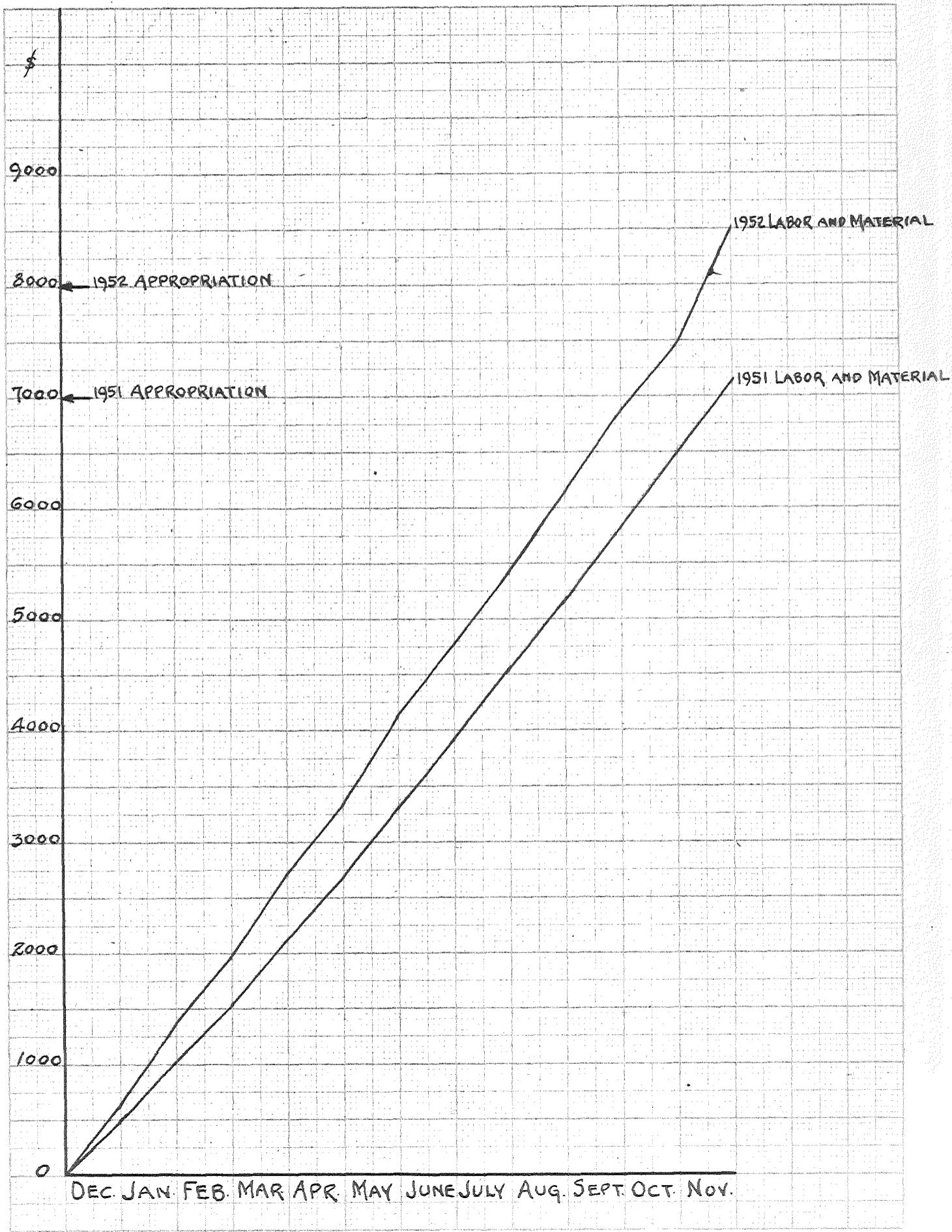
SANITATION

Expenditures.....	\$8523.27
1952 Appropriation.....	8000.00
Deficit.....	<u>\$ 523.27</u>

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 work 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 \$3113.19.

City Incinerator:- 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 labor is used in bulldozing incinerator dump, shifting track etc. The total expenditure this year was \$5410.08.



SEWERAGE DOMESTIC

Gross Expenditure.....	\$14,975.97
Credits.....	5,840.30
Net Expenditure.....	\$ 9,135.67

The above credits are made up as follows:-

Material and labour supplied for house connections....	\$5,645.54
346 Ft. of 5" T.C. Pipe used by other city Depts.....	186.84
Services of Sewer Crew at airport.....	7.92
Total Credits..	\$5,840.30

New customers connected to City Sewer System this year.....70

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

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 346 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 new circuit for Maryland Heights.

The five circuits are made up as follows:-

<u>Lower Front Circuit:</u>	<u>Transformer Size</u>
28-600 C. P. Lamps @ .350 K. W. demand.....	9.80
16-250 C. P. Lamps @ .160 K. W. demand.....	2.56
	12.36 K. W. 15 K. W.

Lower Rear Circuit:

2-600 C. P. Lamps @ .350 K. W. demand.....	.72
140-250 C. P. Lamps @ .160 K. W. demand.....	22.40
	23.12 K. W. 25 K. W.

Upper Front Circuit:

12-600 C. P. Lamps @ .350 K. W. demand.....	4.55
42-250 C. P. Lamps @ .160 K. W. demand.....	6.72
	11.27 K. W. 15 K. W.

Upper Rear Circuit:

11-600 C. P. Lamps @ .350 K. W. demand.....	3.85
106-250 C. P. Lamps @ .160 K. W. demand.....	16.96
	20.81 K. W. 25 K. W.

Maryland Heights:

74-250 C. P. Lamps @ .160 K. W. demand.....	11.84	
4-600 C. P. Lamps @ .350 K. W. demand.....	1.40	
	13.24	K. W.
		15 K.W.

SYSTEM NO. 2, the multiple lighting system consists of 152 units, 14 on Waterloo Row, 138 on King Street, Queen Street, Brunswick Street, and Cross Streets including part of Campbell Street and York St. Each unit consists of a 500 W. 115 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 unit.

SYSTEM NO. 3, consists of six multiple lights, each of 150 W. 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, is a series lighting system which had formerly been installed in the former Town of Devon and consists of 8.59 miles of line and 155 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:-

<u>Carleton Ward(down):</u>	<u>Transformer Size</u>
188-250 C. P. Lamps @ .160 K. W. demand.....	14.08 K.W. 15
<u>Carleton Ward (up)</u>	
67-250 C. P. Lamps @ .160 K. W. demand.....	10.72 K.W. 15

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

The Street Lighting Costs for the year 1952 were as follows:-

Gross Expenditure.....	\$ 26,203.18
Credits.....	991.79
Net Expenditure.....	\$ 25,211.39
* 1952 Appropriation.....	25,000.00
Debit Balance.....	211.39

The above Credit of \$991.79 is for purchase of material from Canada Wire and Cable Co. and charged to street lights instead of Capital Account Street Lights.

The Street Lighting expenditure of \$25,211.39 is made up as follows:-

132 - 600 C. P. Series Lamps.....	174.04
1309 - 250 C.P. " "	915.96
Current in Subway and Series lighting Nov. 27/51 - Nov. 27/52	11212.68
Charges on Multiple Fixtures owned and operated by Maritime	
Electric Co. @ 60¢ per light per year.....	8653.57
Maintenance @ contract of pole line.....	639.84
Maintenance of lamp fixtures (including only such articles	
on lamp standards, lamp brackets, heads, sockets, shades, time	
switches etc.....	1904.91
Material and labour used in major repairs and new	
installations.....	748.99
Labor rerouting circuits.....	647.09
Cerotaph light bill and lamp replacement.....	126.78
Miscellaneous.....	<u>187.53</u>
Total....	25211.39

The following new lights were installed and paid for under Street Lighting ordinary.

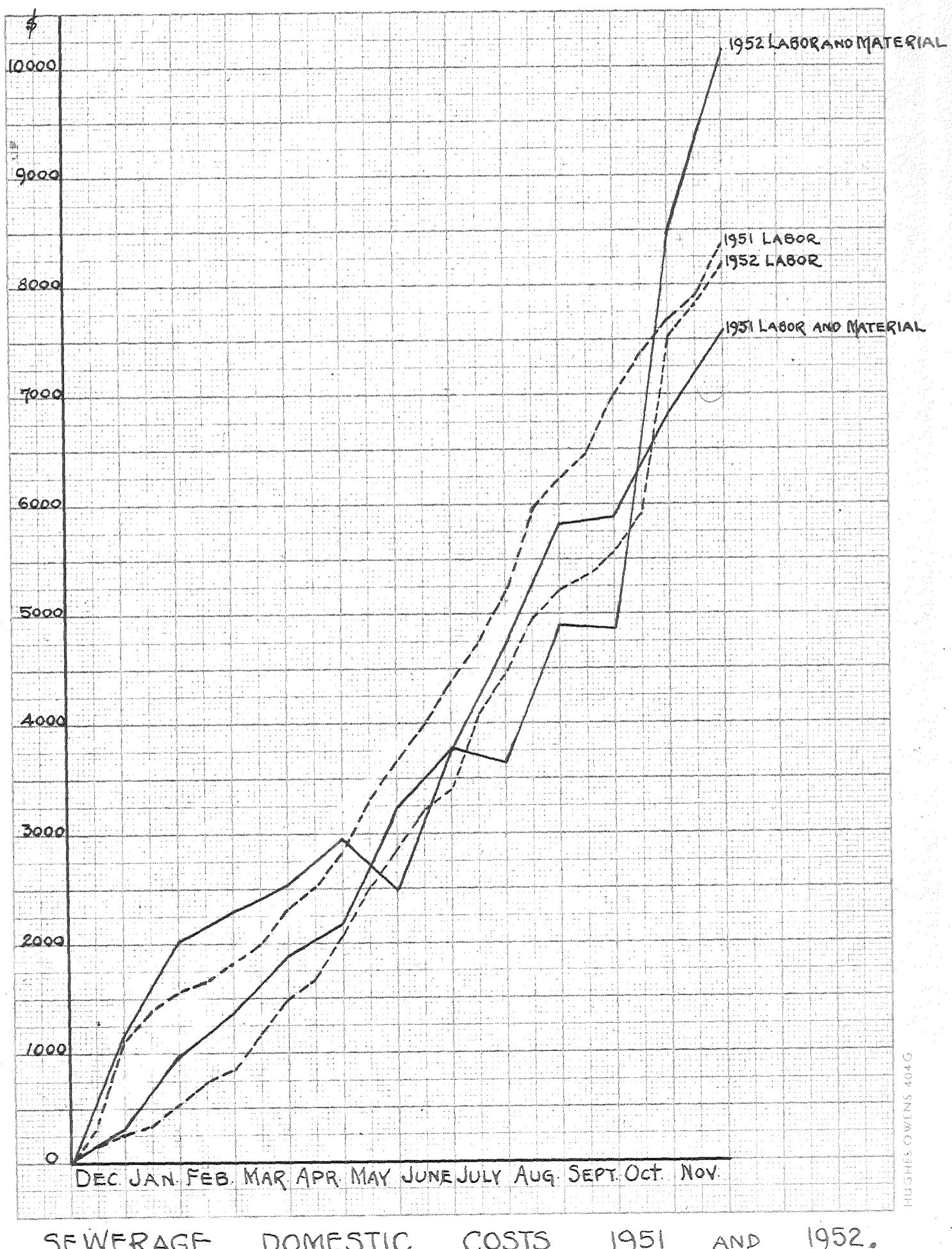
Harwell Road and Parkhurst drive.....	1-250 C.P.
Regent St. at Railway Crossings.....	3-600 C.P.
Aberdeen St. near Regent Street.....	2-250 C.P.

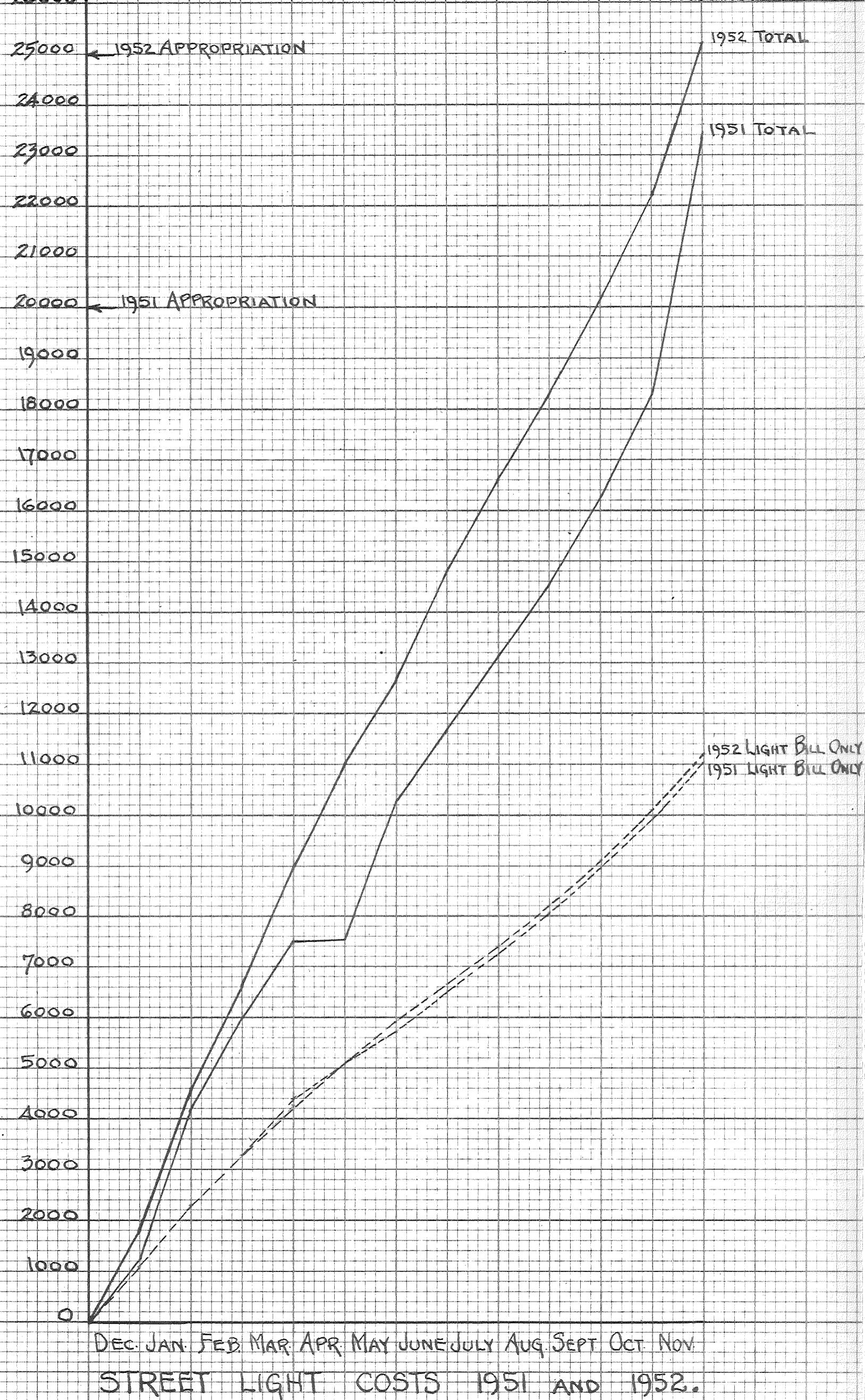
The total per capita charge for street lighting for 1952 population of 16018 as per the 1951 census is $\frac{25211}{16018} = \$1.57$

TABLE SHOWING COMPARATIVE YEARLY

COST IN STREET LIGHTING

Year	Total Yearly Cost	Yearly Appropriation
1938	\$ 8,314.06	\$ 9,000.00
1939	8,645.97	7,500.00
1940	8,172.25	7,500.00
1941	9,888.78	8,500.00
1942	9,803.27	10,000.00
1943	11,035.89	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





CEMENT WALKS

Gross Expenditure.....	\$20086.12
Credits.....	10.20
Net Expenditure.....	<u>\$20075.92</u>

The above credits of \$10.20 was for cement laid from City Sidewalks to Private Walks and paid for by the Property owners.

Under this heading Cement Walks were laid at the following locations:-

<u>Location</u>	<u>Lin. Ft.</u>
Smythe St. - King to Queen Sts. (East Side).....	355'
Queen St. - Smythe St. running East (South Side).....	98'
Regent St. - Brunswick to King St. 6' Wide (East Side).....	338'
Dundonald - Westmorland to York Sts. (South Side).....	624'
Dundonald St. - Westmorland to Northumberland (South Side)....	1279'
Dundonald St. - Westmorland to Northumberland (North Side)....	588'
Northumberland St. - Victoria to Dundonald Sts. (West Side)...	348'
Northumberland St. - Victoria to Dundonald Sts. (East Side)...	360'
Albert St. - Regent to York Sts. (North Side).....	1337'
Bridge St. - Water to Union Sts. (East Side).....	303'
Neill St. - Union to Dobie Sts. (West Side).....	713'
Reid St. - Albert St. to Green Road (West Side).....	1195'
Hanson St. - Albert St. to Green Road (East Side).....	1398'
Victoria St. - Northumberland to Smythe Sts. (South Side)....	632'
Victoria St. - Northumberland to Smythe Sts. (North Side)....	<u>624'</u>
Total.....	10192'

In addition to above locations repairs were made as follows:-

<u>Location</u>	<u>Lin. Ft.</u>
Smythe St. - Charlotte to Saunders Sts. (East Side).....	343'
York St. - Charlotte to Saunders Sts. (West Side).....	329'
York St. - Between Dundonald and Victoria Sts. (West Side). .	141'
Bridge St. - Water to Union St. (West Side).....	372'
Blocks of Sidewalk laid on various streets due to lifting by roots of trees, laying of water main etc.....	<u>200'</u>
Total.....	1385'

The total cost of the above 11577 Lin. Ft. of completed walk was \$20075.92. These figures give the overall cost per Lin. Ft. of completed Sidewalk as \$1.73.

CITY SCALES

Expenditures.....	\$1383.24
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The above expenditure is made up as follows:-

Wages and extra help at City Scales.....	\$1197.00
Repairs and Government testing.....	164.49
Light Bill.....	11.54
Supplies.....	<u>10.21</u>

\$1383.24

WILMOT PARK

Expenditure.....\$2044.48

The above expenditure is made up as follows:-

Labor and trucking at Wilmot Park.....	\$1520.37
Materials used on lawns and flower beds.....	75.62
Band stand erected for R.C.M.P. Band.....	257.58
Repairs to Park House.....	53.47
Telephone.....	37.44
Water Bill.....	<u>100.00</u>
	\$2044.48

CHILDRENS HOME

Expenditure.....\$723.90

The above expenditure is made up as follows:-

Labour including painting building by firemen, miscellaneous work by city workmen.....	\$484.14
Material supplied by City.....	<u>239.76</u>
Total.....	\$723.90

WATER

We have now 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 St. 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. A description of this system may be found in my Yearly Report for 1946.

The Water costs which follow in this report include the water costs of both the systems or the total Fredericton 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.....	\$27394.35
Credits.....	2653.27
Net Expenditures.....	<u>\$24741.08</u>

The Credits are made up as follows:-

Work done for and material 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 systems which do not belong to the City.....	\$2648.45
Town of Marysville (Sale of fittings for service pipe).....	<u>4.82</u>
Total..... \$2653.27	

The Gross Expenditure is made up as follows:-

City Payroll for Hydrants.....	\$ 2847.98
City Payroll for Meters.....	2767.16
City Payroll for Water Ordinary.....	<u>7561.36</u>
Total Payrolls.....	13176.50
Material and other charges.....	14217.85
Gross Expenditure.....	<u>\$ 27394.35</u>

No water extensions were laid under this heading but they appear under Capital Account "ater. Under this heading the mains for two new sprinkler systems were laid by City workmen at the following locations:-

Wilmot Church- Carleton Street
York Street School - York Street

These sprinkler system extensions were paid for by the owners of the properties and are included in the above credit of \$2648.45. No city charge is made for water supplied for sprinkler systems.

HYDRANTS:-

We have in the City 287 hydrants - 192 in the City proper, 6 on University of New Brunswick property, 7 in Military Areas and 83 in Carleton Ward. The credit for rental of these hydrants appears under credits of Water Pumping Station.

METERS:-

of all our water services in the City 1265 are charged under flat rate and 1915 on meter, giving us altogether 3180 services.

The labor cost this year per meter for installation, reading, repairing etc. is \$1.44.

All meters are read twice a year and bills are sent out twice a year. We have 104 customers whose meters are read once a month although they also are billed only twice a year. Those are such customers who ordinarily have large consumptions and where a stopped meter or 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 read meters.

Meters in store room January 1st, 1953:-

5/8 meters repaired and fit for service.....	26
New 5/8"meters.....	25
3/4" meters fit for service.....	5
1-in. meters fit for service.....	1
1 1/4" meters fit for service.....	6
2" meters.....	1
1/2" meters fit for service.....	1

DISTRIBUTION SYSTEM:-

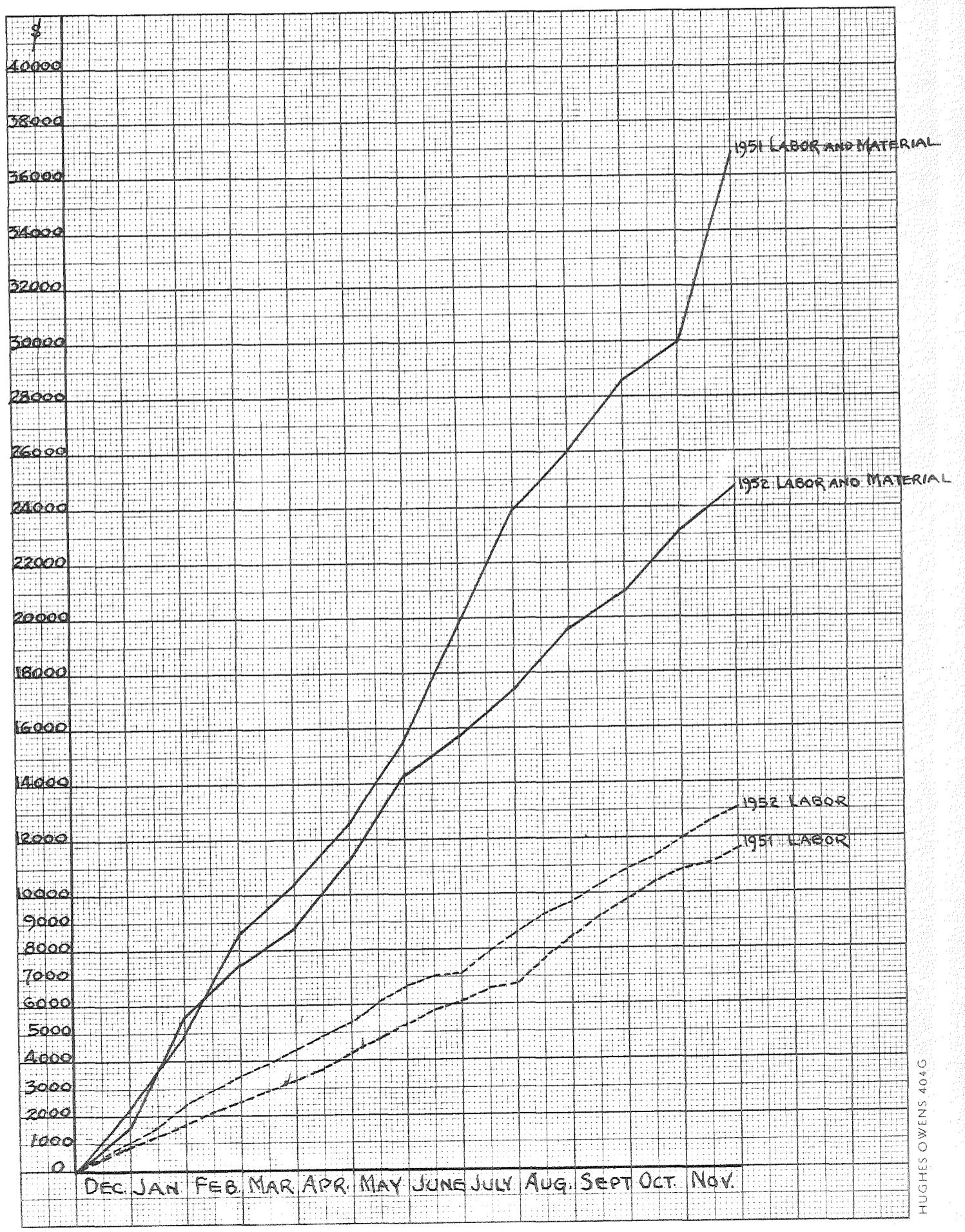
New Services installed this year.....	63
Old Services relaid this year.....	27
Frozen Services which had to be thawed.....	0
Services discontinued.....	8

We had in the City on November 30, 1951, 3180 Water Services

The Fredericton Distribution System consists of 36.11 miles of water main made up of the following sizes:-

18 inch main.....	0.98 miles
12 inch main.....	1.01 miles
10 inch main.....	1.56 miles
8 inch main.....	6.89 miles
6 inch main.....	21.17 miles
4 inch main.....	4.23 miles
3 inch main.....	.27 miles

This does not include the water mains installed by the Department of National Defence at Military Training Centre No. 70, Military Depôt No. 7 or the Military Hospital.



WATER PUMPING STATION

Water Pumping Station Costs 1952:-

Gross Expenditure.....	\$40476.10
Credits.....	6190.00
Net Expenditures.....	<u>\$34286.10</u>

The Credit of \$6190.00 is made up as follows:-

Journal Voucher (Yearly rental on 287 Hydrants).....	\$5740.00
Journal Voucher (Water used in City Hall Building).....	100.00
Journal Voucher (Water used at Old Street Lighting Building on Carleton St.).....	25.00
Journal Voucher (Water used in City Alms House).....	50.00
Journal Voucher (Water used at Wilmot Park).....	100.00
Journal Voucher (Water used at Queen's Square and Carleton Ward Playgrounds).....	<u>175.00</u>
Total.....	\$6190.00

The Gross Expenditure is divided as follows:

City Payroll for salaries of engineers at Pumping Station.....	\$10613.28
Work done by other City employees in and around Pumping Station..	3222.12
Total City Payrolls.....	<u>\$13835.40</u>
Material and Workmen's Compensation Charge.....	<u>26640.70</u>
Total.....	\$40476.10

The Material Cost of \$26640.70 is itemized as follows:-

Item # 1 Light and Power supplied by the Maritime Electric Co. (548700 K. W. Hours).....	12,777.61
2 Transformer Charges.....	151.88 92
3 Liquid Chlorine 8850 lbs.....	1,336.45
4 Alum 124690 lbs.....	2,970.62
5 Coal 181.535 Tons.....	1,853.84
6 Fuel Oil.....	----
7 Engine Oil.....	----
8 Motor Oil 43 Gals D-B. (Electric Motors).....	27.24
9 Gasoline.....	----
10 Maintenance and repair of building and Machinery Pier... 11 New Installations.....	5,160.72 68
12 Supplies, Packing Rags, etc.....	269.43
13 Stationary, forms, charts, etc.....	147.87
14 Workmen's Compensation Board.....	----
15 E. W. Hagerman's Salary.....	1,210.08
16 Lime 685 Bags.....	511.22
17 Miscellaneous, telephone, trucking, machinery, etc.....	<u>223.74</u>
Total.....	26,640.70

COMPARISON OF WATER PUMPED AND COSTS

FOR SOUTH SIDE OF RIVER

FOR LAST SEVENTEEN YEARS.

Year	I. G. Water Pumped	Yearly Gross Expend- iture 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

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

By taking our average daily consumption of Carleton Ward as 121,000 G.P.D. arrived at from a number of test runs, I estimate the yearly water pumpage from our wells there to be for 1952 some 45,000,000 I.G.

The total amount of Water pumped during 1952 for the Whole City is, therefore, 384,330,000. I.G.

Our total net water expenditure for the City for 1952 - \$59,027.18.

Therefore our net cost to pump and deliver to the Customer 1000 I.G. of water in 1952 is \$59,027.18 = 15.3 cents
384,300

All these 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 of Sinking Fund Charges.

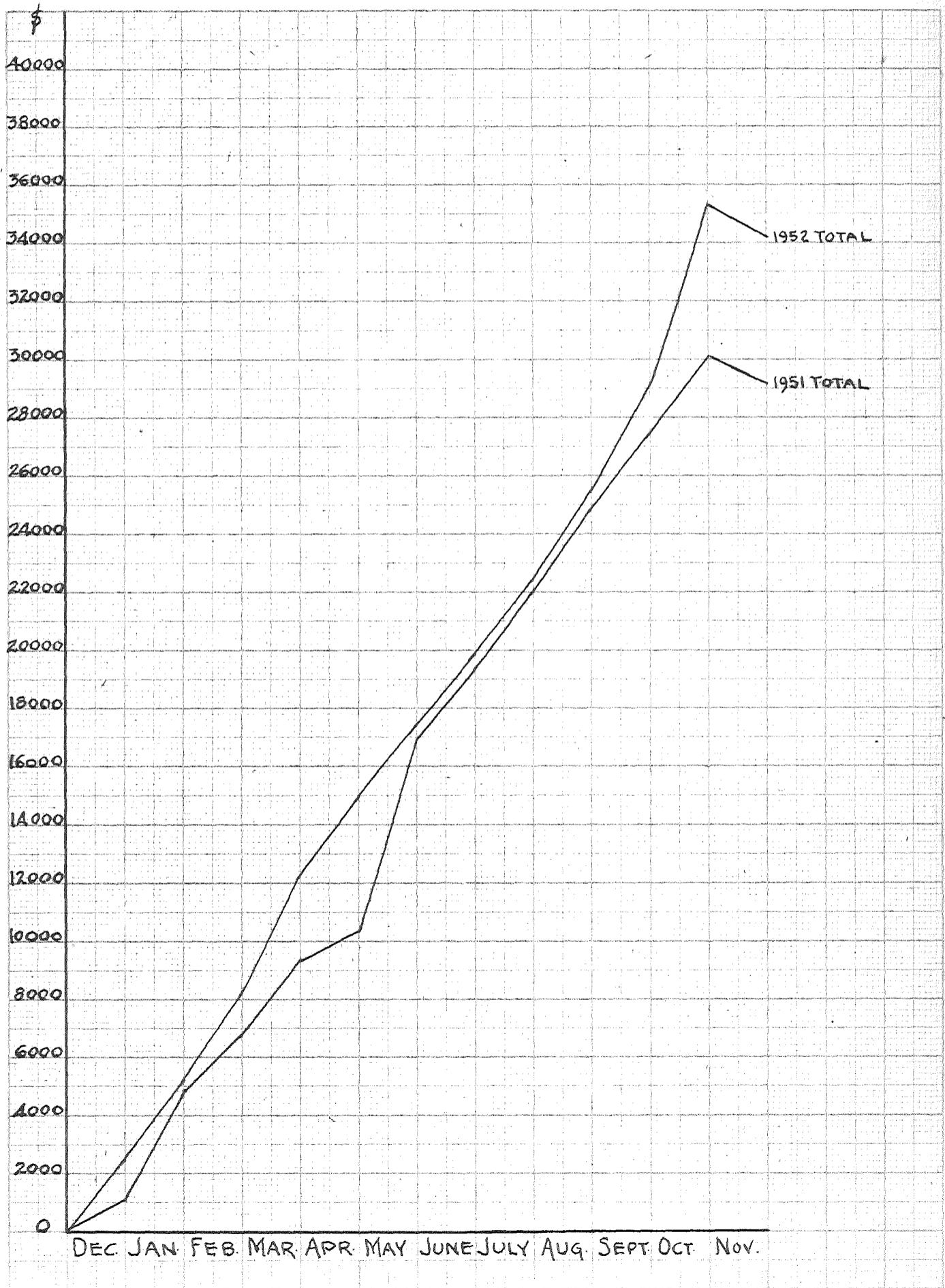
The Water Pumping Station was as usual under the supervision of the plant superintendent and Chief Engineer, Mr. Fred. Nason.

Accompanying this report is the report of Mr. E. W. Hagerman on the Fredericton Water Supply from January 1st, 1952 to December 31st, 1952.

Respectfully submitted,

City Engineer.

HUGHES OWNERSHIP



WATER PUMPING STATION COSTS 1951 AND 1952.

FREDERICTON WATER SUPPLY

Year 1952..... Jan. 1st to Dec. 31st

The quality of Fredericton's Water Supply for 1952 has changed little from last year.

The Chlorinators continue to do good work and we find that they require a minimum of attention to keep them working efficiently.

The bacteriological quality of the water is well below the limit as set forth in the Drinking Water Standards of the American Public Health and American Water Works Associations.

The average Residual Chlorine content of the water as delivered to the mains is 0.2 parts per million.

The pH of the finished water averages 7.2 having been raised to this point from 6.1 by the addition of Lime Water.

The lack of sufficient settlement time and the inability to control the alum dose quickly and accurately remain as the two major problems which should be corrected as soon as possible. The evils resulting from these two faults are After-Flocculation (floc formation in distribution system) and increased Hardness.

After-Flocculation increases the total Solids of the treated water so that they now vary about the 1000 parts per million mark.

Excessive amounts of Alum, which at times are unavoidable due to our antiquated metering device for controlling this chemical, result in an unnecessary increase in the hardness of the water. The average at present is between 90 and 100 parts per million.

With the above mentioned faults corrected it should be possible to produce an Effluent showing around 500 parts per million of solids and 70 parts per million of hardness.

The report by Gore and Storrie on The Renovation of the City of Fredericton Water Supply, proposes to correct the above mentioned troubles by the construction of a settling basin and installation of a Dry Feed Alum machine.

The writer urges that their plans be turned into realities as soon as possible.

Tests for the Coliform group of bacteria were made on samples taken from different parts of the System. Attached is a list of the tests taken for 1952.

Fredericton, N. B.
January 1st, 1953.

Sgd. E. W. Hageman.

FREDERICTON WATER SUPPLY

Test for Coliform Group. Primary Media Lactose Broth. Secondary media Brilliant Green Bile 2%.

Date of Test	Origin of test	Of five 10 cc. portions the test divides them as follows	Positive or Negative
<hr/>			
1952			
January 1	Pumping Sta.	0	5
" 12	" "	0	5
" 6	127 Charlotte St.	0	5
" 19	Pumping Sta.	0	5
" 31	" "	0	5
<hr/>			
February 4	127 Charlotte St.	0	5
" 9	Pumping Sta.)		
" 15	127 Charlotte St.) All	0	5
" 20	Pumping Sta.)		
" 26	Engineering Bldg. U.N.B.)		
<hr/>			
March 2	127 Charlotte St.)		
" 10	U.N.B. Eng. Bldg.)		
" 15	127 Charlotte St.) All	0	5
" 21	U.N.B. Eng. Bldg.)		
" 27	City Hall)		
<hr/>			
April 3	Pumping Sta.)		
" 11	" ")	
" 18	154 Aberdeen St.) All	0	5
" 24	127 Charlotte St.)		
" 29	U.N.B. Eng. Bldg.)		
<hr/>			
May 5	U.N.B. Eng. Bldg.)		
" 10	City Hall)		
" 15	Taylor's Canteen) All	0	5
" 19	127 Charlotte St.)		
" 28	123 Charlotte St.)		
<hr/>			
June 3	U.N.B. Eng. Bldg.)		
" 5	127 Charlotte St.)		
" 8	Pumping Sta.) All	0	5
" 13	" ")	
" 24	" ")	
" 24	Raw water Sample 3 Portions	all 3 Positive	
<hr/>			
July 3	Pumping Sta.)		
" 18	Pumping Sta.) All	0	5
" 25	City Hall)		
<hr/>			
August 4	MacNaughton Motors)		
" 8	127 Charlotte St.)		
" 12	Pumping Sta.) All	0	5
" 18	Pumping Sta.)		
" 22	U.N.B. Eng. Bldg. }		
" 29	127 Charlotte St.)		

Date of Test	Origin of Sample	Of the five 10 cc. portions comprising the Sample, the test divides them as follows: Positive or Negative
-----------------	---------------------	--

1952

September	4	City Hall)	
"	10	Pumping Sta.)	
"	16	U.N.B. For. Bldg.)	All 0
"	21	127 Charlotte St.)	
"	28	U.N.B. Eng. Bldg.)	

5

October	2	Pumping Sta.)	
"	14	127 Charlotte St.)	
"	19	Pumping Sta.)	All 0
"	26	Eng. Bldg. U.N.B.)	
"	31	Pumping Sta.)	

5

November	3	Pumping Sta.)	
"	8	Alexandra St.)	All 0
"	14	U.N.B. Eng. Bldg.)	
"	18	Pumping Sta.)	1
"	18	City Hall)	1
"	21	City Hall)	0
"	27	127 Charlotte St.)	0

5

4

4

5

Note the above positive results occurred during breaks in the Main on Smythe St., (Wash water intake).

December	6	Pumping Sta.)	
"	14	R. Baird Brick Hill)	
"	22	Pumping Sta.)	All 0
"	29	City Hall)	

5

MATERIAL	AMOUNT PURCHASED 1952	AVE. PRICE F.O.B. F'TON 4% Sales Tax not included
Aluminum Sulphate	124,650#	2.38 C
Asphalt	10,250 Gals	.287 C per Gal.
Antifreeze	72 Gals	3.75 - \$4.25 per gal
Batteries	11	\$22.25-\$60.75
Brick	133,200	\$24.50-\$32.50 per M
Cement	3,000 bbls	4.66 per bbl
Chain Hoist	1	185.00
Chairs Armtilter	2	39.75
Chlorine	8850#	11.3320
Catch Basins	47	40.57
Calcium Chloride	160 Tons	48.60 Ton
Chains	6 sets	14.00 - 41.65
Chains Cross	132	1.44 - 3.20
Chains Link	23	.364
Coal Sprinkler <i>Springhill</i>	12.44 Tons	17.65 per ton
Coal Minto	403.662 Tons	9.60 - 11.15 per ton
Detonators	80	.144
Dynamite	227#	.50 per lb.
Drill # Esq Thor $\frac{1}{2}$ H.D.	1	81.90
Drill Press #8	1	39.90
Engine 4 Cylinder Complete With Clutch for Tarvia Mixer	1	600.00
Fill	546 yds	.60C per yd.
Fibreene	14 rolls	10.25 - 13.65 per roll
Gauge Pressure	1	27.00
Grader Blades	83	10.00 - 25.00
Gravel	627 yds	1.00 - 1.25 per yd.
Gas	13,202 Gals	24.704 - 25.20
Grease	350#	15.25 - 19.50 per lb.
Heater	1	50.05
Impeller	1	195
Impeller	1	809
Impeller	1	595

MATERIAL	AMOUNT PURCHASED 1952	AVE. PRICE F.O.B.'TON 4% Sales Tax not included
Lumber	46496 Bd. Ft.	55.00 per M
Lumber	19359 Bd. Ft.	75.00 - 110.00 per M
Lighting Standards	3	178.60
Lawn Mower	1	145.00
Lime	785 Bags	.65475 C per bag.
Meters 5/8" x 3/4"	45	22.26
Meters 2"	2	141.71
Manholes	83	40.57
Nozzle with root cutter	1	78.50
Oakum	2060#	.31 c per lb.
Oats	35 bags	3.25 per bag
Oil Diesel Fuel	36940 Gals	19.90 - 20.70 C per gal
Oil Lubricating	592 Gals	1.07 - 1.41 per gal
Oil Gear	1300 Gals	12.25 - 16.25 C per gal
Oil Imperial D.B.	43 Gal	.60.90 per gal
Oil Imperial Van Hymelt	340 gals	17.80 - 18.30 C per gal
Oil(Stove)	265 gals	21.70 - 25.20 C per gal
Posts	28	1.00
Pump Sump With Motor	1	350.00
Paint	110 gals	2.30 - 7.45 per gal
Pipe 5" V.T.	4400'	.62 C per foot
Pipe 8" V.T.	6960'	75.10 C per foot
Pipe 12" V.T.	1500'	1.56 per foot
Pipe 15" V.T.	3500'	2.00 per foot
Pipe 10" Concrete	1200'	65.25 C per foot
Pipe 12" Concrete	1002'	77.16 C per foot
Pipe 24" Concrete	952'	2.62 per foot
Pipe 36" Concrete	16'	5.48 per foot
Pipe Galvanized Iron Water 1"	176'	29.19 per 100'
Pipe Copper Type(k)Water 1"	396'	65.48 C per foot
Pipe Copper Type(k)Water 1"	198'	46.50 per 100'
Pipe C.I. Water 4"	112'	1.49 per foot
Pipe C.I. Water 6"	1312'	2.11 per foot
Pipe C.I. Water 8"	1211'	3.16 per foot

MATERIAL	AMOUNT PURCHASED 1952	Avg. Price F. O. B. Fton 4% Sales Tax not included
Pipe C.I. Water 18"	18 yds	25.71 per yd.
6" Hydrants	8	147.75 - 175.00
4" Valves	3	31.66
6" Valves	14	49.10
6" Elbows	1	56.00
10" Sleeves	1	71.00
12" Sleeves	2	86.25
18" Sleeve	1	150.00
Reducers	180#	14.30 per 100#
Sleeves	597#	14.30 per 100#
Tees	2650#	14.30 per 100#
Bends	1820#	14.30 per 100#
Rock	419.68 Tons	.75 C per ton
Salt	30 Tons	19.00 per ton
Seed	727 lbs.	.184 - .60 C per lb.
Sand	388 yds.	1.25 - 1.75 per yd.
Sand	1900.68 tons	.75C per ton
Schythette	1	130.00
Service Boxes 5' - 6' and 6' - 7'	90	4.60 - 5.48
Tires	18	26.00 - 1200.40
Topsoil	215 yds.	2.00 per yd
Transformer 480 x 22	1	259.20
Wheelbarrow	2	31.00

SEWER INSTALLATIONS 1952.

1952.

A. McAndrew	767 Union St.	New
Odell Com. Co. (Lot # 72)	38 Woodbine Court	"
" " " (Lot # 69)	25 Woodbine Court	"
Agnes Mathews	84 Smith St.	"
Mrs. H. G. Kitchen	363 Saunders St.	Relay
Alfred S. Tait	George St.	New
Odell Con. Co. Ltd. (Lot # 73)	26 Woodbine Court	"
Harry Worrall	Gibson St.	"
Austin M. Savage	886 Barker St.	"
C. C. Thompson	York St.	"
Chas. Llewellyn	Windsor St.	"
Paul Duplissis	Graham Ave.	"
Roy B. Young	215 Aberdeen St.	"
Harry Levine	University Ave,	"
Vincent C. McIntyre	Hughes St.	"
J. L. Simms & Sons	Lansdowne Court	"
Weldon Vroom	Hillcrest Drive	"
E. Roach	Ryan Court	"
Mrs. J. G. Kaine	358 Gibson St.	Repaired
Paul Jacques	Argyle St.	New
H. A. Watson	George St.	Lowered
J. D. Duffie	Regent St.	New
Mrs. Alice Timms	Charlotte St.	"
F'ton High School	George st.	"
D. W. Griffiths	818 George St.	Relay
Ronald R. Holder	145 Pine St.	New
Coys Cleaners	Union St.	"
Wallace Burlock	Gibson St.	"
O. D. Gorman	Woodstock Road	"
F. G. Ashfield	Smith St.	"
Carl Hetherington	Gibson St.	"
Mrs. Leslie Wilson	Highland Ave.	"
Willis O. White	384 Union St.	"
Burton Rideout	Mitchell St.	"
Ernest Ryan	Mitchell St.	"
Ronald Targett	Mitchell St.	"
G. E. Kitchen	Mitchell St.	"
Armand Sharpe	Mitchell St.	"
Mrs. Allan Carman	233 Gibson St.	"
AL. L. Reynolds	Byng St.	"
Kenneth Stuart	Sewell St.	"
Harry E. Wilson	Highland Ave.	"
H. Aalund	Acacia Court	"
Mrs. Margaret Moore	Northumberland St.	"
Leo Dionne	Lansdowne Court	"
General Dairies	550 King St.	"
F'ton Exhibition Ltd.	Office	"
Chas. Llewellyn	Needham St.	"
Harold Sweetland	Regent St.	"
(Church)	Myles St.	"
Richard Richard	McLaren Ave.	"
Raymond Fairlong	117 Crerer Ave.	"
J. H. Evans	123 Crerar Ave.	"
Leo Chambers	Crerar Ave.	"
A. Ramey	152 Hughes St.	"
Manley Woodworth	McKeen St.	"
Harding Jones	Chestnut St.	"
Mrs. J. Tweedale Hall	York St.	"
T. C. Gough	York St.	"
Keith Goodwin	McLaren Ave.	"
Fire Station	Union St.	"
C. Roy Forbes		

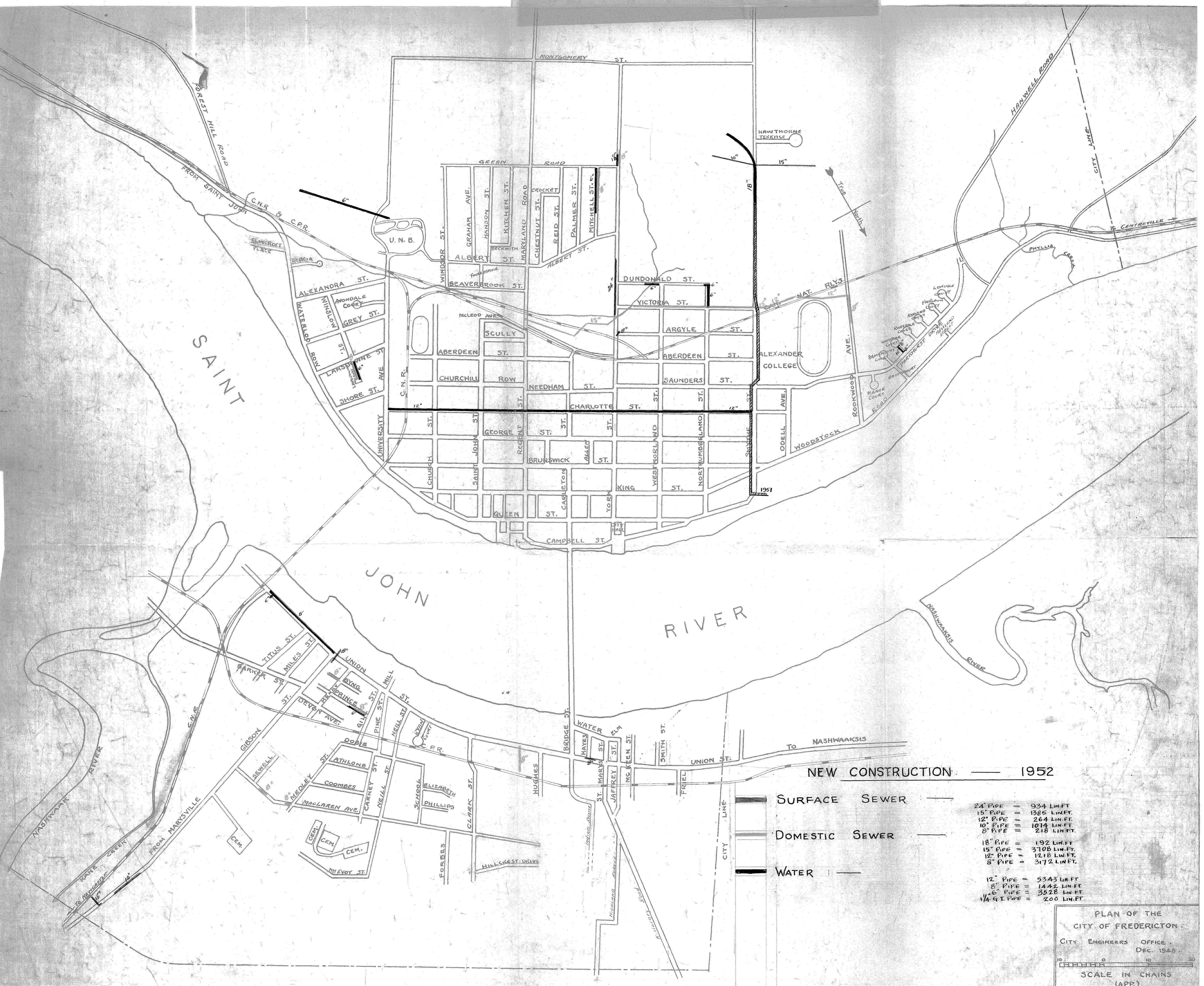
WATER INSTALLATIONS

1952.

Sussex Ginger Ale Co.	Clark St.	5/8 Cop.	New
Odell Con. Co. (Lot # 72)	38 Woodbine Court	"	"
Odell Con. Co. (Lot # 69)	25 Woodbine Court	"	"
Mrs. H. G. Kitchen	363 Saunders St.	"	Relay
Alfred S. Tait	George St.	"	New
R. F. Morris	Waterloo Row	"	"
Odell Com. Co. (Lot # 73)	26 Woodbine Court	"	"
Harry Worrall	Gibson St.	"	"
C. C. Thompson	York St.	"	"
Chas Llewellyn	Windsor St.	2-- $\frac{3}{4}$ Cop.	"
Paul Duplissis	Graham Ave	5/8 Cop.	"
Roy B. Young	215 Aberdeen St.	"	"
Harry Levine	University Ave.	"	"
Vincent C. McIntyre	154 Hughes St.	"	"
G. E. Trites	Woodstock Road	"	"
E. L. MacFarlane	172 Charlotte St.	"	Relay
J. L. Simms & Sons Ltd	Lansdowne Court	"	New
York Flooring Mills	Gibson St.	"	"
Weldon Vroom	Hillcrest Drive	"	"
Frank Barry	678 Union St.	"	Relay
E. Roach	Ryan Court	"	New
Paul Jacques	Argyle St.	"	"
Mrs. Alice Timms	Charlotte St.	"	"
F'ton High School	George St.	2--1 Cop.	"
D. W. Griffiths	718 George St.	5/8 Cop.	Relay
Miss Grace Olts	270 Waterloo Row	"	"
B. W. Kelly	675 Charlotte St.	$\frac{5}{4}$ Cop.	"
Central Trust (Ashburnham Apts)	Brunswick St.	"	"
G. E. George	324 Queen St.	5/8 Cop.	"
R. L. Monroe	177 Charlotte St.	"	"
Donald Rogers	Smythe St.	"	New
Reid Morgan	30 Shore St.	"	Relay
Coys Cleaners	Union St.	"	New
Wallace Burlock	Gibson St.	"	"
Jack Barry	Campbell St.	"	"
G. E. Barbour	Argyle St.	Gate on Sprinkler System	
O. D. Gorman	Woodstock Road	5/8 Cop.	New
Carl Hetherington	Gibson St.	"	"
Mrs. Leslie Wilson	Highland Ave.	"	"
Burton Rideout	Mitchell St.	"	"
Ernest Ryan	Mitchell St.	"	"
Ronald Targett	Mitchell St.	"	"
G. E. Kitchen	Mitchell St.	"	"
Armand Sharpe	Mitchell St.	"	"
Perdy True	320 Argyle St.	"	Relay
J. D. Rogers	Hawthorne Terrace	"	New
A. L. Reynolds	Byng St.	"	"
Kenneth Stuart	Sewell St	"	"
Ralph Rowan	533 Brunswick St.	"	Relay
Harry E. Wilson	Highland Ave.	"	New
Dwight Fowler	451 Charlotte St.	"	Relay
H. Aalund	Acacia Court	"	New
F'Ton Exhibition Ltd.	Race Track	1" Gal	"
Mrs. Margaret Moore	Northumberland St.	5/8 Cop.	"
Leo Dionne	Lansdowne Court	"	"
General Dairies	550 King St.	2--1 Cop.	"
A. F. Baird	Smythe St.	5/8 Cop.	"
F'ton Exhibition Ltd.	Office	"	"
Chas. Llewellyn	Needham St.	$\frac{3}{4}$ Cop.	"
Willard Timms	459-461 Needham St.	"	Relay
Salvation Army	King St.	5/8 Cop.	"
Richard Richard	Myles St.	"	New
Raymond Fairlong	McLaren Ave.	"	"
Robert Jewett	357-359 Aberdeen St.	"	Relay
York St. School	York St.	6" Sprinkler System	New
Wilmot Church	Carleton St.	"	"
Emerson Wilby	675 Churchill Row	5/8 Cop.	Relay
George Bliss	729 Charlotte St.	"	"
Mrs. J. Tweedale Hall	Chestnut St.	"	New
Harry Smith	Smythe St.	"	"
T. C. Gough	York St.	"	"

WATER INSTALLATIONS PAGE # 2

Keith Goodwin	York St.	5/8 Cop.	New
Ralph Slocum	444 Northumberland St.	"	Reley
Ralph Rowan	702-704 Churchill Row	"	"
Fire Station	775 McLaren Ave.	"	New
Lorne Duplissea	153 Pine St.	"	Relay
Mrs. W. Fisher	658 Churchill Row	"	"
Clive Sutton	Albert St.	"	New
Harlod Tait	York St.	"	"
E. K. Bonneyman	Mitchell St.	"	"
Mrs. Karl Walker	Northumberland St.	"	Reay
W. W. Murchie	495 Westmoreland St.	"	"
M. J. Mitchell	Highland Ave.	"	New
George Wiseman	Union St.	$\frac{3}{8}$ Iron	"
Odell Con Co.	Acacia Court	$\frac{5}{8}$ Cop.	"
Dept. Indian Affairs	Union St.	$\frac{3}{4}$ Gal.	Realy
City Spring Service Ltd.	Gibson St.	$\frac{5}{8}$ Cop.	New
Willard McConnell	Crockett St.	"	"
John Paisley	286 University Ave.	"	Reay
George Morgan	Hughes St.	"	New
O. E. Rushton	Prince St.	"	"
Hilton Fullerton	Gibson St.	"	"
Ronald Paul	Reservation	"	"
H. T. Farris	Avondale Court	"	"



2ND CROSS-ROAD - GRADED AND GRAVELLED

S
A
I
N
T

JOHN

RIVER

