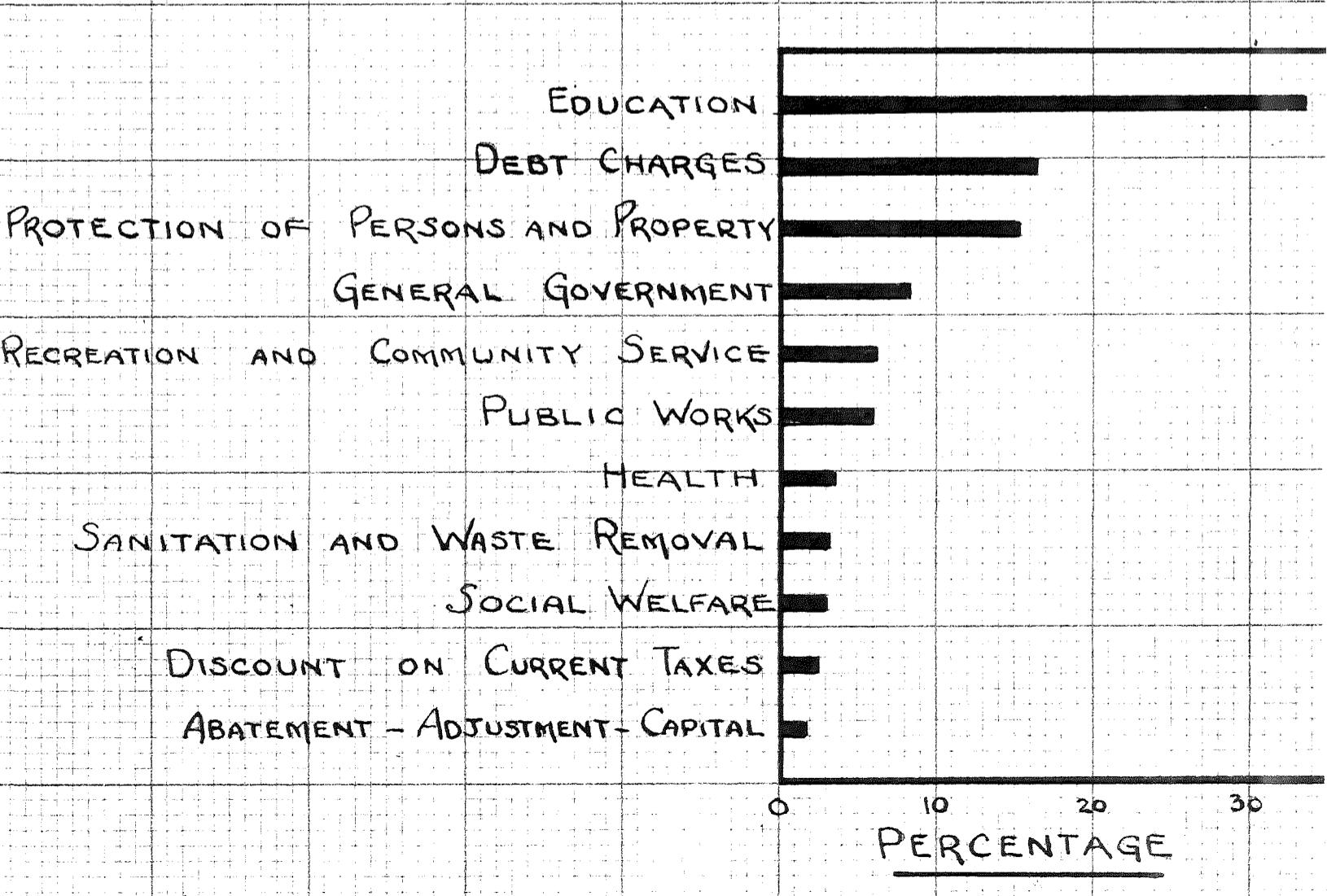


ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

1964



DISTRIBUTION OF THE 1964 CITY DOLLAR



ROADS AND STREETS

In 1964 the appropriation for Roads and Streets was \$189,750.00.

There are in Fredericton some 66.24 miles of Roads and Streets; 11.97 miles being located on the north side of the Saint John River and 54.27 miles on the south side. In addition there are 48.53 miles of concrete sidewalks; 8.47 miles on the north side and 40.06 miles on the south side of the Saint John River.

	<u>Roads and Streets</u>		
	<u>Urban</u>	<u>Rural</u>	<u>Total (Miles)</u>
Paved	47.23	5.31	52.54
Unpaved	7.46	6.24	13.70
TOTALS =	54.69	11.55	66.24

Roads and Streets Expenditure - 1964

Gross Expenditure	\$ 309,442.65
Credits	<u>88,441.02</u>
Net Expenditure	\$ 221,001.63
1964 Appropriation	<u>189,750.00</u>
DEBIT	\$ 31,251.63

The above credits of \$88,441.02 are made up as follows:-

Materials or charges for machinery to private parties	\$ 2,629.78
Journal Voucher (Materials sold to other City Departments) ...	423.45
Journal Voucher (Gas, Oil, Varsol, Antifreeze, Diesel Fuel)....	6,277.42
Journal Voucher (Machinery rental on other accounts)..	77,528.00
Rebate for Winter Works Project N.B.-50 (Federal Government)	718.49
Rebate from Compensation Board (Injured workmen)	546.88
Flintkote Co. (Return of Drums)	<u>317.00</u>
TOTAL	\$ 88,441.02

The Gross Expenditure is divided as follows:-

- Labor - Being the total of Roads and Streets Payrolls, (\$103,528.25) plus the cost of hired trucks or any other machinery hired by the hour, (\$32,969.00)\$ 136,497.25
- Material Charges - Which includes Workmen's Compensation, Unemployment Insurance and all materials including purchase and repairs to City owned equipment\$ 172,945.40

The Gross Expenditure of \$309,442.65 is divided into the following items. These items give an account of the amount and kind of work done by the Roads and Streets Department during this year.

ITEM #1

Snowplowing Sidewalks:- 48.53 miles

48.53 miles of sidewalks were kept plowed in 1964.

Total expenditure under this heading amounted to \$7,481.44, and was made up as follows:-

Labor	\$ 3,630.44
Machinery charges	<u>3,851.00</u>
Total Labor and Machinery	<u>\$ 7,481.44</u>

In 1964 the unit cost of plowing and sanding one mile of sidewalk was approximately \$288.00 and was calculated as follows:-

Labor	\$ 6,472.15
Machinery charges	6,297.00
Materials	<u>1,250.00</u>
Total Expenditure (Labor, Machinery and Materials).....	<u>\$14,019.15 (1)</u>

The overall cost including Compensation, Pension Fund and Sick Leave was approximately \$303.00 per mile.

ITEM #2

Snow Control:- 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. The total cost of snow control amounted to \$98,615.84 and was made up as follows:-

Labor, hired trucks and machinery	\$ 56,329.93
Machinery charges (City graders, jeeps, bulldozers) ...	31,550.00
Materials (Shovels, pick axes, etc.)	3,080.83
Expendable materials (Grader blades, chains, shear pins, etc.)	5,688.11
Maintenance to Snow Equipment (Repairs to Snow Blowers)	<u>1,966.97</u>
TOTAL EXPENDITURE	<u><u>\$ 98,615.84</u></u>

The following table shows comparative labor costs of Snow Control for the years 1962 to 1964 inclusive:-

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Snowplowing Roads and Streets ...\$	5,380.93	11,269.45	14,055.03
Blowing, hauling and shovelling snow	13,416.85	62,073.65	37,430.87
Catch Basins	2,374.16	4,818.13	3,842.61
Snow Fences	577.77	702.51	752.74
Plowing Parking Areas	-----	235.27	248.68
Thawing Culverts	<u>39.39</u>	-----	-----
TOTALS	<u><u>\$ 21,789.10</u></u>	<u><u>79,099.01</u></u>	<u><u>56,329.93</u></u>

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

The unit cost per mile of plowing, salting and sanding City Roads and Streets was approximately \$1,976.00 and was calculated as follows:-

Labor, Hired Trucks & Machinery	\$ 67,696.78
Machinery charges (City Graders, jeeps, bulldozers)	41,333.50
Material (Sand, salt)	15,079.51
Repairs to Snow Blowers	1,966.97
Expendable Material (Grader blades, etc.)	<u>5,688.11</u>
TOTAL	<u><u>\$131,764.87</u></u> - (2)

The overall cost including Compensation, Pension Fund, Holidays and Sick Leave was approximately \$2,174.00 per mile.

TOTAL COST OF SNOW CONTROL:- ADD (1) and (2) \$145,784.02

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

January 1, 1960 to December 31, 1960	88.40 inches
January 1, 1961 to December 31, 1961	93.89 inches
January 1, 1962 to December 31, 1962	90.80 inches
January 1, 1963 to December 31, 1963	106.10 inches
January 1, 1964 to December 31, 1964	120.40 inches

Snow Fences:-

Eleven thousand feet of lath and wire snow fencing was erected under Snow Control to prevent drifting snow from building up on outlying roads. No purchase of snow fencing was made in 1964.

ITEM #3

Sanding Streets and Walks:-

Storing sand in Winter Storage piles and spreading same on slippery streets and walks.

Labor	\$ 14,208.56
Machinery Charges	12,229.50
Materials	<u>13,248.68</u>
TOTAL EXPENDITURE	<u>\$ 39,686.74</u>

7,196 cubic yards of sand was purchased and used during the winter of 1964. The sand was supplied by W. R. and W. W. Thomas at prices of \$1.25 and \$1.20 delivered at City Yard.

In 1964, 205 tons of Salt was used for ice control.

ITEM #4

Streets:-

General work of maintenance of streets and sidewalks and any other items such as building culverts, curbs and gutters or pavements which are not mentioned under some particular heading.

Total expenditure under Streets Account (Labor, machinery and materials) amounted to \$78,935.71 and was made up as follows:-

Item	Labor	Machinery charges	Materials	Total
Repairing Machinery	\$ 15,343.40	1,522.00	35,730.20	52,595.60
Dust Control	591.40	24.00	2,021.92	2,637.32
Repairing Culverts	313.95	356.00	797.34	1,467.29
Ditching	73.15	100.50		173.65
Erection of Guard Posts	307.16	52.00	66.69	425.85
Repairing Streets (Curbs and Walks)	1,083.25	539.00	703.89	2,326.14
Rip-Rapping	242.16	57.00		299.16
Cutting Grass	1,232.93	395.00		1,627.93
Weather Account	13,405.77			13,405.77
Machinery Rentals	2,625.00			2,625.00
Retroactive Pay	1,352.00			1,352.00
TOTALS =	\$ 36,570.17	3,045.50	39,320.04	78,935.71

In 1964, 14,593.2 gallons of oil and one-half ton of Calcium Chloride were used for dust control.

ITEM #5

Surface Sewers:-

The Surface Sewers in the City were flushed where necessary and all Catch Basins were cleaned and repaired during the year and repairs were made to any leaks that occurred or extensions needed to the sewer outfalls amounting to \$10,023.80, made up as follows:-

Labor	\$ 5,748.64
Machinery Charges ..	2,516.50
Materials	<u>1,758.66</u>
TOTAL	<u>\$ 10,023.80</u>

ITEM #6

Yard:-

Caretaker at City Yard, repair work in City Yard, Heat, Power, Etc.

Labor	\$ 3,653.21
Machinery Charges.	54.00
Materials	<u>1,972.02</u>
TOTAL	<u>\$ 5,679.23</u>

In 1964 a pre-engineered Steel Building was erected at the City Yard to house city vehicles. This building was started in 1963 with the laying of the foundation and completed in 1964 by Brunswick Builders Ltd.

The cost of this building to the City was as follows:-

Brunswick Builders Ltd.	\$ 11,266.00
Federal Department Public Works (Credit re Project N.B. 50)	<u>718.49</u>
TOTAL	<u>\$ 10,547.51</u>

ITEM #7

Grading and Gravelling:-

Grading and application of gravel on City Roads and Streets.

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

The Gravel was purchased from Forbes and Sloat. The contract price for gravel was as follows:-

<u>Class of Gravel</u>	<u>Price per ton delivered to the job</u>
Class C (3" Crushed)	\$ 1.00 per ton
Class A (1¼" Crushed)	\$ 1.08 per ton

A stock pile was placed at the site of the Old City Dump on Wilsey Road for spring frost boils and excavation repairs.

The total cost under this heading "Roads and Streets" amounted to \$160.79.

ITEM #8

Lincoln Road:-

Under the heading "Lincoln Road" the labor expenditure amounted to \$159.40 and was for ditching the south side of the Lincoln Road from the Fredericton Boat Club to Wilsey Road.

Following is the total expenditure:-

Labor	\$ 159.40
City Machinery	70.00
Hired Trucks	<u>116.00</u>
TOTAL	\$ 445.40
	<u> </u>

ITEM #9

Wilsey Road:-

All work done on the Wilsey Road, other than work done by the Motor Graders.

A section of this road, south of the residence of Mr. Tyler Hodgson was ditched to the City line at a cost of \$2,637.57, made up as follows:-

Labor	\$ 1,380.57
City Machinery	118.00
Hired Machinery	<u>1,139.00</u>
TOTAL	\$ 2,637.57
	<u> </u>

ITEM #10

Doak Road:-

All work done on the Doak Road, other than work done by the Motor Graders.

A section of this road, south of the Doak School was ditched this year. The total expenditure amounted to \$445.25 and was made up as follows:-

Labor	\$ 201.75
City Machinery	159.50
Hired Machinery	<u>84.00</u>
TOTAL	\$ 445.25
	<u> </u>

ITEMS #11 and #12

New Maryland and Rural Roads:-

No expenditures were made on these roads in 1964 under this heading. The Provincial Government of Public Works chip-sealed the Maryland Road at no cost to the City.

ITEM #13

Asphaltic Concrete Repairs and
Paving Driveway Entrances:-

Patching and repairing Asphalt or Tar Pavement, applying seal coat, light tar or asphalt to Pavements and applying asphalt to driveways (Labor Cost)...\$ 11,728.56.

Total Cost:-

Labor	\$ 11,728.56
City Machinery	6,284.50
Materials	<u>11,745.17</u>
TOTAL	<u>\$ 29,758.23</u>

In 1958 a large Aggregate Dryer and Aggregate Conveyor Belt were purchased to facilitate the mixing of patching material in the City Yard. This equipment has resulted in an improvement to the quality of the patching material produced at the yard and has also accelerated the operation.

When local contractors have plants set up, patching material can be obtained more economically. Patching material, when available was obtained from Diamond Construction Company (1961) Limited and W. J. Gorman.

The total expenditure for Pavement Repairs and Driveways for 1964, including Workmen's Compensation, Pension Fund, Holidays, Sick Leave and Depreciation on the plant, amounted to \$32,089.76 and was computed as follows:-

ASPHALT

Stock from 1963	\$ 1,442.70
8100 Gallons RC ₃	2,882.74
3150 Gallons RS ₂	555.34
135 Gallons RS ₁	<u>61.97</u> ...\$ 4,882.75

Less Stock 1964

3050 Gallons RC ₃	\$ 1,067.50
360 Gallons RS ₂	<u>64.80</u> ... <u>1,132.30</u>
	\$ 3,750.45

Plus Freight and Cartage Charges 26.85

TOTAL GROSS \$ 3,777.30

Less Credit on Return of Drums 1,773.00

NET COST OF LIQUID ASPHALT USED \$ 2,004.30

Cost of Hot Mix Asphalt in patching
Streets and Driveways obtained
from Diamond Construction Company
(1961) Ltd. and W. J. Gorman\$ 7,072.91

TOTAL HOT MIX ASPHALT COST\$ 7,072.91

Liquid Asphalt	2,004.30
Kerosene (1585 Gallons)	447.97
Crushed Rock (100 tons)	300.00
Crusher Dust (200 tons)	400.00
Gravel (214.25 tons)	231.39
Sand (490 yards)	581.00
Depreciation on Conveyor, Hopper and Dryer	652.69
Maritime Electric Power	247.07
Repairs to Plant	922.51
Coal (5.95 tons)	135.48
City Labor (City employees, includ- ing Pension Fund, Workmen's Compensation and Holiday Account)	13,839.70
City Machinery (Trucks, Boilers, Loaders, Roller, etc.)	6,284.50
Miscellaneous	245.36
Chip Sealing, Connaught Street	<u>323.75</u>

TOTAL GROSS EXPENDITURE\$ 33,688.65

Less Credits (1) Diamond Construction,
Roller Rental\$ 36.54
(2) Modern Con-
struction, Centennial
Building 119.63 156.17

TOTAL NET ACTUAL COSTS\$ 33,532.48

ITEM #14

City Road Graders:-

Operator's Wages	\$ 933.98
Machinery Charges	<u>3,536.00</u>
TOTAL FOR LABOR AND MACHINERY CHARGES	\$ 4,469.98

The repair costs for City Graders will be found
on page 15 of this report under the heading "Roads
and Streets."

ITEM #15

Parking Lots:-

The Public Parking Lots were graded and
gravelled where necessary and were kept in a
satisfactory condition in 1964.

The total expenditure amounted to \$715.73
and was made up as follows:-

Labor	\$ 96.41
Machinery charges	174.50
Materials	<u>445.82</u>
TOTAL	\$ 716.73

ITEM #16

Paint Department:-

Painting, repairing and installing street signs on City Streets.

The total expenditure under the heading amounted to \$1,902.68, made up as follows:-

Labor	\$ 1,050.17
Machinery charges	4.50
Materials	<u>848.01</u>
TOTAL	\$ 1,902.68

ITEM #17

Clearing along Right of Ways:-

The bushes along the right of way on Priestman Street, from Smythe Street to Regent Street, were cut and a road 66' wide was cleared on Priestman Street, from Regent Street to College Hill Road, at a cost of \$805.46 for labor and \$38.00 for machinery, making a total cost of \$843.46.

LABOR COSTS, ROADS & STREETS ACCOUNT FOR 1964
AMOUNTED TO \$103,528.25

TABLE COMPARING YEARLY COSTS OF LABOR AND HIRED MACHINERY ON ROADS AND STREETS ITEMS

ITEM	1961	1962	1963	1964
1. Snowplowing sidewalks	\$ 3,841.47	1,741.60	4,932.42	3,630.44
2. Snow Control	41,158.27	21,789.10	79,099.01	56,329.93
3. Street Sanding	5,818.55	6,387.58	11,271.58	14,208.56
4. Surface Sewer	6,104.26	5,031.12	6,309.93	5,748.64
5. Yard	3,357.61	3,928.57	3,912.51	3,653.21
6. Streets Account	32,384.51	36,709.41	34,467.89	39,880.00
7. Grading & Gravell-	105.72	900.78	77.20	-----
8. Lincoln Road (ing	130.30	646.56	-----	159.40
9. Wilsey Road	32.64	635.03	444.36	1,380.57
10. Doak Road	134.22	372.62	668.90	201.75
11. New Maryland Road	-----	-----	-----	-----
12. Rural Roads	25.05	-----	-----	-----
13. Tarvia Repairs	9,023.69	10,794.57	11,998.06	8,418.73
14. Road Graders	770.66	1,109.07	934.19	933.98
15. Parking Lots	241.71	212.50	30.33	96.41
16. Paint Department	910.59	960.17	1,256.64	1,050.17
17. Clearing along Right of Ways	-----	-----	-----	805.46
TOTALS	\$ 104,039.25	91,218.68	155,403.02	136,497.25

HIRED TRUCKS & MACHINERY COSTS 1964 - \$ 32,969.00

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

1.	Sicard Junior Snowblower	\$ 21,216.00
	Model BJ1D672T400 F.R. Serial #552 - }	
	JB with the following accessories:- }	
	Honeyweld Control for Power Unit, }	
	4 Clearance Lamps, 3 Marker Lamps, }	
	4 Direction Lights, 3-Way Light F & R)	
	Electric Flasher Top of Cab, Chains....	274.00
	Cummings Engine #NHL95 Diesel	
		\$ 21,490.00
	Plus Tax 3%	<u>644.70..\$ 22,134.70</u>
1 -	International $\frac{1}{2}$ ton Serial #38777A6...\$ 2,846.00	
	<u>Less</u> - Trade in allowance on	
	1 Ton G.M.C. 1960	<u>1,400.00</u>
		\$ 1,446.00
	Plus Tax 3%	<u>43.38.. 1,489.38</u>
1 -	Model 380 Hy-Hoe Backhoe, Serial #4622W, Motor - 47999, mounted on:-	
	C.C.C. Crane Carrier, Model 1064C,	
	Serial #1064C-2953, Engine	
	#Y313-8D5-25446C	\$ 26,080.00
	<u>Less</u> - Trade in on used Michigan	
	Backhoe Model T6K	<u>4,580.00</u>
		\$ 21,500.00
	Plus Tax 3%	<u>645.00.. 22,145.00</u>
1 -	Matthew Moddy Mixer, Model 456M, Briggs and Stratton Motor Model 80101, Type 908057, Serial #6222171	\$ 240.00
	Plus Tax 3%	<u>7.20.. 247.20</u>
1 -	VT4FD Atlas Copco Portable Air Compressor, A/N136693	\$ 5,995.00
	Plus Tax 3%	<u>179.85</u>
		\$ 6,174.85
	<u>Less</u> - Rental Credit	<u>2,475.00.. 3,699.85</u>
	TOTAL EXPENDITURE	<u>\$ 49,716.13</u>

The following is a list of vehicles and machinery used in the Roads and Streets Department, together with the repair costs for 1963 and 1964, including tires and tubes.

<u>Name of Vehicle</u>	<u>Year Purchased</u>	<u>Repairs 1963</u>	<u>Repairs 1964</u>
Austin Western Grader (300 Pacer)	1962	\$ 2,315.50	\$ 2,167.52
Allis Chalmers Grader AD-40	1955	5,488.39	7,877.50
Galion Grader	1961	2,794.22	1,250.61
Caterpillar D-6 Bulldozer	1953	2,354.78	1,861.63
Case 420 Crawler Tractor	1961	2,634.82	3,074.71
Case 420 Crawler Tractor	1962	700.16	2,429.49
TD5 International Crawler Tractor	1963	138.63	2,601.87
Michigan T6K Shovel (Traded in 1964)	1947	5,969.69	209.61
Hy Hoe	1964	-----	695.79
Unit Shovel (3/4 Yard)	1957	5,739.56	7,506.48
Pettibone Mulliken Loader	1958	5,647.85	1,568.51
Hough 450 Model Loader	1963	264.94	960.95
Airpic Compressor	1953	68.99	10.61
Ingersol Rand Compressor	1957	365.96	1,054.21
Copco Compressor	1964	-----	32.70
Tarvia Roller Model #157	1955	89.68	235.43
Willys Jeep #11	1961	963.70	244.81
Willys Jeep #12	1962	352.15	385.83
Willys Jeep #17	1960	411.65	423.27
Willys Jeep #40	1962	276.51	754.96
Dodge 3 ton	1963	71.25	92.67
G.M.C. 3 ton	1962	570.29	518.21
International 3 ton	1961	441.65	528.38
Chevrolet 3 ton	1960	410.01	292.60
Ford 3 ton	1959	881.27	491.14
G.M.C. 1 ton (Traded in 1964)	1960	1,494.46	83.06
International $\frac{1}{2}$ ton	1964	-----	105.16
International 1 ton	1959	586.21	194.67
Chevrolet Panel	1963	136.13	17.18
Ford Tudor (300)	1963	61.05	145.71
Expendable Accessories (Grader Blades, Bolts, Nuts, Bulldozer Blades and Corners, Tools, etc.)		6,198.69	9,252.88
TOTAL COST	=	\$ 47,428.19	47,068.15

The following equipment is used on Snow Control and repair and maintenance cost for this equipment is shown as follows:-

<u>Name of Vehicle</u>	<u>Year Purchased</u>	<u>Repairs 1963</u>	<u>Repairs 1964</u>
Sicard Snow Blower #30	1949	\$ 4,736.72	552.50
Sicard Snow Blower #39 (1952 Model)	1961	9,127.69	656.48
Sicard Snow Blower #47	1963	5.77	358.03
Ford Sand Spreader	1960	<u>254.30</u>	<u>735.82</u>
TOTAL COST	=	\$ 14,124.48	2,302.83

I N D E XP A G E

Letter of Transmittal -----	1
Total Yearly Expenditure -----	4
Administration of Justice -----	51
Capital Account Curb and Gutter -----	18
Capital Account Domestic Sewer -----	19 - 21
Capital Account Forest Hill Access Road -----	33
Capital Account Gravel Roads -----	32
Capital Account Paving -----	19
Capital Account Surface Sewer -----	22 - 24
Capital Account Water: -----	25 - 31
Drilled Well - Carleton Ward -----	28
Diesel Standby for Main Waterworks Plant -----	29 - 31
Carleton Park -----	42 - 43
Cement Walks -----	47
City Hall -----	44 - 45
Clark, J. T. Memorial Building -----	51
Clearing Park Areas -----	43
Contingent -----	52
Domestic Sewer -----	45 - 46
Fire Department -----	50
Industrial Development -----	41
Local Improvement -----	34 - 35
Loyalist Burial Ground -----	51
Municipal Home -----	45
Municipal Parking Lot -----	52
Odell Park -----	42
Old Burial Ground -----	46 - 47
Public Works -----	36 - 41
Queen's Square Improvement -----	52
Recreation -----	44
Roads and Streets -----	5 - 16
Sanitation -----	48 - 50
Street Lights -----	54 - 57
Tourist and Industry -----	53
Water: -----	58 - 62
Water Ordinary -----	58 - 59
Hydrants -----	60
Meters -----	60 - 61
Distribution System -----	61
Water Pumping Station -----	62 - 65
Wilmot Park -----	43
Winter Works Program -----	17 - 18
York Street School -----	53
Report of E. W. Hagerman, City Analyst -----	66 - 69

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

Gentlemen:

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

This report covers the period January 1, 1964 to December 31, 1964 and is written for the purpose of maintaining an accurate record on file of the activities and costs of the various departments.

During the year, along with regular maintenance, City crews and contractors constructed the following work:

Concrete Curb and Gutter	3.90 miles
Concrete Sidewalk	1.55 miles
Grading and Gravelling	1.74 miles
Ditching (Wilsey Road & Doak Road)28 miles
New Street Construction	1.68 miles
New Pavement 3/4" Dense Mix (Diamond Construction Co.(1961) Ltd.)	.09 miles
10" to 72" Surface Sewer	3.27 miles
8" to 10" Domestic Sewer	2.92 miles
4" to 12" C. I. Water Main	3.20 miles

Contractors under contract with the Public Works Department of the City of Fredericton in 1964 constructed or began construction on the following projects:-

- | | |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Ashfield Construction Company Ltd. | - To installing Domestic Sewer, Surface Sewer and Water on Lynhaven Street. |
| Ashfield Construction Company Ltd. | - To installing Domestic Sewer, Surface Sewer and Water on Lorne, Bessborough and Massey Streets (Hill Bros. subdivision). |
| Ashfield Construction Company Ltd. | - To installing Domestic Sewer, Surface Sewer and Water on Oxford Street and Simcoe Court (Greendale subdivision). |
| Ashfield Construction Company Ltd. | - To installing Domestic Sewer, Surface Sewer and Water on a portion of Smythe and Prospect Streets. |
| Diamond Construction Co. (1961) Ltd. | - To construction of Forest Hill Access Road (partially completed 1964). |
| Everett Farris | - To installing Domestic Sewer, Surface Sewer and Water on Bailey Drive and Kennedy Court (Carleton Realty subdivision). |

- Everett Farris - To installing Domestic Sewer, Surface Sewer and Water on Regent Street (partially completed 1964). (Municipal Loan and Development Fund)
- Robert Morse Corp. - To supply and installation of Diesel Driven Pumping Equipment at Fredericton Water Works (Queen and Smythe Streets).
- Forbes and Sloat - Supply and delivery of Crushed Gravel.
- Brunswick Builders Ltd. - Completion of 1963 contract for supply and erection of a pre-engineered steel building at City Yard.

The current expenditures for the twelve-month period, January 1, 1964 to December 31, 1964 appear as follows:-

	<u>Appropriation</u>	<u>Net Expenditure</u>	<u>Debit</u>	<u>Credit</u>
Street Lights	\$ 56,930.00	57,682.43	752.43	
Public Works	24,600.00	26,619.65	2,019.65	
Roads and Streets	189,750.00	221,001.63	31,251.63	
Sanitation (Land Fill and Garbage)	59,438.00	59,664.16	226.16	
Wilmot Park	4,140.00	3,323.30		816.70
Odell Park	4,926.00	5,590.19	664.19	
Carleton Park	3,200.00	3,150.63		49.37
Old Burial Ground	2,150.00	1,463.72		686.28
Street Cleaning	48,500.00	45,838.66		2,661.34
Loyalist Burial Ground	100.00	95.15		4.85
Queens Square	2,000.00	1,743.14		256.86
Clearing Park Areas	1,000.00	----		1,777.45
TOTALS =	\$ 396,734.00	426,172.66	34,914.06	6,252.85

	<u>Revenue</u>	<u>Net Expenditure</u>	<u>Credit</u>
Water Pumping Station)		52,431.23	
Water Ordinary } \$ 249,090.70	63,683.77	109,311.62	
Sewerage Domestic } 15,164.08			
Salaries	-----	8,500.00	-----
TOTALS =	\$ 249,090.70	139,779.08	109,311.62

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

The preliminary report on the 1961 census shows the City's population as 19,683.

Following in the body of this report is a detailed statement of the work done, comparative expenditures and unit costs under the various departments. The detailed report of any particular department can be readily found by referring to the index before page 1.

Respectfully submitted,

W.L. Barrett

City Engineer.

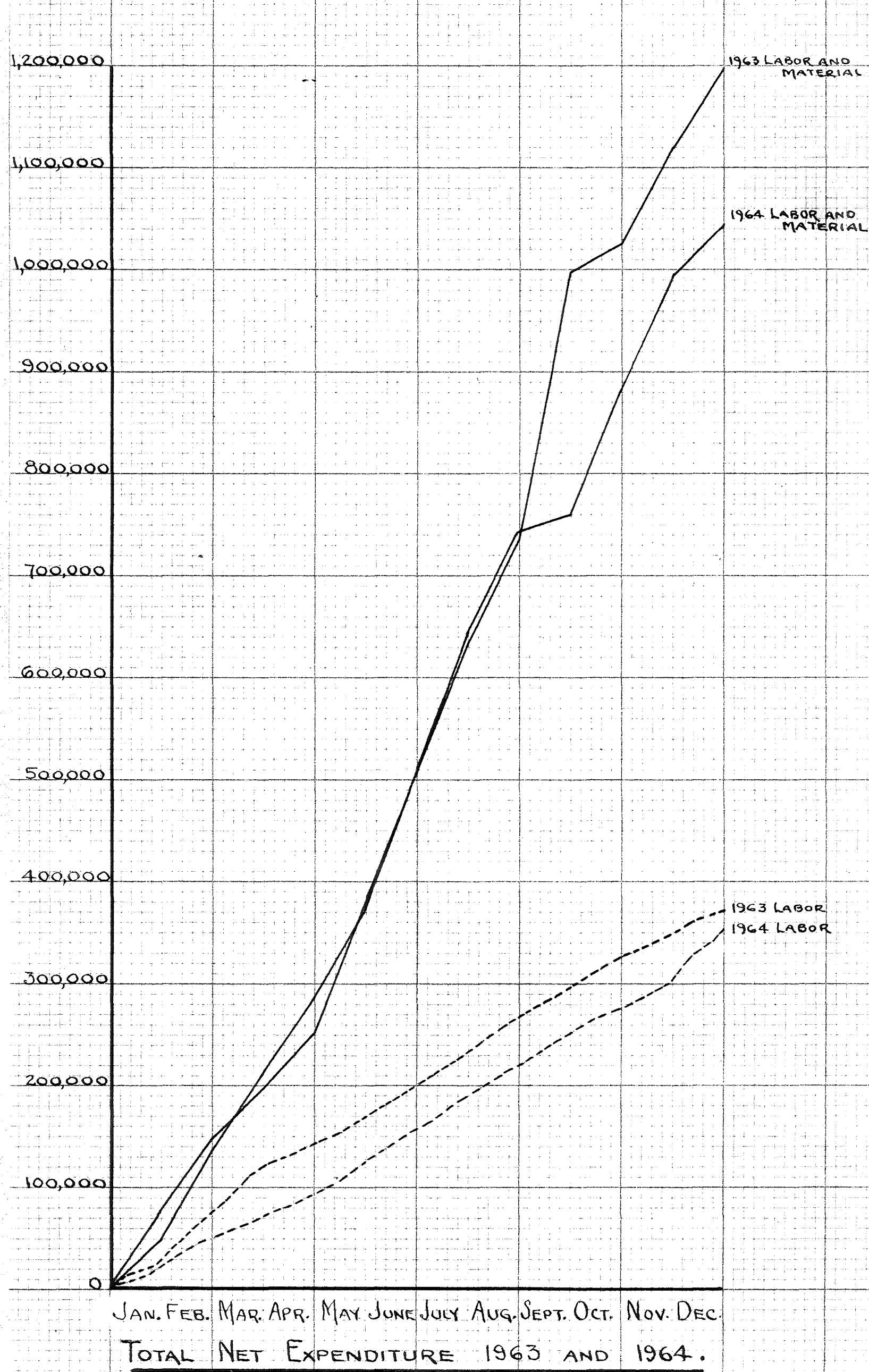
TOTAL YEARLY EXPENDITURE

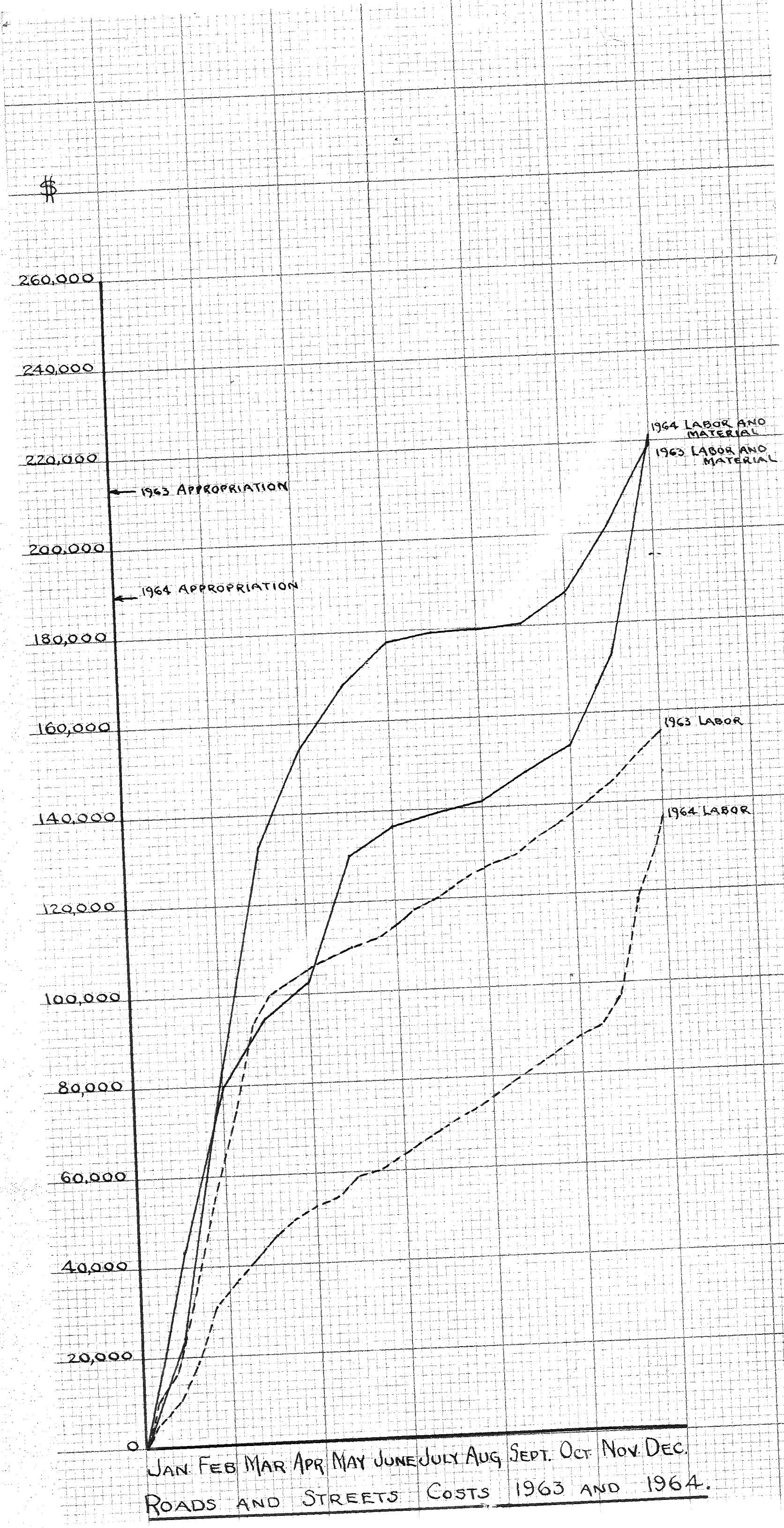
The total yearly net expenditure under the direct supervision of the City Engineer in 1964 amounted to \$1,047,917.61.

A graphic comparison of expenditures for labor and labor and material for the year 1963 and the year 1964 is shown on the following graph.

The location of new construction completed and commencing in 1964 is shown on maps inserted after page 4 of this report.

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





WINTER WORKS PROGRAM

The Public Works Department in 1964 took advantage of assistance offered under the Winter Works Incentive Program on all projects which qualified for same.

Assistance was obtained on several projects which were part of the Capital Works Program for the year and which were commenced or were in progress during the period for which assistance is available; namely, November 1st to May 31st.

The following is a list of projects on which assistance was obtained and the credits for same appear in the appropriate accounts or will be credited in 1965 when claims are finalized.

JANUARY 1, 1964 - APRIL 30, 1964

<u>Project Number</u>	<u>Description</u>	Total Direct Payroll Cost	Amount Claimed	Net Labor Cost to City of F'ton
N.B.-49	Installation of Services Skyline Acres	\$ 9,087.28	\$ 2,922.35	\$ 6,164.93
N.B.-138	Clearing New Streets in Smythe and York Street areas	933.18	429.27	503.91
TOTAL FOR PERIOD Jan. 1/64 to April 30/64		<u>\$10,020.46</u>	<u>\$ 3,351.62</u>	<u>\$ 6,668.84</u>

NOVEMBER 1, 1964 - DECEMBER 1, 1964

<u>Project Number</u>	<u>Description</u>	Total Direct Payroll Cost	Amount Claimed	Net Labor Cost to City of F'ton
N.B.-8	Installation of Services, Skyline Acres	\$ 516.79	\$ 178.60	\$ 338.19
N.B.-9	Clearing Right of Way, Oxford and Willingdon Streets	582.15	215.32	366.83
N.B.-11	Clearing on Priestman Street	838.29	343.65	494.64
N.B.-12	Installation Water and Sewer Mains, Wilsey Road	2,933.26	845.12	2,088.14
N.B.-61	Clearing and Grubbing Areas for Ski Runs, Odell Park	1,166.52	412.11	754.41
TOTAL FOR PERIOD Nov. 1/64 to Dec. 31/64		<u>\$ 6,037.01</u>	<u>\$ 1,994.80</u>	<u>\$ 4,042.21</u>

SUMMARY FOR YEAR 1964

Total Direct Payroll Cost	\$ 16,057.47
Less Amount Claimed	<u>5,346.42</u>
NET LABOR COST TO CITY OF FREDERICTON.	\$ 10,711.05

CAPITAL ACCOUNT CURB AND GUTTER

The net expenditure under this heading amounted to \$42,823.44.

For the above expenditure of \$42,823.44, concrete curb and gutter was constructed at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Road (east side)	3,951
ury Drive; Cambridge Crescent to Essex Street (both sides)	1,782
Street (both sides)	390
y Crescent, Cambridge Crescent to Manchester Court (both sides)	635
ter Court (both sides)	1,059
reet, Montgomery Street to Pederson Crescent (both sides)	674
n Crescent (both sides)	1,125
od Crescent (both sides)	2,896
Street, Montgomery Street to south entrance to Beechwood Cres. (both sides). .	2,452
venue, completion of curbing on street (both sides)	855
Street, McEvoy Street to near Irvine Street (both sides)	3,476
ery Street, U.N.B. property line to College Hill Road (both sides)	1,345
TOTAL	20,640

All the above listed Curb and Gutter was constructed by City Crews.

All the concrete poured was purchased ready-mixed from the firm of Elmtree Concrete Limited, at a price of \$14.95 per cubic yard. A cubic yard of concrete poured 20.6 lineal feet of Curb and Gutter.

The unit cost of one lineal foot of Curb and Gutter, found by dividing the total length laid, which equals 20,640 lineal feet, into the total cost of \$42,823.44 is \$2.07 per lineal foot.

The topsoiling of Boulevards is included in the above cost.

CAPITAL ACCOUNT PAVING

Due to the construction of St. Thomas University and Teachers' College on Montgomery Street, the remaining portion of Montgomery Street, adjacent to these buildings, was paved by the Diamond Construction Co. (1961) Ltd. at a cost of \$2,911.42. This expenditure was made up as follows:-

Diamond Construction Co. (1961) Ltd.,	
355.2 tons Base Asphalt at \$7.75	
per ton\$ 2,752.80	
Journal Voucher (City Machinery)56.50	
Journal Voucher (Material)7.28	
Labor (City workmen)94.84	
TOTAL\$ 2,911.42	

CAPITAL ACCOUNT DOMESTIC SEWER

Gross Expenditure and Stocked	
Material\$ 90,621.09	
Less Inventory, Dec. 31, 1964. 4,489.97	
\$ 86,131.12	
Credits31,979.30	
NET EXPENDITURE\$ 54,151.82	

Included in the net expenditure of \$54,151.82 is the amount of \$3,504.24 holdback from jobs completed in 1963 and showing in 1964 accounts.

The above credits are made up as follows:-

Fredericton Housing Ltd.)	\$ 9,359.20
Parkside Development)	2,000.00
Carleton Realty)	1,366.00
Hill Brothers)	4,767.20
C. Montgomery-Campbell)	1,888.80
Greendale Limited)	2,818.00
Donald F. Grant)	76.00
J. K. Brien)	1,081.20
Journal Voucher (Materials paid for by Capital Account Domestic Sewer and used by Private Parties)	23,356.40 3,504.24 63.49 19,852.16
Journal Voucher (Materials paid for by Capital Account Domestic Sewer and used by other City Departments)	8,559.41
TOTAL	\$ 31,979.30

Domestic Sewer Mains were constructed at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>	
	<u>8" Transite</u>	<u>10" Transite</u>
Heather Terrace	572	
Carleton Realty (Bailey Drive & Kennedy Court	1,183	
Greendale Ltd. (Oxford Street and Simcoe Court)	1,357	
Hill Bros. (Lorne, Massey and Bessborough Streets)	1,789	
Industrial Road (Wilsey)		2,060
Lynhaven Street	598	
Prospect Street	600	
Regent Street	2,655	
Smythe Street	534	
Fredericton Housing Subdivision (Forest Hill)	4,065	
TOTALS :.....	13,353	2,060
	<u>=====</u>	<u>=====</u>

The actual cost of installing the above listed Sewer Mains was as follows:-

<u>Location</u>	Payment to Contractors Including City Labor Reserves for and			<u>Total</u>
	<u>Holdback</u>	<u>Machinery</u>	<u>Material</u>	
Heather Terrace	\$ 1,459.08	1,213.14	1,213.14	2,672.22
Carleton Realty	2,616.00	334.23	2,632.16	5,582.39
Greendale Ltd.	6,534.00	115.40	2,845.20	9,494.60
Hill Brothers	6,857.00	225.21	3,612.22	10,694.43
* Industrial Park	2,138.87	708.51	5,695.89	8,543.27
Lynhaven Street	2,770.50	72.74	1,098.40	3,941.64
Prospect Street	1,883.70	43.15	1,105.00	3,031.85
Regent Street	6,179.35	851.43	5,610.63	12,641.41
Smythe Street	1,781.60	15.84	1,001.31	2,798.75
Fredericton Housing Subdivision		6,511.43	9,726.08	16,237.51
TOTALS =	\$ 30,761.02	10,337.02	34,540.03	75,638.07
	<u>=====</u>	<u>=====</u>	<u>=====</u>	<u>=====</u>

* Hired Machinery and Crew Payroll - Ashfield Construction Co.

All above costs include any holdback payments, thus showing the actual cost of construction greater than the net expenditure. To arrive at the cost per lineal foot of construction, the cost of \$75,638.07 *i.e. - 54,151.82* must be used for determining same.

City Machinery and City Workmen installed the Domestic Sewer on Heather Terrace and Fredericton Housing Subdivision.

Total Lineal Feet laid 15,413

Cost by Contractors per Lineal Foot

Size of Pipe	Carleton Realty	Greendale Ltd.	Hill Bros.	Lynhaven Street	Prospect Street	Regent Street	Smythe Street
8"	\$ 4.72	\$ 7.00	\$5.97	\$6.59	\$5.05	\$ 4.76	\$ 5.24
10" Rock		75%	40%	75%			

Cost by City Crews and Machinery per Lineal Foot

Size of Pipe	Heather Terrace	F'ton Housing Subdivision
8" Rock	\$ 4.67 40%	\$ 4.00 75%

Cost by Hired Machinery and Crew Payroll per Lineal Foot

Size of Pipe	Industrial Road (Wilsey)
10"	\$ 4.35

Materials in stock, December 31, 1964:-

637½ lineal feet of 8" T.C.Pipe @ \$0.86 per foot	\$ 548.25
29½ lineal feet of 10" T.C.Pipe @ \$1.19 per foot	35.11
58 lineal feet of 12" T.C.Pipe @ \$1.55 per foot	89.90
1813 lineal feet of 8" Asbestos Cement Pipe @ \$1.48 per foot	2,683.24
247½ lineal feet of 10" Asbestos Cement Pipe @ \$2.01 per foot	497.47
210½ lineal feet of 12" Asbestos Cement Pipe @ \$2.40 per foot	505.20
9 Pre-Cast Manhole bottoms @ \$10.07 each	90.63
1 Manhole Cover and Frame @ \$40.17 each	40.17
TOTAL	<u>\$4,489.97</u>

CAPITAL ACCOUNT SURFACE SEWER

Gross Expenditure and Stocked Material	\$ 176,472.67
Less Inventory, Dec. 31, 1964	<u>5,831.31</u>
	<u>\$ 170,641.36</u>
Credits	<u>45,160.94</u>
Net Expenditure	<u><u>\$ 125,480.42</u></u>

Included in the net expenditure of \$125,480.42 is the amount of \$2,407.47 holdback from jobs completed in 1963 and showing in 1964 accounts.

The above credits are made up as follows:-

Fredericton Housing Subdivision)	\$ 11,961.10
Parkside Development)	2,570.00
Carleton Realty)	1,788.75
Hill Bros.)	5,843.10
C. Montgomery-Campbell)	2,244.90
Greendale Limited)	4,154.25
Donald F. Grant)	85.50
J. K. Brien)	1,580.35

Work done and materials sold to private parties, other than above	1,157.74
Government of Canada (Winter Works Incentive Program)..	4,189.49
Journal Vouchers (Materials paid for by Capital Account Surface Sewer and used by other City Departments)	<u>9,585.76</u>
TOTAL	<u><u>\$ 45,160.94</u></u>

Under this heading Surface Sewer Mains were constructed at the following locations:-

Location	Concrete Pipe						
	10"	12"	15"	18"	24"	30"	60"
Back Drain Diversion							
Heather Terrace	138	400					
Carleton Realty -	161	153	345				
Kennedy Court and Bailey Drive							
Devon Avenue	39						
Greendale Ltd. (Oxford and Simcoe)	408	740	52	414			
Hill Bros. (Lorne, Massey & Bessborough)	285	746	1,606				
Lynhaven Street	41	4		20	1,221		
Montgomery Street	45	4		516			
Noble Street							
Prospect Street	120	620					
Regent Street	141		164	690	1,716		
F'ton Housing Subdivision	438	2,092	1,072	1,000	364		
Smythe Street	69	68	488				
TOTALS	=	1,885	4,827	3,747	2,664	3,301	112
							500

Total lineal feet all sizes 17,036

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

Location	Payment to Contractors including Reserves for Holdback	City Labor and Machinery	Material	Total
Back Drain Diversion	\$ 4,262.58	10,747.09	15,009.67	
Heather Terrace	2,457.25	2,006.06	4,463.31	
Carleton Realty	1,899.80	341.79	1,979.35	4,220.94
Devon Avenue		92.87	178.49	271.36
Greendale Ltd.	11,024.00	310.48	4,424.53	15,759.01
Hill Bros.	11,591.00	363.91	6,222.15	18,177.06
Lynhaven Street	8,214.00	322.55	7,817.33	16,353.88
Montgomery Street		1,194.04	1,823.00	3,017.04
Noble Street		309.40	656.56	965.96
Prospect Street	3,157.70	65.37	1,369.45	4,592.52
Regent Street	8,677.00	1,782.43	13,195.80	23,655.23
Fredericton Housing Subdivision		29,878.04	16,852.25	46,730.29
Smythe Street	1,588.60	239.35	1,088.75	2,916.70
TOTALS =	\$ 46,152.10	41,620.06	68,360.81	156,132.97

All above costs include any holdback payments which will appear in 1965 accounts but do not include credits from Winter Works Assistance.

City Workmen and City Machinery installed Surface Sewers at the following locations:-

City Back Drain Diversion
 Heather Terrace
 Devon Avenue
 Montgomery Street
 Noble Street
 Fredericton Housing Subdivision
 (Skyline Acres)

Following is the cost for laying various sizes of pipe including Catch Basins, in place by Contractors and City Workmen.

Cost by Contractor per Lineal Foot

Size of Pipe	Carleton Realty	Greendale Ltd.	Hill Bros.	Lynhaven Street	Prospect Street	Smythe Street	Regent Street
24"	\$	\$	\$	\$ 12.32	\$	\$	\$ 9.87
18"		11.98		8.49			6.54
15"	6.70	11.48	8.09			4.47	7.54
12"	6.19	8.97	5.08		6.21	5.56	
10"	6.03	8.81	4.92	4.32	6.05	5.40	6.87
		75% Rock	40% Rock	75% Rock			

Cost by City Crews and Machinery per Lineal Foot

Size of Pipe	Back Drain Diversion	Heather Terrace	Devon Avenue	Montgomery Street	Noble Street	Fredericton Housing Subdivision
60"	\$ 29.12	\$	\$	\$	\$ 8.62	\$
30"						12.68
24"						9.85
18"				6.14		9.35
15"						8.68
12"		8.35				8.62
10"		8.13	6.90			75% Rock
		40% Rock				

Stock on hand December 31, 1964:-

537 lineal feet of 10" Concrete Pipe @ \$0.82 per foot ..	\$ 440.34
1404 lineal feet of 12" Concrete Pipe @ \$0.98 per foot..	1,375.92
293 lineal feet of 15" Concrete Pipe @ \$1.49 per foot ..	436.57
656 lineal feet of 18" Concrete Pipe @ \$1.99 per foot ..	1,305.44
432 lineal feet of 24" Concrete Pipe @ \$4.82 per foot ..	2,082.24
4 lineal feet of 30" Concrete Pipe @ \$5.49 per foot	21.96
Catch Basins (Covers & Frames) 4 @ \$42.21 each.....	168.84
TOTAL	\$ 5,831.31

CAPITAL ACCOUNT WATER

Gross Expenditure and Stocked Material ...	\$ 200,667.39
<u>Less</u> Inventory, Dec. 31, 1964	<u>35,254.20</u>
	\$ 165,413.19
<u>Less</u> Credits	<u>38,559.02</u>
Net Expenditure	<u>\$ 126,854.17</u>

Included in the net expenditure of \$126,854.17 is the amount of \$3,017.28 holdback from jobs completed in 1963 and showing in 1964 accounts.

The above credits are made up as follows:-

Fredericton Housing Subdivision)	\$ 8,189.30
Parkside Development)	1,750.00
Carleton Realty)	1,195.25
Hill Bros.)	4,171.30
C. Montgomery-Campbell)	1,652.70
Greendale Ltd.)	2,465.75
Donald F. Grant)	66.50
J. K. Brien)	946.05
Work done and materials sold to private parties, other than above	4,837.88
Return of Material to Canadian Brass Company	131.85
Government of Canada (Winter Works Incentive Program)..	48.38
Journal Voucher (Materials paid for by Capital Account Water and sold to other City Departments)	<u>13,104.06</u>
TOTAL	<u>\$ 38,559.02</u>

Water Main installations were made at the following locations:-

Location	Size of C. I. Pipe				
	12"	10"	8"	6"	4"
Albert Street			268	6	
Heather Terrace (Brien Subdivision)				54	528
Drilled Wells (Carleton Ward)		15			
Carleton Realty		326		11	220
College Hill Road	646			5	
Greendale Ltd. (Oxford Street & Simcoe Court)	471		10	336	585
Hill Bros. (Massey, Lorne & Bessborough Streets)		422		1,491	
Industrial Road	1,997			16	
King's College Road	1,368			17	
Lynhaven Street		640		10	
Prospect Street		620		15	
Regent Street	90	796	1,735	24	
Fredericton Housing Subdivision (Skyline Acres)		839	936	1,212	288
Smythe Street	487		21	15	
York Street				394	
TOTALS =	577	6,117	4,993	3,606	1,621

Total lineal footage all sizes 16,914 feet.

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

Location	Payment to Contractors including Reserves for Holdback	City Labor and Machinery	Material	Total
Albert Street	\$ 1,097.35	1,600.18		2,697.53
Heather Terrace	1,489.14	1,728.04		3,217.18
Carleton Realty	1,425.40	45.27	2,252.15	3,722.82
* College Hill Road	1,882.65		3,714.06	5,596.71
Greendale Limited	5,542.00	171.95	5,826.37	11,540.32
Hill Bros.	6,873.50	239.89	6,935.76	14,049.15
* Industrial Road	2,138.87	708.51	10,525.88	13,373.26 -
* King's College Road	1,990.55	1,539.80	8,722.38	12,252.73
Lynhaven Street	2,377.00	206.74	3,092.78	5,676.52
Prospect Street	2,329.55	58.95	2,707.83	5,096.33
Regent Street	5,565.95	893.38	13,521.61	19,980.94
Fredericton Housing Subdivision		6,796.37	18,307.83	25,104.20
Smythe Street	1,288.00	25.73	3,920.98	5,234.71
York Street		1,984.83	1,980.52	3,965.35
TOTALS =	\$ 31,413.47	15,257.91	84,836.37	131,507.75

* Hired Machinery and Crew Payroll
(Ashfield Construction Company)

All above costs include any holdback payments which will appear in 1965 accounts but do not include credits from Winter Works Assistance or holdbacks from 1963 projects.

City Workmen and City Machinery installed Water under the above heading at the following locations:-

Albert Street (Regent to Chestnut)
Heather Terrace
Fredericton Housing Subdivision (Skyline Acres)
York Street (Connaught to Albert)

Water Mains were laid at the following locations by Ashfield Construction Company (Hired Machinery and City Payroll).

College Hill Road
King's College Road
Industrial Road

The following shows the cost per foot for laying various sizes of Cast Iron Pipes by Contractor, City Workmen and Hired Machinery and Crew Payroll and includes gates and manholes, but not including fire hydrants:-

COST BY CONTRACTOR PER LINEAL FOOT

Size of Pipe	Carleton Realty	Greendale Ltd.	Hill Bros.	Lynhaven Street	Prospect Street	Regent Street	Smythe Street
12"	\$	\$	\$	\$	\$	\$10.11	\$10.19
10"		9.01				8.27	
8"	7.45		7.37	8.75	8.07	7.12	8.45
6"		7.83	7.34				6.17
4"	5.57	6.98					
		75% Rock	40% Rock	75% Rock			

COST BY CITY WORKMEN & MACHINERY PER LINEAL FOOT

Size of Pipe	Albert Street	Heather Terrace	York Street	Fredericton Housing Subdivision
10"	\$	\$	\$	\$ 9.03
8"	9.86			7.88
6"		6.29		6.85
4"		5.44 40% Rock	10.06	6.00 75% Rock

COST BY HIRED MACHINERY & CREW PAYROLL PER LINEAL FOOT

Size of Pipe	College Hill Road	Industrial Road	King's College Road
10"	\$ 8.61	\$ 6.63	\$ 8.86
6"			6.68

Included in the net expenditure for "Capital Account Water" is the expenditure of \$5,427.06 under "Capital Account Drilled Wells" and \$9,651.51 under "Capital Account Water," Diesel Standby for Main Water Works Plant.

CAPITAL ACCOUNT DRILLED WELL - CARLETON WARD

In 1963 the City of Fredericton entered into an agreement with Aden Sullivan to drill a Rock Wall Well in Carleton Ward, near the site of the 1,000,000 Gallon Reservoir constructed in 1959.

The drilling of the Well and erection of a building to house the pumping equipment was completed in 1963 and the electrical partially completed in 1963. Installation of pumping equipment, connection from Well to Reservoir, installation of meters and the electrical was completed in 1964. The building was erected by City Workmen.

The expenditure for 1963 and 1964 was as follows:-

Development of Rock Wall Well	\$ 5,484.00
Construction of Pump House	2,825.03
Electrical Equipment (Including meters, guages, relays)	3,267.87
Mechanical Equipment (Pipe, tubes, valves, etc.)	\$ 1,048.91
Pump	<u>5,163.83</u>
International Water Supply Co. (installing pump)	400.00
Journal Voucher (City machinery)	179.00
Journal Voucher (Materials, sand, cement, brick, manholes)	600.84
Journal Voucher (City labor)	<u>931.88</u>
TOTAL GROSS EXPENDITURE	\$ 19,901.36

Less the following Credits in 1963:-

Elmtree Concrete (to cancel Federal Sales Tax)	\$ 2.48
Government of Canada (Winter Works Incentive Program) ...	<u>690.06</u>
TOTAL NET EXPENDITURE	\$ 19,208.82

The developed cost was \$19,208.82 for a capacity of 325 I.G.P.M.

CAPITAL WATER
DIESEL STANDBY FOR MAIN WATERWORKS PLANT

In 1964 a Diesel Standby Pumping Unit was purchased and installed at the Fredericton Pumping Station by Robert Morse Corporation Limited.

The expenditure amounted to \$8,651.51 and was made up as follows:-

1 - Diesel Driven Motor	\$ 8,250.00
S.S. & E. Tax 3%	<u>247.50</u> .. \$ 8,497.50
1 - Only 11A Powers Regulator Size 1" ..	154.01
TOTAL	<u><u>\$ 8,651.51</u></u>

Following is the specification and additional equipment for Diesel Driven Pump:-

Pump Design Data

Capacity	2400 U.S.G.P.M.
Total dynamic head	177'
Operating speed	1800 R.P.M.
Efficiency at condition	84%
B.H.P. required at above condition	128
Impeller diameter	14½" Approx.
Number of stages	1

One (1) only, Robert Morse 8" Weinman split casing, extra heavy duty anti-friction bearing, single stage, centrifugal pump of standard construction as specified, having a suction size of 10" and a discharge size of 8".

Diesel Engine Design Data

Number of cylinders	6 in line type
Bore	5"
Stroke	5-7/8"
Displacement	692 cubic inches
Type	4 stroke cycle, naturally aspirated
Maximum H.P. at 1800 R.P.M..	160
H.P. at 80% of above, equal to	128
Compression of ratio	15.5:1
B.M.E.P. at full load of 1800 R.P.M.	96

One (1) only Dorman, Model 6 L.C., heat exchanger cooled, stationary type, heavy duty diesel engine, suitable for continuous operation at 1800 R.P.M. and complete with the following equipment:-

Jacket water circulating pump with thermostatic control and by-pass to suction side of water pump
Oil bath type air intake cleaner
Fuel Oil Filter with replaceable elements
Lube oil filter, full flow type, with relief valve and by-pass in filter head
Fuel injection pump incorporating mechanical type governor capable of controlling speed within 5% variation from no load to full load and incorporating primary fuel lift pump
Front and rear end mounting feet
Flywheel
Exhaust manifold
Decompressor gear
Sump dipstick
Set of tools
Instruction books and illustrated spare parts manual - 3 each

Additional Equipment

24 volt starting motor
24 volt battery charging generator complete with voltage control
Flywheel housing
Speed and stop controls for manual start and stop operation
Torsional vibration damper
Water jacketed oil cooler for continuous operation at 1800 R.P.M.
Water cooled exhaust manifold
Safety stop solenoid suitable for 24 volt electrics and for the purpose of cutting off fuel oil supply in event of engine low oil pressure, high water temperature or overspeed conditions
1 - Custom built control suitable for protecting engine against high water temperature, low oil pressure or overspeed conditions
1 - Love Joy, flywheel flanged type coupling for connecting engine to pumping unit
1 - Asco type valve for automatically controlling water flow to heat exchanger cooling system of engine. Fuel tank, 180 gallon size, complete with gauge and fittings
2 - Additional water temperature gauges
4 - 6 volt type batteries complete with cables as specified
1 - Battery charger

- 1 - Set of flanges for centrifugal pump suction and discharge connections
- 1 - Lot of anchor bolts for anchoring steel base-plate to concrete foundation (supplied by others)
- 1 - Set of tools for maintenance of pumping unit
- 1 - Suction guage and one (1) pressure guage suitable for mounting on suction and discharge flanges of pumping unit.
- Certified test curves for pump indicating the actual test on pump at the capacity and head indicated in the specifications
- 1 - Heavy box-type base plate provided with lugs for anchor bolts, drainage gutter and necessary parts to facilitate grouting as specified

The pump and driver will be provided with standard tapered dowels to be inserted after installation to ensure the proper re-alignment if for any reason the unit has to be dis-assembled at a future date.

CAPITAL ACCOUNT GRAVEL ROADS

Gross Expenditure	\$ 102,217.04
Credits	<u>30,212.70</u>
Net Expenditure	\$ 72,004.34

The above credits of \$30,212.70 are made up
as follows:-

Fredericton Housing Ltd.)	\$ 11,699.00
J. K. Brien)	1,526.50
Donald G. Grant)	Local	95.00
C. Montgomery-Campbell)	Improvement	2,361.00
Greendale Ltd.)	Charges	3,522.50
Hill Bros.)	5,959.00
Carleton Realty)	1,882.50
Government of Canada (Winter Works Incentive Program)		794.30
Journal Voucher (City Labor)		2,159.40
Journal Voucher (City Machinery)		<u>213.50</u>
TOTAL		\$ 30,212.70

Included in the above expenditures are:-

- (1) - Grading and Gravelling newly Curbed Streets
 - (2) - Gravel Road Construction
1. All newly curbed streets as shown on Page 18 in this report were graded and gravelled after construction of Curb and Gutter.
2. The following streets were constructed and gravelled under this heading:-

<u>Location</u>	<u>Lineal Feet</u>
Simcoe Court)	932
Oxford Street) - Greendale Ltd.	428
Heather Terrace - J. K. Brien subdivision	570
Lorne Street)	346
Bessborough Street) - Hill Bros.....	1,115
Massey Street)	300
Bailey Drive)	327
Kennedy Court) - Carleton Realty	226
Leeds Drive)	1,753
Rochester Street)	843
Southampton Drive) - Fredericton Housing Ltd.	286
Folkestone Court)	298
Liverpool Street)	833
Lynhaven Street - C. Montgomery-Campbell	<u>600</u>
TOTAL	<u>8,857</u>

CAPITAL ACCOUNT FOREST HILL ACCESS ROAD

In 1964 the City of Fredericton entered into a contract with Diamond Construction Company (1961) Limited to construct a new access road to Forest Hill.

The construction was commenced in 1964 and will be completed in 1965.

Preliminary work such as acquiring certain property and surveying by Anric Engineering Limited was done in 1963.

Gross Expenditure	\$ 48,363.79
Credit	<u>29,324.57</u>
Net Expenditure 1964	\$ 19,039.22

The above credit was billed to Province of New Brunswick under a 50% of cost agreement.

To date the total expenditure is as follows:-

1963 Expenditure	\$ 10,285.34
1964 Expenditure	<u>48,363.79</u>
Total Cost to Date	\$ 58,649.13
Less 50% charged to Province of N. B.	<u>29,324.57</u>
NET COST TO CITY to DATE..	\$ 29,324.56

LOCAL IMPROVEMENT

Local Improvement charges to developers were increased in 1964 under By-Law No. 81, a By-Law to amend By-Law No. 18.

COMPARISON OF CHARGES TO SUBDIVIDER

	<u>Frontage Rate prior to 1964</u>	<u>Frontage Rate 1964</u>
Water	\$ 2.65 Centre Line Foot	\$ 3.50 Centre Line Foot
Domestic Sewer	3.25 Centre Line Foot	4.00 Centre Line Foot
Storm Sewer	3.50 Centre Line Foot	4.50 Centre Line Foot
Gravel Road	3.00 Centre Line Foot	5.00 Centre Line Foot
Sidewalk	-----	2.52 Centre Line Foot
TOTALS =	<u>\$12.40</u> Centre Line Foot	<u>\$19.52</u> Centre Line Foot
	<u>=====</u>	<u>=====</u>

The following summary of Local Improvement Projects undertaken in 1964 show the actual cost, subdivider's share and net cost to the City of Fredericton.

LOCAL IMPROVEMENT COSTS - 1964 (INCLUDES HOLDBACKS)

Location	Service	Cost	Subdivider's Share at By-Law Rates	Cost to City of Fredericton
Skyline Acres (Fredericton Housing)	Water	\$ 25,104.20	\$ 8,189.30	\$ 16,914.90
	Domestic Sewer	16,237.51	9,359.20	6,878.31
	Storm Sewer	46,730.29	11,961.10	34,769.19
	Gravel Roads	<u>31,373.61</u>	<u>11,699.00</u>	<u>19,674.61</u>
	TOTALS =	<u>\$119,445.61</u>	<u>\$ 41,208.60</u>	<u>\$ 78,237.01</u>
		<u>=====</u>	<u>=====</u>	<u>=====</u>
Greendale Ltd. (Oxford & Simcoe Court)	Water	11,540.32	2,465.75	9,074.57
	Domestic Sewer	9,494.60	2,818.00	6,676.60
	Storm Sewer	15,759.01	4,154.25	11,604.76
	Gravel Roads	<u>12,495.51</u>	<u>3,522.50</u>	<u>8,973.01</u>
	TOTALS =	<u>\$49,289.44</u>	<u>\$12,960.50</u>	<u>\$ 36,328.94</u>
		<u>=====</u>	<u>=====</u>	<u>=====</u>

continued

<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>
Hill Bros. (Lorne, Bessborough & Massey Sts.)	Water	\$ 14,049.15	\$ 4,171.30	\$ 9,877.85
	Domestic Sewer	10,694.43	4,767.20	5,927.23
	Storm Sewer	18,177.06	5,843.10	12,333.96
	Gravel Roads	12,488.07	5,959.00	6,529.07
	TOTALS =	\$ 55,408.71	\$ 20,740.60	\$ 34,668.11
Parkside Development (Prospect St.)	Water	\$ 5,096.33	\$ 1,750.00	\$ 3,346.33
	Domestic Sewer	3,031.85	2,000.00	1,031.85
	Storm Sewer	4,592.52	2,570.00	2,022.52
	Gravel Roads	3,714.04	('61 Construction)	3,714.04
	TOTALS =	\$ 16,434.74	\$ 6,320.00	\$ 10,114.74
Carleton Realty (Bailey Drive & Kennedy Crt.)	Water	\$ 3,722.82	\$ 1,195.25	\$ 2,527.57
	Domestic Sewer	5,582.39	1,366.00	4,216.39
	Storm Sewer	4,151.22	1,788.75	2,362.47
	Gravel Roads	6,815.94	1,882.50	4,933.44
	TOTALS =	\$ 20,272.37	\$ 6,232.50	\$ 14,039.87
Montgomery-Campbell (Lynhaven St.)	Water	\$ 5,676.52	\$ 1,652.70	\$ 4,023.82
	Domestic Sewer	3,941.64	1,888.80	2,052.84
	Storm Sewer	16,353.88	2,244.90	14,108.98
	Gravel Roads	5,176.46	2,361.00	2,815.46
	TOTALS =	\$ 31,148.50	\$ 8,147.40	\$ 23,001.10
Donald Grant (Squires St.)	Water)	\$ 66.50		
	Domestic Sewer) 1965	76.00		
	Storm Sewer) Construction	85.50	1965	
	Gravel Roads)	95.00	Construction	
	TOTALS =	\$ 323.00		
J. K. Brien (Heather Terrace)	Water	\$ 3,217.18	\$ 946.05	\$ 2,271.13
	Domestic Sewer	2,672.22	1,081.20	1,591.02
	Storm Sewer	4,463.31	1,580.35	2,882.96
	Gravel Roads	1,966.44	1,526.50	* 439.94
	TOTALS =	\$ 12,319.15	\$ 5,134.10	\$ 7,185.05

* - Gravel Road Incomplete in 1964

All the Local Improvement Services, excepting Skyline Acres (Fredericton Housing) and Heather Terrace were constructed under contract.

City forces and machinery constructed the gravel roads. The cost shown includes holdback payment to Contractors, which are payable in 1965.

304,318.52

109,743.70

203,574.82

PUBLIC WORKS

Gross Expenditure	\$ 28,888.64
Credits	<u>2,268.99</u>
Net Expenditure	\$ 26,619.65
1964 Appropriation	<u>24,600.00</u>
DEBIT	\$ 2,019.65
	<u><u> </u></u>

The credits of \$2,268.99 were made up as follows:-

Toronto Dominion Bank (Sale of Map)	\$ 1.20
Paul Burden Refund (Paper)	120.00
Insurance claim (Damage to tree)	50.00
Insurance claim (Damage to Guard Post)	5.00
Refund - W. L. Barrett	41.25
Mr. Stultz (Damage to tree)	30.00
Capital Co-Operative Ltd. (Maps)	4.00
Avon Products (Sale of Map)	2.70
Government of Canada (Cleaning Federal Wharf)	50.00
David Halliday (Damage to lawn)	25.00
Mr. Bridges (Damage to tree)	25.00
Mr. N. D. Pearson (Sale of Maps)	6.00
Miscellaneous (Sale of Map, Tree damage)	21.00
Journal Voucher (Mobile Radios)	1,449.69
Journal Voucher (Oil)	1.65
Journal Voucher (Machinery)	<u>436.50</u>
TOTAL	<u>\$2,268.99</u>
	<u><u> </u></u>

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

Trees	\$ 8,737.05
Back Drain Diversion	56.37
Back Drain	191.33
Survey	285.72
Surface Sewer	121.80
Unforseen Account	2,792.37
Casuals' Vacation Pay	<u>740.36</u>
TOTAL	<u>\$ 12,925.00</u>
	<u><u> </u></u>

TREES:-

Expenditure

\$ 15,502.57

The above expenditure is made up as follows:-

Labor	\$ 8,737.05
Machinery	2,888.50
Materials	3,277.02
Mr. Charles Smith (Honorarium for Services rendered)	<u>600.00</u>
TOTAL	<u>\$ 15,502.57</u>
	<u><u> </u></u>

In 1964, 65 trees were removed on the recommendation of the Fredericton Tree Commission. The condemned trees were either in a decadent condition, a menace to public safety or as possible breeding places for the Elm Bark Beetle.

Following is a list of trees removed in 1964:-

Elms	48
Maples	5
Basswood	2
Willows	1
Manitoba Maples	2
Birch	1
Spruce	1
Oak	2
Ash	2
Pine	<u>1</u>
TOTAL	65

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

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

Trees on private property which are condemned as possible breeding places for the Elm Bark Beetle, which carries the fungus of Dutch Elm Disease, are also removed by City Crews. Following is the list of trees which were confirmed as Dutch Elm Disease trees:-

620 Forest Hill Road	2
University of New Brunswick	1
L. Griesbach (Lincoln Road)	1
J. B. Adams (Lincoln Road)	2
720 Union Street	1
645 Union Street	2
364 Union Street	1
160 Friel Street	1
Barker Street (rear of York Structural Steel)	2
Cocoa Cola Plant (Grieves Creek)....	<u>1</u>
TOTAL	14

Following is the number of trees removed from 1961 to 1964 with Dulch Elm Disease:-

1961	2
1962	2
1963	1
1964	<u>14</u>
TOTAL ...	19

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

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

414 trees were pruned during the year as well as the usual planting program.

Spraying for the Fall Canker Worm was carried out in several areas of the City, where the infestation was high enough to warrant spraying with the Roto-Mist Blower.

Trees were planted at the following locations:-

<u>Location</u>	<u>Number of Trees</u>
Inglewood Drive	17
Harewood Crescent	5
Valley View Street	12
Windsor Street	7
Forest Acres Court	21
Forest Hill Road	3
Woodbridge Street	10
Leicester Street	15
Sheffield Court	12
Brighton Court	6
Cambridge Crescent	13
Canterbury Drive	22
Chelsea Court	11
Neill Street	16
Turnbull Court	5
Montgomery Street	6
St. Mary's Street	7
Municipal Home (York Street).....	<u>4</u>
TOTAL	<u>192</u>

Following is a list of trees replaced in 1964:-

<u>Location</u>	<u>Number of Trees</u>
King's College Road	10
Edinburgh Street	5
Parkhurst Drive	4
Rookwood Avenue	1
Windsor Street	2
Forbes Street	2
McEvoy Street	8
Hanson Street	1
Beaverbrook Court	1
Woodstock Road	4
Hanwell Road	2
York Street	2
Gibson Street	1
Irvine Street	2
Scully Street	1
Loyalist Court	2
Medley Street	2
Fenety Street	4
Sewell Street	1
MacLaren Avenue	2
Palmer Street	<u>2</u>
TOTAL	<u>59</u>

Under the above heading, the following trees were purchased in 1964:-

40 Crimson King Maples @ \$4.25 each (8'-10')\$ 170.00
40 Silver Maples @ \$3.95 each (8'-10') 158.00
40 Tilia Cordata @ \$4.20 each (8'-10') 168.00
40 Tilia Pallida @ \$3.75 each (8'-10') 154.00
40 Norway Maples @ \$3.75 each (8'-10') 150.00
12 Norway Maples @ \$3.50 each (7'-8') 42.00
8 Silver Maples @ \$3.50 each (7'-8') 28.00
2 Little Leaf Lindens @ \$4.00 each (7'-8')	... 8.00
2 Emperor Lindens @ \$3.50 each (7'-8')	... 7.00
27 Crimson King Maples @ \$4.70 each (10'-12')	.. <u>126.90</u>
TOTAL\$ <u>1,011.90</u>	

BACK DRAIN DIVERSION:-

The expenditure under this heading amounted to \$64.37, made up as follows:-

Labor	\$ 56.37
City Machinery ..	<u>8.00</u>
TOTAL ...\$ <u>64.37</u>	

The above expenditure was for Maintenance (Cleaning Catch Basins).

BACK DRAIN:-

Under this heading the expenditure of \$391.33 was to maintenance of Back Drain and improvements to Estey and Curtis Parking Lot, situated on Beaverbrook Court.

The expenditure of \$391.33 is made up as follows:-

Labor	\$ 191.33
City Machinery ..	<u>200.00</u>
TOTAL ...\$ <u>391.33</u>	

SURVEYING:-

Under this heading, expenditure amounted to \$1,008.54, made up as follows:-

Labor	\$ 285.72
Materials	<u>722.82</u>
TOTAL ..\$ <u>1,008.54</u>	

The labor charge of \$285.72 was for helpers with the Engineers during the course of their work during 1964, on other than programmed projects.

The material charges of \$722.82 were made up as follows:-

J. C. Risteen Co. (Stakes)	\$ 17.27
Paul Burden Ltd. (4 Frisco Levelling Rods) ..	300.76
Kelvin & Hughes (Repairs & Rentals on Transit and Levels)	264.12
Federal Hardware Ltd. (Tapes)	83.53
J. S. Neill & Sons Ltd. (Crayons, Cord, Axes, Handles, etc.)	38.56
Miscellaneous (Express on Levels and Transit, Iron Pins)	<u>18.58</u>
TOTAL	\$ 722.82

SURFACE SEWERS:-

Expenditure\$ 367.85

The above expenditure is made up as follows:-

Labor	\$ 121.80
Machinery	78.00
Material	<u>168.05</u>
TOTAL ...	\$ 367.85

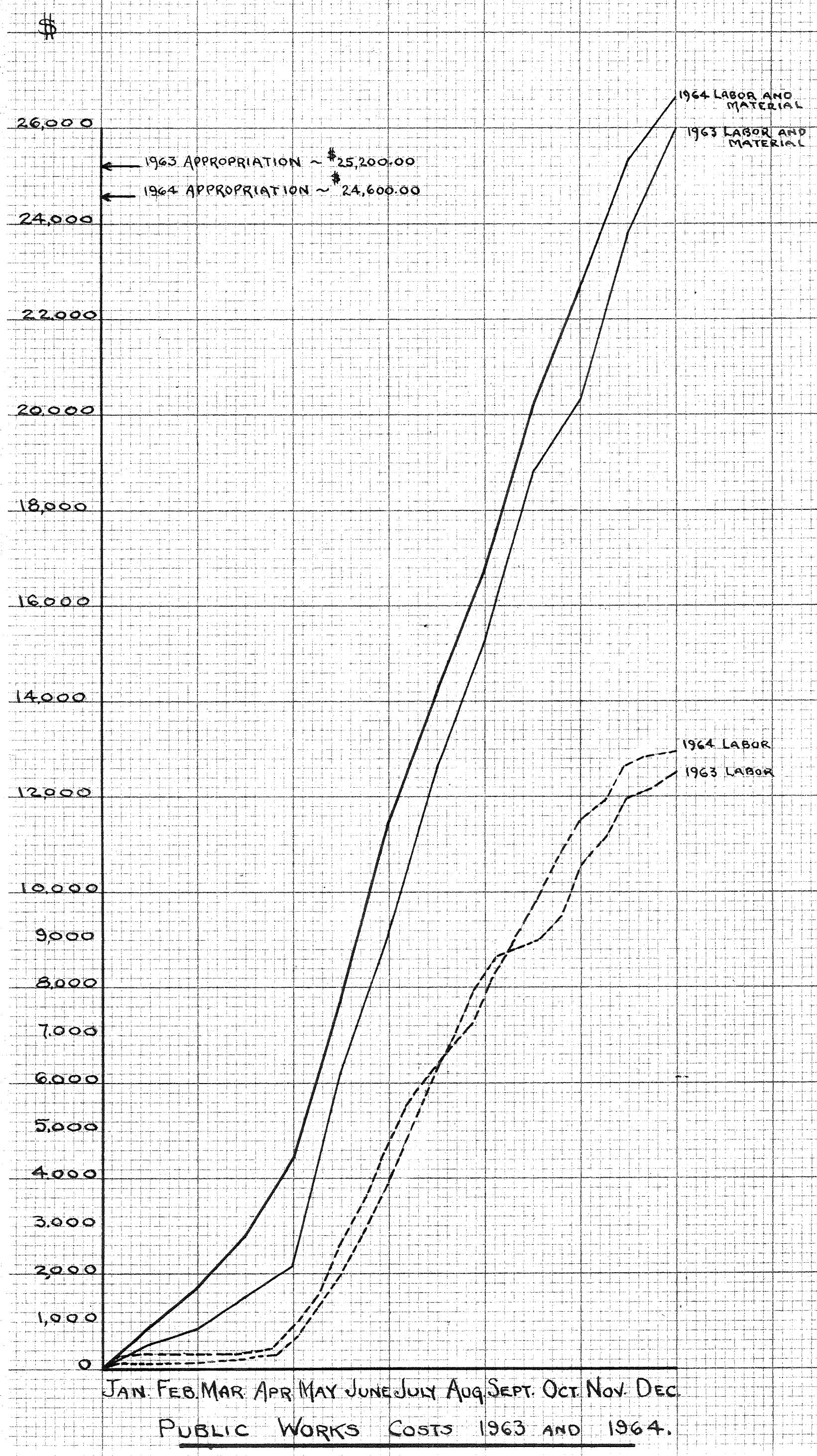
Under this heading, a 10" Offtake Sewer was laid east of St. Margaret's Church Hall from the Lincoln Road to near the Canadian National Railway Tracks to take care of surface water.

UNFORSEEN ACCOUNT - LABOR

Removal of Christmas Trees from City Streets	\$ 321.12
Construction of Map Cabinet	24.60
Test Holes in Ice	6.56
Greens (Cutting, raking, seeding, topsoil, etc.)	2,081.98
Benches (Painting and Repairing)	157.50
Sir James Dunn Fountain (Queen St.) ..	60.40
Taking of Inventory for 1964	31.53
Cleaning Wharf (Regent Street)	93.17
Armistice Stand	<u>15.51</u>
TOTAL	\$ 2,792.37

The total expenditure amounted to \$8,766.60, made up as follows:-

Labor	\$ 2,792.37
Machinery	257.00
Materials	<u>5,495.23</u>
TOTAL	\$ 8,544.60



CASUALS' VACATION PAY:-

The total amount under this heading was \$740.36 for Casual Labor Vacation Pay.

INDUSTRIAL DEVELOPMENT

Under this heading, Water and Sewer was laid to the Pyramid Mobile Home Building on the Industrial Road by Ashfield Construction Company.

The expenditure under this heading amounted to \$6,922.79, made up as follows:-

Labor	\$ 637.65
Machinery	945.00
Surveys & Materials.	<u>5,340.14</u>
TOTAL	<u>\$6,922.79</u>

The Surveys & Materials charge of \$5,340.14 is made up as follows:-

Seaboard Surveys Ltd. (Survey work and printing of plans)	\$ 1,056.18
Installation of Water and Sewer to Pyramid Mobile Homes Bldg. ..	<u>5,866.61</u>
TOTAL	<u>\$ 6,922.79</u>

The sum of \$5,667.02 is recoverable from the future purchaser of the Pyramid Homes Building, for installation of water and sewer mains.

ODELL PARK

Gross Expenditure	\$ 5,861.57
Credit	<u>271.38</u>
Net Expenditure	\$ 5,590.19

The above credit is the sale of Logs to Ashley Colter (1961) Ltd.

The above expenditure is made up as follows:-

H. S. Gill (Lumber)	\$ 11.78
J. L. Simms & Sons (Plywood)	10.05
Valley Tree Nursery (100 Austrian Pine Transplants)	11.00
N. B. Telephone Company	50.24
Eastern Chain Saw (Files for saws)	1.50
Harris Marine Supply (Repairs to saw)	13.69
Provincial Secretary-Treasurer (S.S. & E. tax re 1963 Audit)20
Workmen's Compensation (Assessment for 1964)	126.00
Journal Voucher (Gas and Oil)	38.40
Journal Voucher (Machinery)	852.00
Journal Voucher (Labor)	<u>4,746.71</u>
TOTAL	\$ 5,861.57

Under this heading, trees blown down during the Hurricane in the fall of 1963, were cleaned up during the winter of 1964 and a ski-trail was cleared.

CARLETON PARK

Gross Expenditure	\$ 3,200.63
Credits	<u>50.00</u>
Net Expenditure	\$ 3,150.63

The above credit of \$50.00 was amount paid by Insurance Company for lawn damage.

The above expenditure of \$3,200.63 is made up as follows:-

E. M. Young (Purchase of a Maxwell Model M 422 Mower) ...	\$ 67.59
Capital Garden Supply (50 lbs. Grass Seed)	20.22
Craig Electric (Adjusting and repairing mower)	4.00
Federal Hardware (Tools)	12.09
N. B. Apple Exchange (2 tons land lime)	18.00
Canadian Pacific Railway (taxes on property)	446.20
Canadian Pacific Railway (Park rental)	700.00
J. S. Neill & Sons Ltd. (Scythe and Stone, Pail, Hammer, etc.)	32.34
Journal Voucher (Gas and Oil)	8.11
Journal Voucher (Machinery)	181.50
Journal Voucher (Labor)	<u>1,710.58</u>
TOTAL	\$ 3,200.63

For the above expenditure, paths were scuffed, grass was kept mowed, roses were planted and in general, the Park was kept in a clean and orderly condition.

WILMOT PARK

Expenditure\$ 3,323.30

The above expenditure is made up as follows:-

Material used on Lawns and Flower Beds	\$ 65.37
Supplies and Repairs to Lawn Mowers	30.09
Material and Labor charges expended on Caretaker's	
House	58.61
Lighting Wilmot Park (14-4' Fluorescent Lamps)	840.00
Miscellaneous (Tools, wheelbarrow, sprayer, garden hose)	60.79
Journal Voucher (Machinery)	184.00
Journal Voucher (Oil)	2.97
Journal Voucher (Labor)	2,050.47
Journal Voucher (Water Rates)	25.00
Journal Voucher (Domestic Sewer)	6.00
TOTAL	\$ 3,323.30

Included in the above expenditure was the purchase of a heavy-duty wheelbarrow from Federal Hardware at a cost of \$41.15.

CLEARING PARK AREAS

In 1964 no expenditures were incurred under this heading, though there is a credit showing of \$777.45 due to receivable accounts in 1963 and not shown in 1963 accounts.

This credit of \$777.45 is made up as follows:-

W. W. & W. R. Thomas (Sale of Pulpwood)	\$ 140.00
Government of Canada (Credit re Winter Works	
Project DB27)	637.45
TOTAL	\$ 777.45

RECREATION

Expenditure \$ 2,774.42

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

The above cost is divided as follows:-

Under this heading, City Crews and City Machinery constructed a playground in Skyline Acres.

The above labor charge of \$957.87 is made up as follows:-

Playgrounds	\$	508.34
Little League Ball Field		38.51
Henry Park		118.61
Wading Pools		86.46
Rink, Forest Hill		12.00
Rink, Albert Street		23.19
Rink, Hermitage Court	<u>\$</u>	170.76
TOTAL	\$	957.87

CITY HALL

Expenditure \$ 466.78

The above cost is, of course, only the expenditure for City Hall made through the office of the City Engineer and is not the total expenditure made on City Hall.

The expenditure of \$466.78 is made up as follows:-

Labor at City Hall	\$	212.96
J.S.Neill & Sons Ltd. (Paint, brushes, roofing, cement and adapter)		27.54
Elmtree Concrete (1½ Cubic Yards cement, Flagpole Base)	<u>\$</u>	<u>21.68</u>
Forward	\$	262.18

Forward# 262.18

Carried Forward	\$ 262.18
Journal Voucher (Machinery)	26.00
Journal Voucher (Materials)	3.60
Journal Voucher (Water Rates 1964)	100.00
Journal Voucher (Sewer Rental 1964)	50.00
Journal Voucher (Sprinkler System charge 1964)	<u>25.00</u>
TOTAL	\$ 466.78

MUNICIPAL HOME

Expenditure\$ 49.70

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

The above expenditure is made up as follows:-

Journal Voucher (Machinery)	\$ 37.00
Journal Voucher (Labor)	<u>12.70</u>
TOTAL	\$ 49.70

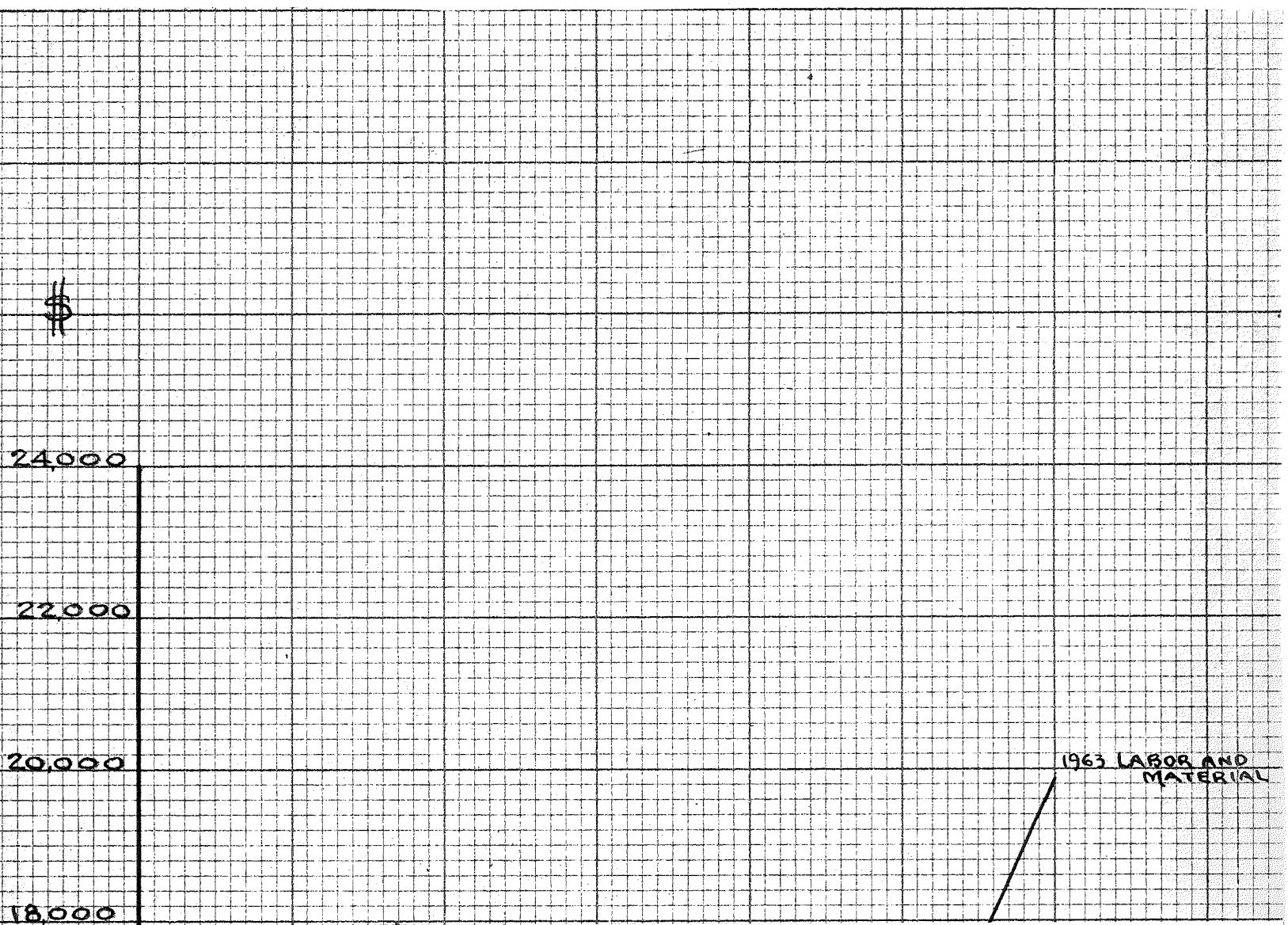
DOMESTIC SEWER

Machinery Cost	\$ 6,724.25
Material Cost	12,821.79
Labor Cost	<u>14,524.80</u>
Gross Expenditure	\$ 34,070.84
Credits	<u>18,906.76</u>
Net Expenditure	\$ 15,164.08

The above credits are made up as follows:-

Material, Labor and Machinery supplied for house connections	\$ 18,522.26
Work done for Private Parties (Cleaning and thawing floor drains)	193.03
Journal Voucher (Materials)	35.47
Journal Voucher (Sewer rental, Fire Department)	100.00
Journal Voucher (Sewer rental, City Hall)	50.00
Journal Voucher (Sewer rental, Wilmot Park)	<u>6.00</u>
TOTAL	\$ 18,906.76

The customers connected to the City Sewer System in 1964 were 177.



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

All Sewer Mains were cleaned and flushed in 1964.

The Fredericton Domestic Sewer System consists of 56.25 miles (12.19 miles in Carleton Ward and 44.06 miles in the City proper) of Sewer Mains and are made up as follows:-

36" Armco Pipe	0.05 miles
36" Concrete Pipe	0.84 miles
30" Concrete Pipe	0.20 miles
24" Terra Cotta Pipe	0.54 miles
18" Terra Cotta Pipe	1.29 miles
15" Terra Cotta Pipe	1.63 miles
12" Terra Cotta Pipe	6.27 miles
10" Terra Cotta Pipe92 miles
8" Terra Cotta Pipe	35.38 miles
12" Transite Pipe	0.53 miles
12" Corrugated Pipe	0.07 miles
10" Transite Pipe	0.87 miles
8" Transite Pipe	7.36 miles
6" C.I. Force Main	0.30 miles

OLD BURIAL GROUND

The Old Burial Ground between Brunswick Street and George Street was kept in good condition in 1964.

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

Gross Expenditure	\$ 1,787.72
Credits	<u>324.00</u>
Net Expenditure	<u>\$ 1,463.72</u>

The above credit was the amounts received from interest on Trust Funds and Bonds.

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

Craig Electric (Repairs to Mower)	\$ 25.93
J.S.Neill & Sons Ltd. (Glass & screws for sign)	5.49
City Heat & Electric (Repairs to Mower)	39.97
H. S. Gill (Lumber)	<u>1.39</u>
Forward	\$ 72.78

Carried Forward	\$ 72.78
J. C. Risteen Co. (Lumber)	1.15
E. M. Young (Paint, turpentine and brush) ...	17.07
Maritime Electric Co. (6 Fluorescent Lamps)..	450.00
Journal Voucher (Gas and Oil)	6.86
Journal Voucher (Machinery)	28.00
Journal Voucher (Labor)	1,210.66
Journal Voucher (Material)	<u>1.20</u>
TOTAL	<u>\$1,287.72</u>

CEMENT WALKS

Gross Expenditure	\$ 24,238.89
Credits	<u>6,953.48</u>
Net Expenditure	<u>\$ 17,285.41</u>

The above credits are made up as follows:-

Journal Voucher (Material)	\$ 19.10
Accounts Receivable re 1964 Cement	
Walk Invoices	<u>6,934.38</u>
TOTAL	<u>\$ 6,953.48</u>

For the above expenditure, concrete sidewalks were laid at the following locations:-

<u>Location</u>	<u>Lineal Feet</u>
Valley View Street	655
Irvine Street	865
Hanwell Road	3,943
Argyle Street	110
Canterbury Drive	821
Smythe Street (Montgomery Street to Beechwood Crescent) ..	450
Smythe Street (Beechwood Crescent north to Beechwood Crescent South) ..	755
Smythe Street (King's College Road to Edinburgh Street) ...	334
Coventry Crescent	<u>254</u>
TOTAL	<u>8,187</u>

The cost of the above sidewalk is apportioned; one-half to the City and one-half to the property owner.

The concrete for the above construction of sidewalks was obtained from Elmtree Concrete Ltd. @ \$14.95 per cubic yard.

The property owner was charged \$1.06 per lineal foot which does not include Compensation, Pension Fund and Holiday Fund.

SANITATION

Gross Expenditure	\$ 105,502.82
Credit	<u>100.00</u>
Net Expenditure	\$ 105,402.82

The above credit of \$100.00 was rental on City Flusher.

Under the heading "Sanitation" the following projects are included.

- (1) Garbage Collection
- (2) Sanitary Land Fill
- (3) Street Cleaning

1. Garbage Collection

The Garbage collection is operated by Mr. H. R. Corey (Fredericton) Ltd. The amount paid in 1964 for this operation was \$43,096.05.

2. Sanitary Land Fill

Expenditure \$16,568.11

The above expenditure is made up as follows:-

Forbes & Sloat (403.8 tons gravel)	\$ 403.80
E. M. Young Ltd. (Rat bait)	48.95
Journal Voucher (Machinery)	759.00
Journal Voucher (Fuel)	1.67
Journal Voucher (City labor and hired trucks, \$860.97, plus \$2,052.00).....	2,912.97
Mr. Kenneth L. Barker	<u>12,441.72</u>
TOTAL	\$16,568.11

In 1961 Mr. Kenneth L. Barker was awarded a five-year contract for bulldozing services at the Sanitary Land Fill at a cost of \$12,441.72 per year.

3. Street Cleaning

Gross Expenditure ...	\$ 45,938.66
Credit	<u>100.00</u>
Net Expenditure	\$ 45,838.66

The above expenditure is made up as follows:-

Labor	\$ 30,152.93
City Machinery	4,840.50
Materials	<u>10,945.23</u>
TOTAL	\$ 45,938.66

City Machinery and Material charges amounted to \$15,785.73 and is made up as follows:-

Hand Brooms, Shovels, Rakes, Forks, repairs to Carts, etc.	\$ 612.40
Main Broom Wire (Canadian Wire Brush Co.)	1,457.41
Gutter Broom Wire (Duder Co. Ltd.)	658.17
Labor and Repair charges on 1960 Elgin Sweeper	2,070.67
Labor and Repair charges on Sicard Flusher	3,971.49
Gas, Oil and Antifreeze: 4582.5 Gallons Gas	\$ 1,145.65
246 Quarts Oil	84.89
2 Gallons Antifreeze	<u>4.72</u>
Purchase of Hose for Flusher	1,235.26
Sanfax Corporation (45 Gallons Sanfax used with Sweeper)	173.97
Sand for cover of fill on Noble Street (Clean-up Week)....	276.43
Journal Voucher (Machinery)	352.80
Miscellaneous (Car allowance, printing, etc;)	<u>4,840.50</u>
	<u>136.63</u>
TOTAL	<u>\$15,785.73</u>

The Elgin Sweeper (purchased in 1960) worked 1091 hours. The actual cost for cleaning streets with this machine was \$9,514.47 and was calculated as follows:-

Labor and Repairs on 1960 Elgin Street Sweeper	\$ 2,070.67
Main Broom Wire	1,457.40
Gutter Broom Wire	658.17
Gasoline (1410.60 Gallons)	352.65
Oil (75 Quarts)	28.46
Anitfreeze (1 Gallon)	2.36
Water (371,000 Gallons)	138.85
Insurance on 1960 Elgin Street Sweeper	55.00
Depreciation on 1960 Elgin Street Sweeper	2,221.56
Sanfax Corporation (45 Gallons used with Sweeper)..	276.43
Labor (including Workmen's Compensation, Holiday and Pension Fund)	<u>2,252.92</u>
TOTAL	<u>\$ 9,514.47</u>

The operating dates for the above machine (Sweeper) were from April 27, 1964 to November 13, 1964.

In 1955 the City of Fredericton purchased a Sicard Master Flusher with a capacity of 2,250 Imperial Gallons. The price of this machine was \$19,435.00 and was paid for in 1956. The operating dates for the above mentioned machine (Flusher) were from May 1, 1964 to October 23, 1964.

The Flusher worked 876½ hours. The actual cost for flushing streets with this machine was \$9,435.30 and was computed as follows:-

Labor and Repairs to Flusher	\$ 3,971.49
Purchase of Hose for Flusher.....	173.97
Gasoline (3171.90 Gallons)	793.00
Oil (171 Quarts)	56.43
Antifreeze (1 Gallon)	2.36
Water (3,845,000 Gallons)	729.50
Insurance on Flusher	52.00
Depreciation on Flusher	1,950.00
Labor (including Workmen's Compensation, Holiday and Pension Fund)	<u>1,706.55</u>
TOTAL	<u>\$ 9,435.30</u>

The following is a list of machinery used in the Sanitation Department together with the repair costs, showing a comparison of costs for 1963 and 1964, including tires and tubes.

Name of Machine	Year Purchased	Repairs 1963	Repairs 1964
Elgin Street Sweeper	1960	\$ 2,847.98	\$ 2,131.48
Sicard Flusher (2250 I.G.)	1955	2,349.62	4,203.35
TOTAL	=	<u>\$ 5,197.60</u>	<u>\$ 6,334.83</u>

FIRE DEPARTMENT

Expenditure\$ 11,413.68

Seaboard Surveys (Survey work on new Station site)	\$ 120.95
L. E. Shaw (Purchase of Pipe and Elbow)	24.02
Journal Voucher (Cement)	3.60
Journal Voucher (419 hydrants, rental)	10,056.00
Journal Voucher (Machinery)	31.50
Journal Voucher (2638.0 Gallons Gas)	659.52
Journal Voucher (Water charges 1964)	300.00
Journal Voucher (Sewer Rental 1964)	100.00
Journal Voucher (Labor)	<u>118.09</u>
TOTAL	<u>\$ 11,413.68</u>

ADMINISTRATION OF JUSTICE

Expenditure	\$ 3,663.30
Journal Voucher (12,127.0 Gallons Gasoline)....	\$ 3,031.78
Journal Voucher (97 Quarts Oil)	32.01
Journal Voucher (Cement, sand, decals, varsol). .	50.00
Journal Voucher (Machinery)	186.00
Journal Voucher (Labor)	<u>363.51</u>
TOTAL	\$ 3,663.30

LOYALIST BURIAL GROUND

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

In 1964 the upkeep expenditure amounted to \$95.15, made up as follows:-

Labor	\$ 78.65
City Machinery	10.50
Material	<u>6.00</u>
TOTAL	\$ 95.15

This area continues to be of historical interest and is also a tourist attraction with pedestrian traffic only, from the Little League Ball Field on the "Flats."

J. T. CLARK MEMORIAL BUILDING

Expenditure\$ 145.11

The above expenditure was for snow removal by City workmen and hired trucks.

CONTINGENT

Expenditure \$ 68.89

In 1960 Lord Beaverbrook donated a fountain to the City of Fredericton. This fountain was erected in 1961 on the Green on Queen Street, approximately 100 feet east of the Robert Burns Monument.

The above expenditure was for labor used on removing and placing a protective covering on the fountain during the winter months.

QUEEN'S SQUARE IMPROVEMENT

Expenditure \$ 1,743.14

The above expenditure of \$1,743.14 is made up as follows:-

Bemrose and Kilburn (136 yards topsoil @ \$1.80 per yard)	\$ 252.00
W.W. & W.R. Thomas (553 yards topsoil @ \$1.80 per yard)	1,008.00
W.W. & W.R. Thomas (56 yards sand @ 90¢ per yard)	50.40
John Gibson & Sons Ltd. (100 lbs. grass seed)	43.40
Capital Garden Supply (150 lbs. grass seed)	60.66
Journal Voucher (Machinery)	87.00
Journal Voucher (Labor)	<u>241.68</u>
TOTAL	\$ 1,743.14

For the above expenditure, topsoil was applied to a selected area which was fenced off as protection for grass growth. This method will be used in future until the sodding has been restored over the entire square.

MUNICIPAL PARKING LOT

In 1958 the City of Fredericton constructed a Parking Area on the north side of Brunswick Street, between York Street and Carleton Street, just east of J. Clark and Sons property (T. Eaton Company property).

The expenditure for the up-keep of the above Parking Lot for 1964, as shown through the office of the City Engineer was \$436.79 and was made up as follows:-

Journal Voucher (Labor)	\$ 191.90
Journal Voucher (Machinery)	242.50
J.S.Neill & Sons (Glass, Putty, Points)	<u>2.39</u>
TOTAL	\$ 436.79

TOURIST AND INDUSTRY

Expenditure \$ 731.06

The above expenditure was for the erecting and lighting of two signs supplied by the "Tourist Industry Committee," one placed at the junction of Woodstock Road and Golf Club Road, the other on Lincoln Road near the City limits.

This expenditure was made up as follows:-

J. L. Simms & Sons (plywood, paint, nails)	\$ 89.71
H. S. Gill (Lumber)	14.80
E. M. Young Ltd. (Paint, brushes)	14.30
J. C. Risteen Co. (Lumber, nails)	8.48
Stan Cassidy Ltd. (Installing of lights, Woodstock Road sign)	262.04
Maritime Electric Co. (Light bills)	16.75
Richards' Electric (Installing lights, Lincoln Road sign)	180.64
Journal Voucher (Labor)	<u>144.34</u>
TOTAL	\$ 731.06

YORK STREET SCHOOL

In 1964 the City of Fredericton purchased the York Street School, property situated on York Street, just west of Brunswick Street Baptist Church for the sum of \$1.00 from the Fredericton School Board. At the time of the writing of this report this building is being offered for sale.

The expenditure in 1964 amounted to \$608.25 and was made up as follows:-

Labor (Caretaker's Wages)....\$ 600.25
Machinery Charge (Plowing Snow) 8.00
TOTAL\$ 608.25

STREET LIGHTS

The City Street Lighting System on December 31, 1964 consisted of:-

1. A Series Lighting System on the south side of the Saint John River
2. A Multiple Lighting System on the south side of the Saint John River
3. A Multiple Lighting System in ~~Carleton Ward~~ C.A.R. Subward
4. A Series Lighting System in Carleton Ward
5. A Multiple Lighting System in Carleton Ward

SYSTEM #1

The Series Lighting System consists of some 22.48 miles of line and 178 lamps. This system is divided into three circuits, one of which is controlled by a 25 K.W. constant current transformer, the other two by 15 K.W. constant current transformers. Two of these transformers along with the main switchboard, are housed in a building, the site of which was purchased from Willett Fruit Company on Carleton Street, south of Needham Street. The third transformer is on a pole situated on Regent Street, between King's College Road and Albert Street and controls the rear circuit for Maryland Heights.

The three circuits are made up as follows:-

<u>Lower Rear Circuit</u>	<u>Load</u>	<u>Transformer Size</u>
8-600 C.P. Lamps @ .350 K.W. demand	2.80 K.W.	
26-250 C.P. Lamps @ .160 K.W. demand	4.16 K.W.	
1-Fluorescent Lamp @ .50 K.W. demand50 K.W.	
	<u>7.46</u> K.W.	15 K.W.

Upper Rear Circuit

12-600 C.P. Lamps @ .350 K.W. demand	4.20 K.W.
50-250 C.P. Lamps @ .160 K.W. demand	8.00 K.W.
16-Fluorescent Lamps @ .50 K.W. demand ...	8.00 K.W.
	<u>20.20</u> K.W. 25 K.W.

Maryland Heights

9-600 C.P. Lamps @ .350 K.W. demand	3.15 K.W.
56-250 C.P. Lamps @ .160 K.W. demand	8.96 K.W.
	<u>12.11</u> K.W. 15 K.W.

SYSTEM #2 and #5

The Multiple Lighting System as on December 31, 1964 was as follows:-

255-500 Watt Incandescent Units @ \$60.00 per light per year
158-200 Watt Incandescent Units @ \$40.00 per light per year
69-400 Mercury Vapor Units @ \$90.00 per light per year
114-250 Mercury Vapor Units @ \$60.00 per light per year
181-4' Fluorescent Units @ \$60.00 per light per year
61-6' Fluorescent Units @ \$75.00 per light per year

Each of the units, excepting the Fluorescents, consists of either a 500, 400 Mercury, 250 Mercury or 200 Watt 125 Volt Lamp, set in a novalex luminar fixture and hung on a bracket attached to the pole. These units are controlled by a control switch, which is energized by the series lighting system. The system was installed and is maintained by the Maritime Electric Company, the City paying the Company \$60.00 per year for each 500 Watt Unit; \$40.00 per year for each 200 Watt Unit; \$90.00 per year for each 400 Mercury Vapor Lamp; \$60.00 per year for each 250 Mercury Vapor Lamp; \$60.00 per light for each 4' Fluorescent Lamp and \$75.00 per year for each 6' Fluorescent Lamp.

SYSTEM #3

System #3 consists of 4 Multiple Lights, each of 150 Watt strength, located in the C.N.R. Subway. This system is also controlled by a control switch which is energized by the Series Lighting System.

SYSTEM #4

System #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 183 lamps. The system originally comprised three circuits, but in 1960 a new circuit was added due to the change from 2500 Lumen Series Lamps on Gibson Street to Fluorescent Series Lamps. The three former circuits are controlled by three 15 K.W. constant current transformers, located on a pole platform on Pine Street; while the new circuit is controlled by a 15 K.W. constant current transformer, situated on a pole on the road leading from MacLaren Avenue to the Carleton Ward School.

The four circuits comprise the following:-

Carleton Ward (Up) - mainly from Hughes Street west

Carleton Ward (Central) - mainly between Hughes Street and Pine Street, including Dobie Subdivision

Carleton Ward (Down) - Pine Street east to Irving Oil Company premises and between Canadian Pacific Railway tracks and Union Street

Carleton Ward (Rear) - including Gibson Street from Devon Avenue to the City line and the easterly extremities of the Dobie Subdivision

	<u>Load</u>	<u>Transformer Size</u>
<u>Carleton Ward (Up)</u>		
2-600 C.P. Lamps @ .350 K.W. demand70 K.W.	
39-250 C.P. Lamps @ .160 K.W. demand	6.24 K.W.	
15 Fluorescent Lamps @ .50 K.W. demand	<u>7.50</u> K.W.	
	<u>14.44</u> K.W.	15 K.W.
<u>Carleton Ward (Central)</u>		
1-600 C.P. Lamp @ .350 K.W. demand35 K.W.	
46-250 C.P. Lamps @ .160 K.W. demand	7.36 K.W.	
12-Fluorescent Lamps @ .50 K.W. demand	<u>6.00</u> K.W.	
	<u>13.71</u> K.W.	15 K.W.
<u>Carleton Ward (Down)</u>		
13-250 C.P. Lamps @ .160 K.W. demand	2.08 K.W.	
14 Fluorescent Lamps @ .50 K.W. demand	<u>7.00</u> K.W.	
	<u>9.08</u> K.W.	15 K.W.
<u>Carleton Ward (Rear)</u>		
1-600 C.P. Lamp @ .350 K.W. demand35 K.W.	
19-250 C.P. Lamps @ .160 K.W. demand	3.04 K.W.	
21 Fluorescent Lamps @ .50 K.W. demand	<u>10.50</u> K.W.	
	<u>13.89</u> K.W.	15 K.W.

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

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

The Street Lighting costs for the year 1964 are as follows:-

Expenditure	\$ 57,682.43
1964 Appropriation.	<u>56,930.00</u>
DEBIT	752.43

The Street Lighting expenditure of \$57,682.43
is made up as follows:-

100 - F48T12/CW/HO Fluorescent Lamps ...	\$ 198.26	
4-F72T12/CW/HO Fluorescent Lamps	11.89	
120-600 C.P.Series Lamps	120.89	
130-250 C.P.Series Lamps	<u>76.89</u>	...\$ 407.93)
Power Costs for subways and Series Lighting (Dec. 23, 1963 to Dec. 31, 1964 -		}
327,300 K.W. Hours)	8,229.61	Series
Maintenance and Contract of Pole Line	621.36	
Maintenance of Lamp Fixtures, including such articles as lamp standards, lamp brackets, heads, sockets, shades, cut-outs, line switches, etc.		Lighting
Light Bill, Fredericton Highway Bridge	676.56	
Cenotaph, Light Bill	151.02)
Charges on Multiple Fixtures owned and operated by the Maritime Electric Company at \$40.00, \$60.00, \$75.00 and \$90.00 per light per year	45,878.15	
Maintenance and Labor used in major repairs and new installations	1,267.94	
City Labor	<u>74.89</u>	
TOTAL	<u>\$57,682.43</u>	

Total Cost of Series System ...\$ 10,461.45

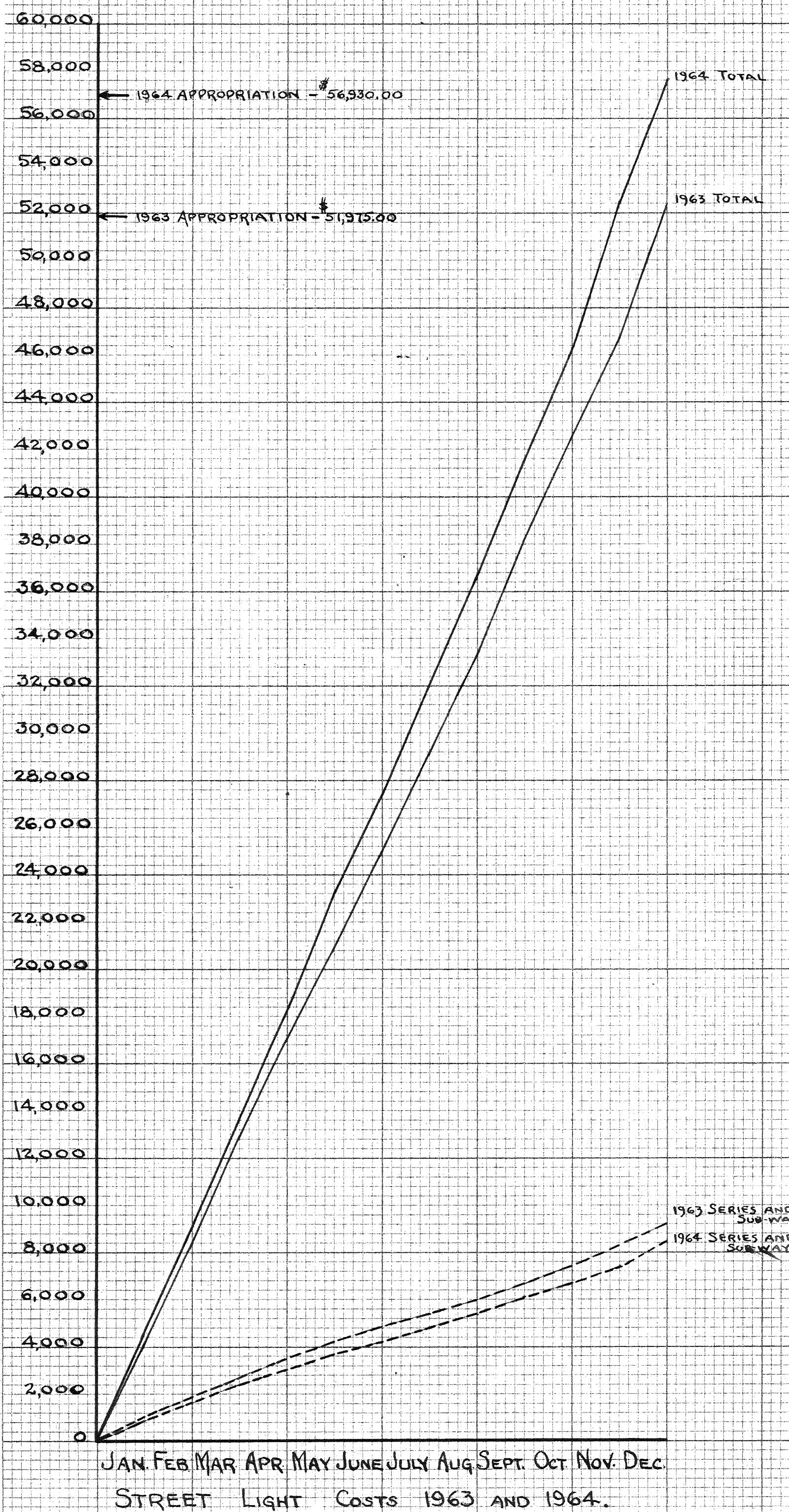
During the year 1964, various changes and extensions were made to the City of Fredericton Street Lighting System. These additions, transfers and removals are shown on a Map in the Office of the City Engineer.

The total per capita charge for Street Lighting for 1964 population, 19,683 as per 1961 census is:-

$$\frac{57,682.43}{19,683} = \$ 2.93$$

TABLE SHOWING COMPARATIVE YEARLY COST IN
STREET LIGHTING

Year	Total Yearly Cost	Yearly Appropriation
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
1957	33,101.56	29,000.00
1958	36,038.79	33,500.00
1959	39,907.64	37,500.00
1960	44,481.71	44,010.00
1961	46,835.74	46,965.00
1962	46,989.38	47,875.00
1963	52,400.10	51,975.00
1964	<u>57,682.43</u>	56,930.00



W A T E R

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

1. During 1964 the south side of the Saint John River derived its water from three Gravel Wells located in the Wilmot Park; namely No. 1, No. 3 and No. 4.

Number 2 Well on Saunders Street cannot be used in its present state because of the prohibitive manganese content, which causes "Red" water and stains linens, etc. and is not acceptable as a Municipal Supply.

2. The water supply on the north side of the Saint John River is derived from four Wells, three of these Wells are outside the City limits and pump directly into the system, which has a 1,000,000 Imperial Gallon Reservoir, completed by Maritime Engineering Limited in 1959. The fourth Well is located on Bridge Street.

In 1964 a fourth Well was put in operation to correct the condition in the Carleton Ward Water Supply as explained in the 1963 Engineer's Report. For further explanation see heading "Capital Account Water," which includes "Capital Account Drilled Well, Carleton Ward," pages 25 and 26.

Chlorine has been added to the Water in Carleton Ward since the reports from the City Analyst showed objectionable Coliforms in the Water. A liquid solution (HTH) is added at the Killarney Road Well. The pump in this Well is being overhauled, the first overhaul in 20 years.

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

"WATER ORDINARY"

and

"WATER PUMPING STATION"

WATER ORDINARY

This account includes all expenditures, other than Capital expenditure for water and expenditures other than the Main Pumping Station and cost of supply from Wells. It also includes all current water expenditures in Carleton Ward.

The expenditure under this heading is made up as follows:-

Gross Expenditure ...\$	90,986.76
Less Credits	<u>27,302.99</u>
Net Expenditure	\$ 63,683.77

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 ...\$	15,241.15
Thawing frozen Water Services	29.66
Sale of Repair Sleeves (U.N.B., Silverwood and Diamond Construction Co. Ltd.)	238.39
Workmen's Compensation Board (Refund)	106.65
Fredericton Automatic Sprinkler System (Cutting Wall). .	32.46
Sam Consentino Ltd. (Sale flaring tool)	5.60
Sale of pipe, couplings and unions	13.00
Journal Voucher (Rental on hydrants, Fire Department). .	10,278.32
Journal Voucher (Water supplied to City owned buildings, swimming and wading pools)	1,200.00
Journal Voucher (Materials)	129.69
Miscellaneous (changing and repairing frozen Water Meters at various locations)	28.07
TOTAL	\$ 27,302.99

The Gross Expenditure is made up as follows:-

City Payroll for Hydrants	\$ 2,991.34
City Payroll for Meters	4,991.31
City Payroll for Water Ordinary	19,831.85
City Payroll for Carleton Ward Pumping Stations	1,204.32
City Payroll for Lincoln Road Pumping Station	503.77
City Payroll for Smythe Street Booster Station	400.25
City Payroll for Montgomery St. Booster Station	383.37
TOTAL PAYROLLS	\$ 30,306.17
Material and other charges	<u>60,680.59</u>
GROSS EXPENDITURE	\$ 90,986.76

No water extensions were laid under this heading in 1964. They appear under "Capital Account Water."

Sprinkler Systems were installed in 1964 at the following locations:-

Cash and Carry Cleaners, 62-68 Regent Street
Simpson Sears Limited, 334 Queen Street
Auto Machinery Co. Ltd., 335 Campbell Street
J. Gibson & Sons, 390 York Street
N. B. Development (Pyramid Homes), Wilsey Road
(8" Sprinkler System)

There are at present 67 Sprinkler Systems in the City. The City charge for Water supplied for Sprinkler Systems is \$25.00 per year.

HYDRANTS

There are, in the City, 442 hydrants; 336 on the south side of the Saint John River and 106 on the north side.

The credit for rental charge on these hydrants appears under credits to Water Ordinary.

Hydrants were installed at the following locations in 1964:-

<u>Location</u>	<u>Number</u>
Leeds Drive	2
Liverpool Street	2
Folkestone Court	1
Rochester Street	2
Smythe Street	1
Prospect Street	1
Oxford Street	1
Lorne Street	1
Massey Street	1
Bessborough Street	1
Bailey Drive	1
College Hill Road	1
Heather Terrace	1
Regent Street (Montgomery Street to near Trans-Canada)	3
Industrial Road (Wilsey Road)	3
Lynhaven Street	1
TOTAL	23

METERS

There are 4473 water services in the City; 423 are charged under flat rate and 4050 on meter rate.

The labor cost per meter for installing, reading, repairing, etc. is \$1.11 for 1964.

225 Meters were installed in 1964.

In 1964, 15 discontinued services were dug out and shut off at the main.

All meters are read twice a year and bills are sent out twice a year. 201 meters are read once a month, although they are billed twice a year. These are meters of customers who ordinarily have large consumption and where a stopped meter or meter digit turned over without being noticed would mean a considerable loss of revenue to the City. All meters on Military Buildings are included in the group of monthly meter readings.

Meters in Stock, December 31, 1964:-

5/8" Meters - Repaired and fit for service	28
3/4" Meters - Repaired and fit for service	1
1 1/4" Meters - Repaired and fit for service	--
3" Meters - Repaired and fit for service	--
 New 5/8" Meters	51
New 1" Meters	5
New 1 1/4" Meters	--
New 1 1/2" Meters	2
New 2" Meters	1
 TOTAL	88
	<hr/>

DISTRIBUTION SYSTEM

New Services installed 1964	173
Old Services relayed 1964	21
Frozen Services that had to be thawed	9

The Fredericton distribution system consists of 58.28 miles of Water Main, made up of the following sizes:-

18" Main	0.98 miles
14" Main	0.33 miles
12" Main	5.19 miles
10" Main	5.51 miles
8" Main	12.61 miles
6" Main	27.62 miles
4" Main	5.77 miles
3" Main	<u>0.27</u> miles
 TOTAL ..	58.28 miles
	<hr/>

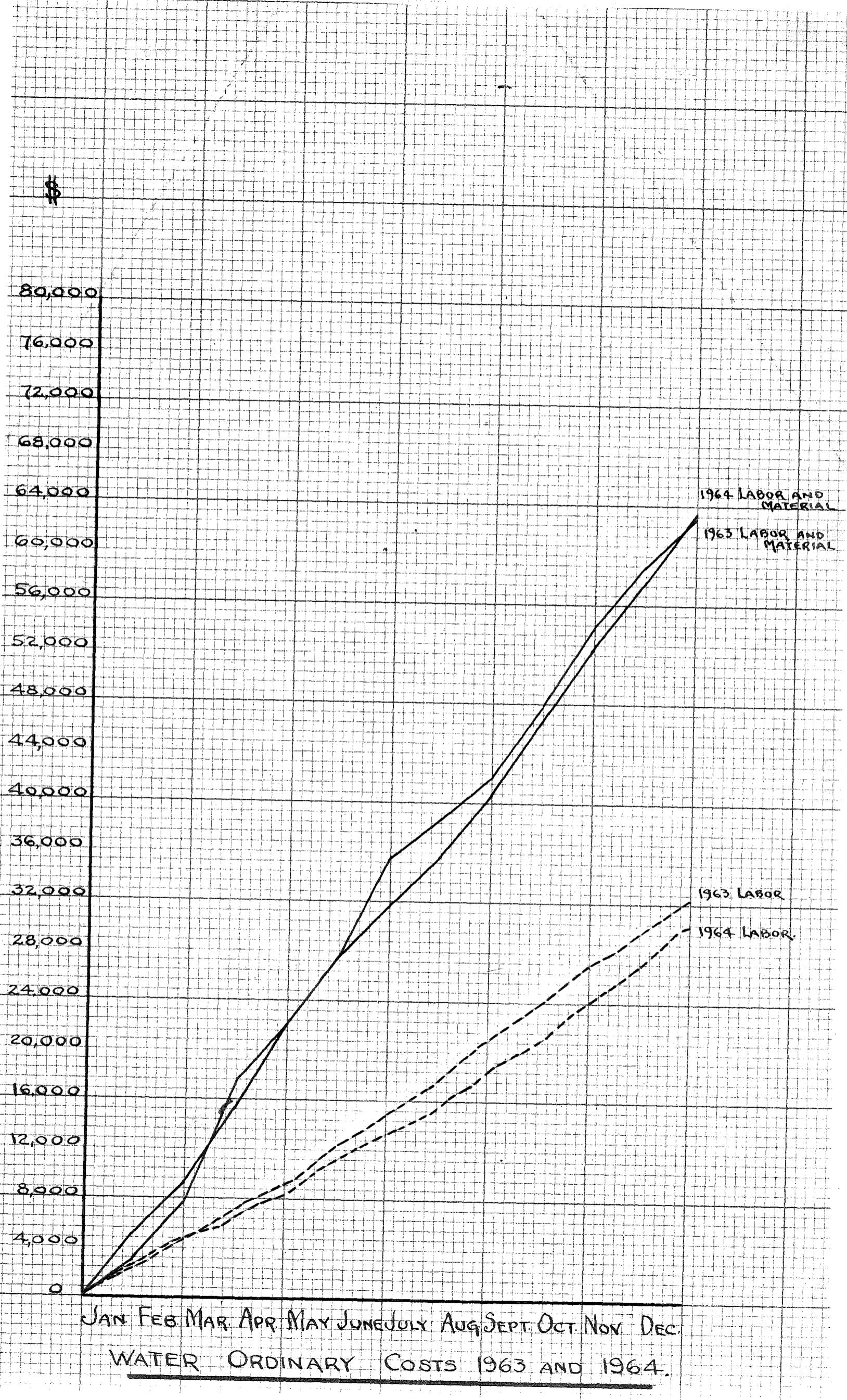
This does not include the water mains installed by the National Defence at the Exhibition Grounds, Military Depot #7, now Department of Health and Social Welfare, Woodstock Road and the Army Garage, Waggoner's Lane.

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 Neptune Meters Ltd.: -

4 - 2" Trident Style 3, cold water meters,
straight reading, Imperial Gallons,
complete with flanges included

continued



4 - 1½" Trident Style 3, cold water meters,
straight reading, Imperial Gallons,
complete with flanges included

250 - 5/8" Neptune Trident seal proof cold
water meters, complete with straight
reading, Imperial Gallons, registers.

Following is the list of vehicles used and
charges to "Water Ordinary" showing a comparison of
repair charges for 1963 and 1964, including tires and
tubes.

<u>Name of Vehicle</u>	<u>Year Purchased</u>	<u>Repairs 1963</u>	<u>Repairs 1964</u>
Chevrolet ½ ton	1963	\$ 156.57	\$ 156.35
International ½ ton (traded in 1964)	1958	811.28	271.36
Chevrolet ½ ton	1964		137.28
Chevrolet ½ ton	1959	<u>139.94</u>	<u>126.10</u>
TOTAL	=	\$ 1,107.79	\$ 691.09

Included in the expenditure for Water Ordinary
was the purchase of the following:-

1 - 1964 Chevrolet ½ ton Model 1404
Serial No. 4C14-04609773, Motor
No. 4154029, equipped with
heater, inside mirror, R.H.
mirror, (Nylon) 4 ply 670/15
tires, undercoated.....\$ 2,725.00
Less trade in on 1958 Inter-
national ½ ton1,285.00
Trading Difference\$ 1,440.00
Plus N.B.S.S. & E. Tax43.20
TOTAL\$ 1,483.20

WATER PUMPING STATION

Expenditure\$ 52,431.23

The above expenditure is divided as follows:-

City Payrolls for salaries of employees at
Pumping Station\$ 21,791.31
Work done by other City employees in and
around Pumping Station 2,094.19
Material charges 28,545.73
TOTAL\$ 52,431.23

The material cost of \$28,545.73 is itemized as follows:-

Item 1	Light and Power supplied by Maritime Electric Company (654,800 K.W.Hours)....	\$ 12,391.41
Item 2	Light and Power supplied by Maritime Electric Company at Wells in Park	7,363.09
Item 3	Heating (5355.4 Gallons furnace oil)	762.55
Item 4	Diesel Fuel (2000 Gallons)	304.40
Item 5	Liquid Chlorine (900 lbs.)	130.40
Item 6	Oil - 3 Cases HDX #10\$ 24.28 45 Gallons Mobiloil 65.35 5 Gallons Teresso #43 .. <u>6.02</u>	95.65
Item 7	Maintenance and repair to buildings, machinery and intake pier	3,822.35
Item 8	Instruments (2 Diesel #426 Thermometers) ..	26.77
Item 9	Supplies, packing rags, lamps, wrenches, etc.	255.10
Item 10	Stationary, forms, charts, chemicals, ink, etc.	175.24
Item 11	Workmen's Compensation	932.80
Item 12	E. W. Hagerman (City Analyst Salary)	1,800.00
Journal Voucher (Gas, Varsol)		16.15
Journal Voucher (Sand, Cement)		7.65
Miscellaneous (Telephone, Uniforms, etc.)	<u>462.17</u>	
	TOTAL	\$ 28,545.73
		<u>=====</u>

Following is a further explanation of some of the above items:-

Item #3 - Heating

Following is the yearly consumption and costs of heating the Fredericton Pumping Station Plant for the last eight years:-

<u>Year</u>	<u>Gallons</u> <u>Furnace Oil</u>	<u>Cost</u>
1957 (Heat from Victoria Public Hospital, 749,210 lbs. steam @ \$1.84 per lb.)		
	3,507.1	\$ 1,378.54
	4,513.4	439.98
1958	4,513.4	766.10
1959	6,110.8	1,005.50
1960	6,165.5	1,012.19
1961	4,513.8	709.01
1962	5,079.1	763.10
1963	5,592.8	822.48
1964	5,355.4	762.55

Item #7 - Maintenance and Repairs

In reference to Item #7, the following is included:-

- 1 - Reroofing a section of the Fredericton Pumping Station at a cost of \$2,726.73, including labor charge of \$1,690.29 and material cost of \$1,036.44.
- 2 - Cleaning screens at Intake Pier in the Saint John River.
- 3 - Construction of a new Raw Water Well House at a cost of \$877.52, including labor charge of \$401.91 and a material cost of \$475.61.
- 4 - Maintenance and repairs to Pump Houses Equipment.
- 5 - Repaired sidewall structures of Aerators.
- 6 - Overhaul of 150 H.P. Alternator Diesel Engine.

The Pumping Station plant at the present time has all the Wells operating automatically on demand. The Saint John River supply operates manually and the supply must pass through the Filter Plant for purification. This supply will only be used in an emergency, that is, when the Wells are not operating due to failure, etc. or when the demand of water is higher than the Wells can produce or during a prolonged electrical interruption, probably longer than 24 hours.

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

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

Year	Imperial Gallons	Gross Expenditure at Pumping Station	Pumping Station cost
			per 1,000 Gallons Gross Expenditure
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
1957	469,185,000	42,465.50	9.0 cents
1958	454,765,000	42,888.56	9.4 cents
1959	487,704,000	47,923.19	9.8 cents
1960	520,081,000	50,280.09	9.6 cents
1961	510,250,000	45,081.88	8.8 cents
1962	499,880,000	48,298.53	9.7 cents
1963	519,168,000	48,441.10	9.3 cents
1964	544,650,000	52,431.23	9.6 cents

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

By taking the average consumption of Carleton Ward as 300,000 Gallons per day, the estimated water pumped for 12 months from these Wells was 109,500,000 Imperial Gallons.

The total amount of water pumped from January 1, 1964 to December 31, 1964 therefore, for the whole City, is 654,150,000 Imperial Gallons.

The total net water expenditure for the City from January 1, 1964 to December 31, 1964 is \$116,097.00.

Therefore the net cost to pump and deliver to the customer, 1,000 Imperial Gallons of Water from January 1, 1964 to December 31, 1964 is
 $\frac{116,097.00}{654,150} = 17.7$ cents.

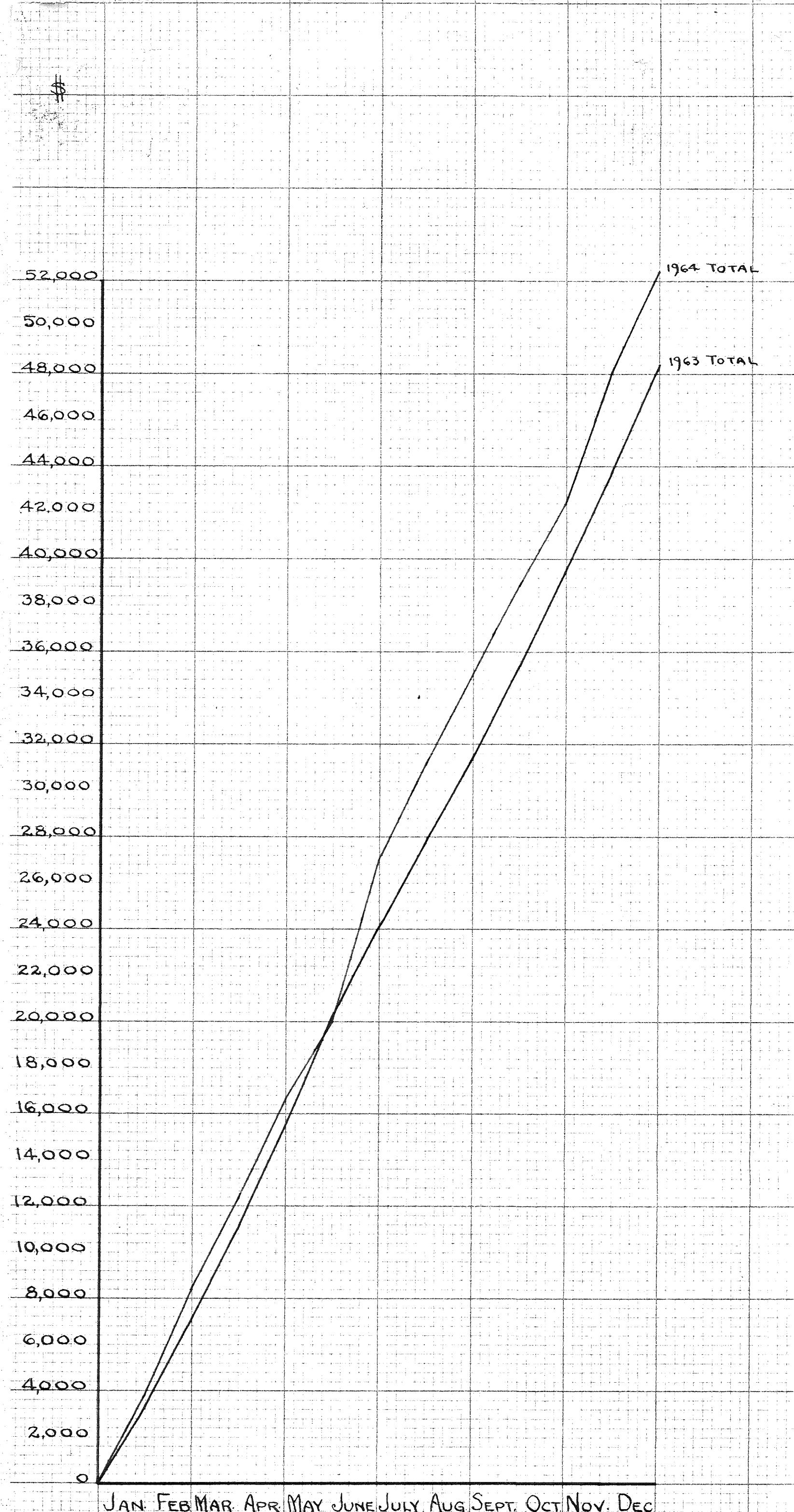
All the preceding costs shown under "Water Pumping Station" and "Water Ordinary" do not include the cost of billing and collecting water bills or any other overhead charge included in the City Government cost, nor do they include bond payments or sinking fund charges.

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

Accompanying this report is the report of Mr. E. W. Hagerman, City Analyst, on the Fredericton Water Supply from January 1, 1964 to December 31, 1964.

Respectfully submitted,

W. L. Barrett
CITY ENGINEER.



JAN FEB MAR APR MAY JUNE JULY AUG SEPT. OCT NOV. DEC.
WATER PUMPING STATION COSTS 1963 AND 1964.

FREDERICTON WATER SUPPLY

YEAR 1964

JANUARY 1st to DECEMBER 31st

The water supply for Fredericton now comes from seven Wells. The seventh, put into use in June, 1964, is in Carleton Ward adjacent to the Highland Avenue reservoir. Water from this Well is of top quality, having a total hardness of about 80 parts per million (7.6 grains per Imperial Gallon) and is very low in iron, manganese and chlorides.

The water quality from the remaining six Wells, 3 on each side of the River Saint John, shows little or no change, averaging about 90 parts per million of hardness for the South side and slightly higher on the North side. In both cases the hardness value of the water delivered to the consumer may vary a few parts per million depending on the Well or combination of Wells in use.

Although the Wells contain only trace amounts of manganese and iron, accumulation of these occasionally occur in dead end pipes, resulting in a cloudy appearance and off-tasting water. Fortunately, the past year has been free from such build up. The completion of pipe loops in place of dead ends has done much to eliminate this trouble.

We maintain a chlorine residual of 0.1 parts per million in the water, entering the mains on the South side system. Because the Wells are almost free of organic matter very little combined chlorine is present. Organic combinations of chlorine account for the objectionable tastes attributed to that element. Free chlorine in distilled water is undetectable to taste up to 1.0 parts per million or even higher. We think that sometimes the union of chlorine with the scale formed in old pipes may account for some earthy tastes flavoured with chlorine. Generally taste problems are of a local and intermittent nature. Replacing old galvanized pipes with copper, in the buildings where the complaints arise, will usually correct the trouble.

On the South side of the River the sampling point, for water entering the City system, is not more than 100 feet downstream from the point of chlorine application. Many persons drink water from this faucet every day and up to the present there have been no complaints of chlorine or other objectionable tastes from this source.

On the other hand, the writer has had chlorine taste reports from patients in the Victoria Public Hospital which is 500 feet to 1,000 feet distant, as the pipe lines go, from the previously mentioned taste free sampling point which is so much closer to the chlorine source. In opposition to this complaint, we find that consumers on the opposite side of the street from the Hospital consider the water to be quite satisfactory.

The subject of taste is a complicated one because almost any peculiar taste is attributed to chlorine, especially as the users know that it is the common element used for water sterilization. The taste may be from stale ice, or from past flavours adhering to roughened surfaces of plastic glasses or it may be real chlorinous taste due to chlorine set free, due to some unknown set of conditions,

and which accumulates at some point in the system. Another explanation may be that a sick person's taste is "out of adjustment" and water does not taste right until the person recovers.

Chlorine is applied to the North side system at the Killarney and Bridge Street Wells. The amount of residual is 0.1 ppm at the Wells, when they are in use, but this is soon dissipated in the system. The water quality has been generally good with no complaints.

Sixty-six samples were collected in 1964 and were tested for the Coliform Group. From each sample 5 portions of 5 cc. each were planted in Lactose Broth, making a total of 330 portions tested. Out of the 330, two were positive but subsequent samples from the same source were negative.

Following is a brief of the United States Treasury Standards as applicable to Fredericton Water Supply.

- 1 - A sample consists of 5 portions.
- 2 - Each portion contains 10 cc of the water to be tested.
- 3 - The confirmed test shall be used to show the presence of the Coliform Group. The confirmatory media is 2% Brilliant Green Bile. The primary media is Lactose Broth.

APPLICATION OF TEST

- 1 - Of all the 10 cc portions examined per month, not more than 10% shall show positive.
- 2 - When less than 20 samples per month are examined, one sample may have 3 positive portions.
- 3 - The procedure given, using a standard sample of 5 portions, provides for an estimation of the MOST PROBABLE NUMBER (MPN) of coliform bacteria per 100 cc of sample as per table below.

<u>Negative</u>	<u>Positive</u>	<u>When 5 - 10 cc portions are tested</u>
5	0	Less than 2.2 per 100 is the MPN
4	1	Less than 2.2 per 100 is the MPN
3	2	Less than 5.1 per 100 is the MPN
2	3	Less than 9.2 per 100 is the MPN
1	4	Less than 16 per 100 is the MPN
0	5	More than 16 per 100 is the MPN

From the table, July and September had MPN's of 2.2 with all other months less than 2.2. All samples had less than 10% of portions positive and no one sample had more than 3 positive portions.

FREDERICTON, N. B.
February 22, 1965.

(Signed) E. W. Hagerman
CITY ANALYST.

Following is a list of sampling stations used
for 1964:-

<u>DATE OF SAMPLE</u>	<u>ORIGIN OF SAMPLE</u>	<u>POSITIVE RESULTS ONLY WILL BE NOTED HERE ALL OTHERS ARE O. K.</u>
January 4	Fire Station, MacLaren Avenue	
January 11	U.N.B. Engineering Building	
January 18	277 Gibson St., D. D. Pringle	
January 24	Canadian Oil, Union & Friel	
January 31	99 Smith Street, H. Bailey	
February 4	U.N.B. Engineering Building	
February 8	Fire Station, MacLaren Avenue	
February 13	99 Smith Street, H. Bailey	
February 18	377 Gibson St., Greer & Lawson	
February 23	U.N.B. Engineering Building	
February 29	99 Smith Street, H. Bailey	
March 5	99 Smith Street, H. Bailey	
March 6	By-Pass to Lincoln, Daniel's Trucking (Well)	
March 13	** 230 Cambridge Crescent (New construction)	
March 20	By-Pass, Daniel's Trucking (Well)	
March 25	U.N.B. Engineering Building	
March 30	Highland Ave. Well, City's Latest Well	
April 6	U.N.B. Engineering Building	
April 11	99 Smith St., H. Bailey	
April 17	U.N.B. Engineering Building	
April 22	Fire Station, MacLaren Avenue	
April 27	Records Building, Prov. of N.B.	
May 3	277 Gibson St., D. D. Pringle	
May 9	U.N.B. Engineering Building	
May 15	460 Squires St., H. Budovitch	
May 19	99 Smith St., H. Bailey	
May 27	** 35 Pembroke Crescent, H. L. Cook (Construction)	
June 5	Highland Avenue Well	
June 10	127 Charlotte St. E. W. Hagerman	
June 16	U.N.B. Engineering Building	
June 21	Fire Station, MacLaren Avenue	
June 27	Beaverbrook Hotel	
July 1	277 Gibson St., D.D.Pringle	
July 7	99 Smith St., H. Bailey	1 Plus
July 10	99 Smith St., H. Bailey (O.K.)	4 Minus
July 17	Fire Station, MacLaren Avenue	
July 24	127 Charlotte St., E. W. Hagerman	
July 30	277 Gibson St., D. D. Pringle	
August 8	99 Smith St., H. Bailey	
August 12	U. N. B. Engineering Bldg.	
August 18	Fire Station, MacLaren Avenue	
August 26	377 Gibson St., Greer & Lawson	
September 2	Fire Station, MacLaren Avenue	
September 7	U.N.B. Engineering Building	

** Non Gas (non coliform) show producing growths that are not present in other samples. Probably due to new plumbing.

POSITIVE RESULTS ONLY
WILL BE NOTED HERE
ALL OTHERS ARE O.K.

DATE OF
SAMPLE

ORIGIN OF SAMPLE

September 15	99 Smith St., H. Bailey	1 Plus	4 Negative
September 17	99 Smith St., H. Bailey (o.k.)		
September 21	99 Smith St., H. Bailey (o.k.)		
September 25	99 Smith St., H. Bailey (o.k.)		
October 2	Fire Station, MacLaren Avenue		
October 7	99 Smith St., H. Bailey		
October 14	Beaverbrook Hotel		
October 20	Fire Station, MacLaren Avenue		
October 24	Canadian Oil, Union & Friel		
October 30	** Teachers' College (New)		
Nov. 2	** Teachers' College (New)		
Nov. 6	** St. Thomas College		
Nov. 13	277 Gibson St., D. D. Pringle		
Nov. 20	** Teachers' College		
Nov. 24	** Teachers' College		
Nov. 28	713 King's College Road (Just before City Mains enter U. N. B. land)		
Dec. 3	U.N.B. Engineering Building		
Dec. 8	127 Charlotte St., E. W. Hagerman		
Dec. 13	Rookwood Ave., Pony Club (dead end)		
Dec. 18	277 Gibson St., D.D.Pringle		
Dec. 27	Fire Station, MacLaren Avenue		
Dec. 30	Fire Station, MacLaren Avenue		

** Non gas producing (non Coliform) growths present that are not present in other samples. Probably from new plumbing. It might be noted that the sample from 713 King's College Road, just outside U.N.B. grounds and about a thousand feet from St. Thomas and Teachers' College does not show these growths in the tests and neither do samples from Engineering.

Large buildings which are being occupied while under construction, with new plumbing being added from day to day, should be provided with a proportional chlorinator attached to a water meter and so making possible the maintenance of a proper chlorine residual at all times.

W A T E R R E L A Y S 1 9 6 4 .

1.	Mrs. Marion McNair Est.	92 Waterloo Row	5/8" Cop.
2.	Myer Budovitch Est.	78-80 York Street	1" Cop.
3.	Nurses Residence	268 Queen Street	1" Cop.
4"	Mrs. D. A. MacLennan	316 University Avenue	5/8" Cop.
5.	Miss Jean Cain	365 Northumberland Street	3/4" Cop.
6.	Edna Wilson	262 St. Marys Street	5/8" Cop
7.	Irving Oil Co. Ltd.	963 Union Street	5/8" cop.
8.	Phillips & Pringle Ltd.	Campbell Street	5/8" Cop.
9.	Mrs. Walter MacLean	162 Neill Street	5/8" Cop.
10.	R.C.A.F. Association	255 Regent Street	5/8" Cop.
11.	Louis Swetsky	96 Regent Street	5/8" Cop.
12.	Chippins Ltd.	560 Needham Street	5/8" Cop.
13.	Mrs. Yvette Breau	478 Union Street	5/8" Cop.
14.	Miles Tire Service Ltd.	643 McLeod Avenue	5/8" Cop.
15.	Eastern Trust Co.	448 Queen Street	1" Cop.
16.	J. Stanley DeLong	220 Victoria Street	5/8" Cop.
17.	Mrs. Lawson Hanson	717 Aberdeen Street	5/8" Cop.
18.	Mrs. Sadie Velensky	304 George Street	5/8" cop.
19.	George Spohr	230 Regent Street	1" Cop.
20.	E. R. Blackmer	770 Brunswick Street	5/8" Cop.
21	Harold Partington	520-522 Regent Street	5/8" Cop.

WATER INSTALLATIONS 1964.

1.	Jan. 7/64	Fredericton Housing Ltd.	126 Coventry Crescent	5/8" Cop.
2.	Mar. 26/64	Maunder & McPhee	459 Mansfield Street	5/8" Cop.
3.	Mar. 31/64	Charles Llewellyn	1133 Smythe Street	5/8" cop.
4.	Apr. 6/64	Charles Llewellyn	1125 Smythe Street	5/8" Cop.
5.	Apr. 18/64	Fredericton Housing Ltd.	249 Cambridge Crescent	5/8" Cop.
6.	Apr. 18/64	Fredericton Housing Ltd.	99 Coventry Crescent	5/8" op.
7.	Apr. 27/64	Hill Bros. Ltd.	90 Beechwood Crescent	5/8" Cop.
8.	Apr. 28/64	Donald M E AGOOON Magoon	26 Perley Court	5/8" cop.
9.	Apr. 28/64	Fredericton Housing Ltd.	531 Forest Hill Road	5/8" Cop.
10.	Apr. 28/64	Cummings Housing Ltd.	659 Kitchen Street	5/8" Cop.
11.	Apr. 20/64	Cash & Carry Cleaners	Regent Street	6" C.I. Sprinkler
12.	May 5/64	Maritime Engineering Ltd.	573-577 King Street	3/4" Cop.
13.	May 5/64	Hill Bros Ltd.	952 Smythe Street	5/8" cop.
14.	May 5/64	Hill Bros. Ltd.	1022 Smythe Street	5/8" Cop.
15.	May 6/64	Wendell Farris	143 Beechwood Crescent	5/8" Cop.
16.	May 6/64	Hill Bros. Ltd.	998 Smythe Street	5/8" Cop.
17.	May 8/64	Atkinson, Atkinson & Harper	343 Union Street	3/4" Cop.
18.	May 12/64	T. C. Gough	779-781 Mitchell Street	3/4" Cop.
19.	May 13/64	Laurel G. McNeill	845 Irvine Street	5/8" cop.
20.	May 13/64	Eldon Dunphy	798 Jones Street	5/8" Cop.
21.	May 14/64	Fredericton Housing Ltd.	166 Coventry Crescent	5/8" Cop.
22.	May 15/64	Suburban Construction Co.	29 Pembroke Crescent	5/8" Cop.
23.	May 20/64	Wayne Hill	701 Gregg Court	5/8" Cop.
24.	May 21/64	Fredericton Housing Ltd.	109 Coventry Crescent	5/8" Cop.
25.	May 21/64	Fredericton Housing Ltd.	108 Cambridge Crescent	5/8" Cop.
26.	May 15/69	Fredericton Housing Ltd.	139 Coventry Crescent	5/8" Cop.
27.	May 29/64	Eldon Dunphy	425 Mansfield Street	5/8" Cop.
28.	June 1/64	Eastern Bakeries Ltd.	Smythe Street	5/8" Cop.
29.	June 1/64	Suburban Construction Co.	109 Montgomery Street	5/8" Cop.
30.	June 2/64	Parkside Development Ltd.	58 Prospect Street	1" Cop.
31.	June 2/64	Elbridge Wilkins	119 Pembroke Crescent	5/8" Cop.
32.	June 4/64	Rusco Windows Ltd.	25 Prospect Street	5/8" Cop.
33.	June 5/64	Fredericton Housing Ltd.	226 Coventry Crescent	5/8" Cop.
34.	June 5/64	Carl S. Hay	677 Windsor Street	1" Cop.
35.	June 6/64	Vipond Automatic Sprinkler Co.	334 Queen Street	6" C. I. Sprinkler
36.	June 9/64	Eldon Dunphy	475 Mansfield Street	5/8" Cop.
27.	June 10/64	Robert Calhoun	125 Montgomery Street	5/8" Cop.
28.	June 12/64	Wayne Hill	713 Gregg Court	5/8" Cop.
29.	June 15/64	Eldon Dunphy	720 Gregg Court	5/8" Cop.
30.	June 15/64	H. Semple	129 Pembroke Crescent	5/8" Cop.
31.	June 18/64	Fredericton Housing Ltd.	515 Forest Hill Road.	5/8" Cop.
32.	June 18/64	Charles Llewellyn	25 Waggoners Lane	3/4" Cop.
33.	June 19/64	Charles Kerton	180 Noble Street	5/8" Cop.
34.	June 22/64	Fredericton Housing Ltd.	331 Canterbury Drive	5/8" Cop.
35.	June 22/64	Fredericton Housing Ltd.	9 Leeds Drive	5/8" Cop.
36.	June 26/64	C.W.Ritchie & Sons Ltd.	St. Thomas College	8" C. I.
37.	June 25/64	Fredericton Housing Ltd.	50 Rochester Street	5/8" Cop.
38.	June 26/64	Fredericton Housing Ltd.	12 Leeds Drive	5/8" Cop.
39.	June 26/64	Fredericton Housing Ltd.	40 Rochester Street	5/8" Cop.
40.	June 29/64	Ronald Stevenson	260 Kings College Road	3/4" Cop.

41.	June 30/64	Carl L. Vaughan	255 Kings College Road	5/8" Cop.
42.	June 30/64	Ferris Housing	371 Kings College Road	3/4" Cop.
43.	July 3/64	E. F. Carpenter	420 Mansfield Street	5/8" Cop.
44.	July 3/64	Neill Hillman	746 Devon Avenue	5/8" Cop.
45.	July 8/64	Royce Dorcas	15 Perley Court	5/8" Cop.
46.	July 8/64	J. C. Flynn	18 Perley Court	5/8" Cop.
47.	July 10/64	Herman Taylor	221 St. Marys Street	5/8" Cop.
48.	July 14/64	Fredericton Housing Ltd.	19 Leeds Drive	5/8" Cop.
49.	July 14/64	Fredericton Housing Ltd.	29 Leeds Drive	5/8" Cop.
50.	July 16/64	Fredericton Housing Ltd.	55 Leeds Drive	5/8" Cop.
51.	July 16/64	Fredericton Housing Ltd.	70 Rochester Street	5/8" Cop.
52.	July 17/64	Fredericton Housing Ltd.	89 Coventry Crescent	5/8" Cop.
53.	July 22/64	Sutherlands Marine	336 Lincoln Road	5/8" Cop.
54.	July 23/64	Peter Saad	561 York Street	5/8" Cop.
55.	July 25/64	J. R. Booker	230 Noble Street	5/8" Cop.
56.	July 27/64	Fredericton Housing Ltd.	806 Jones Street	5/8" Cop.
57.	July 28/64	Eldon Dunphy	435 Mansfield Street	5/8" Cop.
58.	July 29/64	Dale Pond	479 Pedersen Crescent	5/8" Cop.
59.	July 29/64	Dale Pond	435 Pedersen Crescent	5/8" Cop.
60.	July 29/64	Diamond Construction Co.	Teachers College (U.N.B.)	8" C.I.
61.	July 21/64	Auto Machinery Co. Ltd.	335 Campbell Street	6" C.I. Sprinkler
62.	Aug. 4/64	Edward T. Moran	St. Dunstans Church	1" Cop.
63.	Aug. 6/64	Suburban Construction Co.	373 Oxford Street	5/8" Cop.
64.	Aug. 6/64	Wilson Laundry Ltd.	358 Westmorland Street	4" C. I.
65.	Aug. 7/64	Hill Bros. Ltd.	264 Bessborough Street	5/8" Cop.
66.	Aug. 7/64	Hill Bros. Ltd.	244 Bessborough Street	5/8" Cop.
67.	July /64	Fredericton Housing Ltd.	699 Valleyview Street	5/8" Cop.
68.	July 31/64	Wayne Hill	821 Jones Street	5/8" Cop.
69.	July 31/64	Fredericton Housing Ltd.	843 York Street	5/8" Cop.
70.	Aug. 7/64	Eldon Dunphy	814 Jones Street	5/8" Cop.
71.	Aug. 10/64	Hill Bros. Ltd.	207 Bessborough Street	5/8" Cop.
72.	Aug. 11/64	Hill Bros. Ltd.	150 Bessborough Street	5/8" Cop.
73.	Aug. 11/64	Hill Bros. Ltd.	180 Bessborough Street	5/8" Cop.
74.	Aug. 11/64	Maunder & McPhee	239 Bessborough Street	5/8" Cop.
75.	Aug. 12/64	Hill Bros. Ltd.	159 Bessborough Street	5/8" Cop.
76.	Aug. 12/64	Hill Bros. Ltd.	141 Bessborough Street	5/8" Cop.
77.	Aug. 13/64	Hill Bros. Ltd.	165 Bessborough Street	5/8" Cop.
78.	Aug. 13/64	Hill Bros. Ltd.	112 Bessborough Street	5/8" Cop.
79.	Aug. 14/64	Hill Bros. Ltd.	229 Bessborough Street	5/8" Cop.
80.	Aug. 17/64	Hagerman's Plumbing & Heating Ltd.	389 Argyle Street	5/8" Cop.
81.	Aug. /64	Prov. of N.B., Central Repair Depot,	College Hill Road	2" Cop.
82.	Aug. 18/64	Fredericton Housing Ltd.	35 Leeds Drive	5/8" Cop.
83.	Aug. 19/64	Fredericton Housing Ltd.	60 Leeds Drive	5/8" Cop.
84.	Aug. 19/64	Fredericton Housing Ltd.	65 Leeds Drive	5/8" Cop.
85.	Aug. 20/64	Fredericton Housing Ltd.	133 Leeds Drive	5/8" Cop.
86.	Aug. 24/64	Maritime Engineers Ltd.	120 Westmorland Street	1" Cop.
87.	Aug. 21/64	Fredericton Housing Ltd.	141 Leeds Drive	5/8" Cop.
88.	Aug. 25/64	Fredericton Housing Ltd.	31 Forest Acres Court	5/8" Cop.
89.	Aug. 25/64	Vipond Sprinkler Co. (Gibsons)	390 York Street	6" C.I. Sprinkler
90.	Aug. 26/64	Fredericton Housing Ltd.	43 Leeds Drive	5/8" Cop.

91.	Aug. 26/64	Fredericton Housing Ltd.	75 Leeds Drive	5/8" Cop.
92.	Aug. 27/64	Fredericton Housing Ltd.	32 Leeds Drive	5/8" Cop.
93.	Aug. 28/64	Fredericton Housing Ltd.	37 Rochester Street	5/8" Cop.
94.	Aug. 31/64	Fredericton Housing Ltd.	70 Leeds Drive	5/8" Cop.
95.	Aug. 31/64	Fredericton Housing Ltd.	30 Rochester Street	5/8" Cop.
96.	Sept. 1/64	Fredericton Housing Ltd.	110 Leeds Drive	5/8" Cop.
97.	Sept. 2/64	Fredericton Housing Ltd.	177 Leeds Drive	5/8" Cop.
98.	Sept. 2/64	Fredericton Housing Ltd.	551 Forest Hill Road	5/8" Cop.
99.	Sept. 3/64	Fredericton Housing Ltd.	358 Canterbury Drive	5/8" Cop.
100.	Sept. 4/64	Fredericton Housing Ltd.	105 Leeds Drive	5/8" Cop.
101.	Dept. 8/64	Fredericton Housing Ltd.	115 Leeds Drive	5/8" Cop.
102.	Sept. 9/64	Clive Sutton	720 Irvine Street	5/8" Cop.
103.	Sept. 10/64	S.C.R. Construction Co.	College Hill Road	1" Cop.
104.		N. B. Development	Wilsey Road	8" C.I. Sprinkler
105.	Sept. 15/64	Eldon Dunphy	447 Mansfield Street	5/8" Cop.
106.	Sept. 16/64	Gordon Christenson	143 Neill Street	5/8" Cop.
107.	Sept. 17/64	Suburban Construction Co.	80 Pembroke Crescent	5/8" Cop.
108.	Sept. 18/64	Suburban Construction Co.	19 Pembroke Crescent	5/8" Cop.
109.	Sept. 18/64	Suburban Construction Co.	69 Pembroke Crescent	5/8" Cop.
110.	Sept. 21/64	D. M. Young	109 Pembroke Crescent	5/8" Cop.
111.	Sept. 22/64	F. W. Forestell	813 Jones Street	5/8" Cop.
112.	Sept. 23/64	Hill Bros Ltd.	571 Squires Street	5/8" Cop.
113.	Sept. 24/64	Morgan Kerton	710 Beaverbrook Street	5/8" Cop.
114.	Sept. 25/64	J. W. Bird	9 Simcoe Court	5/8" Cop.
115.	Sept. 28/64	Schurman Ltd.	50 Simcoe Court	3/4" Cop.
116.	Sept. 29/64	Schurman Ltd.	55 Simcoe Court	3/4" Cop.
117.	Sept. 29/64	Schurman Ltd.	21 Simcoe Court	5/8" Cop.
118.	Oct. 1/64	Hill Bros. Ltd.	185 Bessborough Street	5/8" Cop.
119.	Octl. 1/64	Hill Bros. Ltd.	1030 Smythe Street	5/8" Cop.
120.	Oct. 2/64	Hill Bros. Ltd.	239 Bessborough Street	5/8" Cop.
121.	Oct. 7/64	Mauder & McPhee	954 York Street	5/8" Cop.
122.	Oct. 8/64	Grace Memorial Church	530 Northumberland Street	1" Cop.
123.	Oct. 9/64	J. E. Swanton	341 Kings College Road	5/8" Cop.
124.	Oct. 13/64	Eric. F. Wheatley	318 Kings College Road	5/8" Cop.
125.	Oct. 15/64	Charles Llewellyn	31 Waggomers Lane	1" Cop.
126.	Oct. 16/64	Schurmans Ltd.	27 Simcoe Court	5/8" Cop.
127.	Oct. 19/64	Schiirman Ltd.	49 Simcoe Court	3/4" Cop.
128.	Oct. 20/64	Fredericton Housing Ltd.	85 Leeds Drive	5/8" Cop.
129.	Oct. 21/64	Schurmans Ltd.	33 Simcoe Court	3/4" Cop.
130.	Oct. 22/64	Schurmans Ltd.	16 Simcoe Court	3/4" Cop.
131.	Oct. 22/64	Suburban Construction Co.	139 Pembroke Crescent	3/4" Cop.
132.	Oct. 23/64	Suburban Construction Co.	15 Harewood Crescent	3/4" Cop.
133.		Diamond Construction Co. (Wilmot Church Hall)	Carleton Street	3/4" Cop.
134.	Oct. 27/64	Wayne Hill	700 Gregg Court	3/4" Cop.
135.	Oct. 27/64	Herman Taylor	627 Hillcrest Drive	3/4" Cop.
136.	Oct. 29/64	Fredericton Housing Ltd.	95 Leeds Drive	5/8" Cop.
137.	Oct. 30/64	Fredericton Housing Ltd.	100 Leeds Drive	3/4" Cop.
138.	Oct. 30/64	Fredericton Housing Ltd.	125 Leeds Drive	5/8" Cop.
139.	Nov. 3/64	Fredericton Housing Ltd.	355 Canterbury Drive	1" Cop.
140.	Nov. 4/64	Fredericton Housing Ltd.	231 Leeds Drive	5/8" Cop.
141.	Nov. 4/64	Fredericton Housing Ltd.	150 Leeds Drive	5/8" Cop.

142. Nov. 5/64	Fredericton Housing Ltd.	5/8" Cop.
143. Nov. 6/64	Fredericton Housing Ltd.	5/8" Cop.
144. Nov. 6/64	Fredericton Housing Ltd.	5/8" Cop.
145. Nov. 9/64	Fredericton Housing Ltd.	3/4" Cop.
146. Nov. 9/64	Fredericton Housing Ltd.	3/4" Cop.
147. Nov. 9/64	Fredericton Housing Ltd.	5/8" Cop.
148. Nov. 10/64	Fredericton Housing Ltd.	5/8" Cop.
149. Nov. 10/64	Fredericton Housing Ltd.	5/8" Cop.
150. Nov. 10/64	Fredericton Housing Ltd.	5/8" Cop.
151. Nov. 10/64	Fredericton Housing Ltd.	5/8" Cop.
152. Nov. 12/64	Fredericton Housing Ltd.	5/8" Cop.
153. Nov. 12/64	Fredericton Housing Ltd.	5/8" Cop.
154. Nov. 13/64	Fredericton Housing Ltd.	3/4" Cop.
155. Nov. 18/64	Schurman Co.	3/4" Cop.
156. Nov. 20/64	Schurman Co.	3/4" cop.
157. Nov. 21/64	Simpson Con. Co.	1" Cop.
158. Nov. 24/64	Schurman Co.	3/4" Cop.
159. Nov. 25/64	Suburban Con. Co.	3/4" Cop.
160. Nov. 26/64	Thomas A. Kirkpatrick	3/4" Cop.
161. Dec. 4/64	York Structural Steel	3/4" Cop.
162. Dec. 16/64	Carl Hay	3/4" Cop.
163. Dec. 15/64	Donald C. Wilson	3/4" Cop.
164. Nov. 27/64	Hill Bros. Ltd.	3/4" Cop.
165. Dec. 8/64	A. R. Walker	5/8" Cop.
166. Dec. 10/64	Eldon Dunphy	3/4" Cop.
167. Dec. 14/64	Cowan Construction Co.	3/4" Cop.
168. Dec. 18/64	Kenneth Howlett	3/4" Cop.
169. Dec. 22/64	Mrs. Yvonne Sivret	5/8" Cop.
170. Dec. 22/64	Suburban Construction Co.	5/8" Cop.
171. Dec. 27/64	Hill Bros. Ltd.	3/4" Cop.
172. Dec. 28/64	Eldon Dunphy	5/8" Cop.
173. Dec. 28/64	Eldon Dunphy	5/8" Cop.
	147 Leeds Drive	
	157 Leeds Drive	
	167 Leeds Drive	
	197 Leeds Drive	
	187 Leeds Drive	
	97 Rochester Street	
	87 Rochester Street	
	100 Rochester Street	
	80 Rochester Street	
	67 Rochester Street	
	200 Leeds Drive	
	90 Rochester Street	
	178 Cambridge Crescent	
	89 Pembroke Crescent	
	79 Pembroke Crescent	
	1115 Regent Street	
	31 Simcoe Court	
	43 Simcoe Court	
	45 Simcoe Court	
	Wilsey Road	
855	825 Irvine Street	
	149 Montgomery Street	
	214 Bessborough Street	
	1111 Smythe Street	
	822 Jones Street	
	346 Kings College Road	
	35 Kennedy Court	
	276 Highland Avenue	
	732 Gregg Court	
	172 Bessborough Street	
	428 Mansfield Street	
	438 Mansfield Street	

DOMESTIC SEWER INSTALLATIONS 1964.

1.	March 26/64	Maunder & McPhee	459 Mansfield Street
2.	March 31/64	Charles Llewellyn	1133 Smythe Street
3.	Apr. 6/64	Charles Llewellyn	1125 Smythe Street
4.	Apr. 18/64	Fredericton Housing Ltd	249 Cambridge Crescent
5.	Apr. 18/64	Fredericton Housing Ltd.	99 Coventry Crescent
6.	Apr. 27/64	Hill Bros. Ltd.	90 Beechwood Crescent
7.	Apr. 28/64	Donald Magooon	26 Perley Court
8.	Apr. 28/64	Fredericton Housing Ltd.	531 Forest Hill Road
9.	Apr. 28/64	Cummings Housing Ltd.	659 Kitchen Street
10.	May 5/64	Maritime Engineering Ltd	573-577 King Street
11.	May 5/64	Hill Bros Ltd.	952 Smythe Street
12.	May 5/64	Hill Bros. Ltd.	1022 Smythe Street
13.	May 6/64	Wendell Ferris	143 Beechwood Crescent
14.	May 6/64	Hill Bros. Ltd.	998 Smythe Street
15.	May 8/64	Atkinson, Atkinson & Harper	343 Union Street
16.	May 11/64	J. A. Barry	599 Campbell Street
17.	May 12/64	T. C. Gough	779-781 Mitchell Street
18.	May 13/64	Laurel G. McNeill	845 Irvine Street
19.	May 13/64	Eldon Dunphy	798 Jones Street
20.	May 14/64	Fredericton Housing Ltd.	166 Coventry Crescent
21.	May 15/64	Suburban Construction Co.	29 Pembroke Crescent
22.	May 20/64	Wayne Hill	701 Gregg Court
23.	May 21/64	Fredericton Housing Ltd.	109 Coventry Crescent
24.	May 21/64	Fredericton Housing Ltd.	108 Cambridge Crescent
25.	May 25/64	Fredericton Housing Ltd.	139 Coventry Crescent
26.	May 29/64	Eldon Dunphy	425 Mansfield Street
27.	June 1/64	Eastern Bakeries Ltd.	Smythe Street
28.	June 1/64	Suburban Construction Co.	109 Montgomery Street
29.	June 2/64	Parkside Development Ltd.	58 Prospect Street
30.	June 2/64	Elbridge Wilkins	119 Pembroke Crescent
31.	June 4/64	Rusco Windows Ltd.	25 Prospect Street
32.	June 5/64	Fredericton Housing Ltd.	226 Coventry Crescent
33.	June 5/64	Carl S. Hay	677 Windsor Street
34.	June 9/64	Eldon Dunphy	475 Mansfield Street
35.	June 10/64	Robert Calhoun	125 Montgomery Street
36.	June 12/64	Wayne Hill	713 Gregg Court
37.	June 15/64	Eldon Dunphy	720 Gregg Court
38.	June 15/64	H. Semple	129 Pembroke Crescent
39.	June 18/64	Fredericton Housing Ltd.	515 Forest Hill Road
40.	June 18/64	Charles Llewellyn	25 Waggoners Lane
41.	June 19/64	Charles Merton	180 Noble Street
42.	June 22/64	Fredericton Housing Ltd.	331 Canterbury Drive
43.	June 22/64	Fredericton Housing Ltd.	9 Leeds Drive
44.	June 25/64	Fredericton Housing Ltd.	50 Rochester Street
45.	June 26/64	Fredericton Housing Ltd.	12 Leeds Drive
46.	June 26/64	Fredericton Housing Ltd.	40 Rochester Street
47.	June 29/64	Ronald Stevenson	260 Kings College Road
48.	June 30/64	Carl L. Vaughan	255 Kings College Road

49.	Jane	30/64	Ferris Housing Ltd.	371 Kings College Road
50.	July	3/64	E. F. Carpenter	420 Mansfield Street
51.	July	3/64	Neill Hillman	746 Deven Avenue
52.	July	8/64	Royce Dorcas	15 Perley Court
53.	July	8/64	J. C. Flynn	18 Perley Court
54.	July	10/64	Herman Taylor	221 St. Marys Street
55.	July	14/64	Fredericton Housing Ltd.	19 Leeds Drive
56.	July	13/64	Skyline Motel	Forest Hill Road
57.	July	14/64	Fredericton Housing Ltd.	29 Leeds Drive
58.	July	16/64	Fredericton Housing Ltd.	55 Leeds Drive
59.			Fredericton Housing Ltd.	70 Rochester Street
60.	July	17/64	Fredericton Housing Ltd.	89 Coventry Crescent
61.	July	25/64	J. R. Booker	230 Noble Street
62.	July	23/64	Peter Saad	561 York Street
63.	July	27/64	Fredericton Housing Ltd.	806 Jones Street
64.	July	28/64	Eldon Dunphy	435 Mansfield Street
65.	July	29/64	Dale Pond	479 Pedersen Crescent
66.	July	29/64	Dale Pond	435 Pedersen Crescent
67.	Aug.	4/64	Edward T. Moran	St. Dunstans Church
68.	Aug.	6/64	Suburban Construction Co.	373 Oxford Street
69.	Aug.	6/64	Wilson Laundry	358 Westmorland Street
70.	Aug.	7/64	Hill Bros. Ltd.	264 Bessborough Street
71.	Aug.	7/64	Hill Bros. Ltd.	244 Bessborough Street
72.	July	/64	Fredericton Housing Ltd.	699 Valleyview Street
73.	July	31/64	Wayne Hill	821 Jones Street
74.	July	31/64	Fredericton Housing Ltd.	843 York Street
75.	Aug.	7/64	Eldon Dunphy	814 Jones Street
76.	Aug.	10/64	Hill Bros. Ltd.	207 Bessborough Street
77.	Aug.	11/64	Hill Bros. Ltd.	150 Bessborough Street
78.	Aug.	11/64	Hill Bros. Ltd.	180 Bessborough Street
79.	Aug.	11/64	Maunder & McPhee	239 Bessborough Street
80.	Aug.	12/64	Hill Bros Ltd.	159 Bessborough Street
81.	Aug.	12/64	Hill Bros. Ltd.	141 Bessborough Street
82.	Aug.	13/64	Hill Bros. Ltd.	165 Bessborough Street
83.	Aug.	13/64	Hill Bros. Ltd.	112 Bessborough Street
84.	Aug.	14/64	Hill Bros Ltd.	229 Bessborcugh Street
85.	Aug.	17/64	Hagerman's Plumbing & Heating	389 Argyle Street
86.	Aug.	18/64	Fredericton Housing Ltd.	35 Leeds Drive
87.	Aug.	19/64	Fredericton Housing Ltd.	60 Leeds Drive
88.	Aug.	19/64	Fredericton Housing Ltd.	65 Leeds Drive
89.	Feb.	20/64	Fredericton Housing Ltd.	133 Leeds Drive
90.	Aug.	24/64	Maritime Engineers Ltd.	120 Westmorland Street
91.	Aug.	21/64	Fredericton Housing Ltd.	141 Leeds Drive
92.	Aug.	25/64	Fredericton Housing Ltd.	31 Forest Acres Court
93.	Aug.	26/64	Fredericton Housing Ltd.	43 Leeds Drive
94.	Aug.	26/64	Fredericton Housing Ltd.	75 Leeds Drive
95.	Aug.	27/64	Fredericton Housing Ltd.	32 Leeds Drive
96.	Aug.	28/64	Fredericton Housing Ltd.	57 Rochester Street
97.	Aug.	31/64	Fredericton Housing Ltd.	70 Leeds Drive

98.	Aug. 31/64	Fredericton Housing Ltd.	30 Rochester Street
99.	Sept. 1/64	Fredericton Housing Ltd.	110 Leeds Drive
100.	Sept. 2/64	Fredericton Housing Ltd.	177 Leeds Drive
101.	Sept. 2/64	Fredericton Housing Ltd.	551 Forest Hill Road
102.	Sept. 3/64	Fredericton Housing Ltd.	358 Canterbury Drive
103.	Sept. 4/64	Fredericton Housing Ltd.	105 Leeds Drive
104.	Sept. 8/64	Fredericton Housing Ltd.	115 Leeds Drive
105.	Sept. 9/64	Clive Sutton	720 Irvine Street
106.	Sept. 10/64	S.C.R. Construction Co.	College Hill Road
107.	Sept. 15/64	Eldon Dunphy	447 Mansfield Street
108.	Sept. 16/64	Gordon Christensen	143 Neill Street
109.	Sept. 17/64	Suburban Construction Co.	60 Pembroke Crescent
110.	Sept. 18/64	Suburban Construction Co.	19 Pembroke Crescent
110.	Sept. 18/64	Suburban Construction Co.	69 Pembroke Crescent
111.	Sept. 21/64	D. M. Young	109 Pembroke Crescent
112.	Sept. 22/64	F. W. Forestell	813 Jones Street
113.	Sept. 23/64	Hill Bros. Ltd.	453 Squires Street
114.	Sept. 24/64	Morgan Kerton	710 Beaverbrook Street
115.	Sept. 25/64	J. W. Bird	9 Simcoe Court
116.	Sept. 28/64	Schurman Ltd.	50 Simcoe Court
117.	Sept. 27/64	Schurman Ltd.	55 Simcoe Court
118.	Sept. 29/64	Schurman Ltd.	21 Simcoe Court
119.	Oct. 1/64	Hill Bros. Ltd.	185 Bessborough Street
120.	Oct. 1/64.	Hill Bros. Ltd.	1030 Smythe Street
121.	Oct. 2/64	Hill Bros Ltd.	239 Bessborough Street
122.	Oct. 7/64	Maunder & McPhee	954 York Street
123.	Oct. 8/64	Grace Memorial Church	530 Northumberland Street
124.	Oct. 6/64	Modern Construction Co. Ltd.	King Street
125.	Oct. 9/64	J. E. Swanton	341 Kings College Road
126.	Oct. 13/64	E. T. Moran	St Dunstans Church
127.	Oct. 13/64	Eric. F. Wheatley	318 Kings College Road
128.	Oct. 15/64	Charles Llewellyn	31 Waggoners Lane
129.	Oct. 16/64	Schurman Ltd.	27 Simcoe Court
130.	Oct. 16/64	Willett Fruit Co.	Carleton Street
131.	Oct. 19/64	Schurman Ltd.	49 Simcoe Court
132.	Oct. 20/64	Fredericton Housing Ltd.	85 Leeds Drive
133.	Oct. 21/64	Schurmans Ltd.	33 Simcoe Court
134.	Oct. 22/64	Schurma ns Ltd.	16 Simcoe Court
135.	Oct. 22/64	Suburban Construction Co.	139 Pembroke Crescent
136.	Oct. 23/64	Suburban Construction Co.	15 Harewood Crescent
137.	Oct. 26/64	Diamond Construction Co. Ltd.	Carleton Street
138.	Oct. 27/64	Wayne Hill	700 Gregg Court
139.	Oct. 27/64	Herman Taylor	627 Hillcrest Drive
140.	Oct. 29/64	Fredericton Housing Ltd.	95 Leeds Drive
141.	Oct. 30/64	Fredericton Housing Ltd.	100 Leeds Drive
142.	Oct. 30/64	Fredericton Housing Ltd.	125 Leeds Drive
143.	Nov. 3/64	Fredericton Housing Ltd.	355 Canterbury Drive
144.	Nov. 4/64	Fredericton Housing Ltd.	150 Leeds Drive
145.	Nov. 4/64	Fredericton Housing Ltd.	150 Leeds Drive

146. Nov. 5/64	Fredericton Housing Ltd.	147 Leeds Drive
147. Nov. 7/64	Fredericton Housing Ltd.	157 Leeds Drive
148. Nov. 6/64	Fredericton Housing Ltd.	167 Leeds Drive
149. Nov. 9/64	Fredericton Housing Ltd.	197 Leeds Drive
150. Nov. 9/64	Fredericton Housing Ltd.	187 Leeds Drive
151. Nov. 9/64	Fredericton Housing Ltd.	97 Rochester Street
152. Nov. 10/64	Fredericton Housing Ltd.	87 Rochester Street
153. Nov. 10/64	Fredericton Housing Ltd.	100 Rochester Street
154. Nov. 10/64	Fredericton Housing Ltd.	80 Rochester Street
155. Nov. 10/64	Fredericton Housing Ltd.	67 Rochester Street
156. Nov. 12/64	Fredericton Housing Ltd.	200 Leeds Drive
157. Nov. 12/64	Fredericton Housing Ltd.	90 Rochester Street
158. Nov. 13/64	Fredericton Housing Ltd.	178 Cambridge Crescent
159. Nov. 18/64	Schurman Ltd.	89 Pembroke Crescent
160. Nov. 20/64	Schurman Ltd.	79 Pembroke Crescent
161. Nov. 21/64	Simpson Construction Co.	1115 Regent Street
162. Nov. 24/64	Schurma n Con, Ltd.	31 Simcoe Court
163. Nov. 25/64	Suburban Construction Co.	43 Simcoe Court
164. Nov. 26/64	Thomas A. Kirkpatrick	45 Simcoe Court
165. Dec. 4/64	York Structural Steel	Wilsey Road
166. Dec. 16/64	Carl Hay	855 825 Irvine Street
167. Dec. 15/64	Donald C. Wilson	149 Montgomery Street
168. Nov. 27/64	Hill Bros. Ltd.	214 Bessborough Street
169. Dec. 8/64	A. R. Walker	1111 Smythe Street
170. Dec. 27/64	Hill Bros. Ltd.	172 Bessborough Street
171. Dec. 10/64	Eldon Dunphy	822 Jones Street
172. Dec. 14/64	Cowan Construction Co.	346 Kings College Road
173. Dec. 18/64	Kenneth Howlett	35 Kennedy Court
174. Dec. 28/64	Eldon Dunphy	428 Mansfield Street
175. Dec. 28/64	Eldon Dunphy	438 Mansfield Street
176. Ded. 22/64	Mrs. Yvonne Sivret	276 Highland Avenue
177 Dec. 22/64	Suburban Con. Co.	732 Gregg Court.

NEW METERS INSTALLED 1964.

1.	Paul Jacques	74 Beechwood Crescent
2.	John Blizzard	Dunn Crossing Road
3.	Mauder & McPhee	459 Mansfield Street
4.	Irving Oil Co. Ltd.	823 Barker Street
5.	Ronald F. Drummond	227 Noble Street
6.	Eldon Dunphy	440 Pedersen Crescent
7.	Weyman Construction Co.	573-577 King Street
8.	Mrs. Marguerite Huny	148 St. Marys Street
9.	T. C. Gough	779-781 Mitchell Street
10.	Hill Bros. Ltd.	1022 Smythe Street
11.	Fredericton Housing Ltd.	249 Cambridge Crescent
12.	M. R. Caeson	334 Gibson Street
13.	Mrs. Edna Wilson	262 St. Marys Street
14.	Charles Llewellyn	58 Prospect Street (Motel)
15.	Mrs. Helen F. Gilbert	299 Highland Avenue
16.	Cummings Housing	659 Kitchen Street
17.	Rusco Windows Ltd.	25 Prospect Street
18.	Eldon Dunphy	798 Jones Street
19.	Donald Magoon	26 Perlay Court
20.	Harold Velinsky	677 Windsor Street
21.	Kenneth Crowley	Dunn Crossing Road
22.	E. Dunphy	425 Mansfield Street
23.	Fredericton Housing Ltd.	531 Forest Hill Road
24.	Charles Kerton	180 Noble Street
25.	Suburban Construction Co.	29 Pembroke Crescent
26.	D. A. McCarty	312 Argyle Street
27.	Elm City Chrysler	190 King Street
28.	Fredericton Housing Ltd.	166 Coventry Crescent
29.	Fredericton Housing Ltd.	226 Coventry Crescent
30.	Fredericton Housing Ltd.	99 Coventry Crescent
31.	Fredericton Housing Ltd.	109 Coventry Crescent
32.	Fredericton Housing Ltd.	331 Canterbury Drive
33.	Fredericton Housing Ltd.	9 Leeds Drive
34.	Suburban Construction Co.	109 Montgomery Street
35.	George M. Currie	50 Rochester Street
36.	Robert Calhoun	125 Montgomery Street
37.	Fredericton Housing Ltd.	40 Rochester Street
38.	Fred ericton Housing Ltd.	47 Rochester Street
39.	Fredericton Housing Ltd.	108 Cambridge Crescent
40.	U.N.B. (Club House)	Aberdeen Street
41.	Fredericton Housing Ltd.	515 Forest Hill Road
42.	Hill Bros Ltd.	998 Smythe Street
43.	John C. McManus Est.	81 Babbitt Street
44.	Hill Bros. Ltd.	952 Smyhte Street
45.	H. Semple	129 Pembroke Crescent
46.	I. Doherty	739 Coombes Street
47.	Herman Taylor	221 St. Marys Street
48.	Laurel G. McNeill	845 Irvine Street
49.	Staples	119 Pembroke Crescent
50.	Peter Saad	561 York Street

51. Fredericton Housing Ltd. 55 Leeds Drive
 52. Fredericton Housing Ltd. 29 Leeds Drive
 53. Fredericton Housing Ltd. 19 Leeds Drive
 54. G. Matthews 344 Clark Street
 55. Fredericton Housing Ltd. 60 Rochester Street
 56. Wayne Hill 701 Gregg Court
 57. Wayne Hill 713 Gregg Court
 58. Hill Bros. Ltd. 264 Bessborough Street
 59. Eldon Dunphy 475 Mansfield Street
 60. Sutherlands Marine 336 Lincoln Road
 61. Mrs. Walter MacLean 162 Neill Street
 62. R. A. & M. L. Reid 220 Neill Street
 63. A. W. Thorpe 208 Neill Street
 64. Carl E. Howe 298 Highland Avenue
 65. U. N. B. (Offices) 810 Albert Street
 66. J. Levine 371 Kings College Road
 67. Ronald C. Stevenson 260 Kings College Road
 68. Carl L. Vaughan 280 Kings College Road
 69. Charles Llewellyn 1133 Smythe Street
 70. Charles Llewellyn 1125 Smythe Street
 71. Fredericton Housing Ltd. 843 York Street
 72. John R. Booker 230 Noble Street
 73. Royce Dorcas 15 Perley Court
 74. Teachers College U. N. B.
 75. St. Thomas College Residence
 76. St. Thomas College Residence
 77. St. Thomas College Class Rooms
 78. N. Hillman 746 Devon Avenue
 79. Hagerman's Plumbing & Heating 389 Argyle Street
 80. Fredericton Housing Ltd. 60 Leeds Drive
 81. Fredericton Housing Ltd. 65 Leeds Drive
 82. Mrs. Louisa Martin 145 Titus Street
 83. Fredericton Housing Ltd. 133 Leeds Drive
 84. Bliss Wood 373 Oxford Street
 85. Hill Bros. Ltd. 165 Bessborough Street
 86. Hill Bros. Ltd. 244 Bessborough Street
 87. Hill Bros. Ltd. 112 Bessborough Street
 88. Fredericton Housing Ltd. 249 Cambridge Crescent
 89. Donald Beverage 225 Medlay Street
 90. Antworth 141 Leeds Drive
 91. James C. Flynn 18 Perley Court
 92. St. Thomas College House of Studies
 93. Charless Llewellyn 25 Waggoners Lane
 94. W. W. Ward 217 Bessborough Street
 95. Gerald Hall 720 Gregg Court
 96. Hill Bros. Ltd. 172 Bessborough Street
 97. Hill Bros. Ltd. 150 Bessborough Street
 98. N. B. Government Central Repair Depot, College Hill Road
 99. Hill Bros. Ltd. 90 Beechwood Crescent
 100. E. Carpenter 420 Mansfield Street

101. J. Stanley DeLong
 102. Morgan Kerton
 103. Stanley Barr
 104. Fredericton Housing Ltd.
 105. R. S. Urquhart
 106. Eldon Dunphy
 107. Fredericton Housing Ltd.
 108. Fredericton Housing Ltd.
 109. Hill Bros. Ltd.
 110. Fredericton Housing Ltd.
 111. Fredericton Housing Ltd.
 112. Suburban Construction Co.
 113. Evangelistic Assemblies
 114. Clive Sutton
XXXXX
 115. R. C. Bishop of St. John
 116. Research Building
 116. G. Estey
 117. J. Swanton
 118. Fredericton Housing Ltd.
 119. Fredericton Housing Ltd.
 120. Fredericton Housing Ltd.
 121.
 122. Gerald Phillips
 123. Robert Giles
 124. Fredericton Housing Ltd.
 125. F. W. Forestell
 126. Suburban Construction Co.
 127. Subirban Construction Co.
 128. Leachmans Plumbing & Heating
 129. Hill Bros. Ltd.
 130. Wayne Hill
 131. Fredericton Housing Ltd.
 132. Fredericton Housing Ltd.
 133. Eldon Dunphy
 134. D. Murray Young
 135. Eldon Dunphy
 136. Schurman Ltd.
 138. Taylor
 139. Hill Bros. Ltd.
 140. Seely Stairs
 141. Valley Office Rentals Ltd.
XXXXX
 142. Schurman Ltd.
 143. Judge Dickson
 144. Schurmans Ltd.
 145. Schurmans Ltd.
 146. Schurmans Ltd.
 147. Suburban Con. Co.
 148. Fredericton Housing Ltd.
 149. Fredericton Housing Ltd.
 150. Fredericton Housing Ltd.
 220 Victoria Street
 710 Beaverbrook Street
 57 Rochester Street
 70 Rochester Street
 744 Coombes Street
 814 Jones Street
 43 Leeds Drive
 141 Leeds Drive
 207 Bessborough Street
 139 Coventry Crescent
 89 Coventry Crescent
 19 Pembroke Crescent
 681 Union Street
 720 Irvine Street
 Brunswick St. (Church & Rectory)
 College Hill Road
 144 Friel Street
 341 Kings College Road
 70 Leeds Drive
 35 Leeds Drive
 32 Leeds Drive
 357 Kings College Road
 699 Valleyview Street
 806 Jones Street
 110 Leeds Drive
 813 Jones Street
 80 Pembroke Crescent
 139 Pembroke Crescent
 123 Gibson Street
 204 Bessborough Street
 821 Jones Street
 551 Forest Hill Road
 31 Forest Acres Court
 447 Mansfield Street
 109 Pembroke Crescent
 435 Mansfield Street
 27 Simcoe Court
 207 Charlotte Street
 229 Bessborough Street
 159 Bessborough Street
 1115 Regent Street
 49 Simcoe Court
 21 Simcoe Court
 16 Simcoe Court
 52 Simcoe Court
 33 Simcoe Court
 69 Pembroke Crescent
 90 Rochester Street
 87 Rochester Street
 97 Rochester Street

151. Hill Bros. Ltd.	1030 Smythe Street
152. Fredericton Housing Ltd.	100 Leeds Drive
153. Hill Bros. Ltd.	185 Bessborough Street
154. Fredericton Housing Ltd.	85 Leeds Drive
155. Fredericton Housing LTD.	105 Leeds Drive
156. Lawrence Wilson Munro	30 Rochester Street
157. Fredericton Housing Ltd.	125 Leeds Drive
158. Fredériction Housing Ltd.	187 Leeds Drive
159. Fredericton Housing Ltd.	115 Leeds Drive
160. Dale O. Pond	435 Pedersen Crescent
161. Dale O. Pond	479 Pedersen Crescent
162. Maunder & McPhee	954 York Street
163. Hill Bros. Ltd.	214 Bessborough Street
164. Fredericton Housing Ltd.	358 Canterbury Drive
165. Eldon Dunphy	822 Jones Street
166. Wayne Hill	708 Gregg Court
167. Salvation Army Citadel	120 Westmorland Street
168. Fredericton Housing Ltd.	178 Cambridge Crescent
169. Fredericton Housing Ltd.	147 Leeds Drive
170. Schurman Con. Co.	50 Simcoe Court
171. Herman Taylor	627 Hill Crest Drive
172. Mobile Homes Ltd.	Wilsey Road
173. Fredericton Housing Ltd.	355 Canterbury Drive
174. M. R. Carson	334 Gibson Street

175 Suburban Construction Co.
176 Suburban Construction Co.
177W. W. Ferris
178 Hill Bros Ltd.
179 University of New Brunswick
180 K. A. Fraser
181 James W. Burns
182 Fredericton Housing Ltd.
183 Fredericton Housing Ltd.
184 Fredericton Housing Ltd.
185 Fredericton Housing Ltd.
186 Dale Hirncastle
187 Suburban Construction Co.
188 Dr. Vaughan
189 W. Farris
190 Suburban Construction Co.
191 Suburban Construction Co.
192 Suburban Construction Co.
193 Hill Bros. Ltd.
194XX Fredericton Housing Ltd.
195 Fredericton Housing Ltd
196 Charles Llewellyn Apartments
197 Fredericton Housing Ltd.
198 Fredericton Housing Ltd.
I99 J. A. Semple
200 Suburban Construction Co.
201 Fredericton Housing Ltd.
202 Fredericton Housing Ltd.
203 Brown Derby
204 Save Easy Store
205 Dunut Store
206 Drug Store
207 Co--Op. Hardware Store
208 H. J. Richards
209 Fredericton Housing Ltd.
210 fredericton Housing Ltd.
211 Mrs. T. Cass
212 H. L. Clark
213 Herby Webber
214 Grant Sansom
215
216 Mrs. Edith Waddelow
217 Hill Bros. Ltd.
218 Hill Bros. Ltd.
219 E. P. Wickens
220 Elliott's Grocery
221 George Woodside
222 Charles Brown
223 Arnold Libbey
224 Suburban Construction Co.
225 Suburban Construction Co.
340--342 Inglewood Drive.
354--356 Inglewood Drive
82 Beechwood Crescent
35 Beechwood Crescent
706 Windsor Street.
34 Perley Court
799 Jones Street
196 Coventry Crescent
92 Coventry Crescent
186 Coventry Crescent
89 Cambridge Crescent
273 Gibson Street
345 Montgomery Street
378 Kings College Road
30 Colter Court
396--398 Inglewood Drive
382--384 Inglewood Drive
368--370 Inglewood Drive
140 Beechwood Crescent
341 Canterbury Drive
311 Canterbury Drive
15 Waggoners Lane
308 Canterbury Drive
348 Canterbury Drive
667 Elizabeth Street
99 Pembroke Crescent
126 Coventry Crescent
146 Coventry Crescent
578--580 King Street
604 Union Street
602 Union Street
598 Union Street
600 Union Street
276 Queen Street
235 Cambridge Crescent
225 Cambridge Crescent
Dunn Crossing Road
39 Pembroke Crescent
306 Queen Street
703 Valleyview Street
121 St. John Street
868 Charlotte Street
1014 Smythe Street
1006 Smythe Street
928 Smythe Street
463 Union Street
792 Jones Street
St. Marys Street Ext.
St., Marys Street Ext.
242--244 Inglewood Drive
256--258 Inglewood Drive



THE CITY OF
FREDERICTON & VICINITY

Scale: FEET 1000 2 3 4 5

CONSTRUCTION - 1964.

NEW PAVEMENT	---.08 MILES.
NEW STREETS (GRAVEL ROAD CONSTRUCTION)	---1.68 MILES.
DITCHING	---.30 MILES.
GRADING AND GRAVELLING EXISTING STREETS	---1.74 MILES.
INDUSTRIAL ROAD	
WATER	---.38 MILES.
DOMESTIC SEWER	---.39 MILES.



CITY OF
FREDERICTON, N.B.

CITY ENGINEER'S OFFICE
MAR. 31, 1963.

SCALE 1:25,000 DRAINED JAN 1962