

# ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

## 1951



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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, 1950 to the first of December, 1951.

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:

Pavement .....	1.49 miles
Gravel Road Construction .....	0.50 miles
Concrete Curb and Gutter .....	3.50 miles
Concrete Sidewalk .....	0.29 miles
8" to 24" Surface Sewer .....	2.60 miles
5" to 12" Domestic Sewer .....	2.20 miles
6" Water Main .....	0.50 miles

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

Caldwell Construction Co. built 2.67 miles of concrete sidewalks.

Forbes and Sloat built one Two Million Gallon covered concrete reservoir and laid 5,180 lin. ft. of 18" C.I. water main from the Water Pumping Station to this New Reservoir.

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 1951 as follows:

	Appropriation	Net Expenditure	Debit	Credit
Street Lights	20,000.00	23,484.42	3,484.42	
Public Works	8,000.00	9,538.20	1,538.20	
Roads & Streets	120,000.00	110,689.38		9,310.12
Sanitation	7,000.00	7,126.48	126.48	
		-----		

	<u>Revenue</u>	<u>Net Expenditure</u>	<u>Credit</u>
Water Pumping Sta.		29,226.01	
Water Ordinary	87,943.35	36,863.18	15,269.47
Sewerage Domestic		6,584.69	

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	<u>1951 Available From Bonds</u>	<u>Net Expenditure</u>	<u>1952 Available</u>
City Yard	10,000.00	0.00	10,000.00
New Maryland Road	24,000.00	9,731.96	14,268.04
Reservoir and			
Feeder Mains	351,000.00	213,899.35	137,100.65
Water Capital	30,000.00	23,948.32	6,051.68
Street Lights	5,000.00	0.00	5,000.00
Sewer Domestic	37,000.00	18,133.96	18,866.04
Perm. Roads			
Curb & Gutter	37,000.00	23,340.73	13,659.27
Perm. Road Pavement	126,780.10	60,258.51	66,541.59
Perm. Road Gravel	31,000.00	6,176.95	24,823.05
Perm. Road			
Surface Sewer	30,000.00	24,097.64	5,902.36
Cement Walks	58,660.07	21,017.58 *	37,642.49
Wartime Housing			
Maryland Heights	7,009.12	0.00	7,009.12

\* From this 1951 Sidewalk Expenditure has been subtracted the amount billed to property owners for this 1951 Sidewalk construction.

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 15,870. The Bonded Debt of the City is in excess of \$3,000,000.00. This includes School Debt.

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 preceding page.

Respectfully submitted,

City Engineer.

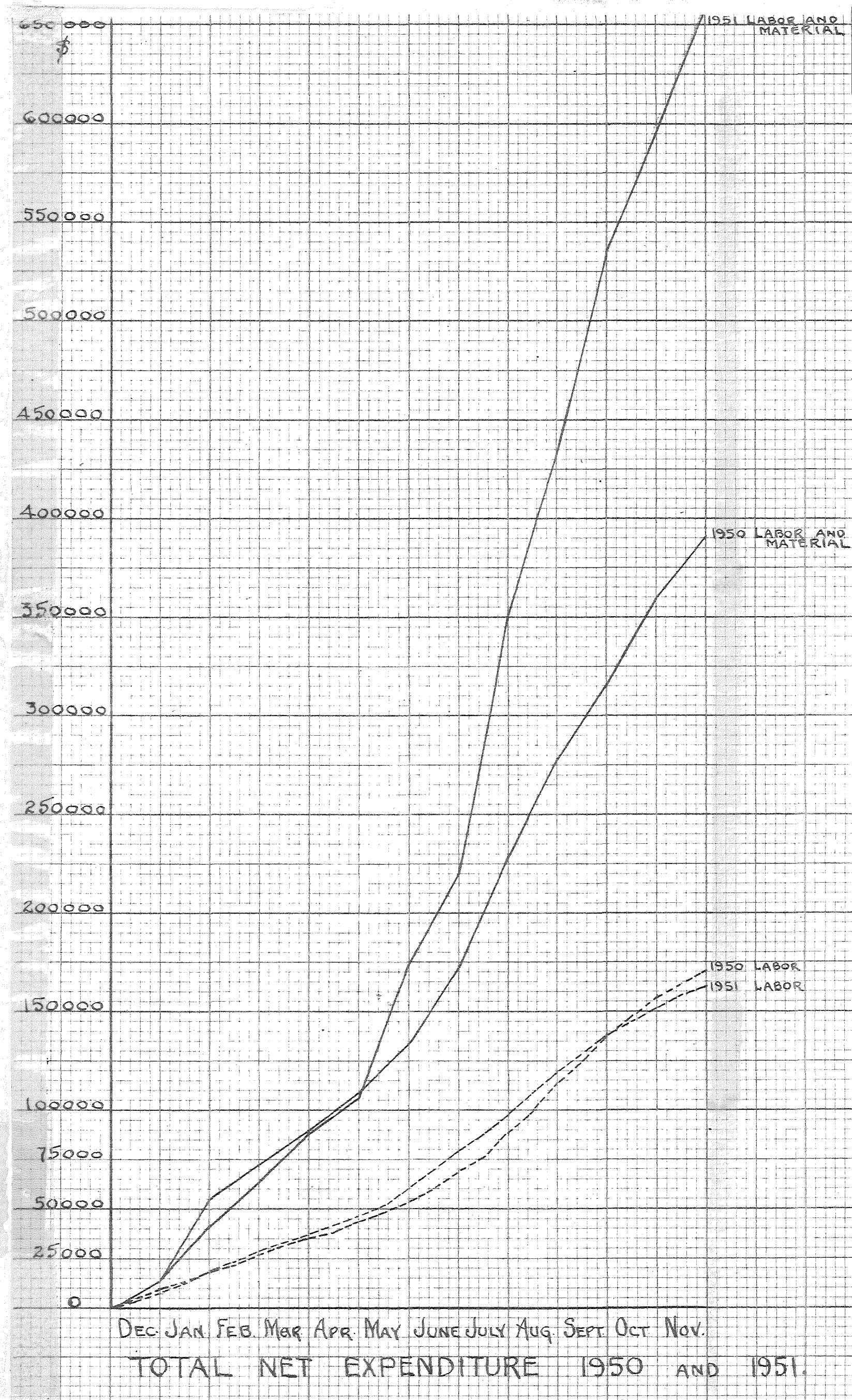
#### TOTAL YEARLY EXPENDITURE

The expenditures shown in this report cover the period of time from December 1st, 1950 to December 1st, 1951.

The Total Yearly Net Expenditure under the direct supervision of the City Engineer this year amounted to \$ 656,294.08. This expenditure will be taken up in detail under the different headings in this report. The total Gross Expenditure for this period amounted to \$ 738,169.32.

A graphic comparison of expenditure for labour and material for the year 1951 ~~and the year 1950~~ 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 \$ 120,000.00. We under-expended this appropriation by \$ 9,310.12.

We have in Fredericton altogether 57.37 miles of roads and streets.

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

<u>Roads and Streets</u>		<u>Urban</u>	<u>Outlying</u>	<u>Total</u>
Paved .....	.....	21.81	3.46	25.27
Gravel .....	.....	8.89	23.21	32.10
Total .....	.....	30.70	26.67	57.37

### Roads and Streets Expenditures 1951:

Gross Expenditures .....	\$ 127,895.34
Credits .....	17,205.46
Net Expenditures .....	110,689.88
1951 Appropriation .....	120,000.00
Credit .....	\$ 9,310.12

The above Credits are made up as follows:

M. G. Hanson (Hire City Shovel 8 hrs. @ \$7.00 per hr.).....	\$ 56.00
Bemrose and Kilburn (25 Bags Calcium Chloride @ \$2.50).....	62.50
Myles Service Sta. (15 Bags Calcium Chloride @ \$2.50-\$2.54)...	37.90
Ashley Colter (Sale of Logs).....	1,326.91
Bemrose and Kilburn (Gravel Stumpage).....	60.05
Journal Voucher (City machinery and trucks).....	14,489.10
Journal Voucher (City Airport sale of Caterpillar #10 Grader).....	400.00
Journal Voucher (Wood 53 loads @ \$10.00-\$17.00).....	773.00
Total ....	\$ 17,205.46

The Gross Expenditure is divided as follows:-

Labour .....	\$ 62,204.41
Material charges and Workmen's Compensation ....	\$ 65,690.93

I have divided the Labour Charges of \$62,204.41 into the following items. Although these items are made up entirely of labour costs, they 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> .....	\$ 347.32
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 .....	9,357.68
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 heading... .	10,280.99
4.	<u>Surface Sewers</u> :- Cleaning, flushing and repairing surface sewers and building new surface sewers within street limits.....	2,826.10
5.	<u>Sanding Walks</u> :- Storing sand in winter storage piles and spreading same on slippery walks .....	2,030.36
6.	<u>Yard</u> :- Men working in blacksmith shop and repair work in City Yard, taking summer equipment out and storing winter equipment .....	3,674.26
7.	<u>Gravel</u> :- Used for maintenance on City Roads and Streets .....	3,937.62
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 .....	455.93
9.	<u>Doak and Wilsey Roads</u> :- All work done on these roads other than work done by power maintainer .....	1,912.01
10.	<u>New Maryland Road</u> :- From C.P.R. Crossing to southern City line. All work done on this road other than that done by power maintainer, or by special contract .....	34.72
11.	<u>Kilarney Road</u> :- .....	58.36

12.	<u>Outlying Roads</u> :- Hanwell Road, Cross Road lying between Brick Hill and College Hill and Forest Hill Road. All work done on these roads other than work done by power maintainer..	\$ 792.31
13.	<u>Street Cleaning</u> :- All cleaning and removal of dirt, leaves, etc. from streets .....	16,356.33
14.	<u>Tarvia Repairs</u> :- Patching and repairing asphalt or tar pavement and sidewalks and applying seal coat of light tar or asphalt to pavements.....	3,990.16
15.	<u>City Road Patrol</u> :- .....	1,295.83
16.	<u>City Forest</u> :- .....	<u>4,854.43</u>

Total ..... \$ 62,204.41

Following is a table comparing Labour Expenditure in these items from 1948 to 1951:

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS  
LABOUR ITEMS

<u>Item</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
1. Snowploughing sidewalks	187.35	197.26	319.59	347.32
2. Snow Control	11,281.23	7,130.54	11,348.98	9,357.68
3. Streets	6,527.10	5,945.38	6,182.19	10,280.99
4. Surface Sewers	480.23	1,627.19	3,426.24	2,826.10
5. Sanding Walks	1,398.85	2,403.32	2,067.79	2,030.36
6. Yard	1,605.38	1,734.12	1,973.93	3,674.26
7. Gravel	3,105.20	2,594.78	5,246.41	3,937.62
8. St. John River Rd.	3,853.72	72.65	92.27	455.93
9. Doak & Wilsey Roads	2,863.32	83.61	216.15	1,912.01
10. New Maryland Road	121.48	182.01	162.44	34.72
11. Kilarney Road	33.63	-----	-----	58.36
12. Outlying Roads	581.20	90.42	925.21	792.31
13. Street Cleaning	13,948.03	11,757.46	13,431.84	16,356.33
14. Tarvia Repairs	2,006.41	1,508.48	2,835.38	3,990.16
15. City Road Patrol	836.33	670.56	804.04	1,295.83
16. City Forest	2,212.27	3,719.00	3,122.05	4,854.43
Total	51,042.03	39,716.78	52,154.51	62,204.41

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

<u>Item 2.</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>
<u>Snow Control:-</u>				
Snowploughing roads and streets	786.24	707.68	1,279.89	972.48
Shovelling and hauling snow	8,857.88	3,738.13	8,098.56	6,037.60
Catch Basins	406.78	663.11	632.83	415.04
Snow Fences	443.51	670.99	483.81	954.17
Keeping Drains on hills open	447.57	1,162.01	801.29	968.01
Thawing Culverts	47.98	164.76	52.60	10.38
General Expenses	289.27	23.86	-----	-----
	\$ 11,281.23	7,150.54	11,348.98	9,357.68

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 24th, 1950 to April 26, 1951. 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 10th, 1951.

Department of Public Works,  
Province of New Brunswick.

In account with the  
CITY OF FREDERICTON

City of Fredericton---Snow Control Account  
October 24, 1950 to April 26, 1951

City Pay Rolls charged to Snow Control  
October 24, 1950 to April 26, 1951 ..... \$ 11,178.74  
Workmen's Compensation ..... 335.36  
Pension Fund Paid by City ..... 558.94

City Trucks:

Chev. 1945 - 2 $\frac{1}{2}$  Ton Dump, License #C-1184  
Chev. 1945 - 3 Ton Dump, License #C-1039  
Ford 1951 - 3 Ton Dump, License #C-1380  
International - 2 Ton Dump, License #C-1034  
Total Hours City Trucks -- 1250 Hours  
@ \$1.70 ..... 2,125.00

City Jeeps---Sidewalk Plows:

License #C-1036  
License #C-1033  
Total Hours City Jeeps--593 Hours @ \$1.00 ..... 593.00

City Road Patrols:

Caterpillar Diesel #10  
Adams Diesel #412  
Auster Western Diesel #99H  
Total Hours City Road Patrols--751 Hours  
@ \$5.00 ..... 3,755.00

City Bulldozers:

International T.D.6 -- 1948  
International T.D.6 -- 1949  
Total Hours City Bulldozers--461 Hours  
@ \$3.00 ..... 1,383.00

City Thawing Machine -- Steam.

Total Hours City Thawing Machine--86 Hours  
@ \$1.80. .... 154.80

City Shovel:

Michigan -- T-6-K  
Total Hours City Shovel--48 Hours  
@ \$5.00 ..... 240.00

City Team:	
Total Hours City Team--100 Hours @ \$1.00 .....	100.00
City Snowblower:	
Sicard	
Total Hours in use ---- 140 Hours	
60L Gal. Gasoline @ \$0.275 .....	165.28
21 Qts. Oil @ \$0.235 .....	4.94
Insurance (1 Year) .....	182.15
Storage .....	48.00
Repairs .....	330.10
Depreciation, (10% of Depreciated Value).....	1,044.77
NOTE: Wages of operators of City Machines do not appear as they are included in Pay Rolls charged to Snow Control.	
MacFarlane Construction Co. Ltd.	
Road Patrol --- 81 $\frac{1}{2}$ Hours @ \$5.50 .....	448.25
Sand:	
From City Pit -- 1000 Cubic Yards @ \$1.00 .....	1,000.00
From Lewis Hughes -- 444 Cubic Yards @ \$0.90 .....	399.60
Calcium Chloride:	
13 $\frac{1}{2}$ Tons @ \$50.20 per ton .....	677.70

\$ 24,724.63

Certified Correct,

City Engineer.

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

1946-47 .....	76"
1947-48 .....	83"
1948-49 .....	64"
1949-50 .....	124 $\frac{1}{2}$ "
1950-51 .....	93"

Snow Fences:

In our Snow Fencing this year we used 10,400 feet of lathmade snow fence.

Item 3.

Streets:-

Repairs to Plant.....	461.76
Painting Traffic Lines and Street Signs .....	1,418.08
Repairs to Streets (Repairs to Curbs, Bridges, etc.) ...	2,488.43
Weather Account (Holidays) .....	4,285.83
Unloading and spreading calcium chloride .....	260.25
Surveying .....	984.60
Constructing Fence on Hughes St. & Highland Ave. ....	84.03
Erecting Posts on Coombes St. .....	47.45
Acacia Grove ( Building up Gulley) .....	<u>250.56</u>
Total .....	\$ 10,280.99

This year we purchased 190 tons of Calcium Chloride against a purchase of 130 tons last year.

The above Weather Account of \$4,285.83 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 1951 to have been the wettest year during the last thirty-eight years.

Item 7.

Gravel:-

This year we hauled from our city gravel pit at Barker's Point 9,171 cubic yards of gravel.

Item 8.

St. John Road:-

The labour expenditure of \$455.93 was made in cutting and burning bushes on the side of the road.

Item 12.

Outlying Roads:-

The labour expenditure of \$792.31 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 \$16,356.33 shows an increase of \$2,924.49 over last year.

Item 14.

Tarvia Repairs:-

Under this heading \$3,990.16 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 rough 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. No seal coating was done this year.

The patching material in place, produced by the above method, costs \$17.00 per ton, \$11.25 being a labour charge and \$6.75 being the cost of binder and aggregate plus cost of gas, fuel and machinery repair charges.

A major patching job on Queen St. from York to Carleton and from Regent to St. John Sts. took 646 tons of asphalt mix which the City purchased from the Diamond Construction Co. plant at Lincoln @ \$6.49 a ton on City trucks at Lincoln.

Item 15.

City Road Patrol.

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

	<u>1949</u>	<u>1950</u>	<u>1951</u>
Caterpillar #10 Grader ...	\$ 751.01	694.92	21.26
Adams #412 Grader .....	589.62	5,488.66	2,361.05
Austin Weston #99 Grader..			2,738.93

Item 18.

City Forest:-

Included in our regular Roads and Street Costs is a labour expenditure for City Forest of \$4,854.43.

This labour item is sub-divided as follows:-

Logging .....	\$ 836.68
Delivering Wood to Municipal Home Customers ...	28.69
Hauling Wood to City Yard .....	17.20
Cutting Wood .....	1,521.71
Sawing Wood (machine) .....	359.48
Haying .....	84.12
Splitting Wood .....	431.65
Caretakers wages and Miscellaneous Expenses ...	<u>1,574.90</u>
Total .....	\$ 4,854.43

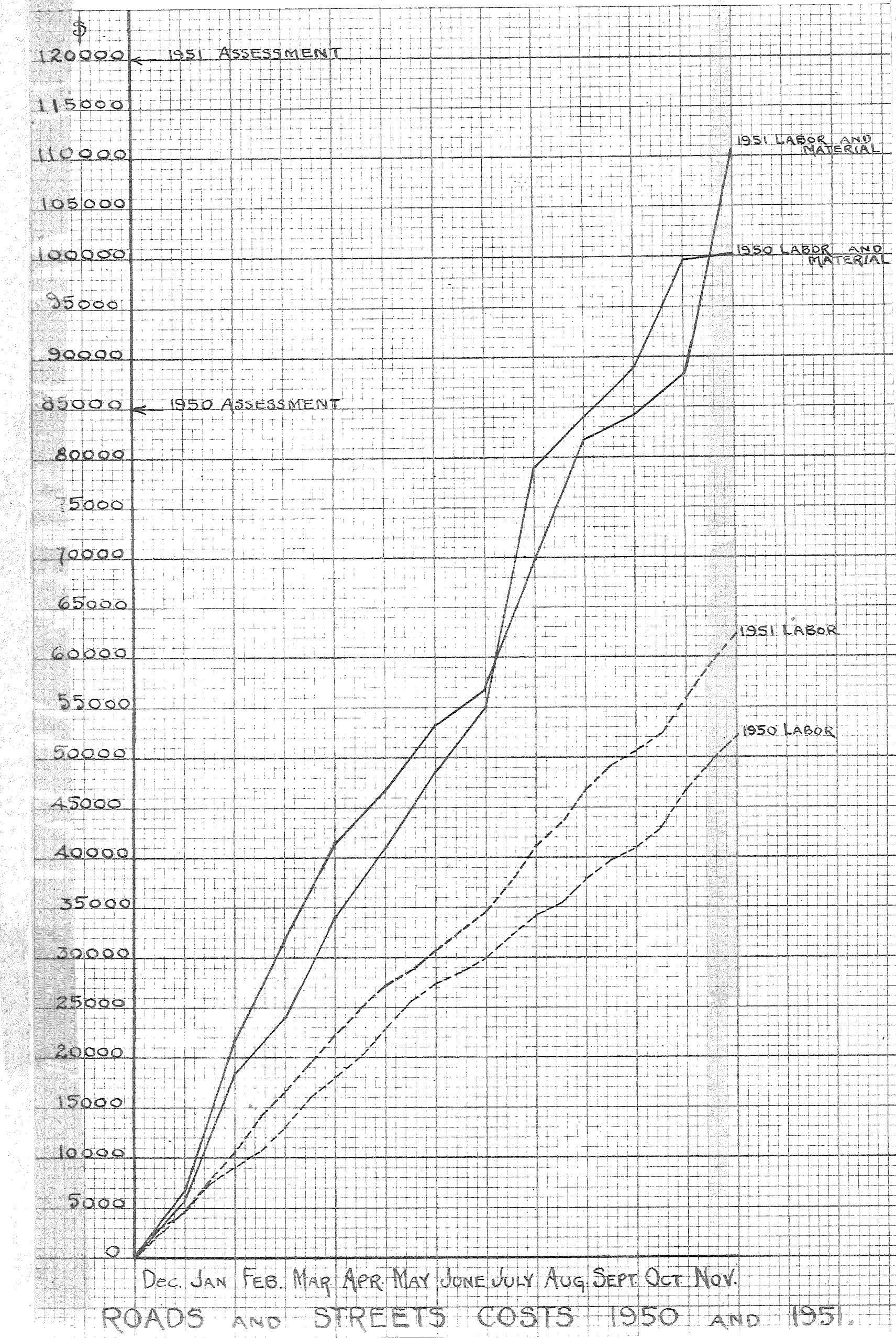
Besides this labour cost, the City Forest shows an expenditure for material of \$480.42 making a total cost for the year of \$5,334.85.

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 this year @ \$18.00 .....	\$ 1,710.00
7 tons hay in City Barn @ \$19.00 .....	133.00
365 Spruce Logs - 12,579 ft. @ \$45.00 per M. ...	566.06
234 Hemlock Logs - 17,261 ft. @ \$43.00 per M. ...	742.22
9 Pine Logs - 414 ft. @ \$45.00 per M. ...	<u>18.63</u>
Total .....	\$ 3,169.91

Roads and Streets bought this year for \$8,320.00 from J. Clark & Son Ltd., one - one half Yard Crawler Type Model - C-16 - Michigan Gas. Shovel, with shovel front and back hoe. This piece of machinery was three years old when purchased by the City.



CAPITAL ACCOUNT PAVING

The Net Expenditure under this heading amounts to \$85,322.24.

Included in above are:-

(1) Capital Account Curb and Gutter .....	\$ 23,440.73
(2) Capital Account Paving .....	61,881.51
Total	\$ 85,322.24

For the above net expenditure of \$23,440.73 concrete curbs and gutters were laid at the following locations:-

<u>Concrete Curb and Gutters</u>	<u>Lin. Ft.</u>
1. Brookmount St. - Parkhurst Drive to Woodstock Rd. (Both Sides)	410
2. Dundonald St. - York to Northumberland ( Both Sides)	2655
3. Gill St. - Union St. to C.P.R. Track (Both Sides)	987
4. Graham Avenue - Albert St. to Green Rd. (Both Sides)	2895
5. Green Road - York to 60' East of Graham Ave. (North Side)	1492
6. Haviland St. - Parkhurst Drive to Woodstock Road (Both Sides)	620
7. Hayes St. - Water to Union Sts. (Both Sides)	768
8. McKeen St. - Union St. to top of River Bank (Both Sides)	945
9. Myles St. - Union to Barker Sts. (Both Sides)	1468
10. Neill St. - Union to Dobie St. (Both Sides)	1422
11. Northumberland St. - Victoria to Dundonald (Both Sides)	759
12. Palmer St. - Green Road to Albert St. (Both Sides)	2228
13. Smythe St. - Argyle to Valley Track (Both Sides)	443
14. Argyle St. - York to Westmorland (North Side)	768
15. Waterloo Row - Elmcroft West (East Side)	367
Total	18227

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 60¢ per lineal ft. of completed curb and gutter. The cost per lineal ft. of all curb and gutter constructed this year, found by dividing the total footage into the total overall cost for the year is \$1.29.

For the above net expenditure of \$61,881.51 the following streets were paved:-

<u>Streets Paved</u>	<u>Lin. Ft.</u>	<u>Sq. Yds.</u>
1. McKeen St. - Union St. to top of River Bank	475	1,003
2. Hayes St. - Union St. to Water St.	351	858
3. Neill St. - Union St. to Dobie St.	740	1,562
4. Gill St. - Union St. to C.P.R. Track	695	1,660
5. Myles St. - Union St. to Barker St.	705	1,723
6. Parkhurst Drive - Rookwood Ave. to Haviland St.	1,504	4,512
7. Manor Court	228	1,186
8. Brookmount Street and Court	500	1,997
9. Riverdale Court	236	1,205
10. Ashland Court	236	1,205
11. Haviland St. - Parkhurst Drive to Woodstock Road	266	798
12. Smythe St. - Argyle to C.N.R. Track	239	717
13. Northumberland St. - Argyle to Victoria	357	1,071
14. Avondale Court	515	1,837
15. Rookwood Avenue	100	300
16. Queen St. - Westmorland to York St.	735	3,022
Total	7,882	24,706

Above pavement was laid to a thickness of 4" except for Queen Street from Westmorland to York St. which was laid as a 2" course over an old pavement. The street grading and all preparatory work other than the actual supplying and laying in place the above premixed pavement was done by regular City crews, at a cost of 44½¢ a square yard. The premixed pavement was supplied and laid by the Diamond Construction Company from their plant located at Lincoln Airport. The company charged the City for this pavement in place \$9.00 a ton for base and \$10.50 a ton for seal. Altogether some 24,706 square yards (some 1½ miles) of City streets were laid at a unit price of \$2.51 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 \$54,665.00.

The quantities used in this pavement were:-

Primer .....	.42 gals. per sq. yd.
Base Mix .....	One Ton spread $5\frac{1}{4}$ sq. yds.
Seal .....	One Ton spread $48\frac{1}{2}$ sq. yds.

The above unit cost shown for this year are I believe rather high as they include heavy grading and gravel base on Graham Avenue, Dundonald St. from York to Northumberland St. and Westmorland St. from Victoria to Dundonald.

#### CAPITAL ACCOUNT SEWER DOMESTIC

Gross Expenditure .....	\$ 22,128.19
Credits .....	<u>2,351.23</u>
Net Expenditure .....	\$ 19,776.96

The Credits are made up as follows:-

Work done on domestic sewer system for private parties, mostly house connections .....	\$ 1,196.21
Peoples Hardware (Pipe) .....	1,095.11
Whitman Lumber Co. (37'-12" T.C. Pipe @ \$1.50 per ft.) .....	55.50
Dominion Gov't Pathological Lab. (2½'-15" T.C. pipe @ \$1.75 per ft.).	4.38
	\$ 2,351.23

The above expenditure covers the sewer construction in Carleton Ward as well as in the City Proper. Domestic sewers were laid at the following locations:-

<u>Location</u>	<u>Lin. Ft.</u>
Parkhurst Drive	8" T.C. Pipe                    156
Woodbine Court	8" T.C. Pipe                    212
Maryland Hill	8" T.C. Pipe                    1674
Acacia	8" T.C. Pipe                    600
Hayes Sub-division	8" T.C. Pipe                    535
St. Marys St.	8" T.C. Pipe                    284
Winslow St.	8" T.C. Pipe                    192
Maryland Heights School	8" T.C. Pipe                    468
	<b>Total</b> <b>4121</b>

The average labor cost per foot for excavating, laying and backfilling was \$1.58 and the overall (Labor and Material) was \$4.80 per lineal foot.

Also laid under this heading was 1467 feet of 5" sewer to individual property owners. This amount of pipe was not figured in the labor cost or overall cost of pipe per foot as it was subtracted from the gross cost by the above credit of \$1,196.24

## CAPITAL ACCOUNT WATER

Gross Expenditure .....	\$ 25,180.94
Credits .....	<u>1,132.62</u>
Net Expenditure .....	\$ 24,048.34

The above Credits are made up as follows:-

Horsnell (32' of 10" C.I. Pipe @ \$4.25 per ft.) .....	\$ 136.00
Town of Marysville (464' of 6" C.I. Pipe @ \$2.04 .....	946.56
1 - 6" Gate Valve @ \$ 50.06 ) .....	<u>50.06</u>
	\$1,132.62

Installations were made at the following locations:-

	<u>Lin. ft. of 6"</u>	<u>1 1/4"</u>
Parkhurst Drive	240	
Dundonald Street	640	145
Woodbine Court		181
Acacia	412	176
Hayes sub-division	937	
Graham Avenue	420	
Pond sub-division	540	
Total	3189	502

Included in the above expenditure is the following stock on hand:

Stock on Hand for 1952:-

2354  
1600 ft. of 6" pipe @ \$2.04 per ft. ..... \$ 3,264.00  
1407 ft. of 8" pipe @ \$2.66 per ft. ..... 3,742.62  
16 ft. of 10" pipe @ \$4.25 per ft. ..... 68.00  
Total ... \$ 7,074.62

CAPITAL ACCOUNT SURFACE SEWER

Gross Expenditure .....	\$ 26,402.68
Credit .....	<u>2,205.04</u>
Net Expenditure .....	\$ 24,197.64

The above Credits are made up as follows:-

Surface sewers were laid at the following locations:-

Location	15" T.C.	15" Concrete	12" concrete	10" Concrete	8" T.C.	Total Lin. Ft.
1. Parkhurst Drive				100'	74'	174
2. Dundonald St.				154'	103'	257
3. York St.	442	814	180			1436
4. McEvoy St.			282			282
5. Gibson St.	362	535	315			1212
6. MacLaren Ave.	505	410	515			1430
7. Graham Ave.		1125	150			1275
8. Henry St.	795		150			945
9. Bridge St.			281			281
10. Between Neill & Carney	720					720
11. Myles St.		202				202
12. Waterloo Row			212		27	239
13. Neill St.		525	144			669
14. Union St.	659					659
15. Devon Ave.		350				350
TOTAL	720	2763	3961	2483	204	10131

The labor and machinery cost per foot to install the above listed sewers is \$ 1.13.

#### CAPITAL ACCOUNT MARYLAND ROAD

Gross Expenditure .....	\$ 21,579.42
Credits .....	11,847.46
Net Expenditure .....	\$ 9,731.96

The above credit of \$11,847.46 is made up as follows:-

Provincial Government (Dep't of Public Works) .....	\$ 11,674.36
Bemrose & Kilburn (Stumpage Gravel) .....	173.10
Total .....	\$ 11,847.46

In 1950 the City of Fredericton entered into an agreement with the Provincial Government to reconstruct and pave the Maryland Road from Albert Street south to the City line, a distance of 3.55 miles. 2.97 miles of above mileage was redonstructed in 1950 leaving .58 miles rebuilt this year. The agreement was that the City and Provincial Government would each pay one-half the costs of the work.

The width in cuts from ditch to ditch was made 36' and width at top of fills was held to a minimum of 40 feet. The culverts were built with local cedar.

In addition to reconstructing the road a 12" concrete surface sewer was laid from Albert St. to Montgomery St. a distance of 2290'. Catch basins were built at intervals of 200' on both sides of the road and these were connected by some 300 lin. ft. of 10" concrete pipe.

### CAPITAL ACCOUNT WATER FEEDER MAIN AND RESERVOIR

During the last few years it has become apparent that our City water system was not adequate to properly supply the demands of the City.

Mr. James MacLaren, a consulting engineer of Toronto, was employed by the City Council to make a survey and report relating to water supply and the waterworks system in Fredericton. This report was received by the City in December 1949. The report examined the City waterworks in detail and suggested remedies for the obvious weaknesses. Roughly the proposals embodied in the report are as follows:

Group I - High level storage reservoir of 2 million gallons capacity, an 18" supply main from the present water pumping station to this reservoir and a 12" cross town main on Charlotte Street.

Group II - A new 24" intake from the river to the water pumping station, new low lift pumps and new service pumps.

Group III - Alterations and extensions to filtration plant.

The City Council adopted this report in principle and this year proceeded with the construction of Group I. The contract for the construction of the reservoir and the laying of the supply and cross town mains was awarded to the firm of Forbes and Sloat, who were the low bidders.

The contracted price for the reservoir included all labor and material except reinforcement steel to be supplied by the contractor, the contract for laying of water mains included labor only to be supplied by the contractor while the City was to supply all pipe and other necessary materials.

The Reservoir construction was proceeded with as soon as possible this spring and although held up somewhat by a delay in delivery of reinforcement steel, was finished this fall excepting for some minor details such as sodding.

The pipe for the supply and cross town mains was ordered through the James Robertson Co. Ltd. of Saint John the low bidder, from the Stanton Iron Works, England. This pipe was ordered in January 1951 but delivery did not start in Fredericton till 11th August 1951 and we did not have enough pipe to start laying till 14th September 1951. The 18" supply main from the water pumping station to the reservoir, some 5180 lin. ft. was completed on the 14th December 1951.

	<u>MacLaren's Estimated Cost</u>	<u>1951 Expenditure</u>
Reservoir	\$ 138,000.00	\$ 93,702.10
Supply & Cross Town Main	213,000.00	120,095.25

### CAPITAL ACCOUNT GRAVEL ROADS

Net Expenditure ..... \$ 6,176.95

The following new roads were laid out, graded and graveled under this heading:-

	<u>Lin. Ft.</u>
Hayes sub-division running west from Clark St.	930
MacLaren Ave. - Medley to Gibson St.	1025
Acacia Court	588
Montgomery St. - part of road between College and Maryland Road	660
Total	3203

## PUBLIC WORKS

Gross Expenditure .....	\$ 10,828.58
Credits .....	<u>1,290.38</u>
Net Expenditure .....	\$ 9,538.20
1951 Appropriation .....	<u>8,000.00</u>
Deficit .....	\$ 1,538.20

The Credits of \$1,290.38 are made up as follows:-

Labor charged to removing trees on Private property .....	\$ 204.09
Diamond Construction Co. Ltd. (To labor moving steam crane)...	8.40
Fredericton Exhibition Co. Ltd. (Unloading and spreading ashes)	38.75
Federal Dept. Public Works (Cleaning wharf) .....	48.46
Fredericton School Board (Bulldozer operator spreading fill) ..	54.00
Labor on City Airport (City truck hauling rock) .....	82.21
Car expenses proportion to other City Departments .....	700.00
Receipts from rentals and trust funds .....	<u>154.47</u>
Total .....	\$1,290.38

The Net Expenditure is made up of a labor charge of \$6,696.64 and a material charge of \$2,841.56. The labor charge is divided as follows:-

Surface sewer .....	\$ 34.04
Back Drain .....	272.45
Trees .....	1,710.16
Unforeseen Account .....	3,043.66
Old Burial Ground .....	<u>1,636.33</u>
Total .....	\$ 6,696.64

Surface Sewer:- An expense of \$34.04 was incurred in digging out and extending surface sewer on green near band stand.

Back Drain:- City back drain was cleaned and ice taken out this spring.

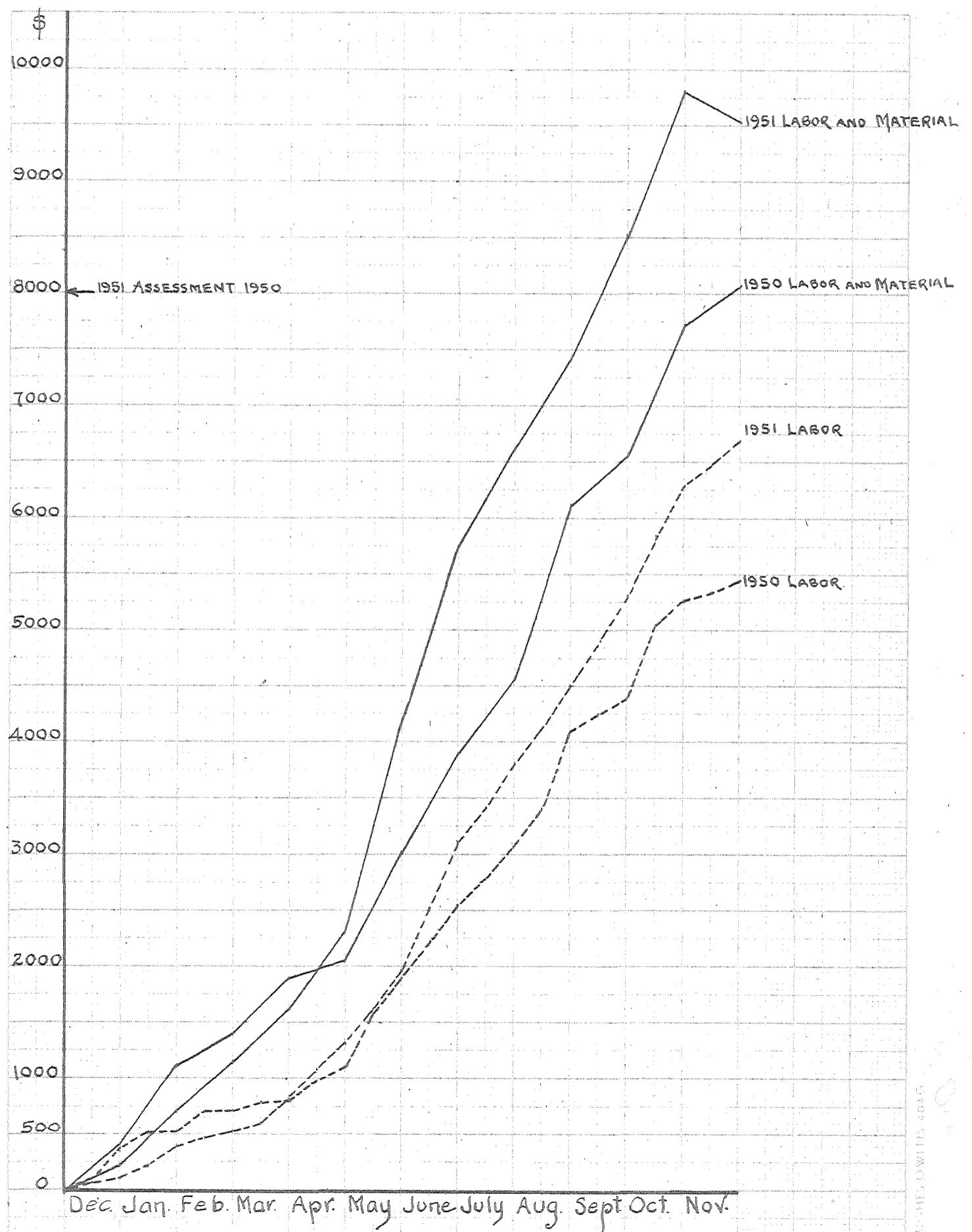
TREES:- The labor cost of \$1,710.16 was for cutting, pruning and spraying shade trees.

Unforeseen Account:- The labor charged to this item was expended as follows:-

Labor at old Devon School (Boarding up windows etc.) .....	\$ 59.90
Labor on moving crane for Diamond Construction Co. ....	8.40
Constructing roads to river for Fire Department .....	27.20
Cutting bushes along river bank from Pumping Sta. to Lincoln Crossing	459.59
Greens, cutting, raking, seeding etc. ....	2118.24
Fredericton Exhibition Co. Ltd. (hauling & spreading ashes) .....	74.57
Dominion Government (cleaning wharves) .....	55.31
Children's Home (putting on windows etc. ) .....	102.24
Fredericton Airport (hauling rock) .....	56.71
Benches, repairing and painting .....	21.70
Miscellaneous .....	59.80
Total .....	\$ 3,043.66

## OLD BURIAL GROUND

The labor expenditure of \$1,636.33 was used in maintaining the Old Burial Ground in the centre of the City.



PUBLIC WORKS COSTS 1950 AND 1951.

### RECREATION

Expenditure ..... \$ 1,362.04

The above charge of \$1,362.04 is divided as follows:-

<u>Playgrounds</u>	<u>City Labor</u>	<u>Material</u>	<u>Total</u>
Queen's Square, Wilmot Park, Carleton Ward, Victoria Mills, Maryland Heights,			
Queen Street and Hughes Street.....	\$ 800.89	88.07	888.96
Bathing Beaches .....	146.71		146.71
Rinks .....	322.43	3.94	326.37
Total .....	\$1,270.03	\$ 92.01	\$1,362.04

The above costs do not include all playground, bathing beach and rink expenditures but only those which appear on the payrolls or costs of material ordered through my office; for instance, the salary of Recreation Director, Mr. Vey, and other supervisors hired during the summer months is not in the above cost, nor do the costs of most of the equipment on the playgrounds appear here.

### CITY HALL.

Expenditure ..... \$ 5,642.40

The above expenditure of \$5,642.40 is divided as follows:-

Wages paid for labour at City Hall including winding and repairs to clock, cost of night fireman and extra janitor service .....	\$ 2,733.24
Water used at City Hall .....	100.00
Coal 184.445 tons burned at City Hall .....	1,888.88
Repairs and improvements to City Hall .....	-----
Light Bill for City Offices .....	819.70
Supplies etc. .....	100.58
Total .....	\$ 5,642.40

This above cost is only the expenditure for City Hall made through the City Engineer's Dept. and does not include the total expenditure made for City Hall.

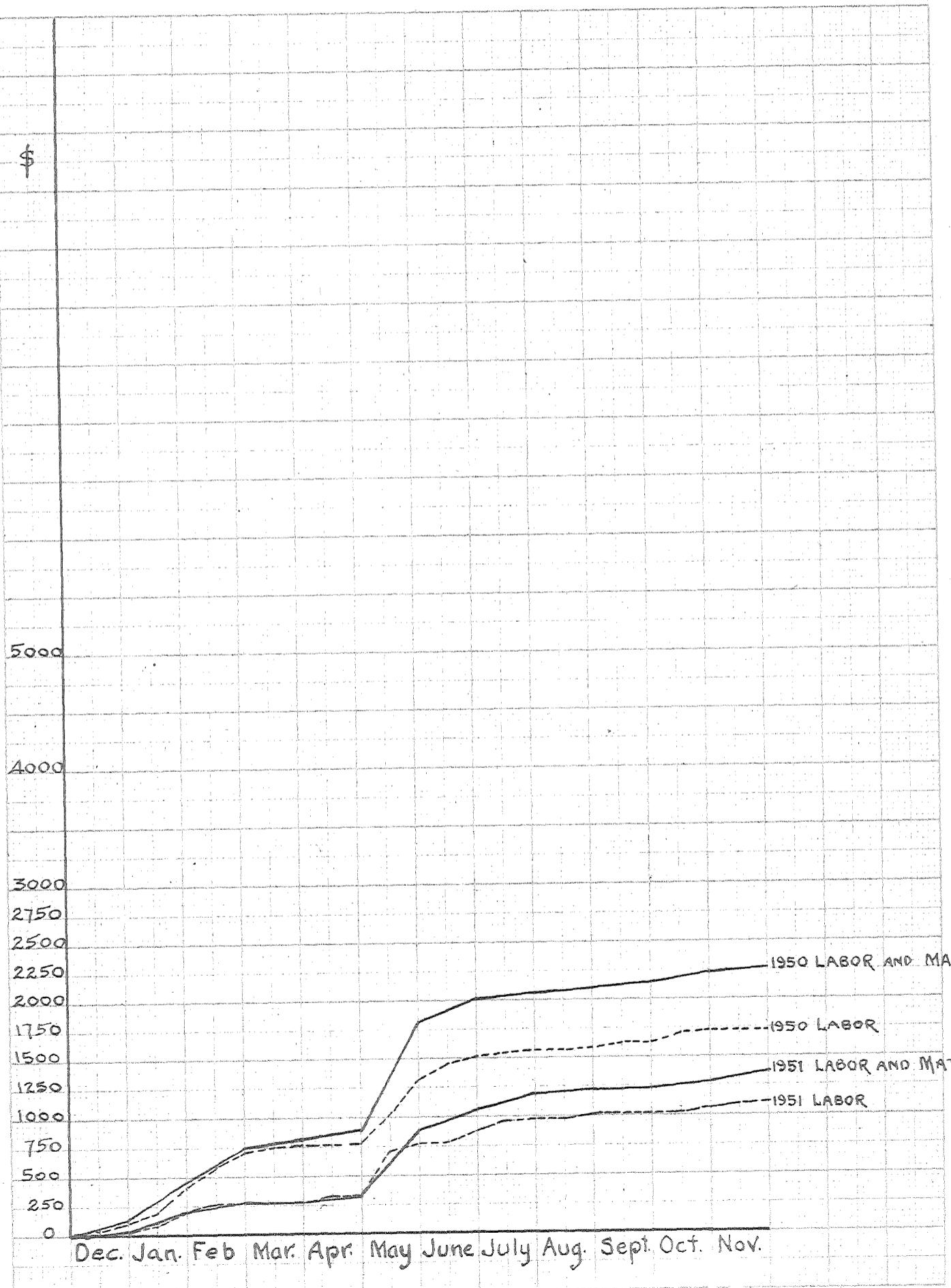
### MUNICIPAL HOME

Expenditure ..... \$ 1,053.04

The above expenditure is made up as follows:-

City water supplied to Municipal Home .....	\$ 25.00
Labor - sawing, splitting and delivering wood to needy families in the City along with some minor repairs to Municipal Home Bldg... Cost of 53 loads wood supplied to needy families from City Forest	255.04
4 loads @ \$17.00 ....	\$ 68.00
45 loads @ \$15.00....	665.00
4 loads @ \$10.00 ....	40.00
Total .....	\$773.00
TOTAL .....	\$1,053.04

The above costs are, of course, only part of the Municipal Home expenditures for the year but they are the only expenditures made under the supervision of the City Engineer, and are, therefore, shown in this report.



RECREATION COSTS 1950 AND 1951.

### SANITATION

Expenditure .....	\$ 7,126.48
1951 Appropriation .....	<u>7,000.00</u>
Deficit .....	\$ 126.48

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

CITY DUMP has one dump tender. Besides the dump tender the City Bulldozer works on the dump from time to time shaping up the dump for the tender. This expenditure for tender and bulldozing amounted to \$ 2,465.48.

### CITY INCINERATOR

Material charges .....	\$ 219.60
Labor .....	<u>4,441.40</u>
Total Expenditure .....	\$4,661.00

The material charges are made up of repairs to incinerator and light and power bills.

The labour charge is wages of incinerator attendants, along with extra City labor used in bulldozing incinerator dump, shifting tracks, etc. We are operating the incinerator with two attendants who work a nine hour day starting at 7:30 a.m. and finishing at 5:30 p.m.

### SEWERAGE DOMESTIC

Gross Expenditure .....	\$ 16,715.83
Credits .....	<u>10,131.14</u>
Net Expenditure .....	\$ 6,584.69

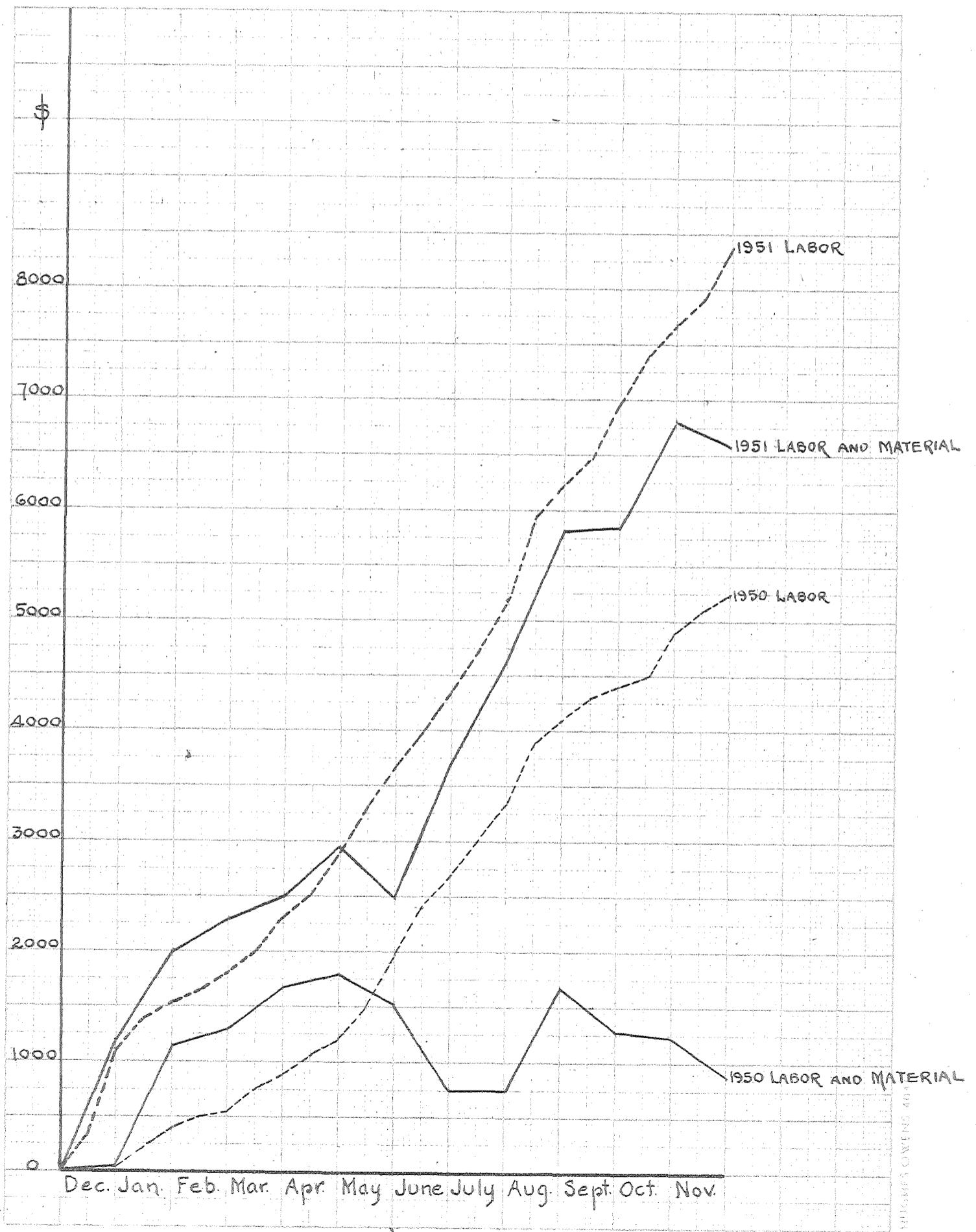
The above Credit is work (mostly house connections) performed for private parties.

New Customers connected with City Sewerage System this year --- 126.

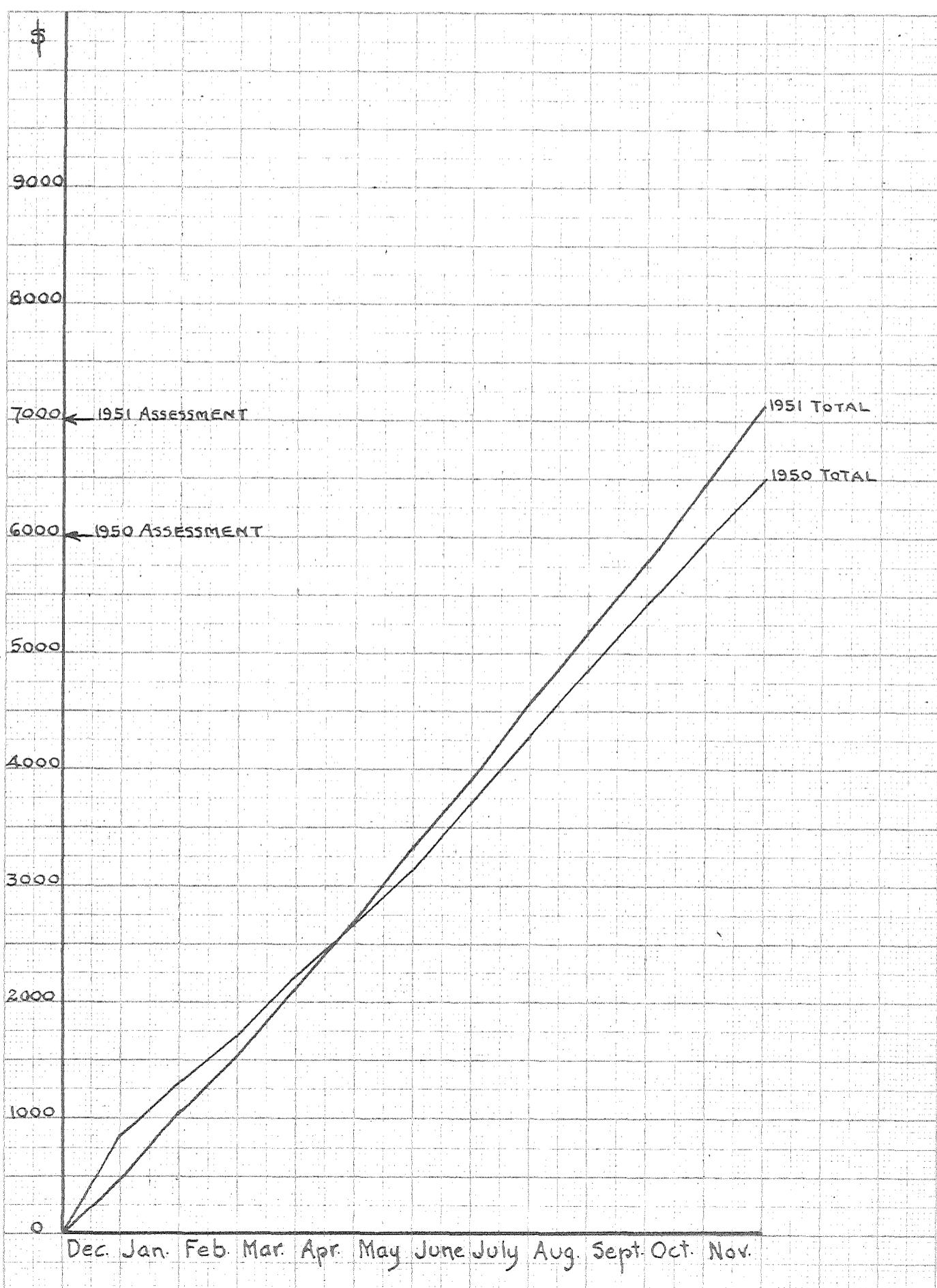
No Domestic Sewerage extensions were made this year under this heading. All extensions were charged to Capital Account and appear under the Capital Account headings.

We had a costly repair job on the Gill Street sewer. The break down occurred in December 1950 and due to frost conditions and necessary construction to by-pass sewerage so that the break in the main sewer could be repaired, the expenditure on this job amounted to \$ 2,500.00

We have now in stock and paid for by Sewerage Domestic some 1,650 feet of 5" Terra Cotta pipe and 1,750 feet of 8" Terra Cotta pipe.



SEWERAGE DOMESTIC COSTS 1950 AND 1951.



SANITATION COSTS 1950 AND 1951 .

## 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 418 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:-

	Transformer Size
<u>Lower Front Circuit:</u>	
25-600 C.P. Lamps @ .350 K.W. demand ... 8.750	
19-250 C.P. Lamps @ .160 K.W. demand ... <u>3.040</u>	
	11.790 K. W.
	15 K.W.
<u>Lower Rear Circuit:</u>	
136-250 C.P. Lamps @ .160 K.W. demand ... 21.760 K.W.	25 K.W.
<u>Upper Front Circuit:</u>	
13-600 C.P. Lamps @ .350 K.W. demand ... 4.55	
38-250 C.P. Lamps @ .160 K.W. demand ... <u>6.08</u>	
	10.63 K. W.
	15 K.W.
<u>Upper Rear Circuit:</u>	
12-600 C.P. Lamps @ .350 K.W. demand ... 4.20	
94-250 C.P. Lamps @ .160 K.W. demand ... <u>15.04</u>	
	19.24 K. W.
	25 K.W.
<u>Maryland Heights:</u>	
80-250 C.P. Lamps @ .160 K.W. demand ... 12.80	
1-600 C.P. Lamp @ .350 K.W. demand ... <u>.35</u>	
	13.15 K.W.
	15 K.W.

SYSTEM No. 2, the multiple lighting system consists of 99 units, 14 on Waterloo Row, 85 on King Street, Queen Street and Cross Streets including part of Campbell Street. 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, maintained and energized 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 152 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:-

	Transformer Size
<u>Carleton Ward (down):</u>	
87-250 C.P. Lamps @ .160 K.W. demand .. 13.92 K.W.	15
<u>Carleton Ward (up):</u>	
65-250 C.P. Lamps @ .160 K.W. demand .. 10.40 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 a 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 labour and material.

The Street Lighting Costs for the year 1951 were as follows:-

Gross Expenditure .....	\$ 23,499.42
Credits .....	<u>15.00</u>
Net Expenditure .....	\$ 23,484.42
1951 Appropriation .....	<u>20,000.00</u>
Debit Balance .....	\$ 3,484.42

The above Credit is return on one oil drum to Canadian General Electric Co.

### STREET LIGHTS

The expenditure of \$23,499.42 is made up as follows:-

132 - 600 C.P. Lamps .....	\$ 210.73
1055 - 250 C.P. Lamps .....	841.42
14 - 150 C.P. Lamps .....	4.06
2 - 100 C.P. Lamps .....	.44
Current on Subway lighting and series lighting from Nov. 30, 1950 to Nov. 1951 .....	11,063.13
Charges on Multiple fixtures installed on City Streets at the contract price of \$60.00 per light per year .....	5,604.28
Maintenance, labor as per contract price .....	639.84
Material purchased for new installations and maintenance of lamp fixtures (including only such articles as lamp standards, lamp brackets, heads, sockets, shades, time switches etc.)	3,543.50
Material and labor used in major repairs and new installations	1,038.75
Miscellaneous charges.....	240.70
Labor on changing circuits .....	235.04
Gencaph (light bill) .....	77.53
Total .....	\$ 23,499.42

One new extension was made this year on Hanwell Road. The Valley Railway was crossed and five lamps installed from the railway to the City line.

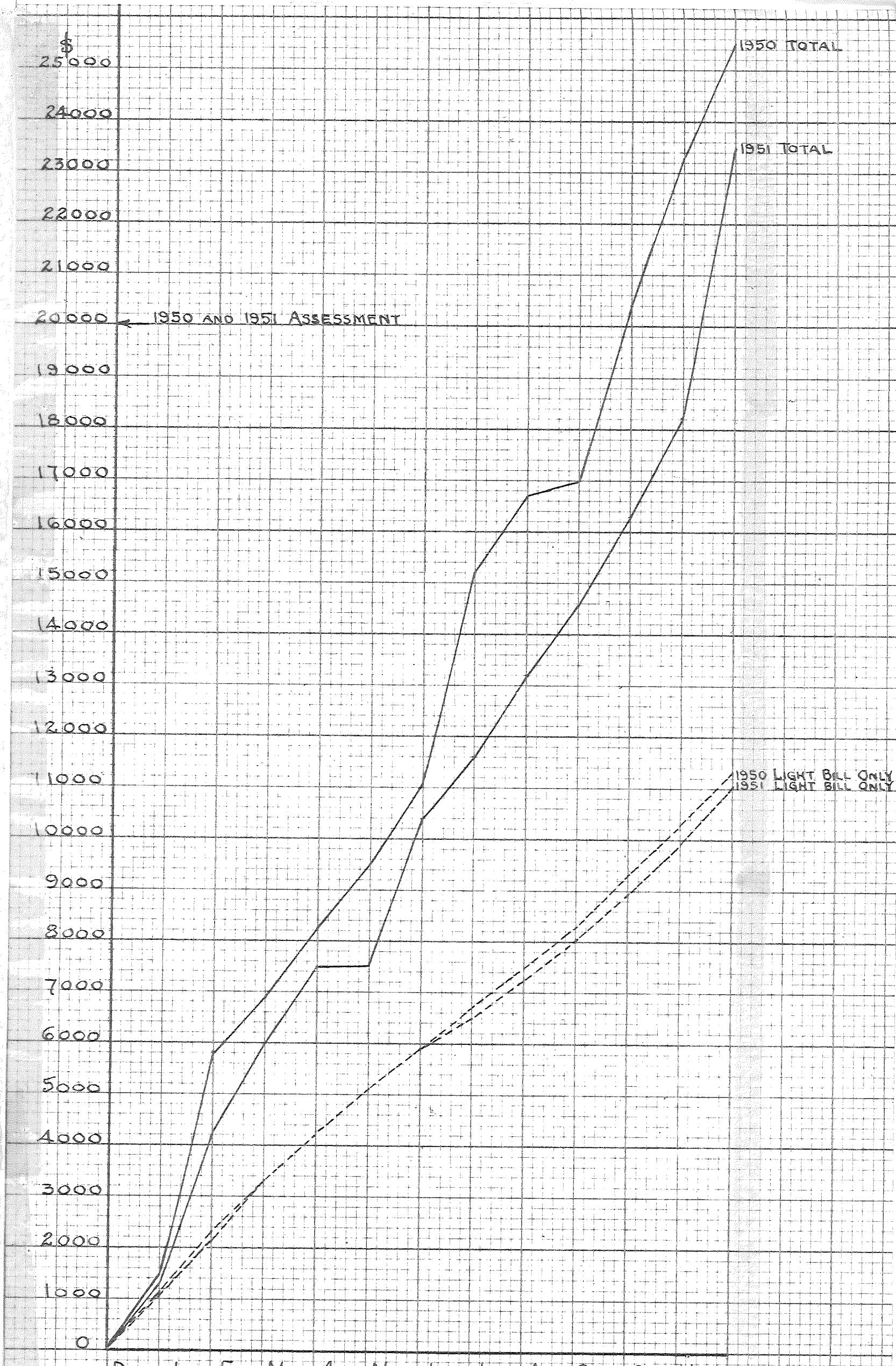
There are now 99 multiple fixtures on City Streets.

The total per capita charge for Street Lighting for 1951 population of 15,870 persons,

$$\frac{23,484}{15,870} = \$ 1.48$$

TABLE SHOWING COMPARATIVE YEARLY  
COST IN STREET LIGHTING

Year	Total Yearly Cost	Yearly Appropriation
1937	\$ 9,688.52	\$ 7,000.00
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	11,033.89	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	12,520.94	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	23,484.42	20,000.00



DEC JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV.  
 STREET LIGHT COSTS 1950 AND 1951.

### ROYAL VISIT

Princess Elizabeth and Prince Phillip visited Fredericton 6th November of this year.

In preparation for this visit a labor expenditure of \$819.09 and an expenditure for material of \$1,201.38 was made by my department.

This expenditure was incurred by the construction and placing on City streets of barricades, fences, No Parking signs etc. and in decorating the City Hall.

On the day of the Royal Visit men from the City works crews took charge of the several public parking lots in the City.

The above listed expenditure does not include any expenditure made by other departments of the City such as Police Department, Fire Department, or by City Government.

### CEMENT WALKS

Gross Expenditure ..... \$ 25,388.85

The City entered into a contract with the Caldwell Construction Co. to construct four inch - five foot wide concrete sidewalks at a unit price of \$1.50 per lineal foot.

After some construction had been completed this price was raised to \$ 1.60 per lineal foot. Altogether this Company laid cement walks on 13,833 lineal feet of City streets.

The Company was paid at the above mentioned rates for necessary extras such as additional thickness in driveways, lips at driveways and connections which the City had to make to existing private walks.

Under this contract cement walks were laid on the following streets:

	<u>Lin. Ft.</u>
Dobie St., Medley to Neill St. (North Side) .....	716
Athlone St., Medley to Carney St. (South Side) .....	591
Coombes St., Medley to Carney St. (South Side) .....	764
MacLaren Ave., Medley to Carney St. (South Side) .....	951
Medley St., Dobie to MacLaren Ave. (West Side) .....	884
Carney St., Dobie to MacLaren Ave. (West Side) .....	867
Neill St., Dobie to MacLaren Ave. (West Side) .....	875
School St., Dobie to MacLaren Ave. (West Side) .....	647
Parkhurst Drive, Brookmount to Haviland (North Side) .....	869
Smythe St., Aberdeen to C.N.R. Tracks (East Side) .....	561
Northumberland, Argyle to Victoria (Both Sides) .....	707
Victoria, Westmorland to Back Drain (Both Sides) .....	578
Churchill Row, St. John to C.N.R. Tracks (South Side) .....	816
Church, Churchill Row to Aberdeen (East Side) .....	372
McLeod Ave., St. John to Regent (North Side) .....	632
Regent, Beaverbrook to Albert (East Side) .....	370
Beaverbrook St., Regent to Windsor (South Side) .....	
Regent to Tweedsmuir (North Side) .....	1725
Albert St., Tweedsmuir to Windsor (North Side) .....	465
Tweedsmuir, Beaverbrook to Albert (West Side) .....	369
Repairs on Several Streets .....	74
Total .....	13833

The total cost for the above 13833 lin. ft. of completed walk was \$23,580.58. This cost included the moneys paid to Caldwell Construction Co. together with some City expenditures for staking out the work and assistance given the Construction Co. on difficult grading. These figures give the overall cost per lin. ft. of finished walk as \$1.71.

Besides the above mentioned walk the City with their own crews laid the following cement walks:-

	<u>Lin. Ft.</u>
Winslow St., Grey to Alexandra (West Side) .....	536
University Ave., Avondale Court to Alexandra (Both Sides) ..	594
Total .....	1130

The total cost of this City work was \$1,808.27 giving an overall cost per lin. ft. of \$1.60.

## 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 urban 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 .....	\$ 47,193.11
Credits .....	10,329.93
Net Expenditures .....	\$ 36,863.18

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 .....	\$ 3,399.98
Town of Marysville (Sale of fittings for service pipe) .....	4.18
Fredericton Jct. Town Water Supply (4 - 4" C.I. Sleeves) .....	26.40
Stanley Mills (Sale of Copper Pipe and Fittings) .....	113.37
Journal Voucher (Salary paid I. McCoombes and $\frac{1}{2}$ salary C. Barnes charged to water ordinary) .....	3,700.00
Journal Voucher (Salary paid McLenahan charged to water ordinary)....	<u>3,086.00</u>
	\$ 10,329.93

The Gross Expenditure is made up as follows:-

City Payroll for Hydrants .....	\$ 1,446.02
City Payroll for Meters .....	2,585.08
City Payroll for Water Ordinary.....	<u>7,587.66</u>
Total Payrolls .....	\$ 11,618.76
Material and other charges .....	<u>35,574.35</u>
Gross Expenditure .....	\$ 47,193.11

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

Fredericton High School - George Street  
Charlotte Street School - Charlotte Street  
Maryland Heights School - Albert Street  
Rosary Hall - Churchill Row  
G. E. Barbour Co. - Argyle Street.

These sprinkler system extensions were paid for by the owners of the properties and are included in the above credit of \$3,399.98. 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 82 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 1,263 are charged under flat rate and 1,860 on meter, giving us altogether 3,123 services.

The labour cost this year per meter for installation, reading, repairing etc. is \$1.39.

All meters are read twice a year and bills are sent out twice a year. We have 99 customers whose meters are read once a month although they also are billed only twice a year. These 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, 1952:-

5/8" meters repaired and fit for service .....	24
New 5/8" meters .....	61
3/4" meters fit for service .....	5
1-in. meters that can be repaired .....	2
New 1-in. meters with 1 $\frac{1}{4}$ " connections .....	7
Compound meters not fit but which can be repaired .....	1
1 $\frac{1}{2}$ " meters .....	1

### DISTRIBUTION SYSTEM:-

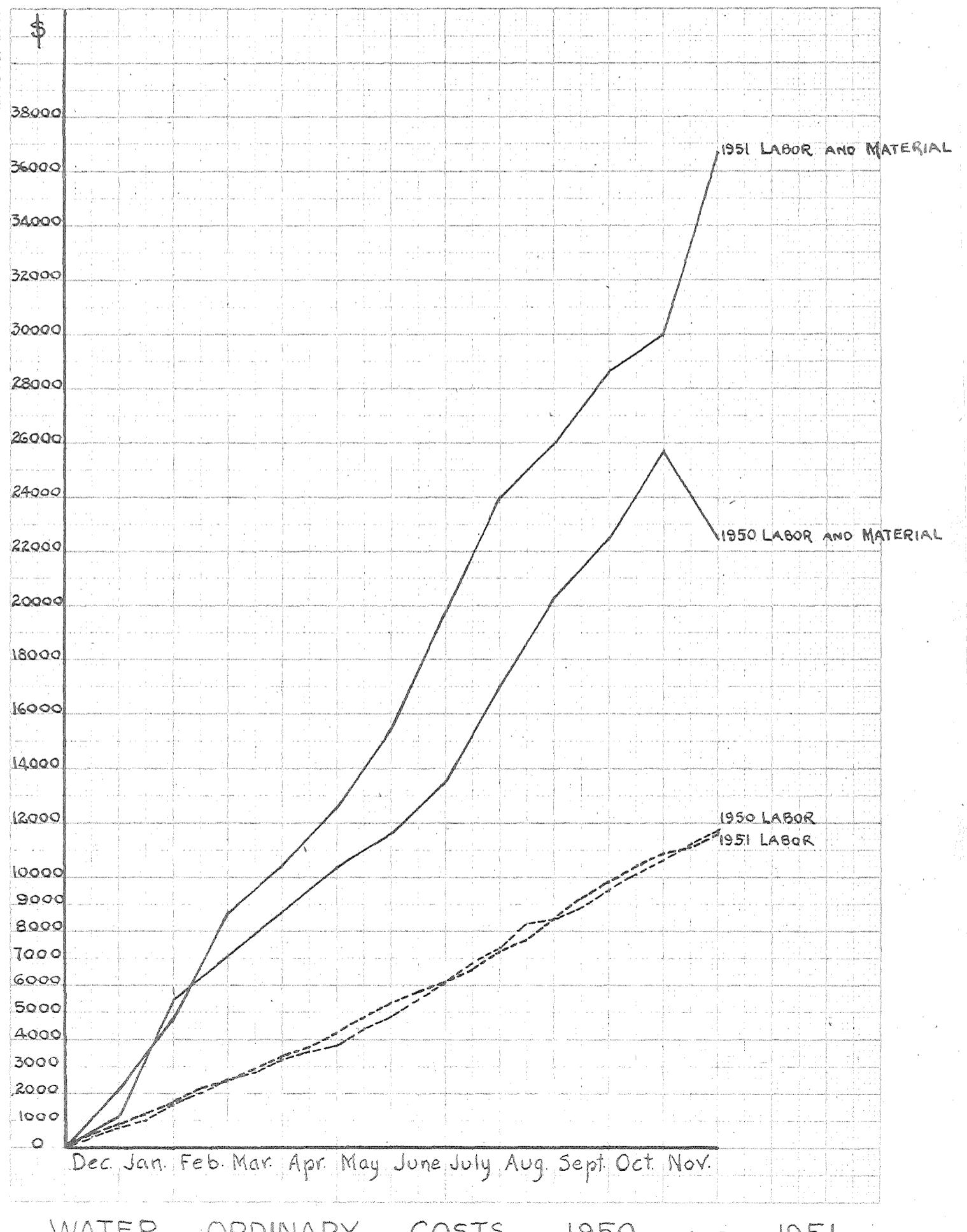
New Services installed this year .....	39
Old Services relaid this year .....	24
Frozen Services which had to be thawed .....	1
Services discontinued .....	2

We had in the City on November 30, 1951, 3,125 Water Services

The Fredericton Distribution System consists of 34.09 miles of water main made up of the following sizes:-

18 inch main .....	0.98 miles
10 inch main .....	1.56 miles
8 inch main .....	6.62 miles
6 inch main .....	20.43 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 Depot No. 7 or the Military Hospital.



### WATER PUMPING STATION

Water Pumping Station Costs 1951:-

Gross Expenditure .....	\$ 35,058.57
Credits .....	<u>5,932.56</u>
Net Expenditure .....	\$ 29,126.01

The Credit of \$5,932.56 is made up as follows:-

Journal Voucher (Labor on Cap. Feeder Main charged to Water Pumping Station) .....	\$ 332.56
Journal Voucher (Yearly rental on 269 Hydrants) .....	5,380.00
Journal Voucher (Water used in City Hall Building).....	100.00
Journal Voucher (Water used in Old Street Lighting Building on Carleton Street) .....	25.00
Journal Voucher (Water used in City Alms House) .....	25.00
Journal Voucher (Water used in City Parks) .....	50.00
Journal Voucher (Water used in Recreation Building) .....	<u>20.00</u>
Total .....	\$ 5,932.56

The Gross Expenditure is divided as follows:

City Payroll for salaries of engineers at Pumping Station ....	\$ 9,923.22
Work done by other City employees in and around Pumping Sta. ..	<u>1,877.14</u>
Total City Payrolls .....	\$11,800.36
Material and Workmen's Compensation Charge .....	<u>23,258.21</u>

Total .....\$ 35,058.57

The Material Cost of \$23,258.21 is itemized as follows:-

ITEM # 1. Light and Power supplied by the Maritime Electric Co. (517,300 K.W. Hrs.) .....	\$ 12,154.49
2. Transformer charges .....	151.92
3. Liquid chlorine 8,100 lbs. .....	1,238.10
4. Alum 80,380 lbs. .....	1,888.93
5. Coal 134.565 Tons .....	1,226.39
6. Fuel Oil .....	-----
7. Engine Oil 21 Gals. Mobile A. (Oil Engine) .....	31.13
8. Motor Oil 43 Gals. D-B (Electric Motors) .....	25.04
9. Gasoline 190 Gallons .....	53.13
10. Maintenance and repair of building and machinery .....	1,112.88
11. New Installations .....	3,304.11
12. Supplies, packing rags etc. .....	280.60
13. Stationery, forms, charts etc. .....	194.28
14. Workmen's Compensation Board .....	225.00
15. Mr. E. W. Hagerman's Salary .....	1,182.57
16. Miscellaneous, telephone etc. .....	189.64
Total .....	\$ 23,258.21

#### ITEM # 11.

The new installation charge of \$3,304.11 includes one Bailey Pressure recorder, one Dry Lime Feeder and Flow Recorder for Chlorine Machines. These new pieces of apparatus installed cost \$3,304.11.

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
1935	197,641,000	\$ 16,251.61	8.1 cents
1936	193,450,000	17,189.21	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	24,990.14	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

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 1951 some 45,000,000 I.G.

The total amount of Water pumped during 1951 for the whole City is, therefore, 412,130,000 I.G.

Our total net water expenditure for the City for 1951 = \$65,989.19

Therefore our net cost to pump and deliver to the Customer 1000 I.G. of water in 1951 is 65,989.19 = 16.0 cents.  
412,130

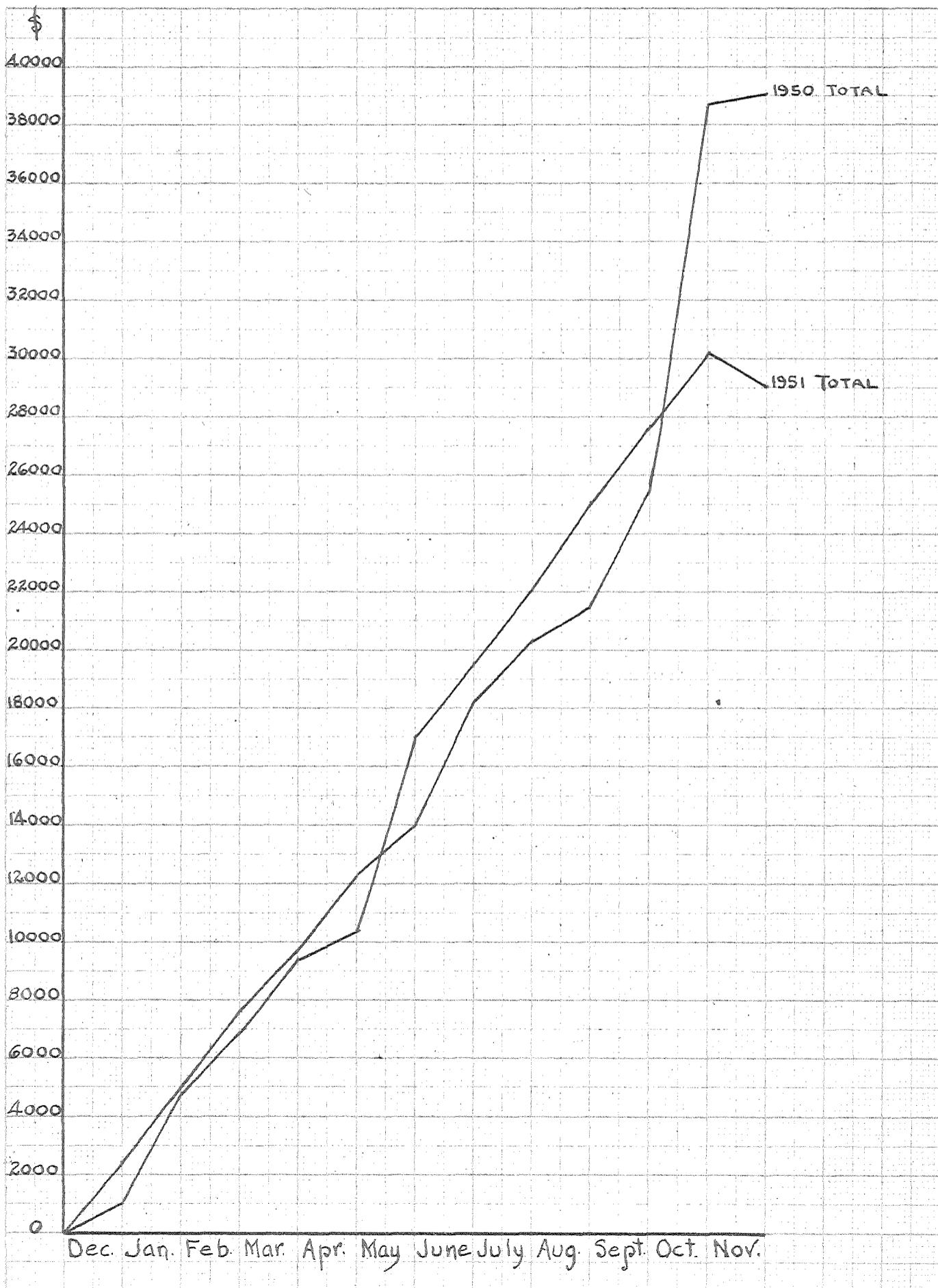
All these preceding costs shown under Water Pumping Station and Water Ordinary do not include the cost of billing and collecting water bills or any other overhead charge included in the City Government Cost, nor do they include bond payment of Sinking Fund Charges.

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, 1951 to December 31st, 1951.

Respectfully submitted,

City Engineer.



WATER PUMPING STATION COSTS 1950 AND 1951.

Materials	Amount Purchased 1951	F.O.B. F'ton Unit Price Tax Included
Ford 3T and Hoist	1	3580.80
Street cleaning cart rubber tired	1	165.80
Cutting edge corners	2	14.56
Chlorine	7100 #	14.18 C
Copper tubing 5/8" "K" soft	13906'	23.42 C
Copper tubing 3/4""K" soft	3564'	35.98 C
Copper tubing 1" "K" soft	990'	40.48 C
Dies (Armstrong)	1	21.84
Dipping Needles	2	34.48
Detonators	618	13.42 C
Dynamite	700#	34.32 C
Dry Chemical W&T feeder for lime mixing chamber	1	1467.00
Dividers and connecting plates for curbs, steel		118.47
Extension ladder	1	39.73
Flow recorders W&T chlorine, central alum units	2	675.00
Gas	9375 Gals.	0.2850 per g
Gear Oil	1200#	16.25 per 100#
Diesel Oil	7144 Gals.	0.1910 per gal
Grease	635 #	16.50 per 100#
R.P.M. (Diesel)	315 gal.	1.06 per gal
Oil (Motor)	381 gal.	1.15 per gal.
Kerosene	340 gals.	0.218 per gal
Imperial VanHymelt #2 (Summer Grease)	350 gals.	0.174 per gal
Anti-freeze	30 gals.	3.95 - 5.35
Gravel (By contract)	9512 yds.	.90 - 1.50
Hay	5 ton	20.00
Horse shoes	86	2.50 per pair
Oats	61 bags	3.90
Hydrants	5	169.52
Hydrants	2	175.24
Lawn Mower	2	18.02 - 178.36
Lime	366 Bags	0.73
Lead	8052 #	0.28
Lead melting furnace with burner - oil. Capacity 450#	1	331.83
Lumber (No cedar included)	22081 bd. ft.	80.00 - 114.00M
Oakum	2565#	0.31
Paint	139 gals.	5.51 - 9.35

Material	Amount Purchased 1951	F' ton Price Tax Included
Rain coats	5	8.27
Rubber boots	16	8.59 - 12.01
Rock Dust	129 ton	0.50
Scorifyng teeth	22	2.26
Scotchlight	1 roll	296.05
Sander 0-5 Butter	1	494.00
Sno-wing (Austin-western)	1	61.32
Truck, hand G-3	1	31.46
Tar	6120 Coal (U.S.)	0.21
Tapping machine & drills	1	237.33
Wheel Adams Grader	1	77.27
Catch basin castings complete	123	43.69
Manhole castings complete	64	41.10 - 47.03
Water Meters 5/8" x 3/4"	180	24.29
Water meters 2"	1	117.47
Water boxes	160	5.51
Valves Bronze 4"	4	30.14
Valves Bronze 6"	14	51.07
Soil Pipe	100 Joints	7.55
4" C.I. Pipe	2 Joints	26.30
6" C.I. Pipe	6069' - 178820 #	132.80 N.T.
8" C.I. Pipe	1407' - 63070#	120.80 N.T.
10" C.I. Pipe	48'	4.25
Tees 6" B.S.B.	540#	13.79 per 100#
Sleeves 6"	730#	13.79 per 100#
5" V.T.	9900'	0.62
8" V.T.	5880'	0.88
15" V.T.	3610'	1.65
18" V.T.	10'	2.47
10" Concrete (Likely)	3549'	0.64
12" Concrete (Likely)	5292'	0.77
15" Concrete (Likely)	1408'	1.44
18" Concrete (Likely)	198'	2.10
Wire reel 500' #10 B&S	1	91.84
Sidewalk	195 L.F.	1.60
Curb	83 L.F.	1.50

<u>Material</u>	<u>Amount Purchased 1951</u>	<u>F.O.B. F'ton</u>
		<u>Unit Price</u>
		<u>Tax Included</u>

Ready-mix Cement

113 cu. yds. curb & gutter @ 14.00

788 cu. yds. curb & gutter @ 12.00

159 cu. yds. sidewalk @ 12.00

Tires

Jeep #2 1 - 25.43, 1 - 27.29, 1 - 32.03

Austin-Western 2 - 1041.83, 1 - 455.85

Adams 1 - 170.05, 1 - 169.84

Fargo 1 ton 1 - 43.10

Chevrolet Truck (Paul) 1 - 98.74, 1 - 136.80, 1 - 129.51

NOTE: Reservoir & Feeder MAIN  
MATERIAL NOT INCLUDED

F.O.B. F.T.C.W.

MATERIALS	AMOUNT Purchased 1951	UNIT	Price TAX INCLUDED
Gleamite volume pump with hose and fitting	1		58.76
Asphalt Base	32 112 Tons		9.00
Asphalt Seal	523 Tons		10.50
Asphalt Base (Trucked by City)	542 Tons		6.25
Asphalt Seal (Trucked by City)	104 Tons		7.50
Aluminum Sulphate	803 80 #		2.35 C
Bailey Pressure Recorder	1		130.00
Batteries	12		21.50 - 52.10
Blades P.B. - 652	6		11.59
Blades P.B. 653	6		11.59
Blades Road Machine 6'	12		9.67 - 10.73
Blades Road Machine 7'	12		10.72 - 12.52
Blades B.P. 65.25 - 35	6		19.50
Blades 1965	6		22.02
Blades B.P. 65.25-35	12		9.75
Brick	77900		32.24 M
Brick	61316		23.92 M

MATERIALS	AMOUNT Purchased 1951	F.O.B. F.I.T.O.N UNIT Price TAK INCL.
Cedar	62346'	50.00 - \$3000M
Cedar Posts 8'	314	0.42
Chain Blocks	1	74.10
Coal (Ornita)	319 Tons	10.09 T
Coal (Springhill)	7 Tons	17.50 T
Coil, 2300 Volt under voltage release and overload for 50 H.P. Motor Starter	1	31.56
Cable, serial #6 1 conductor pre-assembled 2134'		905.22
Cable, serial #6 2 conductor pre-assembled 2050'		1762.16
Cable "1/2"	1000#	19.29 per 100#
Camps Stone	1	46.80
Fab. T.D.C. Tractor	1	531.48
Calcium Chloride	190 Tons	46.23 T
Cement	2342 BBLS.	3.83 BBLS.
Chevrolet Jordan	1	2115.36
Chevrolet Truck	1	2629.12
Michigan Shovel 1/2 yard with Back-Hoe attachment	1	8320.00

MATERIALS	AMOUNT Purchased (1951)	UNIT Price TAX INCL
Dodge Panel Truck	1	900.00
Ford 3T Ford Van	1	3580.80
Street cleaning fast rubber tires	1	165.80
Lifting edge formers	2	14.56
Chlorine	1100#	14.18 c
Copper Tubing 7/8" K Soft	13906'	23.42 c
Copper Tubing 3/4" K Soft	3564'	35.98 c
Copper Tubing 1" K Soft	990'	40.48 c
Ores (Armstrong)	1	21.84
Dipping Needles	2	34.48
Detonators	618	13.42 c
Dynamite	700#	34.32 C
Dry chemical wet feeder for lime mixing chamber.	1	1467.00
Dividers and separating plates for tanks, steel		118.47
Extension ladder	1	39.73

MATERIAL	AMOUNT Purchased 1951	FoB. F.I.T. Unit Price Total
Flow Recorders WET Chlorine, Central Alabama Units	2	675.00
Degs	9375 Gals	0.2850 per gal
Gear Oil	1200 #	16.25 per 100#
Wiesel Oil	7144 Gals	0.1910 per gal
Grease	635 #	16.50 per 100#
R.P.M. (Diesel)	315 gal	1.06 per gal
Oil (motor)	381 gal	1.15 per gal
Kerosene	340 gals	0.2180 <del>&amp; 1.00</del> per gal
Imperial Van Hymer #2 (Summer Grease)	350 gals	0.1740 per gal
Anti freeze	30 gals	3.05 - 5.35
Gravel (By Contract)	9512 yds	.90 - 1.50
Hay	5 Ton	20.00
Horse shoes	86	2.50 per pair
Oats	61 Bags	3.00
Hydromats	5	169.52
Hydromats	2	115.24

MATERIAL	AMOUNT Purchased (95)	UNIT Price TAX INCL
brown powder	2	18.02 - 178.36
lime	366 Bags	0.73
lead	8052 #	0.28
lead melting furnace with burner - oil. Capacity 450 lbs.	1	331.83
timber (No cedar included)	22081 Bd. ft.	80.00 - 11400 M
Oakum	2565 #	0.31
Paint	139 gals	5.51 - 9.35
Rain coats	5	8.27
Rubber Boots	16	8.59 - 12.01
Rock West	129 Ton	0.50
Sawfing teeth	22	2.26
Scratchlight	1 Roll	296.05
Sander D-5 Butter	1	494.00
Ino-Wing (Austin-Western)	1	61.32
Truck, hand G-3	1	31.46
Tar	6120 Gal (U.S.)	0.21
Tapping machine & Drills	1	231.33
Wheel Adams Knader	1	77.27

MATERIAL	AMOUNT Purchased 1951	F.O.B. PITON UNIT PRICE TAX INCL.
Catch Basin Castings Complete	123	43.69
Manhole Castings Complete	64	41.10 - 41.03
Water Meters 5 $\frac{1}{4}$ x 3 $\frac{1}{4}$	180	24.29
Water Meters 2"	<del>1</del>	117.47
Water Boxes	160	5.51
Valves Bronze 4"	4	30.14
Valves Bronze 6"	14	51.07
Sid Pipe	100 Joints	7.55
"4" C.I. Pipe	2 Joints	26.30
"6" C.I. Pipe	6069' - 17 8820#	132.80 N.T.
"8" C.I. Pipe	1407' - 63010#	120.80 N.T.
"10" C.I. Pipe	48'	4.25
Tees 6" B.S.B.	540#	13.79 per 100#
Steeves 6"	130#	13.79 per 100#
"5" V.T.	9900' 12100'	0.62
"8" V.T.	5880'	0.88
"15" V.T.	3610'	1.65
"18" V.T.	10'	2.47

# MATERIAL.

	AMOUNT Purchased (95)	EOB. F.T.C. Unit Price Tax Inc.
10" Concrete (likely)	3549'	0.64
12" Concrete (likely)	5292'	0.77
15" Concrete (likely)	1408'	1.44
18" Concrete (likely)	198'	2.10
Wire Reel 500' #10 B&S		91.84
Sidewalk	195 h.F.	1.60
Curb	83 h.F.	1.50
<u>Ready-mix Cement</u>	113 cu.yards Curb & Gutter @ 14= 188 cu.yards Curb & Gutter @ 12= 159 cu.yards Sidewalk @ 12=	
Iles	1-25.43, 1-27.29, 1-32.03	
Jep #2	2-1041.83, 1-455.85	
Austin-Western	1-170.05, 1-169.89	
Adams	1-43.10	
Fargo 1 Ton		
Chevrolet Truck (Panel)	1-93.74, 1-136.80, 1-129.51	

WATER INSTALLATIONS---1951.

Page # 1.

Odell Con. Co. Ltd.	35 Londale Court	5/8 Cop.	New
" " " "	25 " "	"	"
" " " "	16 " "	"	"
Mrs. Margaret Monohan	330 Parkhurst Drive	"	"
Donald Scribner	Devon Ave (Lunch Counter)	"	"
Gordon Barrett	Ryan Court	"	"
Robin Kilburn	491 York St.	"	Relay
Royal Ryan	Queen St.	"	"
J.L.Simms & Sons (H.Pridham)	Alexandra St.	"	New
Geo. Moore	Charlotte St.	"	New
W.S.Vaughan	673 Brunswick St.	"	Relay
W.H.Bolster	459 Brunswick St.	"	Relay
E.G.Hamilton	Ryan Court	"	New
Odell Com.Co. Ltd.	York St.	"	"
" " " "	370 Parkhurst Drive	"	"
M.R.Colwell	352 Parkhurst Drive	"	"
H.R.Barnes	53 Avondale Court	"	"
Mrs. Eben Staples	450 Albert St.	"	"
G.Arthur Rankine	136 George St.	"	Relay
Sussex Ginger Ale Ltd.	595 Waterloo Row	"	New
W.L.Targett	Clark St.	3/4 Cop.	"
Keith Barton	Green Road	5/8 Cop.	"
Mrs. Currie Gulliver	129 Neill St.	"	Relay
R.D.Gilbert	132 Miles St.	"	"
Odell Co. Co. Ltd.	41 Avondale Court	"	New
W.R.Stuart	Lot # 33 Parkhurst Drive	"	"
Jack Barry	Dundonald St.	"	"
Mrs. R.W.Bailey	Regent St. (Blighty Fish & Chips)	"	"
Lawson Motors Ltd.	155 Aberdeen St.	"	Relay
George Clayton	Westmoreland St.	3/4"	New
Irvine Saunders	338 Gibson St.	5/8"	"
Joseph Howe	Gibson St.	5/8"	"
Dept. Public Works.	Highland Ave.	"	"
Byron Boone	St. Marys St.	"	"
Mrs. Melvin McKeil	334 Union St.	"	Relay
H.E.Marshall	843 Union St.	"	"
Dr. R.D.Baird	Regent St.	3/4 Cop.	New
Austin Scott	29 Allen St.	5/8 Cop.	Relay
J.W.McNutt	323 Saunders St.	"	"
Mrs. Roger Cooper	246 Odell Ave.	"	New
F.I.Haviland	379 Saunders St.	"	Relay
Alton Phillips	277 Northumberland St.	"	"
D.E.Gibson	620 King St.	"	New
United Baptist Church	Gibson St.	"	"
Dennis McGuire	Union St.	"	"
J.M.Vaughan	211 St. John St.	"	"
Mrs. S.S.Baird	Campbell St.	"	"
J.L.Simms	136 Aberdeen St.	"	Relay
G.H.Prince	727 Churchill Row	"	"
Robert A. Watson	31 Lansdowne St.	"	"
R.A.MacMillan	George St.	"	New
W.J.Bearisto	339 St. John St.	"	Relay
Miss Ethel Gorman	George St.(County Market)	3/4 Cop.	New
D.Dickson	220 St. John St.	5/8 Cop.	Relay
R.J.Love	Acacia Grove	"	New
L.J.Whalen	Acacia Grove	"	"
Judson P. Barton	451 York St.	"	Relay
T.J.Bourque	180 Pine St.	"	New
Mrs. Leah G. Hazlett	Gibson St.	"	"
Guy Mathews	Gibson St.	"	"
E.T.Moran	142 Gill St.	"	Relay
Miss Bertha Harvey	255 Smythe St	3/4 Cop.	"
G. MacKenzie	372 Queen St.	"	"
W.S.Robertson	498 Regent St.	5/8 Cop.	"
St. Andrews Church	Hayes Sub-Division	"	New
Harry C. Bailey	346 Brunswick St.	"	Relay
Odell Con. Co. Ltd.	Albert St.	"	New
" " " "	116 " 71 Woodbine Court	"	"
" " " "	45 Woodbine Court	"	"
" " " "	35 Woodbine Court	"	"
" " " "	15 Woodbine Court	"	"
" " " "	58 Londale Court	"	"
" " " "	45 Londale Court	"	"
" " " "	Lot # 31 Parkhurst Drive	"	"
" " " "	Lot # 33 Parkhurst Drive	"	"

## WATER INSTALLATIONS---1951.

Page # 2.

		5/8 Cop.	Relay
R.W.Gough	64 Shore St.	"	"
Ford Delong	375 Northumberland St.	"	New
H.B.Allan	George St.	"	"
Fred Everett	Jaffrey St.	"	"
F.S.Gorham	Clark St.	"	"
A.C.McCulloch	685 Charlotte St.	Relay	
Myles & McPherson	Albert St.(School)	3--3/4 Cop.	New
F'ton School Board	Albert St. (School)	6" Sprinkler	New
F'ton School Board	Charlotte St. (School)	6" Sprinkler	"
D.W.Griffiths	267 Victoria St.	5/8 Cop.	Relay
C.A.McVey	219 George St.	"	"
Joe Budovitch	324 York St.	"	"
John Webster	113 George St.	"	"
J.R.Thompson	390 Northumberland St.	"	"
Charles West	135 Aberdeen St.	"	"
Elks Club	86 Carleton St.	"	"
N.B. Forest Service	498 York St.	1" Cop.	New
N.B. Forest Service	498 York St.	3/4 Cop.	"
Paul Levesque	York St.	5/8 Cop.	"
John J. Doherty	690 Windsor St.	5/8 Cop.	Extension
Willard K. Timms	Forest Hill	"	New
G.E.Barbour Co. Ltd.	Argyle St.	6" Sprinkler	"
Henry Elliott	467 Union St.	5/8 Cop,	Relay
Eldon McNeill	716 Union St.	"	"
J.E.Kennedy	Winslow St.	"	New
Mrs. Sam Shepherd	244-246 Charlotte St.	"	Relay
Odell Con. Co.Ltd.	Lot # 173 Parkhurst Drive	"	New
" " " "	Lot # 174 Parkhurst Drive	"	
" " " "	Lot # 29 Parkhurst Drive	"	"
Harry Hebblewhite	608 Windsor St.	"	"
Gordon McLean	Green Road	"	"
Board School Trustees	George St.(High School)	6" Sprinkler	"
Sisters of Rosary Hall	Churchill Row	6" Sprinkler	"
J.P.Duncan	184 St. Marys St.	5/8 Cop.	Relay
Dr. G.E.Chalmers	63 Grey St.	"	"
Odell Con. Co. Ltd.	McLeod Ave. (J.W.Miles)	"	New
Douglas Saunders	Gibson St.	"	"
W. L. Boone	216 Highland Ave.	"	Relay
Mrs. Eldon Murray	716 Windsor St.	"	New
Frank McMinniman	247 Dundonald St.	"	"
Dept. Public Works	472 King St.	"	Relay
Richard O'Ree	889 Barker St.	"	New
Waldo C. Jones	453 Westmoreland St.	"	Repair
Gerald Ashfield	Union St.	"	New
Mrs. Elizabeth McMullen	Pond Sub-Division	"	"
Willard Tims	Forest Hill	"	"

NOTE: Reservoir & Feeder Main  
Material not Included.

MATERIALS	AMOUNT PURCHASED 1951	F.O.B. F' ton Unit Price Tax Included
Alemite volume pump with hose and fitting	1	58.76
Asphalt Base	32722 tons	9.00
Asphalt Seal	523 tons	10.50
Asphalt Base (Trucked by City)	542 tons	6.25
Asphalt Seal (Trucked by City)	104 tons	7.50
Aluminum Sulphate	80380 #	2.35 C
Bailey Pressure Recorder	1	130.00
Batteries	12	27.50 - 52.70
Blades P.B. - 652	6	11.59
Blades P.B. - 653	6	11.59
Blades Road Machine 6'	12	9.67 - 10.73
Blades Road Machine 7'	12	10.72 - 12.52
Blades B.P. 65.25 - 35	6	19.50
Blades 1965	6	22.02
Blades B.P. 65.25 - 35	12	9.75
Brick	77900	32.24 M
Brick	61316	23.92 M
Cedar	62346	50.00 - 55.00M
Cedar Posts 8'	314	.42
Chain Blocks	1	74.10
Coal (Minto)	319 Tons	10.09 T
Coal (Springhill)	7 tons	17.50 T
Coil, 2300 Volt under voltage release and overload for 50 H.P. Motor Starter	1	31.56
Cable, aerial #61 conductor pre-assemble 2134'		905.22
Cable, Aerial #62 Conductor pre-assembled 2050'		1762.16
Cable $\frac{1}{2}$ "	1000 #	19.29 per 100#
Camp Stove	1	46.80
Cab T.D.C. Tractor	1	531.48
Calcium Chloride	190 Tons	46.23 T
Cement	2342 Bbls.	3.83
Chevrolet Coach	1	2115.36
Chevrolet Truck	1	2629.12
Michigan Shovel $\frac{1}{2}$ yard with back-hoe attachment	1	8320.00
Lodge panel truck	1	900.00

