

ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1956



<u>INDEX</u>	<u>PAGE</u>
Letter of Transmittal	1
Total Yearly Expenditure	3
Roads and Streets	4 - 16
Capital Account - Curb and Gutter	16 - 17
Capital Account - Sewer Domestic	17 - 19
Capital Account - Surface Sewer	19 - 21
Capital Account - Water	22 - 24
Capital Account - Booster Pumping Station Smythe Street	24 - 25
Capital Account - Drilled Wells	25
Capital Account - Drilled Wells, Carleton Ward	26
Capital Account - Gravel Roads	26 - 28
Capital Account - Street Lights	28 - 29
Capital Account - Trailer Park	29
Local Improvement	30 - 31
Public Works	31 - 33
O'Dell Park	33 - 34
Recreation	34
City Hall	34 - 35
Municipal Home	35
City Yard	36
Sanitation	37
Sewerage Domestic	37 - 38
Street Lights	38 - 42
Concrete Walks	42 - 43
City Scales	43 - 44
Wilmot Park	44
Children's Home	44
Fire Department	45
Administration of Justice	45
Lady Beaverbrook Rink	45
John Thurston Clark Memorial Building, Library	46
Airport	46
Assessing and Collecting	46
Capitals Ball Park	46 - 47
Paint Department	47 - 48
Alexander Apartments	48
Water	48 - 61
Water Ordinary	48 - 51
Water Meters	51
Distribution System	51 - 52
Water Pumping Station	53 - 56
Report of E. W. Hagerman, City Analyst	57 - 61

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

Madam and Gentlemen:

I submit herewith this report which is a statement of the work done in the different City Departments under the direct supervision of the City Engineer and covers the period of time from the first of December, 1955 to the first of January, 1957.

Please note that this report is for a thirteen (13) month period due to the fact the fiscal year was changed from December 1st to November 30th, to January 1st to December 31 in 1956.

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

Seal (Diamond Construction Co.)	5.55 miles
Gravelling Roads and Parking Lots	4.23 miles
Excavating and Gravelling of newly curbed streets	1.64 miles
New road construction and gravelling ...	1.75 miles
Concrete curb and gutter	3.34 miles
Concrete sidewalk	1.18 miles
6" to 30" Surface Sewer	2.07 miles
8"-10" Domestic Sewer.....	1.47 miles
4" to 14" C. I. Water Pipe	2.51 miles

Contractors under contract with the city this year constructed the following works:-

Diamond Construction Co. - 5.55 miles of the City Streets were sealed with RC₃ Asphalt and 3/8" Crushed Chips or Sand.

Diamond Construction Co. - Construction of a Booster Pumping Station on Smythe Street.

Maritime Engineering Ltd. - Construction of a Pump House in Carleton Ward.

Canadian Fairbanks Morse - Purchase of Pumping Equipment.

International Water Supply- Purchase of Pumping Equipment.

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

Our regular expenditures for the thirteen month period, December 1, 1955 to December 31, 1956 appear as follows:-

	<u>12-Month Appropriation</u>	<u>Net Expenditure</u>	<u>Debit</u>	<u>Credit</u>
Street Lights	27,700	31,800.72	4,100.00	Less \$20,000
Public Works	10,500	11,717.67	1,217.67	deferred
Roads and Streets	140,000	166,738.94	26,738.94	- payment for
Sanitation	46,000	49,555.19	3,555.19	Flusher
Wilmot Park	2,300	2,166.15		133.85
O'Dell Park	3,000	3,086.97	86.97	

	<u>Revenue</u>	<u>Net Expenditure</u>	<u>Credit</u>
Water Pumping Station)		40,840.35)	
Water Ordinary)	162,448.04	39,611.49)	
Sewerage Domestic)		7,800.45)	63,537.75
Salaries		10,658.00	

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 1956 census shows the City's population as 18,037.

Following in the body of this report is a detailed statement of the work done, comparative expenditures and unit costs under the different departments. The detailed report of any particular department can be readily found by referring to the index on the preceding page.

Respectfully submitted,

City Engineer.

TOTAL YEARLY EXPENDITURE

The expenditure shown in this report covers the period of time from December 1st, 1955 to December 31st, 1956, a thirteen month period.

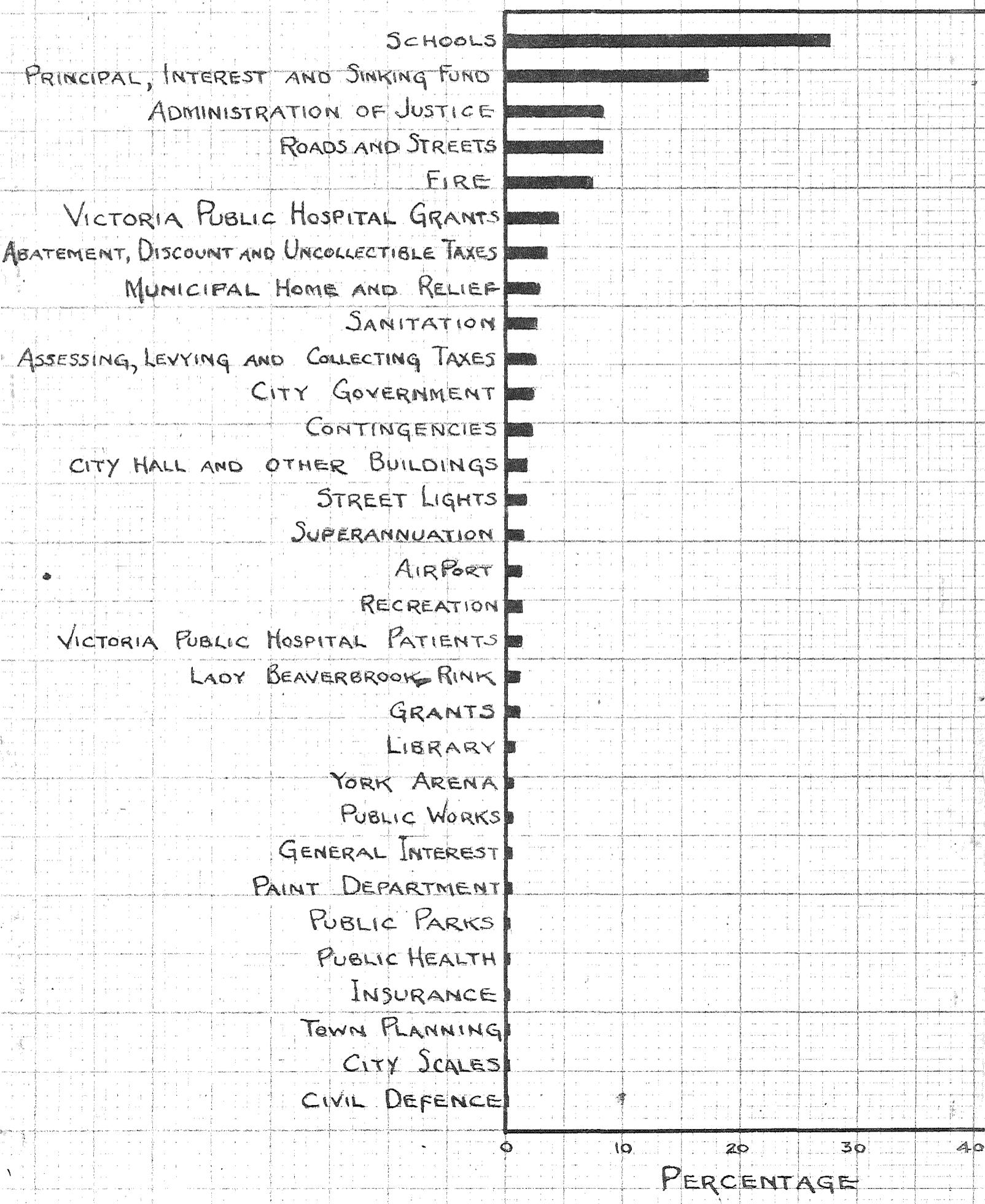
The total yearly net expenditure under the direct supervision of the City Engineer this year amounted to \$625,008.90. This expenditure will be taken up in detail under the different headings in this report. The total gross expenditure for this period amounted to \$742,030.08.

A graphic comparison of expenditures for labour and labour and material for the year 1956 and the year 1955 is shown on the following chart.

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

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

DISTRIBUTION OF THE 1956 CITY DOLLAR



ROADS AND STREETS

In 1956 the appropriation for Roads and Streets was \$140,000.00.

There are in Fredericton altogether, 56.36 miles of Roads and Streets; 11.95 miles being located on the north side of the Saint John River and 44.43 miles on the south side. In addition there are 34.41 miles of concrete sidewalk; 5.21 miles on the north side of the Saint John River and 29.20 miles on the south side.

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

Roads and Streets

	<u>Urban</u>	<u>Rural</u>	<u>Total</u>
Paved	31.62	5.35	36.97
Unpaved	<u>12.76</u>	<u>6.63</u>	<u>19.39</u>
TOTAL	44.38	11.98	56.36

Roads and Streets Expenditures 1956

Gross Expenditure	\$ 209,953.97
Credits	<u>43,215.03</u>
Net Expenditure	\$ 166,738.94
1956 Appropriation	<u>140,000.00</u>
DEBIT	\$ 26,738.91

(Less \$20,000 deferred payment for flusher, which is shown as paid in this account.)

The above Credits of \$43,215.03 are made up as follows:-

Irving Oil Co. (Thawing Drain at Service Station, Barker & Gibson Streets)	\$ 47.00
Board of School Trustees (Plowing Schools).....	52.00
Municipal Home (Plowing Driveway)	80.00
Leo Hayes (Rental on Champion Grader)	7.50
Harry W. Charters (Labor and Machinery Rental, Thawing Drain)	11.20
U. N. B. (2900 lbs. Malagash Salt)	34.95
John L. Simms (Thawing, Cutting Floor at Sandy's Service Station)	94.24
J. D. Creaghan Co. Ltd. (Thawing Catch Basin in yard)	6.04
F'ton. Tire Ltd. (60 bags Calcium Chloride @ \$2.90 per bag)	174.00
Diamond Construction Co. (Installing Surface Sewer at N.B.E.P.C. Building)	<u>457.24</u>
Forward	\$ 964.17

	Carried Forward ... \$	964.17
Kilgour & Hamilton (Replacing 7 posts, Wilsey and St. John Roads)	21.00	
Dept. of National Defence (Rental on Street Sweeper)	18.00	
Robert Thompson (2 ton Scrap Iron)	50.00	
Forest Hill Cemetery (Rental on Grader)	52.00	
M. F. Schurman Co. Ltd. (Levelling School Grounds)...	7.72	
Diamond Const. Co. Ltd. (270 Gals. Bituminous Asphalt)	123.00	
British American Oil Co. (Return of check)	1,465.34	
R. A. Shanks (Rental of Bulldozer)	5.00	
Hope Adjustment Bureau Ltd. (Repairs to Elgin Sweeper)	107.29	
N. B. Telephone Co. (Repairs to Pavement in Carleton Ward and Regent Street)	158.16	
Bemrose & Kilburn (5 bags Malagash Salt)	4.82	
Levine's Ltd. (15 Gals. Kerosene @ .272 per Gal.)...	4.08	
Journal Voucher (Paint Department, Labor and Material)	626.43	
Journal Voucher (J. S. Neill invoice charged to Roads and Streets in error)	51.09	
Journal Voucher (Airport, 40 drums Bituminous Asphalt)	848.39	
Journal Voucher (City Yard, shovel, compressor and gravel)	38.25	
Journal Voucher (C.M. & H.C. Grant changing Catch Basins)	150.00	
Journal Voucher (Material sold to Cement Walks)	14.50	
Journal Voucher (Holiday Account)	1,671.52	
Journal Voucher (Machinery Rental on other accounts)	33,821.80	
Journal Voucher (Gas and Oil)	<u>3,012.47</u>	
TOTAL	\$ 43,215.03	

The Gross Expenditure is divided as follows:-

- Labor - being the total of Roads and Streets
Pay Rolls, which includes the cost of
hired trucks or any other machinery
hired by the hour \$ 77,770.08
- Material - which includes workmen's compen-
sation, unemployment insurance and
all material charges including
purchase and repairs of City owned
equipment \$132,183.89

The Labor charges of \$77,770.08 are divided into
the following items. These items give a good idea of the
amount and kind of work done by the Roads and Streets Department
during the year.

Item	1.	<u>Snowploughing Sidewalks</u> :- 34.41 miles...\$ 1,304.90
2.	<u>Snow Control</u> :- Blowing, shovelling and hauling snow, plowing or scraping roads, cleaning gutters, thawing catch basins of ice and snow and any other means of snow control, 57.22 miles 24,996.36	
3.	<u>Streets</u> :- General work of maintenance of streets and sidewalks and any other items such as building culverts, curbs and gutters or pavements which are not mentioned under some particular heading. 16,656.23	
4.	<u>Surface Sewers</u> :- Cleaning, Flushing and repairing surface sewers and building new surface sewers within street limits 1,762.75	
5.	<u>Sanding Streets and Walks</u> :- Storing sand in winter storage piles and spreading same on slippery streets and walks 5,360.02	
6.	<u>Yard</u> :- Men working in Blacksmith Shop and repair work in City Yard 5,093.09	
7.	<u>Gravel</u> :- Application of Gravel for maintenance on City Roads and Streets .. 2,146.68	
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 149.61	
9.	<u>Doak and Wilsey Roads</u> :- All work done on these roads other than work done by power maintainer 137.02	
10.	<u>New Maryland Road</u> :- Montgomery Street to southern City line. All work done on this road other than work done by power maintainer or by special contract. 254.70	
11.	<u>Killarney Road</u> :- -----	
12.	<u>Outlying Roads</u> :- Hanwell Road, Montgomery Street, Priestman Street, Forest Hill and Golf Club Roads. All work done on these roads other than work done by power maintainer 3.36	
13.	<u>Street Cleaning</u> :- All cleaning and removal of dirt, leaves, etc. from streets 14,956.40	
	Forward \$ 72,821.12	

Carried Forward\$ 72,821.12

Item 14. <u>Tarvia Repairs:-</u>	Patching and repairing asphalt or Tar Pavement and applying seal coat of light tar or asphalt to pavements	4,389.59
15. <u>City Road Patrols:-</u>	<u>559.37</u>
		TOTAL\$ 77,770.08

Following is a table comparing Labor Expenditure in these items from 1953 to 1956:-

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS LABOR ITEMS

ITEM	1953	1954	1955	1956
1. Snowploughing sidewalks	301.63	818.18	1,656.29	1,304.90
2. Snow Control	11,557.12	16,940.16	33,709.50	24,996.36
3. Streets	15,325.70	22,192.68	16,816.70	16,656.23
4. Surface Sewers	1,613.93	4,052.17	1,852.13	1,762.75
5. Sanding Roads and Walks	3,747.46	2,798.64	4,327.59	5,360.02
6. Yard	3,971.01	4,200.19	3,653.97	5,092.09
7. Gravel	758.63	2,259.22	1,993.82	2,146.68
8. St. John Road	109.99	2,872.41	569.06	149.61
9. Doak & Wilsey Roads	459.80	88.89	738.67	137.02
10. New Maryland Rd.	-----	121.03	231.15	254.70
11. Killarney Road	-----	-----	-----	-----
12. Outlying Roads	2,422.36	2,378.91	461.63	3.36
13. Street Cleaning	15,440.11	11,773.86	13,186.69	14,956.40
14. Tarvia Repairs	2,626.40	1,839.42	5,513.19	4,389.59
15. City Road Patrols	954.66	1,276.49	856.41	559.37
16. Preparation & Paving	-----	416.33	-----	-----
17. City Forest	7,305.80	2,481.11	-----	-----
TOTAL	<u>\$66,594.60</u>	<u>76,509.69</u>	<u>85,566.80</u>	<u>77,770.08</u>

City Forest in 1955 was taken out of Roads and Streets Account and put in Public Works Account as O'Dell Park.

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

ITEM #1 - 34.41 miles of sidewalk were kept plowed this year. To the Labor cost of \$1,304.90 must be added an approximate cost of \$1,610.32 (Workmen's Compensation, Pension Fund, Gas, Oil, Repairs and Depreciation) giving a total cost of \$2,915.22 or a unit cost for plowing of sidewalk of approximately \$85.00 per mile for 1956.

ITEM #2

<u>Snow Control</u>	<u>1953</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
Snowplowing Roads and Streets	1,539.66	2,559.95	5,655.80	4,059.22
Blowing, Shovelling & Hauling Snow	4,913.72	11,286.63	25,679.55	19,118.99
Catch Basins	1,425.51	1,078.51	1,189.07	968.01
Snow Fences	572.38	654.39	849.96	505.20
Keeping Drains on the Hills Open	2,991.25	1,143.42	259.32	254.14
Thawing Culverts	<u>114.60</u>	<u>217.26</u>	<u>75.80</u>	<u>90.80</u>
TOTAL	<u>\$11,557.12</u>	<u>16,940.16</u>	<u>33,709.50</u>	<u>24,996.36</u>

56.36 miles of Roads and Streets were plowed and maintained during the winter months.

The unit cost per mile of plowing and maintaining City Roads and streets was approximately \$1,076.00 and was calculated as follows:-

Labor (Snow Control)	\$ 24,996.36
(Sanding Roads)	2,680.01
Workmen's Compensation	689.65
Pension & Holiday Fund paid by City.	2,298.85
City Trucks (3550 hrs. @ \$1.70 per hour)	\$ 6,035.00
800 hrs. @ \$1.00 per hr.	<u>800.00</u> 6,835.00
City Road Patrols - 1406 hrs. @ \$5.00 per hour	7,030.00
Sicard Truck Plough - 109 hrs. @ \$6.00 per hour	654.00
City Bulldozer (1033 hrs. @ \$3.00 per hour)	\$ 3,099.00
249 hrs. @ \$6.00 per hr.	<u>1,494.00</u> 4,593.00
City Thawing Machines - 430 hrs. @ \$1.80 per hour	774.00
City Shovels - 199 hrs. @ \$6.00 per hour	1,194.00
City Snow Blower	4,703.20
Sand	1,200.00
Rock Salt	<u>3,000.00</u>
TOTAL	<u>\$ 60,648.07</u>

It is interesting to note the account submitted to the Provincial Government for Snow Control. This account does not exactly coincide with this report as to dates, being the expenditures made from November 1, 1955 to May 1, 1956. It is a very exact account of Snow Control costs during the above period and is incorporated in this report for record purposes.

Fredericton, N. B.,
May 10, 1956.

Department of Public Works
Province of New Brunswick.

In Account With
THE CITY OF FREDERICTON

City Pay Rolls charged to Snow Control		
November 1, 1955 to May 1, 1956	\$ 27,838.29	
Workmen's Compensation	693.69	
Pension and Holiday Fund Paid by the City	2,312.30	

City Trucks:-

1953 Ford 3 ton Dump	761 Hrs. @ \$1.70	1,293.70
1953 G.M.C. 3 ton Dump	679 Hrs. @ \$1.70	1,154.30
1951 Chev. 3 ton Dump	659 Hrs. @ \$1.70	1,120.30
1955 Chev. 3 ton Dump	777 Hrs. @ \$1.70	1,320.90
1952 Ford $\frac{1}{2}$ Ton Pick-Up	720 Hrs. @ \$1.00	720.00

City Jeeps - Sidewalk Ploughs:-

#1 Jeep	192 Hours @ \$1.50	288.00
#2 Jeep	345 Hours @ \$1.50	517.50
#3 Jeep	234 Hours @ \$1.50	351.00

City Road Ploughs:-

Allis Chalmers Grader	397 Hrs. @ \$5.00	1,985.00
Austin-Western Grader	462 Hrs. @ \$5.00	2,310.00
Champion Grader	250 Hrs. @ \$5.00	1,250.00
Sicard Truck Plough	95 Hrs. @ \$6.00	570.00

City Bulldozers:-

TD 6 - 1948	232 Hrs. @ \$3.00	696.00
TD 6 - 1949	268 Hrs. @ \$3.00	804.00
D - 2 1953	429 Hrs. @ \$3.00	1,287.00
D - 6 1953	233 Hrs. @ \$6.00	1,398.00

City Thawing Machine

	430 Hrs. @ \$1.80	774.00
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City Shovel - C - 16

	133 Hrs. @ \$6.00	798.00
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City Snow Blower - Sicard Junior:-

Total hours in use, 192		
1605.30 Gallons of Gasoline @ \$.296	475.17	
83 Quarts of Oil @ \$.36	29.88	
Insurance	56.28	
Repairs	3,524.94	
Depreciation - 10% of Depreciated Value (6169.27)	616.92	

Sand:-

Bemrose and Kilburn		
1719 yards sand @ \$1.10	1,890.90	
307.14 tons sand @ \$.75	230.36	

Rock Salt:-

60 tons @ \$19.13	1,147.80	
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TOTAL	\$ 57,454.24	
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Note:-

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

Certified Correct,

City Engineer.

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

Dec. 1, 1951 to November 30, 1952	143 $\frac{1}{2}$ inches
Dec. 1, 1952 to November 30, 1953	53 $\frac{1}{2}$ inches
Dec. 1, 1953 to November 30, 1954	117-3/10 "
Dec. 1, 1954 to November 30, 1955	136-9/10 "
Dec. 1, 1955 to December 31, 1956 (13 months) ...	139-6/10 "

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

ITEM #3

Streets:-

Repairs to Streets (repairs to Curbs, Driveways, sidewalks, bridges, culverts, erecting of guard rails, widening streets, etc.)	\$ 1,673.30
Riprappling	203.25
Sodding and Seeding	153.49
Repairs to Machinery	2,972.93
Weather Account (Holidays).....	11,307.73
Unloading and Spreading Calcium Chloride.....	<u>345.53</u>
TOTAL	\$ 16,656.23

Included in the above items "repairs to streets," Queen Street on the east side was widened from the upper driveway of the Fredericton Post Office Building to the eastern sideline of Carleton Street.

A portion of the properties of Mrs. Jean Greenbank and Mrs. Emma Yerxa Estate on Connaught Street, Central Mortgage and Housing Corporation facing on Clark Street and Fire Station property in Carleton Ward facing McEvoy Street, were riprapped.

Sodding and Seeding was done along the Woodstock Road between the curb and sidewalk, between the Hospital and the Hanwell Road.

In 1956, 115 tons of Calcium Chloride and 105 tons of Malagash Salt were purchased for dust control and de-icing.

ITEM #4

Surface Sewers:-

The Surface Sewers in the City were flushed where necessary and all Catch Basins were cleaned and repaired during the year and repairs were made to any breaks that occurred or extensions needed to the sewer outlets.

Under this heading a 10" Surface Sewer, 90 feet in length was laid by city workmen on the premises of the N.B.E.P.C. This sewer was paid for by the N.B.E.P.C.

All the cellar drains on the Maryland Heights project, constructed by the Central Mortgage and Housing

Corporation, flow into a separate sewer, the mains of which are on adjacent streets. Due to the fact that the Catch Basins on these mains are continually plugging by Gravel, refuse flowing out the driveways and children putting broom handles, etc. into the catch basins, screens with a $\frac{3}{4}$ " mesh were attached to the catch basin covers to alleviate this condition. This expenditure was covered by a Central Mortgage and Housing Corporation Grant of \$1,000 made by agreement in 1955. The screens were supplied by Horsnell's Machine and Iron Works at a cost of \$653.15. The City labor for installing the screens was \$150.00, thus making a total expenditure of \$803.15.

ITEM #5

Sanding Streets and Walks:-

2926.5 cubic yards of sand was used during the winter of 1955-1956. Cost of the labor for sanding streets and walks during the winter was \$5,360.02.

ITEM #7

Gravel:-

7,004.66 tons of crushed gravel was used in the maintenance and repairs to Gravel Roads under Roads and Streets.

The Gravel was purchased from the following:-

Crushed Gravel in Tons

Forbes and Sloat	4984.21
S.S.Baird and Sons	<u>2020.45</u>
TOTAL	7004.66 tons

Under this heading the following roads were gravelled:-

<u>Location</u>	<u>Lineal Feet</u>
Wilsey Road, Doak Station to City Line	14,058
Forest Hill	1,000
Hawthorne Terrace	330
Shamrock Terrace	650
Tamarack Terrace	<u>400</u>
TOTAL	16,438 Lin. Ft.

Also Gravelled were the shoulders of the Woodstock Road at Phyllis Creek and the Parking Lot at the rear of the City Hall, as well as a stock pile in the City Yard for spring frost boil and excavation repairs.

An application of crushed gravel approximately 3" thick was applied to the above listed roads.

ITEM #8

Saint John Road

The grass was mowed and bushes were cut along the right of way of the Saint John Road to the eastern limit of the City of Fredericton at a labor cost of \$149.61.

ITEM #9

Doak and Wilsey Roads:-

The bushes were cut where necessary along the right of way of these two roads and minor repairs were made to the Roads at a labor cost of \$137.02.

ITEM #10

New Maryland Road:-

The labor charge of \$254.70 was made up of cleaning the refuse (paper, garbage, etc.) repairing the shoulders of the road and cutting bushes.

ITEM #13

Street Cleaning:-

The labor expenditure charged to this account amounted to \$14,956.40. To this labor charge to get the overall cost for cleaning streets, must be added a material charge of \$13,929.13, thus making a total cost for cleaning streets of \$28,885.53.

The material charge of \$13,929.13 is made up as follows:-

Repairs (Elgin Street Sweeper)	\$ 1,936.13
Materials (Gutter Broom, Wire and Elco Hickory Fibre, etc.)	2,008.50
Gas (1597.50 Gals. @ 30.5¢ per gallon)	487.24
Oil (180 Quarts @ 36.5¢ per quart)	65.70
Water (328,000 Gallons)	123.00
Insurance (Elgin Sweeper)	76.13
Depreciation (Elgin Sweeper)	2,568.38
Sicard Flusher (Repairs)	632.38
Sicard Flusher (Depreciation)	1,943.50
Water Sicard Flusher (5,004,000 Gallons)	879.52
Gas - Sicard Flusher (2638.25 Gals. @ 30.5¢ per Gallon)	804.67
Oil - Sicard Flusher (210 Qrts. Oil @ 36.5¢ per Quart)	76.65
Hand Brooms	149.19
Insurance (Flusher)	88.84
City Machinery (Trucks)	2,089.30

TOTAL\$ 13,929.13

The Elgin Street Sweeper worked 1155 hours during 1956. The actual cost for cleaning streets with this machine was \$8,839.08 and was computed as follows:-

Repairs	\$ 1,936.13
Materials (Gutter Broom Wire and Elco Hickory Fibre, etc.)	2,008.50
Gas (1597.50 Gallons @ 30.5¢ per gallon)	487.24
Oil (180 quarts @ 36.5¢ per quart)	65.70
Water (328,000 Gallons)	123.00
Insurance	76.13
Depreciation	2,568.38
Labor (Operator and Helper making Brushes)	<u>1,574.00</u>
TOTAL.....	<u>\$ 8,839.08</u>

The operating dates for the above machine were from April 4th to November 19th.

In 1955 the City of Fredericton purchased a Sicard Master Flusher with a capacity of 2250 Imperial Gallons, the cost of this machine is included in the expenditure in this report.

The operating dates for the above machine were from April 10th to November 9th.

The Flusher worked 1112 hours. The actual cost for cleaning streets with this machine was \$5,671.00 and was computed as follows:-

Repairs	\$ 632.38
Gas (2638.25 Gals. @ 30.5¢ per Gal.)	804.67
Oil (210 Quarts Oil @ 36.5¢ per Quart)	76.65
Water (5,004,000 Gallons)	879.52
Insurance	88.84
Depreciation	1,943.50
Labor (Operators)	<u>1,245.44</u>
TOTAL	<u>\$ 5,671.00</u>

ITEM #14

Tarvia Repairs:-

The labor expenditure charged to this account amounted to \$4,389.59. This amount was made up as follows:-

Patching	\$ 3,715.92
Seal	<u>673.67</u>
TOTAL	<u>\$ 4,389.59</u>

Patching:-

In most of this pavement patching, the patching material was mixed in a concrete mixer at the City Yard using a cut back tar or asphalt and local crushed gravel which was dried out by an AD-7 Px Tarco Aggregate dryer. The holes in the pavements, after having the edges painted, were raked full

of patching material and rolled by a M-157 Trail-O-Roller. Also used in patching in 1956 was 120 tons crushed Rock @ \$2.50 per ton, 25 tons Crusher dust @ \$1.00 per ton, 529.1 tons of Base, premixed Asphalt and 139.05 tons of Seal which was hauled by City Trucks from the plant of the Diamond Construction Company situated at McKinley's above Fredericton. The Diamond Construction Company charged the city \$8.00 per ton for Seal and \$6.00 per ton for Base when hauled by City trucks. The above purchased asphalt is of much better quality than City mixed asphalt, due to higher temperature and better control of mix, which results in a better repair job.

Seal:-

This year 5.55 miles of City Streets were sealed by the Diamond Construction Company (2.36 miles sand sealed and 3.19 miles chip sealed) at a cost of \$14,409.92 made up as follows:-

25,614 gallons RC ₃ @ .28¢ per Gal....	\$ 7,171.92
1,120 tons 3/8" Chips @ \$5.00 per ton	5,600.00
819 tons sand @ \$2.00 per ton ...	<u>1,638.00</u>
TOTAL <u>\$14,409.92</u>	

The following streets were sealed:-

<u>Location</u>	<u>Lineal Feet</u>
Lansdowne Street (Sand)	1,030
University Ave., Charlotte St. to Lansdowne St. (Sand)	970
✓ Brunswick St., Church St. to Regent St. (Sand)	1,320
✓ Regent St., Brunswick St. to C.N.R. Tracks (sand) ..	2,050
✓ Beaverbrook St., Tweedsmuir St. to Regent St. (Sand)	650
✓ Tweedsmuir St., Albert St. to Beaverbrook St. (Sand)	309
✓ Albert St., Windsor St. to Regent St. (Sand)	1,160
✓ George St., Carleton St. to Smythe St. (Sand)	2,660
✓ Brunswick St., Westmorland St. to Northumberland St. (Sand)	600
✓ Charlotte St., Westmorland St. to Northumberland St. (Sand)	600
✓ Westmorland St., Charlotte St. to Aberdeen St. (Sand)	800
✓ Northumberland St., Saunders St. to Aberdeen Street (Sand)	330
St. John Road (Kent Inn to easterly City line (Chip)	<u>16,836</u>
TOTAL	29,315 Lin.Ft.

The preparatory work and cleaning up of excess sand and chips for the above was done by City Workmen and City Machinery at a cost of \$913.67, thus the total cost for the above sealing was \$15,323.59 making approximately \$2760 per mile for sealing.

In addition, under the heading "Tarvia Repairs" various streets in the business section were excavated between the curb and sidewalk and replaced with pavement, thus reducing the dust nuisance.

ITEM #15

City Road Patrol:-

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

<u>Date Purchased</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>
1950 Austin Western #99H	1,685.16	2,164.77	9,564.60
1953 Champion	1,355.68	2,465.78	1,094.25
1955 Allis Chalmers (AD-40)			91.88

In November 1955 the City of Fredericton traded the 1945 Adams #412 Grader on the purchase of a 1955 Allis Chalmers Grader purchased from Musselsens Ltd.

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

1 only Austin Western 99H Wing Unit for plowing.....	\$ 1,648.00
1 - Frink Snow Plow Model 30 SB with R-330 Ram, with full power hydraulic, complete with all equipment for mounting on Sicard T-46 Truck Flusher (Freight, Truckage, Installation and Sales Tax)	1,799.80
1 - 1956 Fargo truck 3 ton Serial No. 93753682, Motor No. T445-1614C (3797.50 less trade in allowance on 1951 Chevrolet truck, \$800.00 plus Sales Tax)	3,087.41
1 - Sicard Flusher Model FL2G251 Serial 102WT, Capacity 2250 Imperial Gallons purchased in 1955 but paid for and included in the 1956 expenditures	<u>19,435.00</u>
TOTAL	\$25,970.21

CONSTRUCTION 1956.

SEAL

GRAVELLING (MAINTENANCE, PARKING LOTS
AND NEWLY CONSTRUCTED

CURBED STREETS)

GRAVEL ROAD CONSTRUCTION

CURB AND GUTTER

CONCRETE SIDEWALK

5.55 MILES.

5.87

1.75

4.08

1.18

Following is the list of vehicles and machinery used and charged to Roads and Streets showing a comparison of Repair Charges for 1955 and 1956:-

Name of Truck	Year Purchased	Repairs 1955	13 Months Repairs 1956
Chevrolet 3 ton Dump Truck (1951 trade in July 1956)	1951	334.35	167.24
Chevrolet 2½ ton Dump truck	1955	59.16	602.04
Fargo 3 ton Dump Truck	1956	----	256.72
Ford 3 ton Dump Truck (trade in June 10th, 1955)	1951	163.16	----
Ford 3 ton Dump Truck	1953	876.57	721.09
G.M.C. 3 ton Dump Truck	1953	820.01	464.17
Dodge Panel	1946	450.18	199.11
Ford $\frac{1}{2}$ ton Pick-Up	1952	803.83	478.33
Chevrolet (Coach)	1954	412.43	445.97
Caterpillar (D-6 Bulldozer)	1953	406.39	3,577.59
Caterpillar (D-2 Bulldozer)	1954	270.79	1,169.17
International T-D 6 Bulldozer	1948	1,430.98	1,272.31
International T-D 6 Bulldozer	1949	873.48	795.96
Elgin Street Sweeper	1953	2,494.28	3,944.63
Air-Pic Compressor	1953	259.76	1,070.20
Michigan T-6-K Shovel (3/8 yard)	1947	2,201.31	810.35
Michigan C-16 Shovel ($\frac{1}{2}$ yard)	1951	1,465.85	1,429.95
Model #157 Trail-O-Roller	1955	13.01	76.91
Sicard Jr. Snow Blower	1949	9,058.97	608.45
Sicard Flusher (2250 I.G. Capacity) ...	1955	----	542.38
Willys Jeep #1	1955	110.00	603.08
Willys Jeep #2	1955	79.48	823.41
Willys Jeep #3	1953	346.37	392.84
Willys Jeep (Trade in January 23, 1955)	1950	181.06	----
Willys Jeep (Trade in January 23, 1955)	1949	409.53	----
Adams #412 Road Grader (Trade in Nov. 22nd, 1955)	1945	1,385.88	----
Austin Western Grader #99H	1950	2,164.77	9,564.60
Champion Grader	1953	2,465.78	1,094.25
Allis Chalmers Grader AD - 40	1955	----	91.88
TOTAL		\$ 29,537.38	31,202.95

CAPITAL ACCOUNT - CURB AND GUTTER

The Net Expenditure under the above heading amounted to \$20,900.35.

For the above Expenditure of \$20,900.35 concrete curbs and gutters were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Westmorland St., Dundonald St. to Connaught St. (both sides)	771'
Connaught St., Westmorland St. to York Street (both sides)	1,284'
Connaught St., Westmorland St. to Albert Street (both sides)	814'
Albert St., Connaught St. to York St. (both sides) ...	2,512'
Smythe St., C.N.R. tracks to Dundonald Street (both sides)	1,113'
Hanwell Rd., Woodstock Rd. to Parkhurst Drive (both sides)	967'
Beaverbrook St., Tweedsmuir St. to Windsor Street (both sides)	1,077'
Rookwood Avenue, Parkhurst Drive to near Inglewood Drive (both sides)	2,070'
Woodfield Court (both sides)	1,912'
Prince St., Gill St. to Henry St. (both sides)	1,288'
Prince St., Henry St. towards Gibson St. (both sides)	363'
MacLaren Ave., Fire Station to Gibson Street (both sides)	1,706'
Ryan's Court (both sides)	874'
Regent St., Queen St. to Campbell St. (west side)....	163'
Queen St., Post Office to Carleton St. (north side)..	120'
King St., Dominion Store to Regent St. (south side)..	130'
King St., York St. to Fire Station (north side)	231'
Miscellaneous (Queen, McKeen, Woodstock Road, Court House Square)	238'
TOTAL	<u>17,633'</u>

All the 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 Blakeny Concrete Products Ltd. at a contract price of \$14.25 per cubic yard. A cubic yard of concrete for Curb and Gutter poured 23.2 lineal feet of curb.

The unit cost of one lineal foot of Curb and Gutter found by dividing the total length laid which equals 17,633 lineal feet into the total cost of \$20,900.35 is \$1.18 per lineal foot.

CAPITAL ACCOUNT - SEWER DOMESTIC

Gross Expenditure and Stocked Material	\$ 20,115.23
Credits	<u>5,354.39</u>
Net Expenditure	<u>\$ 14,760.84</u>

The above credits are made up as follows:-

Work done on Domestic Sewers for private parties	\$ 1,331.46
Journal Voucher (Materials paid for by Capital Account Sewer and used by other City Depts.)	<u>4,022.93</u>
TOTAL	<u>\$ 5,354.39</u>

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

For this expenditure, sewers were laid at the following locations:-

<u>Location</u>	Lineal Feet 10" T.C.	Lineal Feet 8" T.C.
Duffy subdivision	580'	
Connaught Street	212'	648'
Devon Avenue		444'
Edinburgh Street		860'
Hermitage Court		250'
Hawthorne Terrace		365'
Llewellyn subdivision (Hanson St., Valley View Street and Court and Loyalist Court)		1415'
Irvine subdivision, Irvine Street		950'
TOTAL	212'	5512'
	=====	=====

An actual cost of installing the above listed sewers, at the above locations was kept, giving a unit price per foot of \$3.10 for labor and material.

<u>Location</u>	<u>Labor & Machinery</u>	<u>Material</u>	<u>Total</u>
Duffy subdivision	\$ 1,086.05	1,837.57	2,923.62
Connaught Street	1,082.84	1,368.19	2,451.03
Devon Avenue	457.09	540.44	997.53
Edinburgh Street	1,059.50	1,126.57	2,186.07
Hermitage Court	275.83	297.68	573.51
Hawthorne Terrace	430.02	457.29	887.31
Llewellyn subdivision	1,024.15	1,620.93	2,645.08
Irvine subdivision	909.63	1,187.06	2,096.69
TOTAL	\$ 6,325.11	8,435.73	14,760.84
	=====	=====	=====

Total lineal feet laid, 5724 thus making the cost per lineal foot of \$2.58. To this must be added approximately 20% which includes Holidays for the city workmen, pension fund, workmen's compensation, unemployment insurance and engineering, thus making an overall cost of \$3.10 per lineal foot installed.

In addition to the above listed locations, sewers were also laid and paid for by the property owners at the following locations:-

<u>Location</u>	<u>Installed By</u>	Lineal Feet 10" T.C.	Lineal Feet 8" T.C.	Lineal Feet 8" C.I.
Wilmot Park Apts. Ltd.	Ashfield Bros.	526'	595'	
New School, Carleton Ward	City Workmen	336'	110'	76'
Dominion Store, Connaught Street	City Workmen		207'	
New School, Connaught St.	City Workmen		225'	
TOTAL		862'	1137'	76'
		=====	=====	=====

Material in stock December 31, 1956:-

438.5 lineal feet of 8" T.C. pipe @ 75¢ per foot	=	\$ 328.88
2 Manholes (Covers and Frames) @ \$42.08 each	=	<u>84.16</u>
TOTAL		\$ 413.04

CAPITAL ACCOUNT - SURFACE SEWER

Gross Expenditure and Stocked Material	\$ 46,595.64
Credits	<u>9,358.90</u>
Net Expenditure	<u>\$ 36,736.74</u>

The above credits are made up as follows:-

Material paid for by property owners (Brick, Cement, Pipe, Catch Basins, etc.)	\$ 1,378.27
York Structural Steel (Sale of Scrap)	49.82
Chas. Llewellyn (Installation of Surface Sewer, St. John Road)	455.95
Zeller's Ltd. (Installation of Surface Sewer, King St.)	446.08
Diamond Const. Co. (Installation of Surface Sewer, Queen Street)	318.78
F'ton. School Board (Installation of Surface Sewer, Connaught Street)	197.27
Journal Voucher (Material paid for by Capital Account Surface Sewer and used by other City Depts.)	<u>7,012.73</u>
TOTAL	<u>\$ 9,858.90</u>

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

Location	Size of Concrete Pipe in Feet					
	30"	24"	18"	15"	12"	10"
Smythe St. (Near old Back Drain to Edinburgh Street)					762	125
Connaught St., Albert St. to Smythe St. and connecting street from Connaught St. to Wright St.				460	190	190
Saunders St. Ext. (Cross connection)						54
Regent St., near C.P.R. Tracks...	72					
Ryan's Court						126
Back Drain on Regent St., near Montgomery Street	60	90				
Llewellyn subdivision, Hanson St. Valley View Court.....					812	160
Valley View Street.....						205
Loyalist Court.....						145
						205
Forward	72	60	550	190	1764	1055
						--

Location	Size of Concrete Pipe in Feet						
	30"	24"	18"	15"	12"	10"	8"
Brought Forward	72	60	550	190	176	4	1055
MacLaren Ave., Sewell St. and							
MacLaren Avenue						28	66
Old Back Drain, York St. to							
Culvert on Dundonald Street....	826						
Edinburgh Street					798		90
Woodstock Road (Cross connection)							36
Duffy subdivision.....					551		90
Hanwell Road							297
Hawthorne Terrace						347	30
Irvine Subdivision	156				638		60
McKeen St. (Highland Avenue, outfall line)		290	948	260			
Old Back Drain (Northumberland toward Smythe)	32						
Rookwood Avenue (Cross trench)..							45
Trailer Park (Forest Hill).....		494			80		
Total in Lineal Feet	930	1000	1498	450	3859	2086	30

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

<u>Location</u>	<u>Labor & Machinery</u>	<u>Material</u>	<u>COSTS</u>
			<u>Total</u>
Smythe Street	834.95	1,745.60	2,580.55
Connaught Street	1,220.06	1,921.18	3,141.24
Ryan's Court	93.04	245.64	338.68
Llewellyn Subdivision:-			
Hanson Street	894.63	1,556.09	2,450.72
Valley View Court	185.00	319.93	504.93
Valley View Street	91.80	134.60	226.40
Loyalist Court	182.21	319.93	502.14
Old Back Drain - York St.			
to Dundonald Street	1,205.47	4,326.30	5,531.77
Edinburgh Street	1,201.40	1,270.19	2,471.59
Duffy subdivision	582.91	1,104.00	1,686.91
Hanwell Road	312.22	426.00	738.22
Hawthorne Terrace	328.97	516.17	845.14
McKeen Street	4,547.31	3,656.47	8,203.78
Trailer Park (Forest Hill)	(charged to Trailer Park)	1,830.69	1,830.69
Regent Street	181.28	486.64	667.92
Irvine Subdivision	894.00	1,349.86	2,243.86
TOTAL	=	\$ 12,755.25	21,209.29
			33,964.54

Under this heading Surface Sewers were laid and paid for by the property owners at the following locations:-

Location	Size & Length in Feet	Property Owners
St. John Road	12" - 223') 10" - 215')	Chas. Llewellyn
King Street	10" - 325'	Zeller's Limited
New School, Connaught St.	10" - 61'	F'ton. School Board
King Street	10" - 90'	N.B.E.P.C.
Queen Street	10" - 115'	Bank of Nova Scotia

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

10" Concrete Pipe	-	2.45 per lineal foot
12" Concrete Pipe	-	2.60 per lineal foot
15" Concrete Pipe	-	2.90 per lineal foot
18" Concrete Pipe	-	3.40 per lineal foot
24" Concrete Pipe	-	5.25 per lineal foot
30" Concrete Pipe	-	7.93 per lineal foot

We have in stock, December 31, 1956 the following:-

243 feet of 10" Concrete Pipe @ 65¢ per foot	=	\$ 157.95
231 feet of 12" Concrete Pipe @ 80¢ per foot	=	184.80
780 feet of 15" Concrete Pipe @ \$1.20 per foot	=	936.00
568 feet of 18" Concrete Pipe @ \$1.64 per foot	=	931.52
8 feet of 30" Concrete Pipe @ \$7.83 per foot	=	62.64
Catch Basins (30 Gratings and 12 Frames @ \$19.12 per Grating and \$24.63 per frame)	=	869.16
3000 Brick @ \$45.05 per thousand	=	<u>135.15</u>
TOTAL	=	\$ 3,277.22

CAPITAL ACCOUNT - WATER

Gross Expenditure and
Stocked Material \$ 97,825.00
Credits 4,907.44

Net Expenditure \$ 92,917.56

The above credits are made up as follows:-

Gunter's Plumbing (Sale of 1-4" Sleeve)	\$ 12.28
A. R. Wilson Ltd. (Sale of 2-4" Sleeves)	24.56
McCain Produce Ltd. (Sale of 40' - 24" C. I. Pipe)	600.00
R. A. Staal (Labor charge to installing water service, Hawthorne Terrace)	27.00
W. E. Emerson & Sons Ltd. (2-6" C. I. Solid Sleeves)....	29.78
York Structural Steel (Sale of Scrap)	24.91
Seven-Up Ltd. (Installing Water Service)	187.97
Board of School Trustees (Installing Water Service, Connaught Street)	320.03
W. E. Emerson (Connection for Water Chemistry Building, University of New Brunswick)	142.85
M. F. Schurman (Installing Water at New Carleton Ward School)	1,734.62
Weyman Construction Co. (Installing Water for Dominion Store)	233.72
Nathan Velensky (Installation of Sprinkler System, Queen Street)	211.68
Estey & Curtis (Installation of Sprinkler System, York Street)	195.87
D. F. Campbell (Installation of Sprinkler System, Queen Street)	213.37
Levine's Ltd. (Installation of Sprinkler System, Queen Street)	294.15
Journal Voucher (Materials paid for by Capital Account Water and used by other City Depts.).....	<u>654.65</u>
TOTAL	<u>\$ 4,907.44</u>

Installations were made at the following locations:-

<u>Location</u>		<u>Size of C. I. Pipe</u>
		<u>14"</u> <u>10"</u> <u>8"</u> <u>6"</u> <u>4"</u>
Albert St., Tied in dead end to York Street		176
Byng St., replaced 1" line with 4" C.I.		406
Connaught St., Albert St. to Smythe St. and connecting line from Connaught St. to Wright St..	1307	
Edinburgh Street	1062	
Duffy Subdivision	572	
Devon Ave., Henry St. towards Gill Green Rd., Smythe St. to York St..	1997	427
Hermitage Court		238
Hawthorne Terrace	380	
Llewellyn Subdivision	1005	400
Smythe St., Edinburgh St. to Hawthorne Terrace	290 220	
Irvine Subdivision	976 12	
Prince St., tied in dead end to Gill Street		116
Regent St., Green Road to Montgomery Street	1460	
Sewell St., Tied in dead end to Gibson Street		293
Intermediate pressure Pump House, Smythe Street	392	
Crerar Avenue		373
Gibson St. near City Line	195	
Total Lineal Feet	290 4069 2283 3809 1844	

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

<u>Location</u>		<u>COSTS</u>	
	<u>Labor & Machinery</u>	<u>Material</u>	<u>Total</u>
Albert St., tied in dead end, York St.	412.37	283.31	695.68
Byng Street	313.84	1,131.35	1,445.19
Connaught Street	1,147.35	5,855.92	7,003.27
Duffy Subdivision	1,127.77	2,131.37	3,259.14
Devon Avenue	348.62	1,107.71	1,456.33
Green Road, York to Smythe Street...	3,139.97	10,774.88	13,914.85
Hermitage Court	118.12	948.31	1,066.43
Hawthorne Terrace	585.21	1,427.39	2,012.60
Llewellyn Subdivision:- Hanson St...	659.30	3,304.14	3,963.44
Valley View Court ...	147.28	388.37	535.65
Valley View Street...	99.95	526.79	626.74
Loyalist Court	195.20	401.98	597.18
Smythe Street	1,685.90	4,031.50	5,717.40
Irvine Subdivision	609.11	4,232.69	4,841.80
Prince Street	117.64	304.41	422.05
Regent St., Green Rd. to Montgomery.	3,217.85	7,935.97	11,153.82
Sewell St., Tied in dead end to Gibson Street	224.55	815.75	1,040.30
Intermediate Pressure Pump House, Smythe Street.....	890.67	2,868.15	3,758.82
Edinburgh Street	741.53	2,951.35	3,692.88
Crerar Avenue	148.39	1,061.01	1,209.40
Gibson Street	164.92	506.49	671.41
TOTAL	\$ 16,095.54	52,988.84	69,084.38

Under the above heading, Cast Iron Water Pipe was laid and paid for by the property owners at the following locations:-

<u>Location</u>	<u>Size and Length in Feet</u>		
	8"	6"	4"
Seven-Up Limited (Carleton Street)			202
Fredericton School Board (Carleton Ward) ...	488	26	
Fredericton School Board (Connaught St.) ...	54	13	
Dominion Store (Dundonald Street)			217
Total Lineal Feet	542	39	419

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

14" Mechanical Pipe	-	11.20 per lineal foot
10" Mechanical Pipe	-	8.14 per lineal foot
8" Mechanical Pipe	-	6.12 per lineal foot
6" Mechanical Pipe	-	5.10 per lineal foot
4" Mechanical Pipe	-	4.08 per lineal foot

In addition under this heading the following expenditures were made:-

Diamond Construction Co., construction of a Booster Pumping Station on Smythe Street at a contract price of	\$ 24,700.00
Fairbanks Morse - Purchase of Class 11/600 - NS ₃ reduced voltage starter auto transformer type C/W reverse phase and phase failure relay for use on 2 HP 3/60/220 volt motor	\$ 651.00
Mueller Ltd. - Purchase of a pipe tapping machine... \$ 2,048.90	
James MacLaren Associates - Plans and specifications for Pump House and Pumps for Booster Pumping Station, Smythe Street	\$ 1,972.42
James MacLaren Associates - Full report on Fredericton Water System showing future pressure areas	\$ 890.97

CAPITAL ACCOUNT - BOOSTER PUMPING STATION

- Smythe Street -

In 1956, construction was begun on the second phase or pressure system to serve the area between Edinburgh Street and Montgomery Street East and West of Smythe Street.

The construction of a booster pumping station and connecting lines was begun as detailed in the report of Jas. F. MacLaren Associates made in the fall of 1955.

This new construction when completed will make water pressure available up to and including Montgomery Street.

On December 31, 1956 a temporary pump, supplied by Fairbanks-Morse, until such time as the specified pumps are received, was turned on and water was made available on Regent Street between Green Road and Montgomery Street.

At the time of writing of this report the specified pumps have not arrived, but, it is expected that the completion of the booster pumping station with all its equipment will be ready early in the Spring of 1957.

CAPITAL ACCOUNT - DRILLED WELLS

Expenditure \$ 3,048.33

Under this heading a Remote Control Cable was installed from the Fredericton Pumping Station to the developed Well at Wilmot Park, a distance of 3000 feet, and the Well site at the Park was landscaped. The expenditure for the above was made up as follows:-

Northern Electric Co. - 3 Cond. 10 Std. Ring Control Cable, 600 Volt preassembled to a 5/16 (7 of 10) 30% H. S. Copperweld Messenger, 3000 feet	\$ 1,924.73
Richards Electric Co. - (Material)	77.25
Harry C. Moore (Labor, wiring remote controls for Park Pump)	246.80
Maritime Electric Co. (Labor, trucking and material)..	605.95
Journal Voucher (City Labor)	162.70
Journal Voucher (City Machinery)	<u>30.90</u>
TOTAL	<u>\$ 3,048.33</u>

CAPITAL ACCOUNT - DRILLED WELLS - CARLETON WARD

Expenditure \$ 14,520.65

Due to the supply of water in Carleton Ward being insufficient, a new well was drilled on Bridge Street, approximately 200 feet east of the C.P.R. tracks by Mr. Pius Sullivan at a cost of \$8,715.40, made up as follows:-

35 feet - 24" @ \$24.00/ft.	(0-35)	\$ 840.00
170 feet - 20" @ \$20.00/ft.	(35-205) ...	3,400.00
95 feet - 16" @ \$16.00/ft.	(205-300) ..	1,520.00
100 feet - 12" @ \$12.00/ft.	(300-400) ..	1,200.00
174 hours Test Pumping @ \$10.00/ hour..		1,740.00
11 bags Cement @ \$1.40 per bag		<u>15.40</u>
TOTAL		\$ 8,715.40 ✓

Plans and specifications for the building and pumps for the well were obtained from MacLaren Associates, consulting Engineers at a cost of \$838.23.

The building is being constructed by the Maritime Engineer's Ltd. at a contract price of \$6,635.00. Up to December 31, 1956, Maritime Engineers have been paid \$4,511.80 on this contract price.

This well will be in operation in early 1957.

CAPITAL ACCOUNT - GRAVEL ROADS

Gross Expenditure \$ 43,490.51
Credit 1,140.06

Net Expenditure \$ 42,350.45

The above credits were made up as follows:-

W. F. Mooers (Sale of 10 cords of Pulp @ \$13.00 per cord)	\$ 130.00
Journal Voucher (808.05 tons crushed gravel to Capital Forest Hill Trailer Camp @ \$1.25 per ton)	<u>1,010.06</u>
TOTAL	\$ 1,140.06

Included in the above expenditures are:-

- (1) - Excavating and Gravelling of newly curbed streets.
- (2) - New Road Construction and Gravelling.
- (3) - Regravelling Gravelled Streets.

(1)

The following streets were excavated and gravelled:-

<u>Location</u>	<u>Lineal Feet</u>
Connaught St., York St. to Albert Street	1,130
Smythe St., C.N.R. track to West of Dundonald St.	600
Albert St., York St. to Connaught Street	1,268
MacLaren Ave., Fire Station on MacLaren Ave. to Gibson..	880
Woodfield Court	1,050
Prince Street	872
Ryan's Court	438
Westmorland St., Dundonald St. to Connaught St.	375
Hanwell Road, Woodstock Road to Parkhurst Drive	550
Rookwood Avenue	1,000
Beaverbrook St., Tweedsmuir St. to Windsor St.	525
Total Lineal Feet	8,688

(2)

Under this heading a considerable number of new streets were constructed or partially constructed and gravelled this year and the locations are as follows:-

<u>Location</u>	<u>Lineal Feet</u>
Irvine Subdivision, Irvine Street	1,065
Saunders St., O'Dell Avenue to Rookwood Avenue	1,012
Llewellyn Subdivision - Hanson Street	822
Loyalist Court	231
Valley View Street	172
Valley View Court	231
Duffy Subdivision, Hanson, Fenety & Hazen Streets	572
Connaught St., Albert Street to Smythe Street	842
Edinburgh Street, York Street running west	1,126
Northumberland St., Dundonald St. to Connaught St.	385
Devon Avenue, Henry Street to Gill Street	700
Crerar Avenue	445
Hermitage Court	390
Intermediate Pressure Pump House, Smythe Street	170
Trailer Park, Woodbridge Street	1,100
Total Lineal Feet	9,263

Under this heading 808.05 tons of crushed gravel @ \$1.25 per ton which amounted to \$1,010.06 was erroneously charged to Capital Account Gravel Roads and should have been charged to Forest Hill Trailer Park.

Queen Street on the north side from the easterly side line of the Sobey property to Northumberland Street was widened and gravelled.

(3) The following streets were also gravelled under the above heading:-

<u>Location</u>	<u>Lineal Feet</u>
Elmwood Court	650
Inglewood Drive	525
Beaverbrook St., Windsor St. to University Avenue...	919
Hanwell Road (near C.N.R. track)	100
Campbell Street, Carleton Street to Regent Street...	700
Edinburgh Street, Smythe St. running east.....	<u>939</u>
Total Lineal Feet	<u>3833</u>

Cedar Posts were placed on both shoulders of No. 2 Highway on Woodstock Road at Phyllis Creek.

The northern approach to the Fredericton Highway Bridge was widened at a cost of \$3,862.94 made up as follows:-

S. S. Baird, 4,589.9 tons Gravel Fill delivered to Bridge job @ 60¢ per ton	\$ 2,753.94
S. S. Baird, 897.15 tons Rock Fill delivered to Bridge job @ 80¢ per ton	717.72
City labor and machinery	<u>391.28</u>
TOTAL	<u>\$ 3,862.94</u>

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

	<u>Crushed Gravel</u>	<u>Pit Run Gravel</u>
Forbes & Sloat	8,569.53 tons	
Douglas Saunders	<u>493.00</u> tons	<u>17,781.34</u> tons
TOTAL	<u>8,962.53</u> tons	<u>17,781.34</u> tons

The cost of the crushed gravel was \$1.15 - \$1.25 per ton and pit run gravel was 60 - 66¢ per ton.

CAPITAL ACCOUNT - STREET LIGHTS

Expenditure\$ 7,077.33

In 1955 the City Council authorized the sale of the Carleton Motors Building in which was housed the transformer bank and switchboard for Series Street Lighting and this necessitated a new switch light plant on a site which was purchased through negotiations from Willett Fruit Company on Carleton Street, south of Needham Street. A building to house the transformer bank and street light switchboard, etc. was constructed during 1956 by Maritime Engineering Ltd., and the transfer made.

The cost of the construction of the above building and transferring Series Street Lighting Station to the new location on Carleton Street Extension was as follows:-

Maritime Engineering Ltd.	\$ 2,359.70
James S. Neill & Sons Ltd.	235.29
S. S. Baird	126.36
H. S. Gill	24.87
Journal Voucher (City Labor)	204.62
Journal Voucher (Machinery)	9.20
Journal Voucher (Material)	6.25
Canadian General Electric Co. (2-9F, 2-100 Amp.)	
5000 Volt Oil Fuse Cut-Outs)	208.06
Canadian National Telegraph	2.11
Northern Electric Co. (6 Std. 19 Wire Norzone norprene power cable for aerial or direct burial 1200')	374.73
Maritime Electric Co. (Labor, trucking and material)	2,346.33
Stan Cassidy	<u>132.32</u>
TOTAL	<u>\$ 6,029.84</u>

Under this heading Series Street Lighting on Phillip and Elizabeth Streets was extended and a new light was installed on Woodstock Road, opposite R.C.M.P. at a cost of \$483.99.

30 new Cedar Poles were purchased from Ashley Colter Ltd. at a cost of \$563.50 for extension to Series Street Lighting.

CAPITAL ACCOUNT - TRAILER PARK

Expenditure \$ 10,116.73
Due to the numerous trailers being parked on private property in the City of Fredericton, the City Council purchased a piece of property on the south side of Forest Hill from H. F. G. Woodbridge and constructed the following:-

- (1) Woodbridge Street - 66' widened
- (2) Surveying 22 Trailer lots
- (3) Installed 494' - 24" Concrete and 80' - 12" concrete surface sewer.
- (4) Extended 8" Domestic Sewer 836 feet
- (5) Installed Street Lights
- (6) Made connections for Water and Sewer to service 22 trailer sites.

On the 1st and 2nd January Series Street lighting on Phillip and Elizabeth Streets was extended and a new light was installed on Woodstock Road, opposite R.C.M.P. at a cost of \$483.99.

On the 1st January Series Street lighting on Phillip and Elizabeth Streets was extended and a new light was installed on Woodstock Road, opposite R.C.M.P. at a cost of \$483.99.

LOCAL IMPROVEMENT

Services were installed at the following locations under local improvement:-

<u>Location</u>	<u>Service</u>	<u>Cost</u>	<u>Subdivider's Share at By-Law Rates</u>	<u>Cost to City of Fredericton</u>
Montgomery-	Water	3,692.88	2,263.23	1,429.65
Campbell sub-	Domestic Sewer	2,186.07	2,561.91	---
division	Surface Sewer	2,471.59	3,001.68	---
Edinburgh St.	Gravelled St.	<u>7,830.04</u>	<u>1,708.10</u>	<u>6,121.94</u>
	TOTAL COST	<u>\$16,180.58</u>	<u>9,534.92</u>	<u>7,551.59</u>
D'Arcy, etc.	Water	1,066.43	291.50	774.93
Subdivision	Domestic Sewer	573.51	357.50	216.01
Hermitage	Surface Sewer	738.22	---	738.22
Court	Gravelled St.	<u>830.88</u>	<u>480.00</u>	<u>350.88</u>
	TOTAL COST	<u>\$ 3,209.04</u>	<u>1,129.00</u>	<u>2,080.04</u>
Greer and	Water	4,841.80	2,239.25	2,601.55
Noble sub-	Domestic Sewer	2,096.69	2,746.25	---
division	Surface Sewer	2,243.86	1,962.50	281.36
Irvine St.	Gravelled Rd.	<u>6,672.16</u>	<u>2,870.70</u>	<u>3,801.46</u>
	TOTAL COST	<u>\$15,854.51</u>	<u>9,818.70</u>	<u>6,684.37</u>
Llewellyn	Water	5,723.01	2,484.38	3,238.63
subdivision	Domestic Sewer	2,645.08	3,046.88	---
Hanson St.)Surface Sewer	3,684.19	3,426.25	257.94
Valley View Ct.)	Gravelled Rd.	<u>6,087.93</u>	<u>3,112.50</u>	<u>2,975.43</u>
Valley View St.				
Loyalist Crt.)				
	TOTAL COST	<u>\$18,140.21</u>	<u>12,070.01</u>	<u>6,472.00</u>
Duffy	Water	3,259.14	847.87	2,411.27
subdivision	Domestic Sewer	2,923.62	1,039.84	1,883.78
Hanson St.)Surface Sewer	1,686.91	1,019.83	667.08
Fenety St.)Gravelled Rd.	<u>2,253.75</u>	<u>1,059.85</u>	<u>1,193.90</u>
Hazen St.)				
	TOTAL COST	<u>\$10,123.42</u>	<u>3,967.39</u>	<u>6,156.03</u>
F'ton. School	Water	7,003.27	1,339.18	5,664.09
Board	Domestic Sewer	2,451.03	1,312.02	1,139.01
Robt. Warrell	Surface Sewer	3,141.24	997.00	2,144.24
Dominion Store	Gravelled Road	<u>4,176.48</u>	<u>1,516.05</u>	<u>2,660.43</u>
Connaught St.				
	TOTAL COST	<u>\$16,772.02</u>	<u>5,164.25</u>	<u>11,607.77</u>
TOTAL COST - LOCAL IMPROVEMENT-\$80,279.78			41,684.27	40,551.80

Under Cost Column - Engineering, Pension, Workmen's Compensation, Holiday and Sick Leave have not been taken into consideration. To get a true picture of cost, at least 10% should be added to include these items.

PUBLIC WORKS

Gross Expenditure	\$ 11,994.97
Credits.....	<u>277.30</u>
Net Expenditure	\$ 11,717.67
1956 Appropriation	<u>10,500.00</u>
Debit	<u>\$ 1,217.67</u>

The credits of \$277.30 are made up as follows:-

James McMullen (Copy of Barker's Pt. Airport, 22 sq. ft. @ 10¢ per sq. ft.)	\$ 2.20
Central Mortgage & Housing Corp. (3 copies of Plan amendment to Master Plan 1945)	7.13
Provincial Government, Dept. of Public Works (17' - 42" Ozalid Paper)	1.17
F'ton. Board of School Trustees (Survey and Plan of Devon School grounds)	50.00
Kinsmen Club (Sale of 11-4C Giant Settees @ \$11.12 each)	122.32
Journal Voucher (Material 4, 4C Giant Settees @ \$11.12 each)	44.48
Dept. Public Works (Cleaning Wharf)	<u>50.00</u>
TOTAL	<u>\$ 277.30</u>

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

Forest Hill Graveyard	\$ 10.00
Trees	1758.36
Survey	545.64
Back Drain	160.23
Old Burial Ground	1241.96
Unforseen	<u>2996.55</u>
TOTAL	<u>\$ 6712.74</u>

Forest Hill Graveyard:-

The labor charge of \$10.00 was the amount incurred by two city workmen digging a grave at Forest Hill Cemetery, due to illness of the caretaker.

Trees:-

The labor cost of \$1,758.36 under this item was for cutting, pruning, spraying and the planting of new trees.

The City purchased this year from Bunbury Nursery at Charlottetown, the following trees and these were planted by city workmen:-

10 Norway Maples @ \$2.75	\$ 27.50
10 Crimson King Maples @ \$3.00	30.00
10 Silver Maples @ \$2.75	27.50
10 Golden Weeping Willows @ \$1.50	15.00
10 Little Leaf Lindens @ \$2.50	25.00
10 Emperor's Lindens @ \$2.50	25.00
10 Dutch Lindens @ \$2.50	25.00
10 Pin Oaks (Replacements - no charge).	
10 Acer Rubrum (Replacements - no charge)	
10 Tilia Vulgaris (Replacements - no charge)	
TOTAL \$ 175.00	

The above trees were planted at the following locations:-

Victoria Street - Northumberland to Smythe Street
Parkhurst Drive
Londale Court
Woodbine Court
Smythe Street - opposite Exhibition Grounds
River Bank - Below Underpass
Albert Street
Albert Street School Grounds
Dundonald St., Westmorland St. to Northumberland St.
Kensington Court
Charlotte Street, York Street to Carleton Street
Acacia Court
Devon School Grounds
Dobie Street
St. John Street

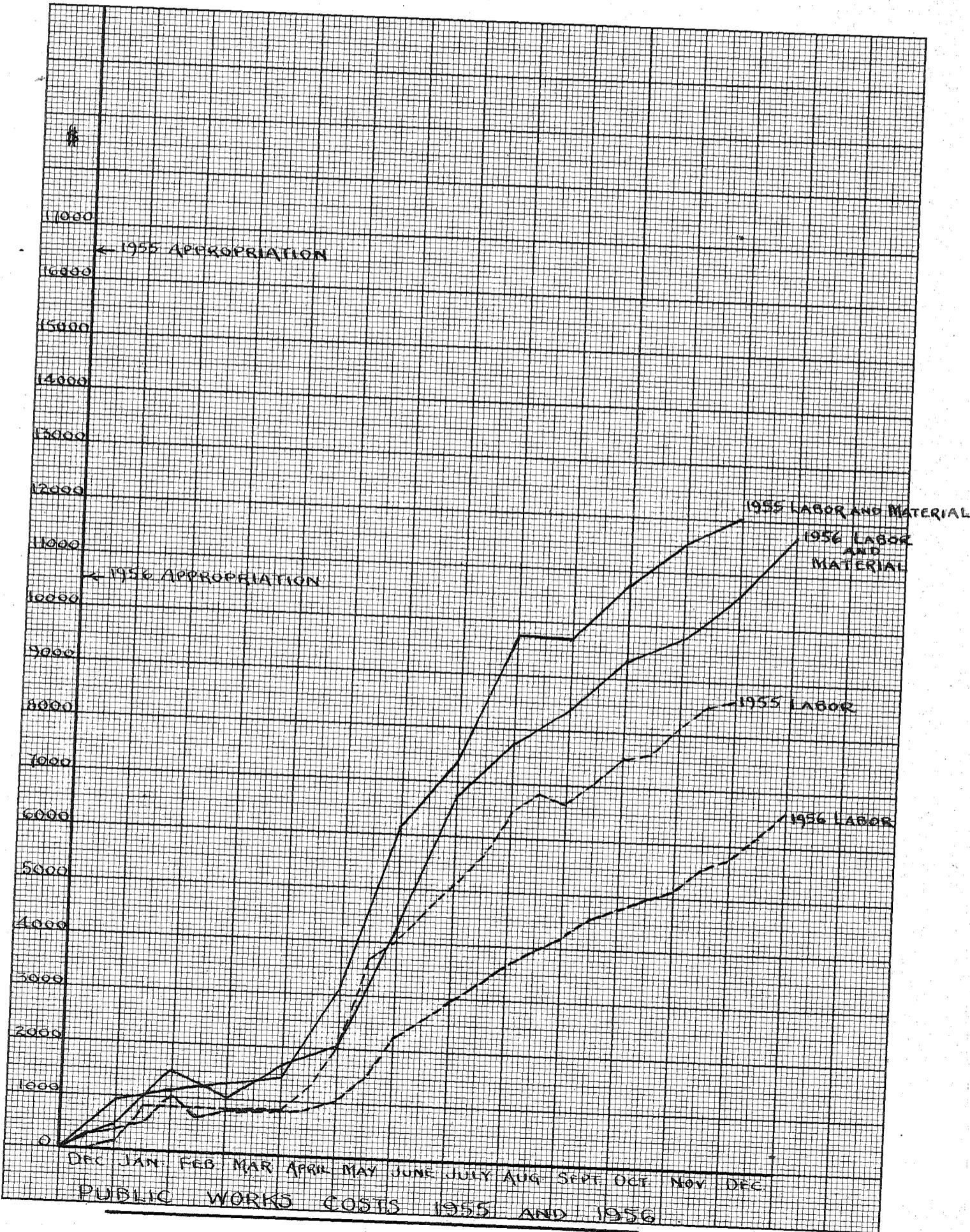
Considerable interest is being shown in the city shade trees by our citizens. During 1952, a committee of citizens under the chairman of a city alderman was formed to act in an advisory manner. The chairman of this committee this year was Alderman H. G. Hughson. This committee is made up mostly of Foresters and others who have a professional knowledge of tree culture. Approximately 25 trees were cut and removed this year which on inspection were found to be in a dangerous condition.

Surveying:-

The labor charge of \$545.64 under this heading was for wages for helpers with the Engineers during the course of their work during 1956.

Back Drain:-

The labor charge under this heading amounted to \$160.23 which was for cutting ice away from the culverts on



York, Dundonald and the outlet at Phyllis Creek during the winter and for general maintenance to the Back Drain.

Old Burial Ground:-

The labor expenditure of \$1,241.96 was used in maintaining the old burial ground in the center of the City.

Unforseen Account:-

Greens, (Cutting, Raking, Seeding, Fill)	\$ 1,528.38
Christmas Tree	59.16
Cutting Bushes and cleaning river bank	893.06
Preparing for Civic Election	61.28
Fire at Jamieson's, Queen St. (Cleaning Street, etc.)	12.00
Benches (repair, painting, etc.)	117.78
Extension to River Bank at intersection of Dunn's Crossing Rd. and St. John Rd...	26.56
Cleaning and painting statue of Robert Burns..	6.36
Cutting hay on City Flats, Waterloo Row	141.00
Parking lot rear of Post Office	34.65
Digging Post Holes on Back Drain, Smythe St. to O'Dell property line	116.32
TOTAL	<u>\$ 2,996.55</u>

The following were purchased this year and charged to Public Works:-

1 - Estate Triple 3 Gang tractor drawn Fairaway Mower W/frame on Rubber from Spramotor Sales and Equipment Ltd.....	\$ 1,004.00
24-4C Giant Settees from the Giant Manufacturing Co. @ \$8.25 each	198.00
1 - Reo Lawn Mower 21" from Federal Hardware Ltd.	154.50
21 Cases - 3 Packages 50% D.D.T. Wettable Powder \$16.00 to \$16.30 per case from N. B. Apple Exchange (1 case weighs 48 lbs.)	343.68

O'DELL PARK

Expenditure\$ 3,086.97

The above expenditure was made up as follows:-

N. B. Telephone Co.	\$ 42.00
Workmen's Compensation	119.97
James S. Neill & Sons Ltd.	6.45
W. A. Calhoun	6.00
John Gibson & Sons	17.25
Jos. A. Likely Ltd. (Reinforced Culvert Pipe) ...	269.92
Burtt's Harness Shop	35.29
Journal Voucher (Caretaker's Wages)	<u>2,590.09</u>

TOTAL\$ 3,086.97

Reinforced Culvert Pipe was purchased from Jos. A. Likely Ltd. and stock piled at O'Dell for future use as culverts for trails, etc.

RECREATION

Expenditure \$ 1,047.11

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

The above costs are divided as follows:-

Playgrounds (Labor and Machinery)	\$ 201.61
Rinks Outside (Labor, Machinery & Material)	185.58
Journal Voucher (Water used at various playgrounds)	500.00
Journal Voucher (Gas and Oil used by Recreation truck)	<u>159.92</u>
TOTAL	<u>\$1047.11</u>

The Bathing Beaches were not officially opened for children swimming this year.

CITY HALL

Gross Expenditure	\$ 11,239.25
Credit	<u>151.89</u>
Net Expenditure	\$ 11,087.36

The above credit was for the sale of 10,310 lbs. scrap iron to Abe Levine and Sons @ \$33.00 per ton - \$151.89.

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

The expenditure of \$11,239.25 is divided as follows:-

Labor at City Hall, including winding and repairs to clock, night fireman and extra janitors.....	\$ 5,563.43
Water Bill for City Hall	100.00
Sewer Bill for City Hall	50.00
Repairs (City Hall and Water Fountain)	961.43
Light Bill for City Offices	1,556.40
Supplies, etc.....	44.44
Coal (208.24 tons @ \$11.25 per ton).....	2,342.65
Journal Voucher (Machinery and Material)	100.39
Journal Voucher (Holidays and Sick Leave)	271.36
Stove Oil (123 Gallons)	27.55
Fuel Oil (1108 Gallons)	<u>221.60</u>
TOTAL	<u>\$11,239.25</u>

Due to the failure of one of the condensation return pumps, the boilers in the furnaces at the City Hall went dry of water causing the sections in the furnaces to break. The City Council has authorized the purchase of two (2) oil fired electric boilers which are being installed by T. Moran at the time of the writing of this report. Meanwhile heat is being supplied to the building by a Portable Hot Mix Boiler on rental from the Diamond Construction Company.

A new condensation pump has been purchased from James Robertson at a cost of \$427.99.

The fountain in front of the City Hall was reconstructed and painted during 1956 at a cost of \$514.78.

The above cost was made up as follows:-

Blakeny Concrete Products Ltd. (Concrete)..	\$ 170.38
York Structural Steel	19.83
J. L. Simms and Sons Ltd. (Lumber)	37.54
S. S. Baird and Sons (Paint)	59.99
Labor and Trucking (City Workmen)	<u>227.04</u>
TOTAL	<u>\$ 514.78</u>

MUNICIPAL HOME

Expenditure

\$ 80.00

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

The above expenditure of \$80.00 was to plowing the driveway at the Municipal Home during the winter months.

CITY YARD

Expenditure \$ 16,223.92

The above expenditure is made up as follows:-

Canadian General Electric Co. (Cable)	\$ 177.02
H. C. Moore (Material and Labor) - (Electrical work 1955)	475.44
C. J. Toner (Trucking Cable)	2.00
W. J. Bearisto (To installing Garwood forced air heating with duct work for new Garage constructed 1955)	585.30
J. S. Neill (Electrical Fixtures, Conduit, etc. 1955)	259.04
N. B. Wire & Fence Co. (Installing and purchase of new fence)	3,799.58
Armco Drainage and Metal Co. (Prefab. Metal Bldg.)..	7,368.11
Canadian Pacific Railway	10.75
Maritime Engineering Ltd.	3,502.23
Journal Voucher (Material and Machinery)	45.45
TOTAL \$ 16,223.92	

Under this heading a seven (7) bay prefabricated dry storage shed 28' wide, 85'-4" long and 12' high to house summer equipment was constructed by the Maritime Engineering Ltd. This building was built by the day labor and the City supplied the prefabrication.

The cost of the building was \$10,890.05 made up as follows:-

Maritime Engineering Ltd.	\$ 3,502.23
Canadian Pacific Railway	10.75
Armco Drainage Co.	7,368.11
J. S. Neill and Sons Ltd.	8.96
TOTAL \$10,890.05	

This year a fence was erected to enclose the City Yard at a cost of \$3,845.03 made up as follows:-

N. B. Wire and Fence Co.	\$ 3,799.58
Journal Voucher (Shovel, Compressor, Cement)	45.45
TOTAL \$ 3,845.03	

SANITATION

Expenditure \$ 11,055.19

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

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

The City Dump has one dump tender. One of the City Bulldozers works on the Dump from time to time, helping the dump tender keep the dump in order. The total expenditure on the dump this year was \$3,230.68.

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 was used in bulldozing incinerator dump, shifting tracks, etc. The total expenditure for City Incinerator was \$7,824.51.

The contract for the Garbage is now held by Mr. J. Coates at a yearly cost of \$36,300.00.

SEWERAGE - DOMESTIC

Gross Expenditure \$ 15,559.07

Credits 7,758.62

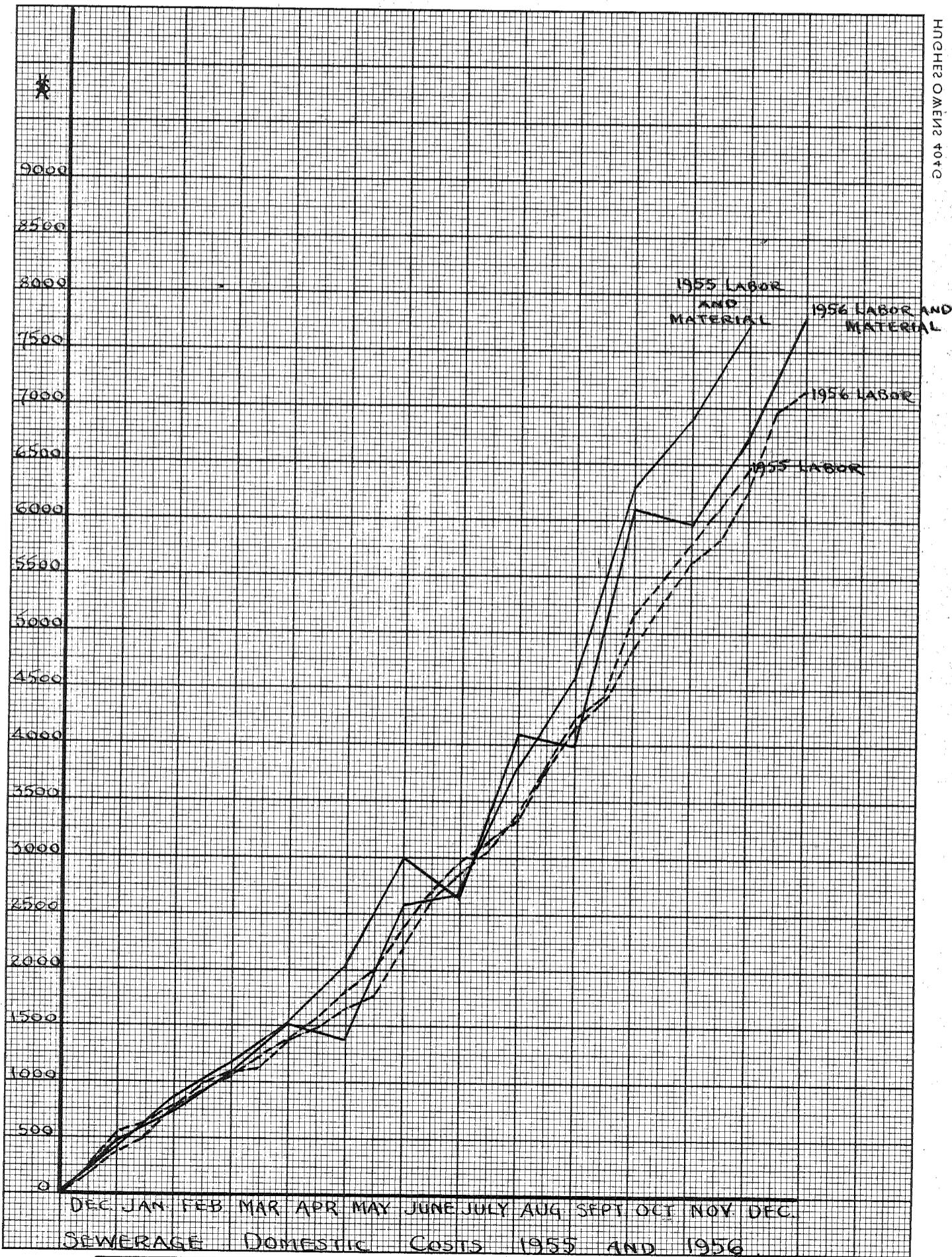
Net Expenditure \$ 7,800.45

The above credits are made up as follows:-

Material and Labor supplied for house connections	\$ 7,137.54
N. B. Telephone Co. (Rental on Pump)	16.00
Diamond Construction Co. (Installing Manhole on Water Main off Gibson Street)	77.50
Weyman Construction Co. (Rental on Shovel)	49.00
Journal Voucher (Material sold to Trailer Camp site, 625' - 5" T. C. Pipe)	312.50
Journal Voucher (Material sold to Capital Account, Domestic Sewer 100 lbs. Sewertile)	12.00
Journal Voucher (Sewer rental for King Street, MacLaren Avenue, Fire Station)	100.00
Journal Voucher (Sewer rental for Caretaker's house at Wilmet Park)	4.00
Journal Voucher (Sewer rental for City Hall)	50.00
TOTAL	<u>\$ 7,758.62</u>

New customers connected to City Sewer System this year were 91.

HODGES OMEIS 4040



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

The Fredericton Domestic Sewer system consists of 40.41 miles (10.45 miles in Carleton Ward and 29.96 miles in the City Proper). of sewer mains made up of the following sizes:-

24"	T. C. Pipe54 miles
18"	T. C. Pipe	1.29 miles
15"	T. C. Pipe	1.63 miles
12"	T. C. Pipe	6.12 miles
10"	T. C. Pipe92 miles
8"	T. C. Pipe	<u>29.91</u> miles
TOTAL		<u>40.41</u> miles

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 Saint 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 32.17 miles of line and 364 lamps. This system is divided into five circuits, one of which is controlled by a 25 K. W. Constant Current Transformer, the other four of which are controlled by a 15 K. W. Constant Current Transformer. Four of these transformers along with the main switch board are housed in a building, the site of which was purchased from Willett Fruit Company on Carleton Street, south of Needham Street. The fifth transformer is on a pole situated on Regent Street between Green Road and Albert Street and controls the rear circuit for Maryland Heights.

Due to the change in location of the sub-station to the new building on Carleton Street, the circuits were changed.

The five circuits are made up as follows:-

<u>Lower Front Circuit</u>	<u>Transformer Size</u>
35-600 C.P. Lamps @ .350 K.W. demand	12.25
18-250 C.P. Lamps @ .160 K.W. demand	<u>2.88</u>
	15.13 K.W.
	15 K.W.
<u>Lower Rear Circuit</u>	
2-600 C.P. Lamps @ .350 K.W. demand	.70
59-250 C.P. Lamps @ .160 K.W. demand	<u>9.44</u>
	10.14 K.W.
	15 K.W.
In this circuit 8-250 C.P. Lamps on Dunn's Lane, 4-250 C.P. Lamps on Forest Hill, 5-250 C.P. Lamps on Alexandra Street and 19-250 C.P. Lamps on University Avenue were replaced in 1956 by multiple fixtures.	
<u>Upper Front Circuit</u>	
10-600 C.P. Lamps @ .350 K.W. demand	3.50
36-250 C.P. Lamps @ .160 K.W. demand	<u>5.76</u>
	9.26 K.W.
	15 K.W.
In this circuit 10-600 C.P. Lamps on Woodstock Road from Smythe Street to Rookwood Avenue were replaced with multiple fixtures.	
<u>Upper Rear Circuit</u>	
19-600 C.P. Lamps @ .350 K.W. demand	6.65
109-250 C.P. Lamps @ .160 K.W. demand	<u>17.44</u>
	24.09 K.W.
	25 K. W.
In this circuit 5-250 C.P. Lamps were added on York Street.	
<u>Maryland Heights</u>	
76-250 C.P. Lamps @ .350 ^{.160} K.W. demand	12.16 K.W.
In this circuit a number of 250 C.P. Lamps on York Street were transferred to Upper Rear and 4-600 C.P. Lamps on C.P.R. tracks have been replaced with multiple fixtures.	15 K.W.
<u>System No. 2:-</u>	
The multiple lighting system consists of 345 units made up of 235 units of 500 Watts and 110 units of 200 Watts.	
The 235 units of 500 Watts are located as follows:- 14 on Waterloo Row; 148 on King Street; Queen Street, Brunswick Street and cross streets including part of Campbell and York Streets; 23 on Woodstock Road; 5 on George Street; 6 on Regent Street; 1 on Brookmount Court; 23 on University Avenue; 5 on Alexandra Street; 9 on Woodfield Court and Rookwood Avenue and 1 on Grey Street.	

This year 56-500 Watt lamps were added to the following locations:- 23 on University Avenue; 5 on Alexandra Street; 14 on Woodstock Road; 9 on Woodfield Court and Rookwood Avenue; 1 on Grey Street; 3 on Campbell Street and 1 on Brookmount Court.

The 110 units of 200 Watts are located as follows:- 4 on University Avenue; 60 on St. John Road; 11 on Woodstock Road; 4 on Beaverbrook Street; 4 on Edinburgh Street; 3 on Smythe Street Extension; 3 on Priestman Street; 4 on Connaught Street; 1 on Westmorland Street; 8 on Dunn's Lane and 8 on Forest Hill.

This year 28-200 Watt Lamps were added to the following locations: 8 on Dunn's Lane; 8 on Forest Hill; 10 on St. John Road and 2 on Woodstock Road.

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

Included in the total of the above multiple fixtures the Maritime Electric Co. installed 4 Mercury Vapor lamps at the Railway Crossing on Regent Street and 13 Mercury Vapor Lamps at the intersection of the streets in the main business area on approval. The rate of these lamps will be \$93.00 per lamp per year when and if these lights are accepted by the City Council.

System No. 3:-

System No. 3 consists of six multiple lights, each of 150 Watt strength located in the C. N. R. Subway. This system is also controlled by a control switch which is energized by the series street lighting system.

System No. 4:-

System No. 4 is a series lighting system which had formerly been installed in the Town of Devon and consists of 8.59 miles of line and 181 lamps. This system is composed of two circuits which are controlled by a two 15 K. W. constant current transformers located on a pole platform on Pine Street.

<u>Carleton Ward (Down)</u>	<u>Transformer Size</u>
90-250 C.P. Lamps @ .160 K.W. demand	14.40 K.W.
	15 K.W.
<u>Carleton Ward (Up)</u>	
91-250 C.P. Lamps @ .160 K.W. demand	14.56 K.W.
	15 K.W.

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

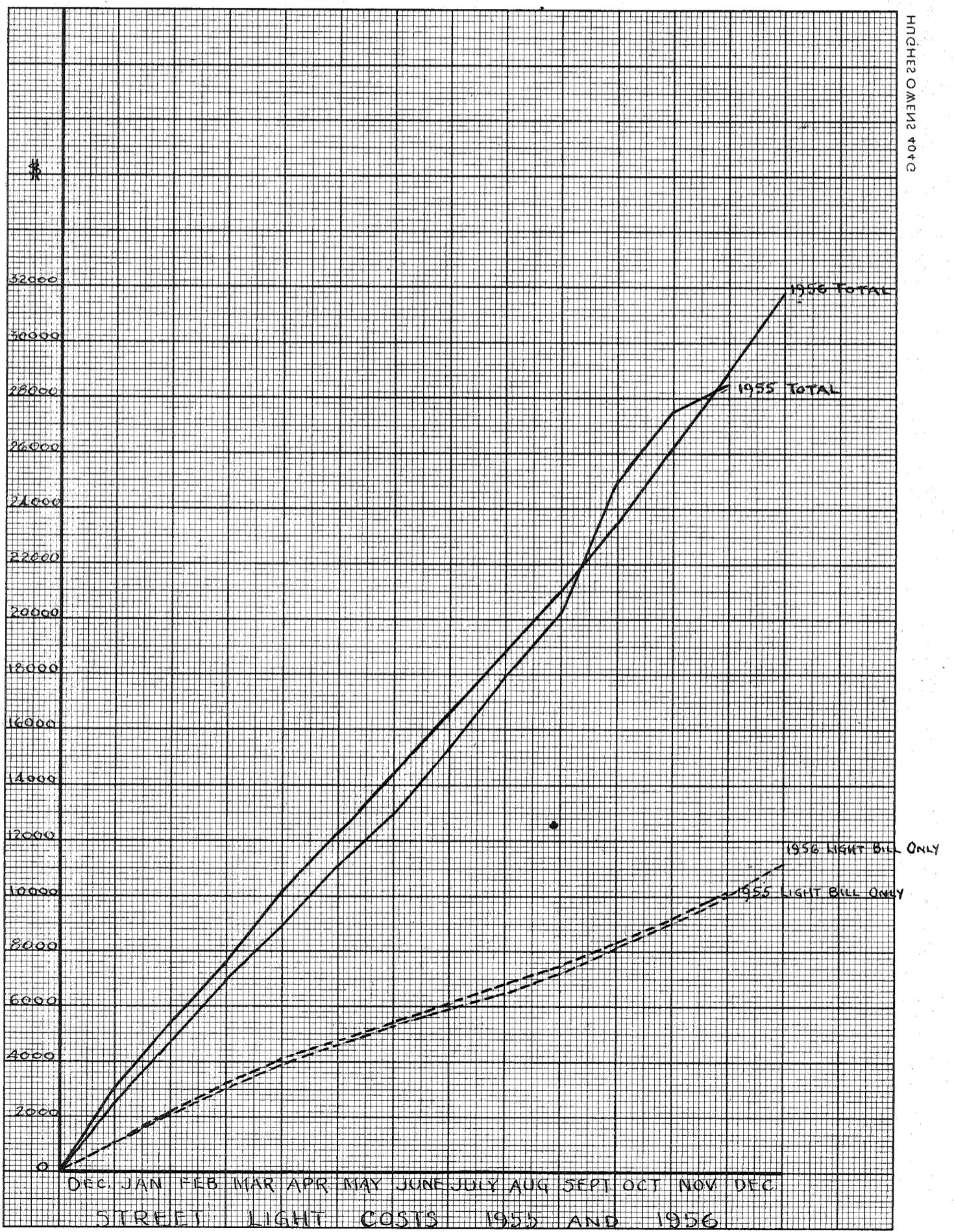
All materials such as wire, poles, pole fixtures, lamps, lamp fixtures, transformers, etc. are paid for by the City, installed by the Company, under their contract price for maintenance. Any new installations which require an enlargement of circuits must be paid for by the City, both labor and material.

The Street Lighting costs for the year 1956 were as follows:-

Gross Expenditure	\$ 31,877.10	(13 months)
Credit	76.38	
Net Expenditure	\$ 31,800.72	
1956 Appropriation	<u>27,700.00</u>	
Debit Balance	<u>\$ 4,100.72</u>	

The Street Lighting Expenditure of \$31,877.10 is made up as follows:-

84-600 C.P. Series Lamps	\$ 100.61
1056-250 C.P. Series Lamps	739.01
1-200 C. P. Lamp46
13-150 C. P. Lamp	4.16
4-300 C. P. Lamp	4.55
Current in Subway and series lighting, Nov. 30, 1955 to Dec. 31, 1956	11,237.47
Charges on Multiple Fixtures owned and operated by Maritime Electric Co. @ \$40.00 and \$60.00 per light per year	17,390.44
Maintenance and contract of pole line	699.02
Maintenance of lamp fixtures, including only such articles as lamp standards, lamp brackets, heads, sockets, shades, cutouts, time switches, etc.	70.02
Material and labor used in major repairs and new installations	1,311.69
Cenotaph Light Bill	139.67
Miscellaneous (Revising Series Lighting Map, Ground Rent, Keys for Carleton St. Sub-Station, use of Machinery, etc.)....	<u>180.00</u>
TOTAL	<u>\$31,877.10</u>



The total per capita charge for Street Lighting
 for 1956 population of 18,037 as per the 1956 census is
 $\frac{31,800.72}{18,037} = \$ 1.76.$

18,037

TABLE SHOWING COMPARATIVE YEARLY COST IN
 STREET LIGHTING

<u>Year</u>	<u>Total Yearly Cost</u>	<u>Yearly Appropriation</u>
1942	9,803.27	10,000.00
1943	11,033.89	10,000.00
1944	10,675.80	10,000.00
1945	10,682.22	10,000.00
1946	11,611.45	12,000.00
1947	12,530.94	15,000.00
1948	15,269.12	15,000.00
1949	15,720.93	16,000.00
1950	25,300.30	20,000.00
1951	23,848.42	20,000.00
1952	25,211.39	25,000.00
1953	25,487.71	27,000.00
1954	23,812.54	27,000.00
1955	28,542.77	27,000.00
1956	31,877.10	27,700.00

CONCRETE WALKS

Included under the above heading are:-

1. Concrete Walks, Ordinary	\$ 3,330.42
2. Concrete Walks, Special	<u>5,181.98</u>
TOTAL	<u>\$ 8,512.40</u>

1. For the above expenditure of \$3,330.42 concrete
 sidewalks were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Mitchell St., C.M.&H.C. line to Green Road (East Side)	751
MacLaren Ave., School St. to Neill St. (South Side)...	506
Prince St., Gill St. to Henry St. (North Side)	665
Uhion St., east of Titus Street (North Side)	119
Water Street, St. Mary's St. to east of Hayes St. (South Side)	338
Miscellaneous (Albert St., Queen St., Regent St., Court House Square, in front of the Federal Building, Custom Building and Post Office, Capital Theatre, King Street; Dundonald St., Westmorland Street, Beaverbrook St., Woodstock Road, Parkhurst Drive, Gibson St., Union St. and York Street	<u>461</u>
TOTAL	2,840 Lin. Ft.

673.9 lineal feet of the above constructed cement sidewalk was charged to Roads and Streets at a cost of \$1,024.33. Therefore, the expenditure of Cement Walks Ordinary would be \$4,354.75.

The cost of the above sidewalks were paid for, one-half by the city and one-half by the property owner with the exceptions of the miscellaneous locations and Water Street; these operations being repairs.

2. For the above expenditure of \$5,181.98, concrete sidewalks were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Clark St., MacLaren Avenue to Hillcrest Drive, (West Side)	518
Forbes St., MacLaren Ave. to Hillcrest Drive (West Side)	693
MacLaren Avenue, Neill St. to Carney St. (South side)	265
Mitchell St., Albert St. to C.M. & H.C. line (East Side)	240
Palmer St., Albert St. to Green Rd. (West Side).....	1071
Phillips Street, (North Side)	299
Elizabeth Street (North Side)	324
TOTAL	<u>3410</u>

The cost of the above sidewalks were paid for by the City due to an agreement entered into with the Central Mortgage and Housing Corporation in 1946.

The concrete for the above construction of sidewalks was obtained from Blakeny Concrete Products Ltd. at a cost of \$14.25 per cubic yard.

The total cost for laying the above lineal feet of concrete sidewalk was \$1.52, which was obtained by dividing the total lineal feet, 6,250 into the total cost which was \$9,536.73.

CITY SCALES

Expenditure\$ 190.13

The above expenditure is made up as follows:-

Maritime Electric Co. (Light Bill)	\$ 20.47
Unemployment Insurance Commission	20.02
Imperial Oil Co. (460.4 Gallons Stove Oil)	103.13
H. S. Gill	5.70
J. S. Neill & Sons Ltd.	6.18
Paul Burden	6.96
Journal Voucher (City Labor)	<u>27.67</u>

TOTAL\$ 190.13

The wages of the weigh scale operator do not appear in the above expenditure. The expenditure is not made through the office of the City Engineer and is therefore not shown in this report.

WILMOT PARK

Expenditure \$ 2,166.15

The above expenditure is made up as follows:-

Labor and Trucking at Wilmot Park	\$ 1,623.05
Material used on Lawns and Flower Beds	84.50
Supplies and Repairs to lawn mowers, etc	134.22
Telephone	45.50
Water Bill	50.00
Sewerage Bill	4.00
Miscellaneous (tools, etc.)	17.44
Repairs to Caretaker's House	105.68
Journal Voucher (Sick leave and holidays)	<u>101.76</u>
TOTAL	<u>\$ 2,166.15</u>

CHILDREN'S HOME

Expenditure \$ 61.21

The above expenditure is made up as follows:-

Federal Hardware	\$ 7.51
James S. Neill and Sons Ltd.66
Journal Voucher (Labor and Trucking)	<u>53.04</u>
TOTAL	<u>\$ 61.21</u>

FIRE DEPARTMENT

Expenditure \$ 9,808.60

The above expenditure is made up as follows:-

Journal Voucher (2007.25 Gallons Gasoline)	\$ 606.34
Journal Voucher (312 hydrants @ \$2.00 per month) ..	8,112.00
Journal Voucher (To proportion of cost of Surface Sewer to King Street Fire Station)	790.26
Journal Voucher (Water used at Fire Station)	200.00
Journal Voucher (Sewer rental at Fire Station)	<u>100.00</u>
TOTAL <u>\$ 9,808.60</u>	

ADMINISTRATION OF JUSTICE

Expenditure \$ 1,720.91

The above expenditure is made up as follows:-

Journal Voucher (5,265.75 Gallons Gasoline)	\$ 1,591.98
James S. Neill & Sons Ltd.	2.16
Journal Voucher (Labor)	<u>126.77</u>
TOTAL <u>\$ 1,720.91</u>	

LADY BEAVERBROOK RINK

Expenditure \$ 13.43

The above expenditure is the amount expended for labor and trucking garbage, refuse, etc. from the Lady Beaverbrook Rink situated on University Avenue, north of the railway crossing.

JOHN THURSTON CLARK MEMORIAL BUILDING

LIBRARY

Expenditure \$ 68.32

Under this heading the expenditure amounted to \$68.32 and was for labor and trucking spent in cleaning cellar and grounds around the Library Building.

AIRPORT

Expenditure \$ 923.89

The above expenditure is made up as follows:-

Journal Voucher (1800 Gallons RC3)	\$ 848.39
Journal Voucher (1500 Brick)	67.50
Journal Voucher (1 Stop Sign)	<u>8.00</u>
TOTAL		<u>\$ 923.89</u>

ASSESSING AND COLLECTING

The expenditure under this heading amounted to \$70.21 and was made up of labor and material in the constructing of a bookshelf for the Assessor's Department.

CAPITAL'S BALL PARK

Expenditure \$ 220.10

For the above expenditure, bleachers were repaired, fences were straightened and post holes were dug for the Baseball Park in Carleton Ward.

The above expenditure is made up as follows:-

H. S. Gill (Lumber)	\$ 150.48
Journal Voucher (Labor)....	61.12
Journal Voucher (Machinery)	<u>8.50</u>
TOTAL	<u>\$ 220.10</u>

PAINT DEPARTMENT

Gross Expenditure	\$ 8,065.16
Credit	42.08
Net Expenditure	<u>\$ 8,023.08</u>
1956 Appropriation	<u>\$ 7,500.00</u>
Debit	<u>\$ 523.08</u>

The above credit is made up as follows:-

Journal Voucher (Labor in making Book Shelf for Assessing Department)	\$ 34.08
Journal Voucher (Sale of 1 stop sign to Municipal Airport)	<u>8.00</u>
TOTAL	<u>\$ 42.08</u>

Up to 1956 the painting of signs, parking spaces and traffic lines had been included in the expenditure of Roads and Streets and as it did not give a true picture of the cost, a separate department namely, "Paint Department" was set up.

The above expenditure of \$8,065.16 is made up as follows:-

Horsnell's Machine & Iron Works (New Standards)	\$ 208.16
Richard's Electric Co.	21.91
J. Walter Co. (Overhaul and repair to saw)	18.00
James S. Neill & Sons Ltd.	471.12
J. L. Simms and Sons Ltd. (Plywood)	525.06
Federal Hardware	9.52
H. S. Gill (Lumber)	152.91
Provincial Secretary-Treasurer	31.48
Canadian Pacific Express Co.	5.80
Harry C. Moore (Wiring Paint Room at Water Works).....	103.08
Minnesota Mining & Manufacturing Co. (Scotchlite).....	1,041.33
Paul Burden Ltd.	7.27
Ross Drug United	7.43
Auto Machinery & General Supply Co. Ltd.	69.24
E. M. Young	31.00
J. C. Risteen Co.	8.96
C. W. Hall and Co.	7.52
Fredericton Welding & Machine Shop	<u>1.25</u>

Forward \$2,701.04

Carried Forward	\$ 2,701.04
Andave Ltd. (10 Grotelite Red Stop Signs, Octagonal, Ready Made)	51.46
Sandy's Service Station	4.65
Parlee Wood Working Co.	6.00
People's Hardware (Traffic Paint, 100 Gallons White, 50 Gallons Yellow)	744.17
C. J. Toner	1.00
Canadian Pacific Railway	6.78
Freeman Hirtle (Stencil Silk Screen).....	20.00
Lockhart's Woodworking Ltd.	4.89
Journal Voucher (16 Quarts Oil for truck)	5.78
Journal Voucher (366.63 Gallons gas used by truck)..	110.45
Journal Voucher (Labor)	<u>4,408.94</u>
TOTAL	<u>\$ 8,065.16</u>

This year the Paint Shop was moved from the basement in the J. T. Clark Memorial Building, (Library Building) on Campbell Street to a room in the Fredericton Pumping Station Building situated on Smythe Street.

ALEXANDER APARTMENTS

Expenditure \$ 32.00

The above expenditure was for labor incurred in cleaning the grounds and hauling fill to one of the Alexander Apartment Buildings that was removed in 1956.

WATER

There are 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 Saint John River and taking its water from a drilled well situated at Wilmot Park. This well water was turned on July 30, 1955 and is at present supplying the system. Up to July 30, 1955 the supply of water was taken from the Saint John River and treated by coagulation, filtration and chlorination. This in future will be used as a standby.

2. The system which derives its water from two drilled wells and is situated on the north side of the Saint John River and serves that part of the City of Fredericton known as Carleton Ward. A third well was dug late in the fall of this year on Bridge Street, north of the C.P.R. tracks and this well will be in operation early in 1957.

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 Expenditure for water outside the Pumping Station and Pumping Station Grounds and includes all water expenditures in Carleton Ward. The expenditure under this heading is made up as follows:-

Gross Expenditure	\$ 55,487.90
Credits	<u>15,876.41</u>
Net Expenditure	<u>\$ 39,611.49</u>

The Credits are made up as follows:-

Work done for and materials sold to private parties when installing a water service over ground other than City property or when the material is to be used on parts of the system which do not belong to the City \$ 5,517.80

H. Smith (replacing frozen Water Meter bottom)	10.68
M. F. Schurman Co. (Rental on Pump)	48.00
N. B. Telephone Co. (Opening Manholes on Queen St.)	18.00
York Structural Steel (Sale of 7337 lbs. scrap @ \$25.00 per ton)	158.24
Allen Chase (1-5/8 copper to $\frac{3}{4}$ Iron Fitting)	1.25
Eldon Hagerman (1 - $\frac{3}{4}$ " Curb Cock)	3.81
Blakeny Concrete Products Ltd. (Use of water from hydrants)	50.00
N. B. Telephone Co. Ltd. (Building Manhole on Union Street)	22.50
George A. Brewer (Labor, repairing hydrant near 720 Hanson Street)	7.50
Dobson Construction Co. (1-1 $\frac{1}{4}$ " Copper to 1-3/4" Iron Union)	3.29
W. J. Bearisto (1-5/8" Copper to $\frac{3}{4}$ " Iron Fitting)	1.25
Town of Oromocto (1-5/8" Neptune Water Meter)	19.43
Thomas Kirkpatrick (1-5/8" Copper Curb Cock)	4.25
Forbes & Sloat (3 Unions - 5/8" Copper to 5/8" Copper)	4.80
University of New Brunswick (Repairs to Hydrant)	97.43
Ashfield Const. Co. Ltd. (To difference in price on two hydrants)	30.00
Abe Levine & Sons (5270 lbs. scrap @ \$30.00 per ton)	70.58
L. E. Shaw (Repair to Water Meter)	8.30
Journal Voucher (Yearly rental on 312 hydrants @ \$2.00 per hydrant per month)	8,112.00
Journal Voucher (Gas)	35.14
Journal Voucher (Oil)	2.16
Journal Voucher (Water used in City Hall Building)	100.00
Journal Voucher (Water used at Wilmot Park Caretaker's Home)	<u>50.00</u>
Forward	\$14,376.41

	Carried Forward	\$ 14,376.41
Journal Voucher (Water used on Queen's Square, Carleton Ward Playgrounds and Wilmot Park Pool)	500.00	
Journal Voucher (Water used at Fire Station)	200.00	
Journal Voucher (to labor and material incorrectly charged to Domestic Sewer).....	<u>800.00</u>	
TOTAL	<u>\$ 15,876.41</u>	

The Gross Expenditure is made up as follows:-

City Pay Roll for Hydrants	\$ 2,454.41
City Pay Roll for Meters	3,371.84
City Pay Roll for Water Ordinary	<u>12,186.81</u>
Total Pay Rolls	\$ 18,013.06
Material and other charges	<u>37,474.84</u>
Gross Expenditure	<u>\$ 55,487.90</u>

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

This year the following Sprinkler Systems were installed:-

1. Nathan Velensky, 418 Queen Street
2. Estey and Curtis, 406 King Street
3. D. F. Campbell, 476 Queen Street
4. Levine's Ltd., 320 Queen Street

There are at present, 50 Sprinkler Systems in the City. The City charge for water supplied for sprinkler systems is \$25.00 per year.

Due to the demolishing of the McMurray Building on Queen Street, the sprinkler system was discontinued.

Hydrants:-

There are in the city, 330 hydrants; 235 hydrants on the south side of the St. John River and 94 on the north side. The credit for rental of these hydrants appears under credits of Water Ordinary. As there were eighteen added this year, late in the year, the rental charge on these eighteen was not charged. They were installed at the following locations:-

<u>Number</u>	<u>Location</u>
3	Green Road, between York St. and Smythe Street
1	Hawthorne Terrace
1	Connaught St., between Northumberland St. and Smythe Street
1	Edinburgh Street, west of York Street
2	Regent Street, between Green Rd. and Montgomery St.

<u>Number</u>	<u>Location</u>
2	Hanson St., between Green Road and Fenety St.
1	Fenety Street
1	Hermitage Court
1	Devon Avenue between Henry St. and Gill St.
1	Byng Street
1	Sewell Street near new Carleton Ward School
1	Irvine Street
1	Crerar Avenue
1	In front of Wilmot Park Apartments

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

Meters

Of all the Water services in the City, 1088 are charged under flat rate and 2,451 on meter rate, making a total of 3,539 services.

The labor cost this year per meter for installing, reading, repairing, etc. is \$1.37.

All meters are read twice a year and bills are sent out twice a year. The meters of 129 customers are read once a month although they are billed twice a year. Those are such customers who ordinarily have large consumptions and where a stopped meter or meter digits turned over without being noticed, would mean considerable loss of revenue to the City. All meters on Military buildings are included in the group of monthly meter readings.

Meters in Store Room, December 31, 1956 are:-

5/8" Meters, repaired and fit for service	90
New 5/8" Meters	140
5/8" Meters to be repaired	0
3/4" Meters fit for service	1
New 3/4" Meters	0
1" New Meters	3
1 1/4" Meters repaired and fit for service	3
1 1/4" Meters new	5
1 1/2" Meters new	6
2" Meters new	6

Distribution System:-

New Services installed this year	88
Old Services relayed this year.....	18
Old Services repaired this year	1
Frozen Services that had to be thawed, (John Hood, 743 Coombes Street)	2
(Carl Libbey, 131 Miles Street)	
Services discontinued	7

The Fredericton distribution system consists of 40.95 miles of water main, made up of the following sizes:-

18 inch main	0.98 miles
14 inch main06 miles
12 inch main	1.01 miles
10 inch main	2.33 miles
8 inch main	7.76 miles
6 inch main	23.83 miles
4 inch main	4.71 miles
3 inch main27 miles

This does not include the water main installed by the National Defence at Military training centre No. 70 (Exhibition Grounds), Military Depot #7 (Woodstock Road), Military Hospital (Wilmot Park), and Army Garage situated on Wagoner's Lane.

The Supply System consists of .36 miles of 14" Cast Iron Pipe, extending from the Well site at Wilmot Park to the Pumping Station and .10 miles of 15" steel pipe extending from the Intake Pier in the Saint John River to the Pumping Station.

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

- 200 - 5/8" x 3/4" Trident, C.I.B. cold water meters, straight reading, imperial gallons, complete with couplings.
- 6 - 1" Trident C.I.B. cold water meters, straight reading, imperial gallons, complete with couplings.
- 3 - 1" x 1 1/4" Trident, C.I.B. cold water meters, straight reading imperial gallons, complete with couplings.
- 3 - 1 1/2" Trident Style 3, cold water meters flanged, straight reading, imperial gallons, complete with companion flanges.
- 9 - 2" Trident Style 3, cold water meters, flanged, straight reading, imperial gallons, complete with companion flanges.

The number of meters installed in 1956 was 126.

The Well House at Wilmot Park and the building housing the controls at the Reservoir on Smythe Street and the two drilled wells in Carleton Ward were painted.

Eleven old hydrants; seven on King Street, one on Queen Street and three on Union Street were replaced with new hydrants.

Following are the vehicles used and charged to Water Ordinary showing a comparison of repair charges for 1955 and 1956: -

<u>Name of Vehicle</u>	<u>Year Purchased</u>	<u>Repair Charges 1955</u>	<u>Charges 1956</u>
Chevrolet - 1 Ton	1953	129.50	316.00
Dodge - 1/2 Ton	1950	549.17	325.18

WATER PUMPING STATION

Gross Expenditure	\$ 41,351.18
Credits	<u>510.83</u>
Net Expenditure	<u>\$ 40,840.35</u>

The Credit of \$510.83 is made of the wages paid to R. Baird while working with the Engineering Department. Mr. Baird being one of the employees at the Water Works.

The above expenditure is divided as follows:-

City Pay-Rolls for salaries of employees at Pumping Station	\$ 16,726.84
Work done by other city employees in and around the Pumping Station	<u>963.11</u>
Total City Pay Rolls	\$ 17,689.95
Material and Workmen's Compensation charges	<u>23,661.23</u>
TOTAL	<u>\$ 41,351.18</u>

The material cost of \$23,661.23 is itemized as follows:-

Item #1	Light and Power supplied by the Maritime Electric Co. (504220 K.W.Hrs.)....	\$ 11,957.76
Item #2	Light and Power supplied by the Maritime Electric Co. at well in Wilmot Park	3,508.70
Item #3	Steam heat supplied from Victoria Public Hospital	1,902.94
Item #4	Transformer charges	164.58
Item #5	Liquid Chlorine (900 lbs.) (15 Gals.)	357.04 113.33
Item #6	Alum	---
Item #7	Diesel Fuel Oil (2600 Gals.)	549.60
Item #8	Motor Oil (147 Gals.)	197.97
Item #9	Maintenance and repair of buildings, machinery and intake pier	483.79
Item #10	New Installations	1,876.46
Item #11	Supplies, Packing Rags, etc.....	<u>150.15</u>
	Carried Forward	\$ 21,262.??

	Brought Forward	\$ 21,262.32
Item #12	Stationery, forms, charts, etc.	153.50
Item #13	Workmen's Compensation	514.16
Item #14	E. W. Hagerman's salary	1,310.92
Item #15	Lime (183 bags)	142.25
Item #16	Miscellaneous, telephone, trucking, machinery, etc	<u>278.08</u>
	TOTAL	<u>\$ 23,661.23</u>

The Raw Water Well and the Coagulation Basin were both cleaned once this year, namely in the Fall.

Prior to 1956, the meter and sign departments were established in the basement of the John Thurston Clark Memorial Building (Public Library).

In the fall of 1955 these departments were given notice by the Historical Society to vacate. In order to provide space for these departments the old boiler room at the Fredericton Water Works was partitioned off into three rooms downstairs and one upstairs and a more orderly use of this boiler room area was made possible so that the meter department has one room on the ground floor for meter storage and repairs. The Paint Department has one room on the ground floor for the cutting out and fabricating of signs, etc. and the second floor constructed in the old boiler room is used for the painting, finishing and storage of signs. The third room on the ground floor is used by the water works operators as a crew room or rest room.

The cost of constructing the preceding rooms was as follows:-

Blakeny Concrete Products Ltd.	\$ 269.76
J. S. Neill & Sons	33.48
John L. Simms & Sons Ltd.	478.36
H. Gill	469.11
Harry Moore	400.04
Journal Voucher (Brick).....	12.59
Journal Voucher (City Labor)	<u>539.48</u>
TOTAL	<u>\$ 2,202.82</u>

The main Pumping Station including the rooms housing the high and low lift pumps and the diesel engine and switchboard were cleaned and painted throughout.

Heaters were installed this year at all the Pumping Sites, namely Wilmot Park, Rifle Range and Killarney Road Pumping Stations.

Included in the water expenditure for 1956 were the following items:-

Fisher Scientific Co. (1 only 11-505-400 P.H. Meter Beckman Model H-2, line operated).....	\$ 311.04
Fairbanks Morse (1-Rotating Assembly less Pump half coupling with 14" Diameter Impeller)....	749.78
Fairbanks Morse (Installation of above Impeller Serviceman)	232.45

COMPARISON OF WATER PUMPED & COSTS
For South Side of River
for last nineteen years

<u>Year</u>	<u>Water Pumped (Imperial Gallons)</u>	<u>Yearly Gross Expenditure at Pumping Station</u>	<u>Pumping Station Cost per 1000 Gals. using Gross Expenditure</u>
1938	181,558,000	19,239.49	10.6 cents
1939	199,662,000	18,144.43	9.1 cents
1940	203,975,000	22,503.35	11.3 cents
1941	222,255,000	19,474.56	8.8 cents
1942	257,205,000	23,400.09	9.1 cents
1943	280,115,000	26,338.50	9.4 cents
1944	295,945,000	22,926.61	7.7 cents
1945	321,355,000	23,990.14	7.7 cents
1946	338,979,000	25,640.43	7.5 cents
1947	319,243,000	37,123.42	11.6 cents
1948	322,339,000	31,050.97	9.6 cents
1949	345,320,000	30,513.39	9.8 cents
1950	372,412,000	44,548.09	11.9 cents
1951	367,130,000	35,058.57	9.5 cents
1952	339,330,000	40,476.10	11.9 cents
1953	351,310,000	36,179.74	10.3 cents
1954	388,540,000	40,403.81	10.4 cents
1955	376,591,000	48,063.07	12.7 cents
1956	448,096,000 (13 Mos)	41,351.18	9.2 cents

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

By taking the average consumption of Carleton Ward as 180,000 Gallons per day arrived at from a number of test runs, the estimated water pumped for thirteen months from these wells was 71,280,000 Imperial Gallons.

The total amount of water pumped from December 1, 1955 to December 31, 1956 is therefore, for the whole City, 519,376,000 Imperial Gallons.

The total net water expenditure for the City from December 1, 1955 to December 31, 1956 is \$80,451.84.

Therefore the net cost to pump and deliver to the customer 1000 gallons (Imperial) of water from December 1, 1955 to December 31, 1956 is $\frac{80,451.84}{519,376} = 15.5$ cents

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

The water pumping station was, as usual, under the supervision of the Plant Superintendent, Mr. Fred Nason.

Accompanying this report is the report of Mr. E. W. Hagerman, City Analyst, on the Fredericton Water Supply from January 1, 1956 to December 31, 1956.

Respectfully submitted,

City Engineer.



FREDERICTON WATER SUPPLY

1956

The 1956 water supply for that portion of Fredericton south of the St. John River came entirely from the Well in Wilmot Park. The old filter plant was kept in readiness as a standby in case of failure of the well or its pump.

The treatments used on the water were Aeration and Chlorination. Aeration raises the pH of the well water from 6.4 to 6.8. Chlorination was used against the possible chance of contamination from cross connections or breaks in the main. The amounts of Chlorine added varied slightly due to the changing demand of the ground water. A maximum dose was 0.3 parts per million added, resulting in a residual of 0.1 ppm of Free Available Chlorine. Since the Wilmot Well water carries only minute quantities of Organic material little or no Combined Available Chlorine is produced.

The North side of the City, lying North of the St. John River, was served from the Killarney and Range Wells that have been in use now for several years.

The Reservoirs at these two wells are old and uncovered allowing entrance of dust and wind blown materials. Sunlight shining into these reservoirs favours the growth of Algae. These low forms of life grow with great rapidity resulting in a necessity for frequent cleaning. The entrance of workmen for this cleaning process increases the chance of contamination unless careful sterilization procedures are taken afterwards. The time required for this sterilization, if done properly, is longer than the system can stand without the reservoir and so the time of sterilization is generally shortened to a point where its value may be doubted.

Tests for the Coliform Group in samples collected from the Range Reservoir gave Negative results throughout the year.

The Killarney Reservoir began to show a few positive results the last week in July. It has been a common occurrence during the last several years to find occasional positive results in water from this reservoir. We have attributed these positives to organisms carried into the open reservoir on dust particles, hen feathers, etc.

The positive results continued so Chlorine was added to the water August 14th. Luckily the apparatus for feeding fluorides and hypochlorites is the same and so we were able to use the so called unused Fluorine feeder installed the previous year.

To prevent the Coliform organisms spreading to the Eastern end of the system we also began chlorination at the Range Reservoir.

Tests of the 22nd of August gave negative at all points in the system and so chlorination was stopped on the

25th of August. By August 28th the Chlorine residual in the mains was down to zero and samples were collected at Highland Avenue, the Provincial Bridge Storage Yard, and Union Garage. Only one Positive occurred at the Union Garage out of the 15 portions on test (i.e. 3 samples of 5 portions each).

Samples taken September 8th gave two positive at the Killarney Reservoir and all negative at Ashfield's Garage.

September 8th samples from the Killarney Reservoir gave positive results but with negative results at Ashfield's Garage. This seemed to indicate the source of trouble to be at the Reservoir. We again put the blame on dust blown in from surrounding roads and fields, we even found sticks floating in the reservoir, probably thrown over the fence by children passing on the road. On September 15th positive results were again found in the Reservoir and in the Well. This indicated a leak into the well itself and so chlorination was begun immediately.

Water has been used from the Killarney Well for many years without any outbreak of waterborne disease occurring from its use. Occasionally positive results have been found in the mains of the western end of the system and in the reservoir but this is the first time that we have found anything in the well. Up to a few years back the number of persons living above the well were few but now the population above the well has increased to many houses and all with outside privies or cesspools. This is increasing the source of possible contamination of the ground water, some of which might, under certain conditions, find its way to the well without sufficient filtration to remove the bacteria.

On Friday, the 21st of September, the Killarney Well test gave one positive with the Range Well nil. On the 24th the Killarney Well was nil. From this time on to October 22nd, a few positive results were found in the Well but none in the mains. This absence of Coliform bacteria in the mains was the result of chlorination at the reservoir. From October 22nd on, all results in the Well and mains showed negative and so chlorination was discontinued on October 26th.

It may be concluded that the freezing of the ground has sealed off some vein that was allowing contaminated water to find entrance to the well. If this is true it will probably be necessary to resume chlorination as soon as the frost leaves the ground.

The network of pipes serving that part of Fredericton north of the St. John River has become of considerable size. As this increases the chances for breaks in the mains increase with a consequent increase in the chance of undesirable bacteria gaining entrance to the system. Just how large a water system should become before continuous chlorination is adopted, is a debatable question. The Health Department does not definitely say that a supply

must be chlorinated but leaves it to the discretion of the municipality concerned, however it definitely recommends the practice of chlorination at any time.

The responsibility for the quality of the water in a system rests on the shoulders of the body operating that system and if a waterborne disease causes sickness to consumers of the water, due to bacteria carried by it, then suit for damage may be brought against those operating the system. If chlorination is practiced then grounds for such suit would be reduced to a minimum.

We might operate this system for a long time without chlorination and without trouble from waterborne disease even with tests for Coliforms showing an occasional positive but it is contrary to good waterworks practice. We chlorinate the water on the South side of the river and the source is as pure or more so than are the sources on the North side.

In conclusion it is the feeling of the writer that a new covered reservoir for the North part of Fredericton should be constructed as soon as possible and that the well completed this past Summer on Bridge Street should be equipped with a proper gas chlorinator and that continuous chlorination of this supply should commence as soon as possible.

Fredericton, N. B.
January 24, 1957.

Mr. E. W. Hagerman.

Following is a list showing date and place of sampling. Each sample is divided into five portions of ten cc each. Nothing will be noted if the portion is negative but a positive result will be written as 1 plus or two plus, etc. up to a possible of 5 plus.

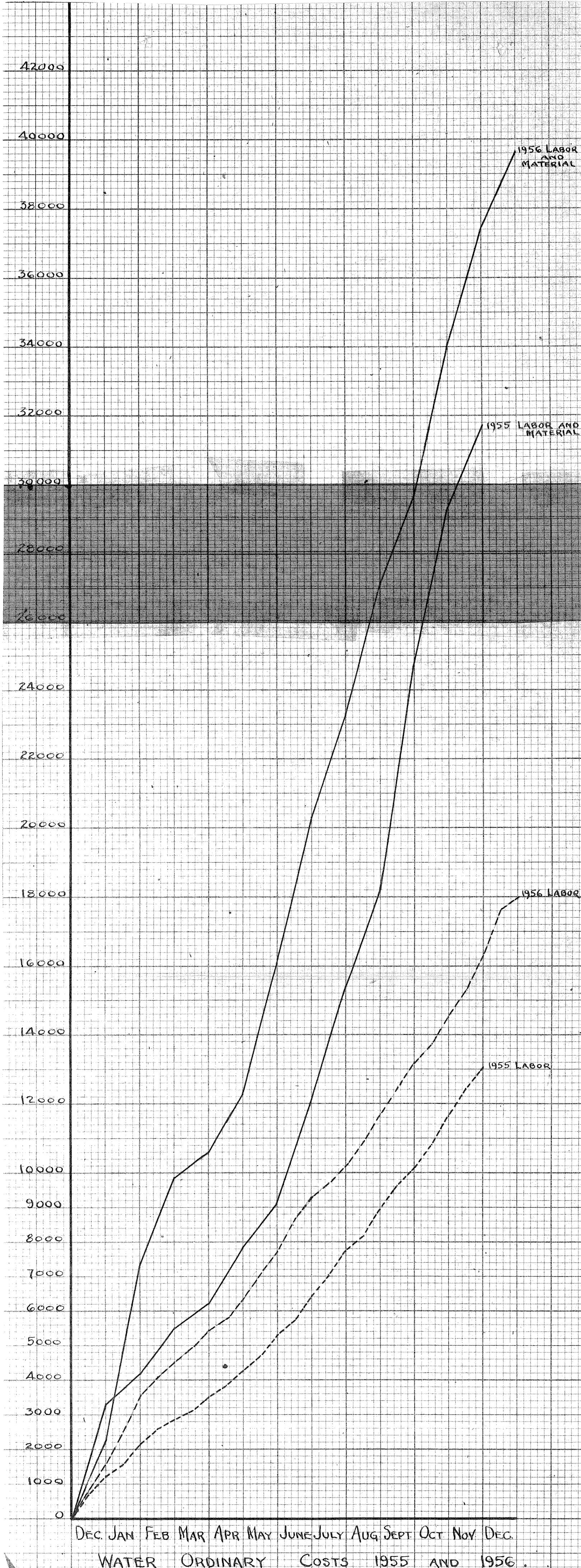
January 2	Pumping Station
January 9	Wilmot Well
January 14	Pumping Station
January 17	Pumping Station
January 27	127 Charlotte Street
February 1	Pumping Station
February 7	U. N. B. Engineering Building
February 14	127 Charlotte Street
February 22	Pumping Station
February 27	U. N. B. Engineering Building
March 3	U. N. B. Engineering Building
March 9	Pumping Station
March 16	127 Charlotte Street
March 21	Union Garage (North Devon)
March 26	127 Charlotte Street
April 3	127 Charlotte Street
April 9	U. N. B. Engineering Building
April 15	Wilmot Well
April 22	Pumping Station
April 27	127 Charlotte Street
May 2	Ashfield's Garage (North Devon) 1 Plus
May 6	Ashfield's Garage - O. K.
May 9	Pumping Station
May 15	U. N. B. Engineering Building
May 24	Ashfield's Garage
June 3	Pumping Station
June 11	127 Charlotte Street
June 19	U. N. B. Engineering Building
June 25	Ashfield's Garage
July 4	127 Charlotte Street
July 6	Ashfield's Garage
July 20	Pumping Station
July 27	Lean's Hardware Store - 1 Plus
July 28	Pumping Station
August 3	Union Garage - 3 Plus
August 6	Fire Station, MacLaren Avenue
August 9	3rd House below Killarney Reservoir - 3 Plus
August 14	<u>Chlorination begins</u>
August 17	Fire Station, MacLaren Avenue
August 20	Union Garage - 3 Plus
August 22	Union Garage
August 22	Fire Station, MacLaren Avenue
August 25	<u>Stopped Chlorinating</u>
August 28	C. McCarty, Highland Avenue
August 28	Government Yard, Killarney Road
August 28	Union Garage - 1 Plus

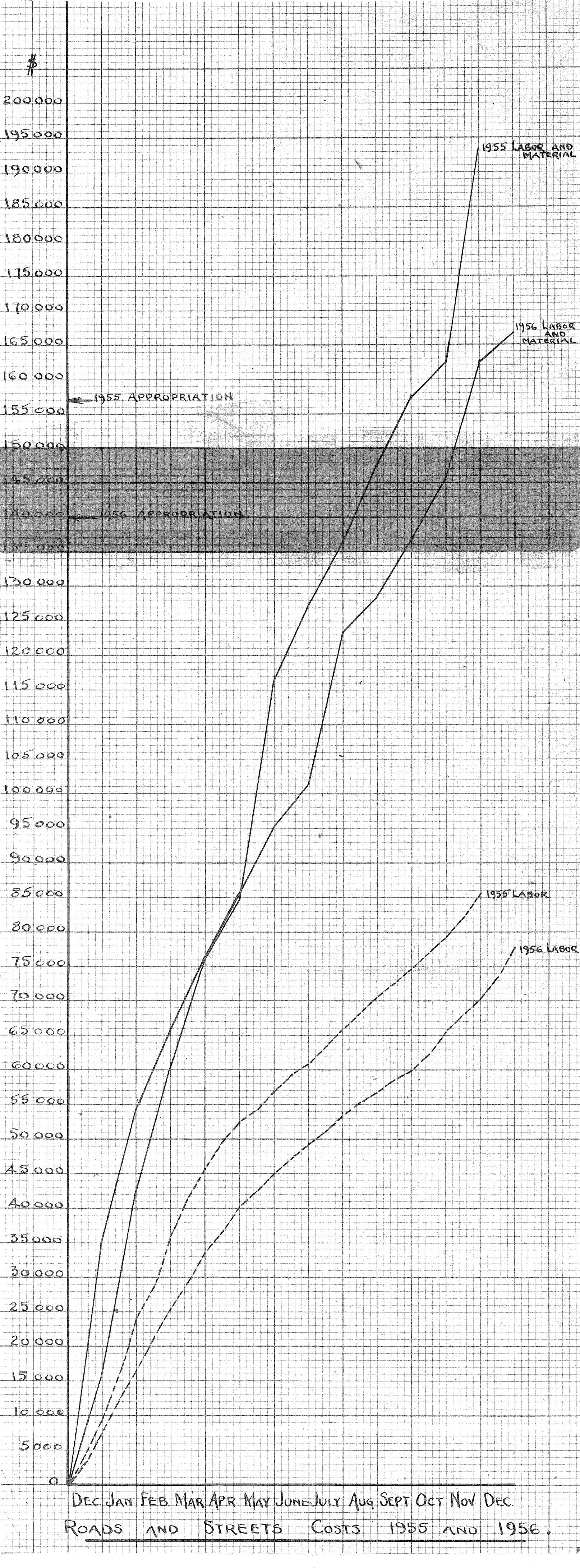
September 2	Ashfield's Garage		
September 8	Killarney Res.	-	2 Plus
September 8	Ashfield's Garage		
September 15	Killarney Well	-	1 Plus
September 15	Killarney Residence-		2 Plus
September 17	<u>Begin Chlorination</u>		
September 21	Killarney Well	-	1 Plus
September 21	Killarney Res.		
September 21	Range Res.		
September 24	Killarney Well		
September 24	Killarney Res.		
October 1	Killarney Well	-	1 Plus
October 1	Killarney Res.		
October 13	Killarney Well	-	1 Plus
October 13	Killarney Res.		
October 22	Killarney Well		
October 23	219 Edinburgh Street		
October 26	<u>Discontinued Chlorination</u>		
October 28	Killarney Well		
October 28	Killarney Res.		
November 6	Killarney Res.		
November 6	Union Garage		
November 13	Wilmot Well		
November 19	Killarney Well		
November 19	Killarney Res.		
December 2	D. D. Pringle, Marysville Road		
December 10	R. B. Malloy, McKeen Street		
December 24	Pumping Station		

The average pH for the Wilmot Well before aeration was 6.43

The average pH for the aerated water going into mains 6.83

New Well on Bridge Street pH 7.9





TRAILER CAMP INSTALLED SURFACE SEWER WATER AND
DOMESTIC SEWER TO SERVICE 22 CAMP SITES

