

# ANNUAL REPORT OF THE ENGINEERING AND PUBLIC WORKS DEPARTMENT

## 1945



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January 21st, 1946.

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

Gentlemen:

I submit herewith this report which is a statement of the work done in the different City Departments under the direct supervision of the City Engineer, and covers the period of time from the first of December 1944 to the first of December 1945.

This report is written with the purpose of reporting to the Council on the costs of the various Departments for the year. It is also written with the idea of having on file an accurate record of the different activities and costs under these Departments.

This report deals only with that part of the City of Fredericton south of the Saint John River. It does not include work done and expenditures made in the former Town of Devon which was amalgamated with the City of Fredericton on July 1st, 1945. Although these two municipalities, Fredericton and Devon, became one city July 1st, 1945, the accounts of the two were kept separately until the end of 1945 fiscal year.

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

Respectfully submitted,

City Engineer.

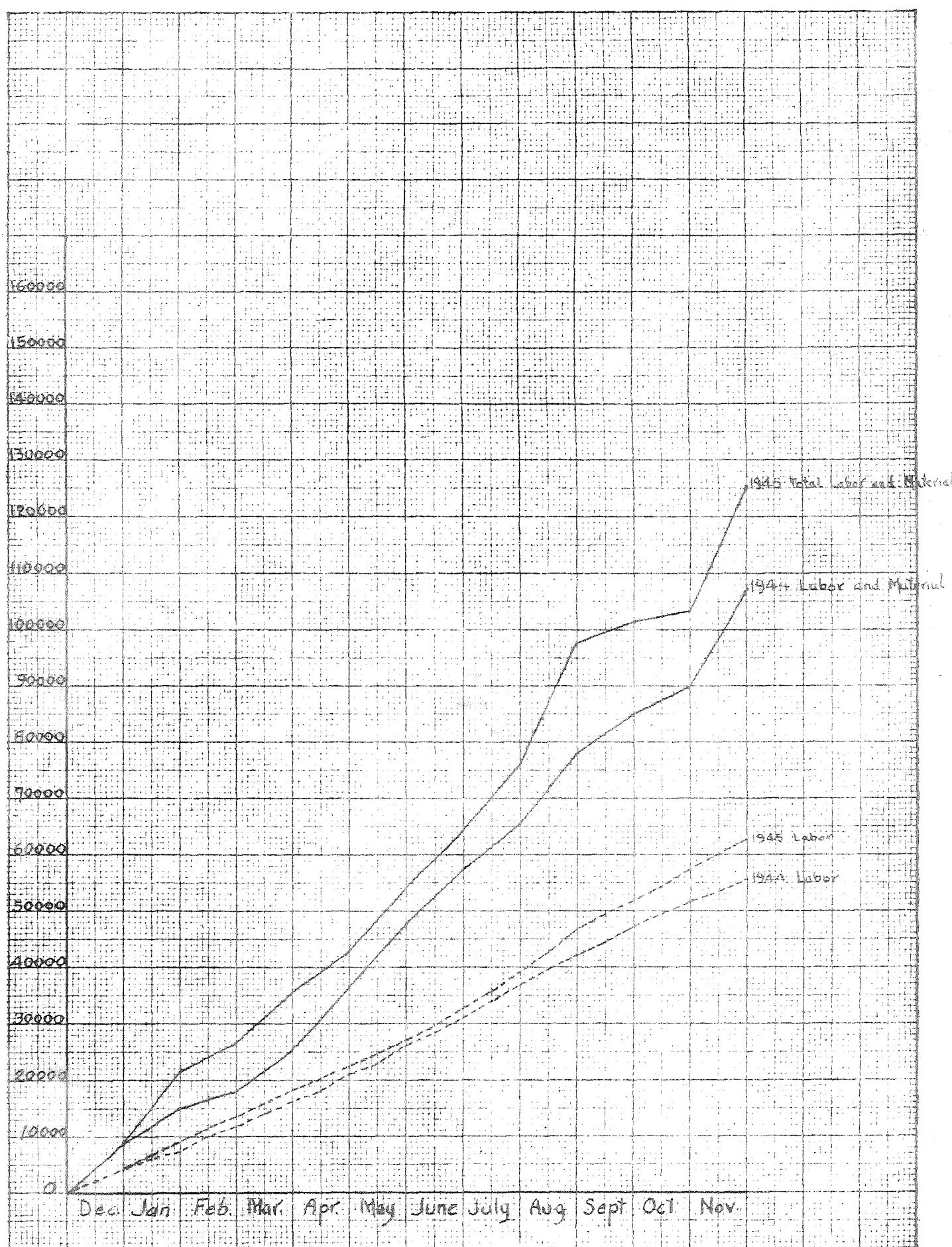
TOTAL YEARLY EXPENDITURE

The Total Yearly Net Expenditure under the direct supervision of the City Engineer this year amounted to \$125,799.73. This expenditure will be taken up in detail under the different headings in this report. The total Gross Expenditure for this period amounted to \$188,927.17.

A graphic comparison of expenditure for labour and material for the year 1945 and a chart showing the distribution of the 1945 Fredericton Tax Dollar are shown here:-

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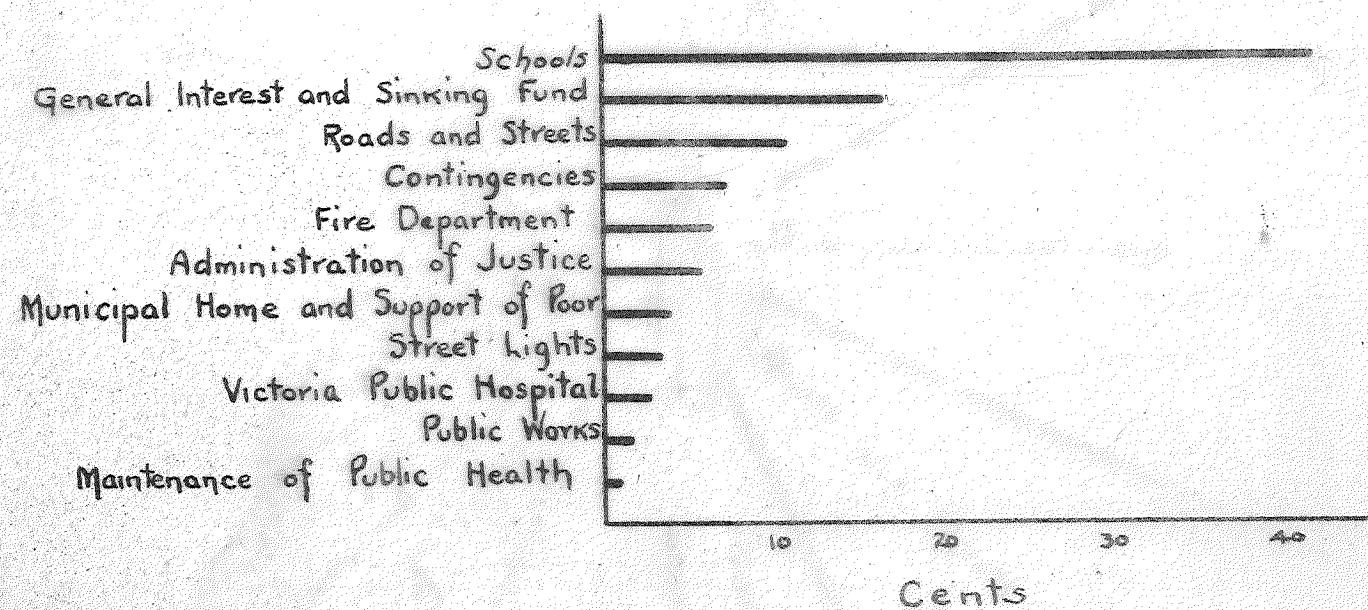
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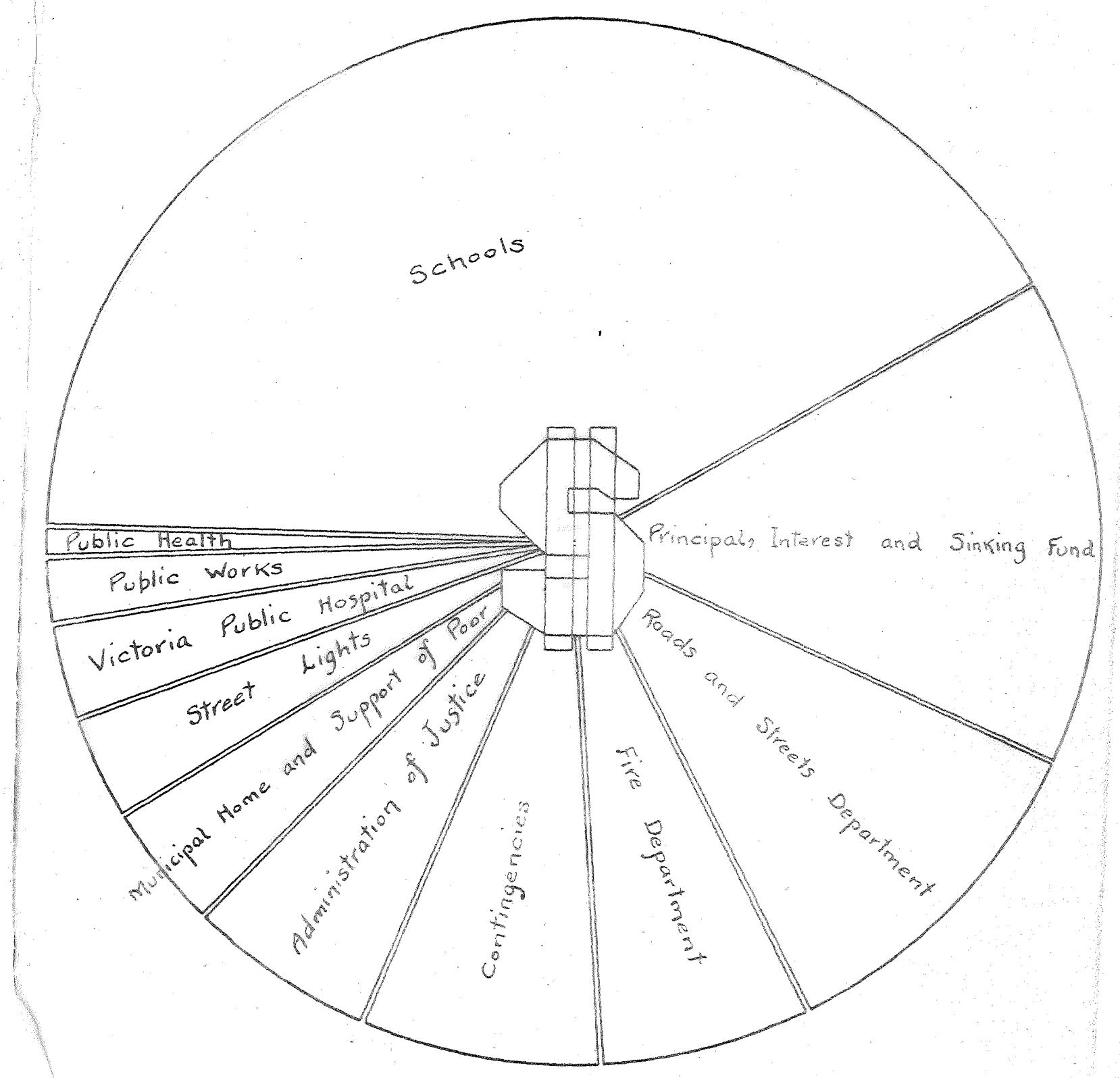
TOTAL NET EXPENDITURE 1944 AND 1945.

1945

THE FREDERICTON TAX DOLLAR in CENTS



DIVISION  
OF  
FREDERICTON TAX DOLLAR  
1945  
SHOWN GRAPHICALLY



### ROADS AND STREETS

This year we had an appropriation for Roads and Streets of \$33,000.00. We over-expended this appropriation by \$17,743.30.

We have in Fredericton altogether some 44 1/3 miles of roads and streets and about 32 miles of sidewalk. This sidewalk is all within the Urban District and is pretty well covered by cement sidewalks.

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

#### Roads and Streets

	<u>Urban</u>	<u>Outlying</u>	<u>Total</u>
Paved	11.85	3.46	15.31
Gravel	5.83	23.21	29.04
Total	17.68	26.67	44.35

#### Roads and Streets Expenditure 1945:-

Gross Expenditure.....	\$ 56,049.45
Credits.....	5,306.15
Net Expenditure.....	50,743.30
1945 Appropriation.....	33,000.00
Dr. Balance.....	\$17,743.30

The above Credits are made up as follows:-

- Item 1. Received from other City Departments for work done and material sold by Roads and Streets Department..... \$ 1,028.90
- Item 2. Work done for and material sold to private parties by Roads and Streets Department..... 1,078.02
- Item 3. Wood sold from City Forest (Odell Ppty.) 3,199.23

Total..... \$ 5,306.15

The Gross Expenditure is divided as follows:-

Labour.....	\$ 30,232.12
Material Charges & Workmen's Compensation Board.	25,817.33
	\$ 56,049.65

I have divided the Labour Charges of \$30,232.12 into the following items. Although these items are made up entirely of labour costs, they give a good idea of the amount and kind of work done by the Roads and Streets' Department during the year.

<u>Snowploughing sidewalks</u> .....	\$ 153.75
<u>Snow Control</u> :- Shovelling and hauling snow, ploughing or scraping roads, cleaning gutters of ice and snow, and any other means of snow control.....	6,841.28
<u>Streets</u> :- General work of maintenance of streets and sidewalks and any other items such as building culverts, curbs and gutters or pavements which are not mentioned under some particular heading.....	5,366.49
<u>Surface Sewers</u> :- Cleaning, flushing and repairing surface sewers and building new surface sewers within street limits.....	477.59
<u>Sanding Walks</u> :- Storing sand in winter storage piles and spreading same on slippery walks.....	386.09
<u>Yard</u> :- Men working in blacksmith shop and repair work in City Yard, taking summer equipment out and storing winter equipment, etc.....	999.44
<u>Gravel</u> :- .....	2,587.62
<u>Street Sprinkling</u> :- Water cart.....	47.30
<u>Stone Crushing</u> :- Repairs to crusher and crushing stone..	nil
<u>St. John Road</u> :- All work done on the River Road from Alexandra Street to eastern city line other than work done by power maintainer and pavement maintenance.....	187.11
<u>Doak and Wilsey Roads</u> :- All work done on these roads other than work done by power maintainer.....	231.47
<u>New Maryland Road</u> :- From C.P.R. Crossing to southern city line. All work done on this road other than that done by power maintainer.....	434.91
<u>Outlying Roads</u> :- Hanwell Road, Cross Road lying between Brick Hill and College Hill Road and Forest Hill Road. All work done on these roads other than work done by power maintainer.....	185.01
<u>Street Cleaning</u> :- All cleaning and removal of dirt, leaves, etc. from streets.....	7,415.71
<u>Tarvia Repairs</u> :- Patching and repairing asphalt and tar pavements and sidewalks and applying seal coat of light tar or asphalt to pavements.....	1,784.63
<u>City Road Patrol</u> .....	647.06
<u>Dunn's Crossing</u> .....	30.66
<u>City Forest</u> .....	2,456.00
Total.....	\$ 30,232.12

Following is a table comparing Labour Expenditure in these items from 1942 to 1945.

TABLE COMPARING YEARLY COSTS IN ROADS AND STREETS  
LABOUR ITEMS

	<u>1942</u>	<u>1943</u>	<u>1944</u>	<u>1945</u>
Snowploughing				
sidewalks	136.19	187.47	64.70	153.75
Snow Control	2,850.87	2,686.00	1,696.51	6,841.28
Streets	2,142.61	1,871.84	4,595.09	5,366.49
Surface Sewers	274.60	307.69	466.07	477.59
Sanding Walks	365.63	321.93	530.74	386.09
Yard	1,158.84	1,194.21	836.62	999.44
Gravel				2,587.62
Street Sprinkling	157.86	12.39	33.81	47.30
Stone Crushing				
St. John Road	93.22	47.68	352.01	187.11
Doak & Wilsey Rds.	514.04	95.47	106.84	231.47
New Maryland Road	7.04	23.74	479.46	434.91
Outlying Roads	695.10	717.85	852.65	185.01
Street Cleaning	6,180.69	7,291.88	7,773.64	7,415.71
Tarvia Repairs	1,470.40	1,876.67	2,482.69	1,784.63
City Road Patrol	545.41	474.28	558.67	647.06
Quarry				
Wood lot at Quarry				
Dunn's Crossing				30.66
City Forest	<u>5,953.12</u>	<u>5,770.34</u>	<u>4,469.70</u>	<u>2,456.00</u>
Total	22,545.62	22,879.44	25,299.20	30,232.12

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

<u>Snow Control:-</u>	<u>1944</u>	<u>1945</u>
Snowploughing roads and streets.....\$	150.74	\$ 775.17
Shovelling and hauling snow.....	573.62	4,820.85
Catch Basins.....	553.61	431.95
Snow fences.....	337.75	331.30
Cutting drains on hills.....		92.00
Thawing culverts.....		73.25
General Expenses.....	<u>80.79</u>	<u>316.76</u>
Total.....\$ 1,696.51		\$ 6,841.28

It will be seen that the labour on snow control in 1945 exceeds that of 1944 by over \$5,000.00. This increase in labour had a corresponding increase in material cost such as:- \$864.00 paid for extra truck hire - \$816.00 for hire of extra snowploughing equipment. This, along with gas, oil, repairs to machinery, etc. made our snow control cost for 1945 some \$9,000.00 over that of 1944.

#### Snow Fences:-

In our snow fencing this year we used 10,000 feet of lathmade snow fence.

Streets:-

Repairs to plant.....	\$ 383.50
Curb and gutter.....	2,256.95
Repairs to streets.....	394.40
Painting traffic lines and street signs.....	204.15
Weather Account.....	726.00
Repairs to bridges.....	742.60
Surveying.....	186.90
Unloading and spreading calcium chloride.....	99.80
Gravel pit.....	88.15
O'Dell Road.....	14.00
Heating tarvia for Coastal Asphalt Co.....	23.50
General Expenses.....	<u>246.54</u>
Total.....	\$ 5,366.49

This season we laid some 4103 lineal feet of concrete curb and gutter at the following locations:-

	<u>Lineal Ft.</u>
Argyle Street - North'ld to Smythe (north side)	625
North'ld to Smythe (south side)	575
Argyle Street - West'ld to North'ld (south side)	617
Westmorland St. - Argyle to Victoria (west side)	361
Argyle to Victoria (east side)	361
Victoria St. - West'ld to North'ld (north side)	632
West'ld to North'ld (south side)	632
Argyle Street - West'ld Street running east along Argyle Street	<u>300</u>
Total.....	4103 lin. ft.

The cost of this above construction was Labour 55¢ a foot and Material Charges 36¢ a foot, making a total cost of 91¢ per foot and a total expenditure for curb and gutter of \$3,733.73.

The above Weather Account of \$726.00 is made up chiefly of wages paid to workmen when they were on their holidays.

Outlying Roads:-

The labour expenditure of \$185.01 is made up as follows:-

Flanagan Road.....	\$ 44.50
Brick Kiln Road.....	33.40
York Street Hill.....	11.55
Hanwell Road.....	12.00
Cross Roads.....	9.00
Forest Hill.....	45.75
College Hill.....	20.00
General Expenses.....	<u>8.81</u>

Total.....\$ 185.01

The actual road machining was done by the City Road Patrol and charged under this item. The expenditures shown above were made up of fixing ditches and culverts and graveling.

Gravel:-

At the first of the season the City was unable to make a satisfactory arrangement with any of the local gravel pits to buy gravel in the pits. Mr. R. T. Scott of Barker's Point had the only available pit for concrete gravel and feeling that this concrete gravel was becoming scarce, he charged us 50¢ a cu. yd. at the pit for gravel as a stumpage charge. To escape from this too heavy yardage cost, the City purchased a gravel pit from Mr. Fred Hartwick. The pit is located at Barker's Point along side of the Scott pit and contains the same class of gravel as the Scott pit.

The piece purchased by the City was some  $4\frac{1}{2}$  acres and should supply the City's needs for gravel for the next ten years at least. The price paid was \$2500.00. The antiquated Sawyer 44 Road Patrol was taken as part payment by Mr. Hartwick at a value of \$500.00 and the other \$2000.00 being a cash consideration.

During the season of 1945 the City hauled from this new City pit 4341 cu. yds. of gravel. A fair estimate of the price which should be paid for this gravel in the pit would be 10¢ a cu. yd. which shows a return on our gravel pit of some \$434.00. Of course, if this amount of gravel had been purchased from Mr. Scott at a price of 50¢ a yard it would have cost the City \$2170.00, but in all probability if the City had had to buy at this price they would not have used so much gravel this summer.

Cleaning Streets:-

The labour cost of \$7,415.71 shows a decrease of \$357.93 over last year's labour expenditure.

Tarvia Repairs:-

The labour expenditure of \$1,784.63 is divided as follows:-

Patching and sealing streets.....	\$ 1,699.65
General Expenses.....	<u>84.98</u>
Total.....	\$ 1,784.63

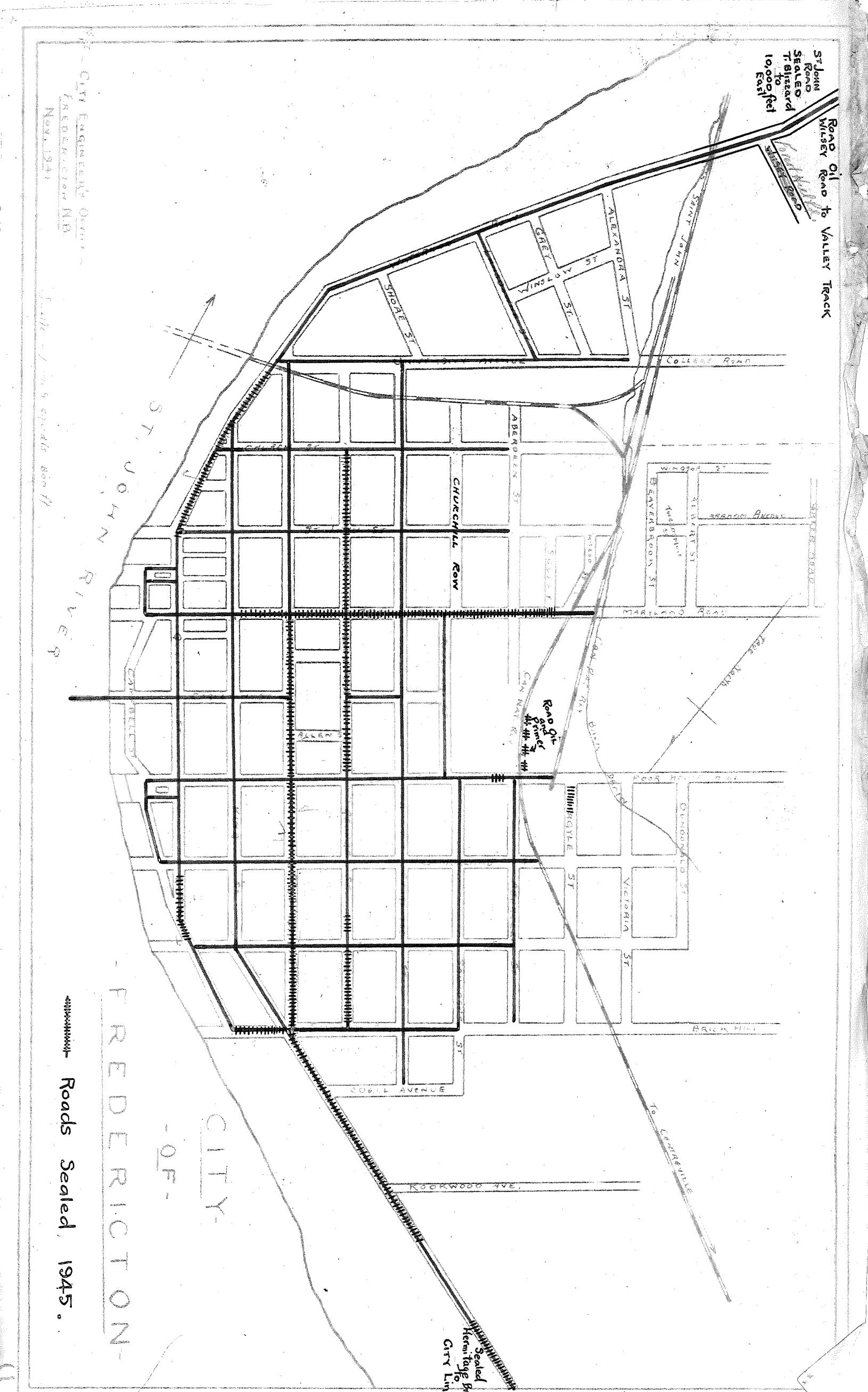
In patching and sealing streets this year we used three tanks or 23,988 gals. R.C. 4 Asphalt and 1440 gals. M.C. 1 Primer.

The following table shows the Bituminous Material used in 1945.

	R.C.4	R.C.3	M.C.1
Gallons in stock spring 1945	1000	1200	0
Gallons purchased 1945	23988	0	1440
Available 1945	24988	1200	1440
Stock on hand fall 1945	<del>2300</del>	0	0
Used season 1945	22688	1200	1440

All streets sealed this year are shown in cross-hatching on the following map which also shows the location of all paved streets in the City.

The above 1440 gals. of M.C. 1 were used on the Saint John Road between the Wilsey Road and the Valley Tracks. This piece of road, formerly paved, had disintegrated. It



was kept in shape for the summer by scarifying and shaping then spreading about four inches of gravel which we penetrated with the M.C. 1. This was done in the hot weather and we were able to shape it for a number of days with the Road Patrol giving a good mat which stood up for the summer and was in good shape this fall.

Surface Sewers:-

All surface sewers in the City were flushed and all catch basins were cleaned and repaired during the summer season at a cost of \$477.59.

City Forest:-

Included in our regular Roads and Streets costs is a labour expenditure for City Forest of \$2,456.00.

The labour item is sub-divided as follows:-

Logging .....	\$ 249.05
Delivering wood to City workmen.....	114.65
Hauling wood from City Forest to City woodyard	473.45
Cutting fuel wood in woods.....	606.10
Cutting pulp in woods.....	74.65
Cutting wood with woodcutter in City Yard....	246.16
Haying.....	43.25
Caretaker's wages & miscellaneous expenses....	<u>648.70</u>
Total.....	\$2,456.00

Besides this labour cost the City Forest shows an expenditure for material of \$1,132.85, making a total cost for the year of \$3,588.85.

For the above expenditure the following work was accomplished:-

21,840 bd. ft. of hemlock and 500 bd. ft. of pine lumber was cut and hauled to the mill.

240 cds. of fuel wood which had been cut in 1944 and piled in the woods were hauled to the wood yard.

115 cds. of 4 ft. fuel wood was cut in the woods and hauled to wood yard.

10.3 cds. of green pulp was cut in woods and hauled to side of the highway road.

355 cds. of 4 ft. wood was cut into 16-inch wood in the City wood yard.

115 cds. of wood from the City wood yard was delivered to City workmen.

6 tons of hay were cut on hay land - cured and hauled to City barn.

About 1/2 mile of wood road through centre of the City Forest was bulldozed and partially graded and gravelled.

The main road from Wilmot Park to the City Forest was graded and gravelled.

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

A Tree Nursery which had been planted in 1944 was kept weeded and cultivated.

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

21,840 ft. hemlock lumber at mill @ \$30.00.....	\$ 655.20
500 ft. pine lumber at mill @ \$40.00.....	20.00
240 cds. fuel wood (which last year had been credited at \$7.00 piled in the woods) hauled to City woodyard and cut into 16" wood @ \$4.00.....	960.00
155 cds. of fuel wood cut on property hauled to woodyard, cut into 16" wood and delivered to City workmen @ \$12.00... 1,860.00	
10.3 cds. green pulp cut and hauled to roadside @ \$10.00.....	103.00
6 tons of hay in barn at \$12.00.....	<u>72.00</u>
Total.....	\$ 3,670.20

The miniature shooting range which had been built on the City Forest property by the military in 1944 was dismantled and the ground put back in its original condition by the military.

Prof. B. H. Fleiger of the University of New Brunswick Forestry Department again helped us in an advisory capacity with the woods operations.

Following is a map of the City Forest with locations showing the 1941 cuts marked in Red, 1942 cuts marked in Green, 1943 cuts marked in Blue, 1944 cuts marked in Brown and 1945 cuts marked in Yellow.



TABLE SHOWING COMPARATIVE COSTS OF ROADS AND STREETS

Years 1929 to 1945

Year	Expenditure for Labour	Gross Expend- iture Labour and Material	Credits	Net Costs Labour and Materials	Appro- priation
1929	14,490.47			26,682.98	31,000.00
1930	16,553.53			34,556.33	32,000.00
1931	26,024.54	50,849.60	15,511.97	35,337.63	31,000.00
1932	25,430.96	39,101.62	4,822.19	34,279.43	25,000.00
1933	10,607.99	19,161.38	333.28	18,829.10	19,000.00
1934	13,332.51	23,665.94	2,311.50	21,354.36	20,000.00
1935	25,264.14	46,588.85	21,502.31	25,086.54	23,000.00
1936	18,357.05	33,238.01	11,059.77	22,178.24	23,000.00
1937	18,060.48	34,931.68	12,641.95	22,289.73	20,000.00
1938	15,601.78	24,273.83	781.88	23,491.95	22,000.00
1939	16,681.88	32,509.93	1,762.67	30,747.26	28,000.00
1940	17,959.36	33,058.59	2,190.50	30,868.09	28,000.00
1941	22,816.69	40,283.46	3,050.12	37,233.34	28,000.00
1942	22,545.62	39,215.84	3,416.91	35,798.93	30,000.00
1943	22,879.44	36,970.80	6,597.85	30,372.95	30,000.00
1944	25,299.20	47,285.36	4,316.50	42,968.86	30,000.00
1945	30,232.12	56,049.45	5,306.15	50,743.30	33,000.00

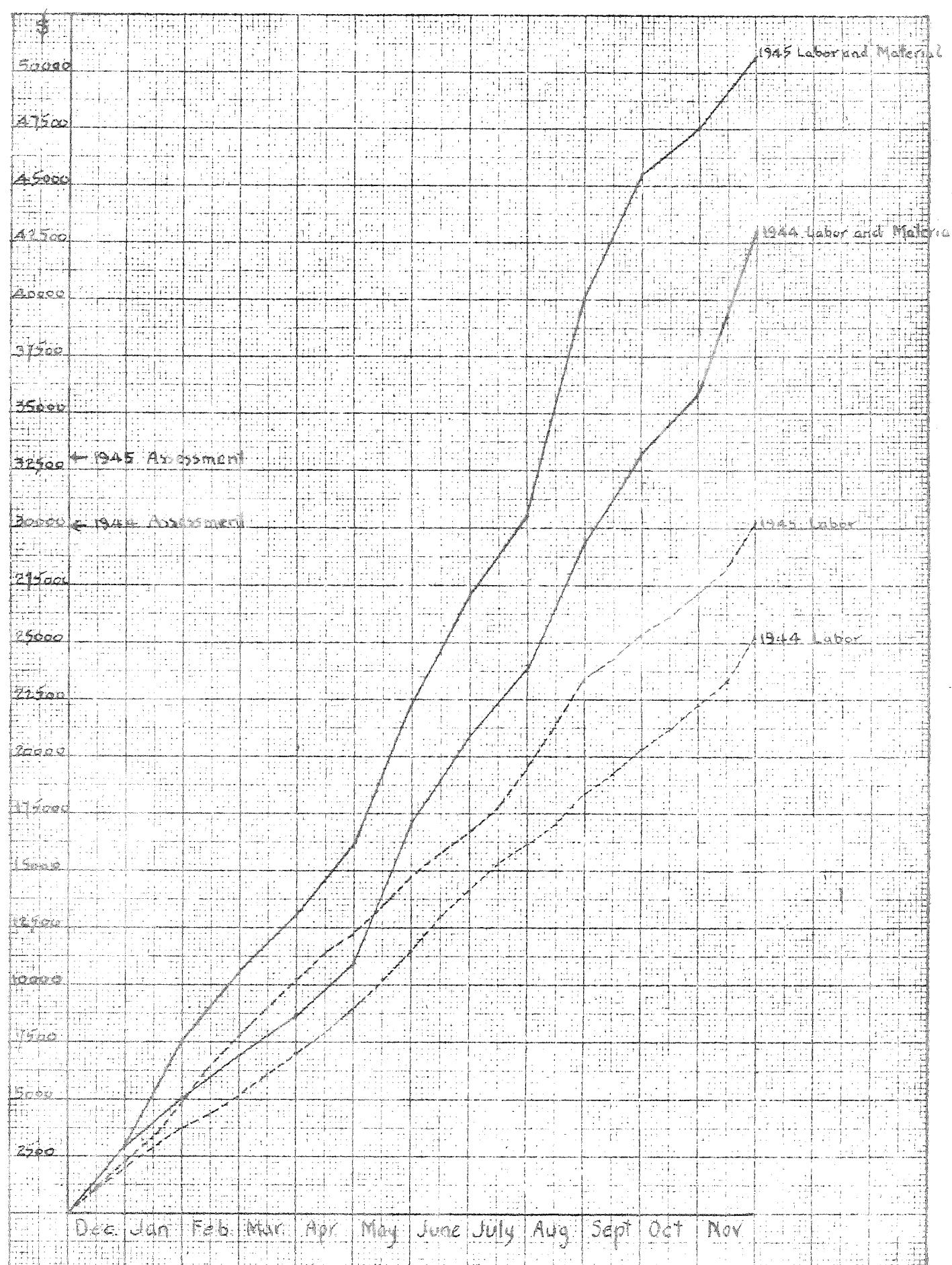
The debit of \$17,743.30 for Roads and Streets this year is partially accounted for by our \$9,000.00 extra expenditure on snow control; \$1,000.00 spent on the Dunn's Crossing Road; the purchase of a new truck \$2,000.00; and the application of a third tank of asphalt used in street sealing.

These four items alone add up to some \$14,000.00, however, it seems that none of them are extraordinary items and any of them might occur from year to year. I therefore believe, for the class of service it seems necessary for our Roads and Streets Department, that the appropriation of \$33,000.00 is too small.

Unless such items as curb and gutter construction and any other work of a permanent nature, which has in the last few years been done under Roads and Streets, can be done under some Capital Charge, it seems to me that it will be necessary to raise the Roads and Streets Appropriation to something in the vicinity of \$50,000.00.

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PROJECT IS BACK ON SIGHT, THE PROJECT WAY WORK IS ONLY THIS MUST BE LEFT-HAND SIDE.



ROADS AND STREETS COSTS 1944 AND 1945.

PUBLIC WORKS

Gross Expenditure.....	\$ 11,843.69
Credits.....	644.61
Net Expenditure.....	11,199.08
1945 Appropriation.....	6,500.00
Dr. Balance.....	4,699.08

The Credits are made up as follows:-

Work done for private parties (trees)...	\$ 42.50
Refund by Devon Lumber Co. to City for over-payment.....	129.66
Payments made to City by Old Graveyard Committee.....	<u>472.45</u>
Total.....	\$ 644.61

The Gross Expenditure of \$11,843.69 is made up as follows:-

Labour.....	\$ 8,307.69
Material Charges.....	3,536.00
	\$11,843.69

This above Labour item is divided as follows:-

Dump.....	\$ 2,378.73
Back Drain.....	976.19
Trees.....	482.48
Unforeseen Account.....	2,102.38
Public Works (playgrounds).....	<u>2,367.91</u>
	\$ 8,307.69

Trees:-

The labour expenditure of \$482.48 on trees was made up of \$275.06 spent on cutting and trimming City trees and \$207.42 spent on spraying. This spring we sprayed considerable areas of the City where the elm trees were being attacked by the Fall Canker Worm. This spraying took place from June 4th to June 26th and was done by City men with the city sprayer under the guidance of Mr. R. E. Balch of the Entomological Laboratory situated in Fredericton and operated by the Federal Government.

Besides the regular tree spraying in June, later in the year experimental work in the control of this elm parasite was carried on under Mr. Balch's supervision. Different D.D.T. solutions were used in spraying the trunks of the elm trees. The effectiveness of this later method will not be determined until the spring of 1946.

Unforeseen Account:-

The labour cost is divided as follows:-

Repairing roof of Lovely house on Queen Street.....	\$ 3.20
Flooding private rinks.....	90.35
Bushing river.....	13.50
Military Depot # 7.....	4.50
City Engineer's Report (typing).....	18.00
A. R. P.....	88.00
Eight Victory Loan.....	4.40
Removing ashes from Farraline Home.....	8.00
Old Burial Ground.....	606.00
Greens - cutting, raking, etc.....	887.35
Benches (repairing, placing and storing).....	33.35
Removing ashes Charlotte Street School.....	22.05
Labour at Children's Home.....	6.95
Labour at A & B Club House.....	8.60
Removing paint from Robert Burns Monument.....	22.00
Labour at fire Brick Kiln Road.....	10.00
Labour at Clothing Depot City Hall.....	170.50
General Expenses.....	<u>105.63</u>
Total.....	\$2,102.38

CITY PLAYGROUNDS

The total expenditure on playgrounds this year was \$3,794.44 made up as follows:-

Community Y. supervisors.....	\$ 717.00
City payroll for playgrounds at Queen Square..	942.15
City payroll for bathing beach.....	625.55
General Expenses.....	<u>83.21</u>
Total Labour.....	<u>2,367.91</u>
Material charge for rinks.....	300.00
Material charge for Queen Square.....	1,041.29
Material charge for bathing beach.....	<u>85.24</u>
Total Material Charge.....	<u>1,426.53</u>
Total Cost.....	\$ 3,794.44

This season the Playgrounds Committee was authorized by the City Council to spend \$5,000.00 on playgrounds over and above the amount on rinks. The rinks during this season were not kept by the City themselves but time on the college rink and on Mr. McDonald's rink at Aula was hired by the City for the school children at a cost of \$150.00 to each rink or for a total cost of \$300.00. It therefore seems that the Playgrounds Committee being authorized to spend \$5,000.00 have spent \$3,494.44 or an under-expenditure of \$1,505.56.

Bathing beaches were as usual kept open this year during July and August at the A. & B. Club House and at the water works beach. The City kept a caretaker on these beaches during the daylight hours including Sundays at a cost as shown above. I do not think that either beach was entirely satisfactory, however, it seems very difficult to do any better under our existing local conditions.

The City Playgrounds expenditure this year was utilized entirely on Queen Square. Mr. Vey, the Y.M.C.A. secretary in Fredericton, took charge of the playgrounds and was ably assisted by Miss Jean King also a Y.M.C.A. employee. These Y.M.C.A. officials were taken over by the City during the months of July and August and I believe they made an outstanding success of the Queen Square playgrounds. Supervision was given morning, afternoon and evening, the evening activities being particularly well attended and enjoyed.

Considerable improvements were made on the Queen Square set-up:- four tennis courts, two volley ball courts and a softball diamond were constructed and the original hardball diamond and the other softball diamond were re-conditioned and put into a very fair state.

Arrangements were made with the University of New Brunswick Playing Field Committee to utilize the college field along with the Queen Square property during the summer months. The dressing room on the college field was painted inside and some new plumbing fixtures installed and it was used by the playgrounds supervisors as a headquarters and club room.

The tennis courts were equipped with back stops, nets, etc. but the actual playing surface was made out of the natural ground graded and shaped up. This did very well for a start and was largely used, but mostly by younger and inexpert tennis players. To make it attractive to the more expert players it will be necessary to improve the surface by making clay courts or a hard surface finish of asphalt.

The playgrounds were this year under the management of a new and enthusiastic Playgrounds Committee who I think are well satisfied with the progress made during the season. I believe this Committee, if continued in the management of the playgrounds, hope to make improvements for the summer of 1946.

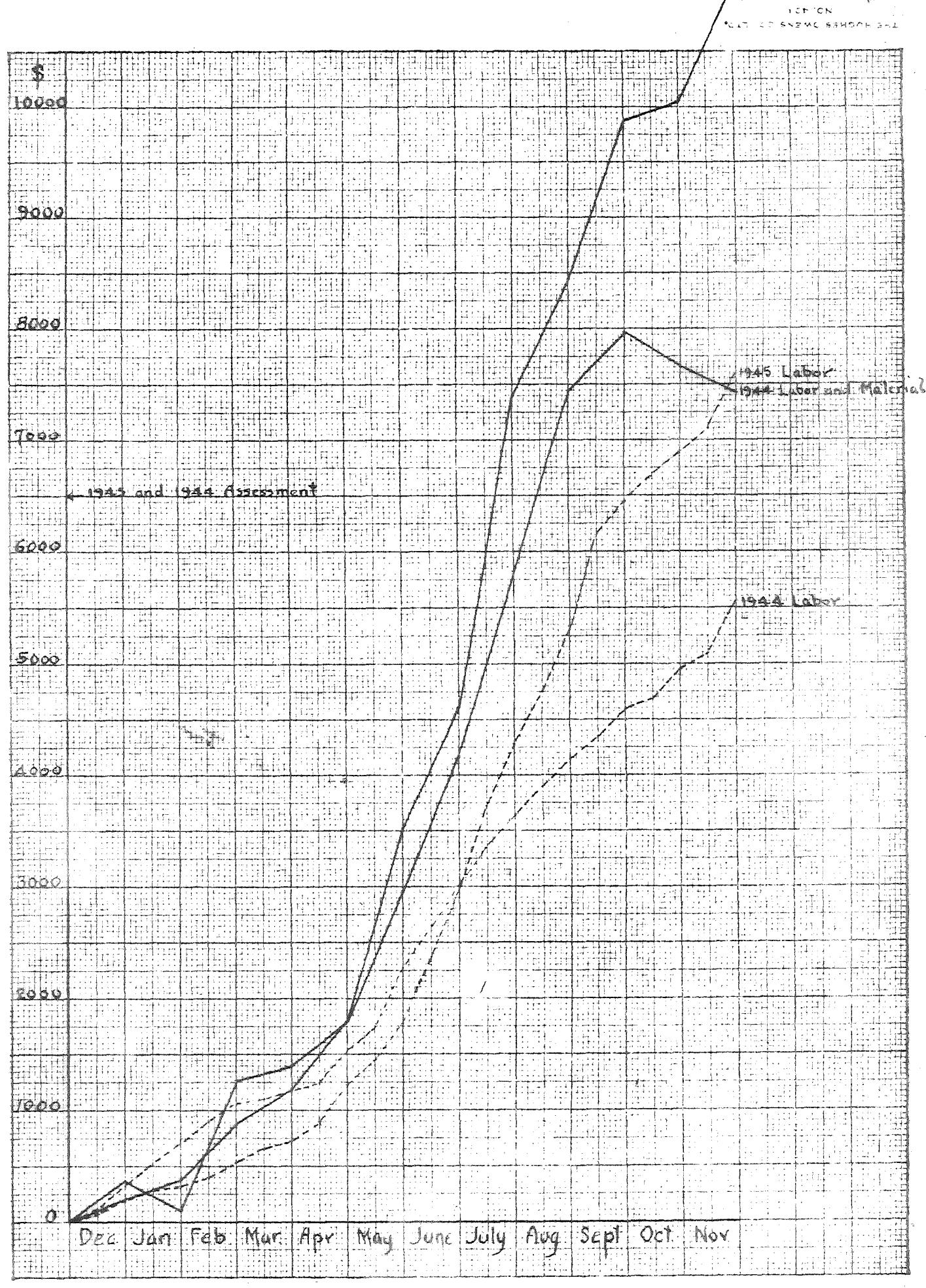
TABLE SHOWING COMPARATIVE YEARLY COSTS OF  
PUBLIC WORKS, Years 1930 - 1945

Year	Expenditure for Labour	Gross Expend- iture Labour and Material	Credits	Net Costs Labour and Materials	Appropri- ation
1930	2,729.82	3,379.09	237.90	3,159.19	5,000.00
1931	1,574.17	1,982.81	61.95	1,920.96	2,500.00
1932	3,797.65	4,992.98	322.35	4,670.63	2,500.00
1933	3,849.39	5,394.06	474.89	4,919.17	4,500.00
1934	3,734.85	4,929.00	1,302.36	3,626.64	4,000.00
1935	2,906.24	4,425.84	2,776.96	1,648.88	3,000.00
1936	2,867.38	4,211.33	2.73	4,160.07	3,000.00
1937	3,673.48	4,283.52	123.45	4,208.60	5,000.00
1938	5,135.07	8,631.67	664.00	7,967.67	4,000.00
1939	3,937.07	4,606.53	255.10	4,361.43	4,000.00
1940	5,610.71	6,826.22	1,204.89	5,621.33	4,000.00
1941	4,751.76	7,204.65	204.95	6,999.70	4,000.00
1942	6,089.55	8,180.32	455.85	7,724.47	4,000.00
1943	5,063.23	5,890.39	280.43	5,609.96	6,500.00
1944	5,546.15	8,852.68	1,424.37	7,428.31	6,500.00
1945	8,307.69	11,843.69	644.61	11,199.08	6,500.00

The above 1945 costs show an over-expenditure in Public Works of \$4,699.00. The \$5,000.00 authorized for playgrounds expenditure would partially account for this over-expenditure as this playground activity was not contemplated when the Public Works appropriation was made up.

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PUBLIC WORKS COSTS 1944 AND 1945.

### WOOD ACCOUNT

During 1945 the City purchased from the Dominion Government through the office of the Timber Controller for the Maritimes the following amount of fuel wood:-

888 cds.	4 ft. dry hard wood brought in by rail from northern part of province
3375 cds.	4 ft. dry hard wood brought in by truck from surrounding country
881 cds.	24 in. dry hard wood brought in by truck from surrounding country
1204 cds.	24 in. dry hard wood brought in by rail from northern part of province
70 cds.	16 in. dry hard wood brought in by rail from northern part of province
3 cds.	16 in. dry hard wood brought in by truck from surrounding country

6421 cds.

Of this 6421 cords 6349 cords were resold by the City to city wood dealers and 72 cords were kept by the City and resold directly to the individual citizen. The City sold the wood to the dealers at the same price the City paid the Timber Controller plus 5¢ a cord. This arrangement was made necessary as the Timber Controller would not deal with the local wood dealers, but only with the City directly.

### MUNICIPAL HOME

On my accounts the following expenditure appears charged against Municipal Home:-

27.76 tons coal delivered to Municipal Home.....	\$ 181.18
City water supplied to Municipal Home.....	25.00
25 cds. 4 ft. soft wood edgings used for needy families.....	125.00
Labour charged by Donald Rogers to Municipal Home (raking hay).....	7.00
Blankets purchased from A. R. P. by City for Municipal Home.....	14.40
Labour - sawing, splitting and delivering wood to needy families in City along with some minor repairs to Municipal Home building.....	1,176.25
Cost of 214.5 cds. of wood supplied to needy families and Municipal Home.....	<u>1,824.00</u>

Total.....\$3,352.83

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

### CITY HALL

Under items of expenditure handled by the City Engineer's Department appears a Gross Expenditure of \$6,203.61 charged to City Hall.

This expenditure is sub-divided as follows:-

Wages paid for labour at City Hall (includes winding and repairs to clock, cost of night fireman and extra janitor service, cost of hauling and unloading coal).....	\$1,085.70
Repairs to City Hall.....	3,606.79
Water used at City Hall.....	75.00
Coal (207.835 tons at from \$6.47 to \$9.00 a ton).....	1,380.79
Supplies, etc.....	55.33
Total.....	\$ 6,203.61

Repairs to City Hall include the following items:-

1. A new ceiling in the office of the City Treasurer.
2. Repairs to wall and office enlarged to give more space in the Assessor's Office.
3. Roof of the main City Hall was renewed with a coat of tar and gravel and the cupola on the north end was removed.
4. The bricks and some of the stone work at the north end of the City Hall were repointed.
5. The boilers and heating system were checked and repaired.
6. The entire lighting installation in the City Hall building was renewed and most of the offices supplied with new fluorescent lights.

## STREET LIGHTS

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

1. A series lighting system which lights most of the City
2. A multiple lighting system on Queen Street
3. A multiple lighting system in C.N.R. Subway

System No. 1, the series lighting system, consists of some 17.9 miles of line and 374 lamps. This system is divided into four circuits two of which are controlled each by a 25 K.W. Constant Current Transformer, the other two of which are each controlled by a 15 K. W. Constant Current Transformer. These transformers, along with the main switch-board, are housed in a transformer room in the old street lighting building on Carleton Street.

The four circuits are made up as follows:-

### Lower Front Circuit:-

	Transformer Size
24-600 C.P. Lamps at .372 K.W. demand.....	8.928
34-250 C.P. Lamps at .155 K.W. demand.....	5.270
9-100 C.P. Lamps at .0716 K.W. demand.....	.644
	<u>14.842</u> K.W.    15 K.V.

### Lower Rear Circuit:-

7-600 C.P. Lamps at .372 K. W. demand.....	2.604
136-250 C.P. Lamps at .155 K. W. demand.....	<u>21.080</u>
	23.684 K.W.    25 K.V.

### Upper Front Circuit:-

19-600 C.P. Lamps at .372 K.W. demand.....	7.068
35-250 C.P. Lamps at .155 K.W. demand.....	<u>5.425</u>
	12.493 K.W.    15 K.V.

### Upper Rear Circuit:-

4-600 C.P. Lamps at .372 K.W. demand.....	1.488
108-250 C.P. Lamps at .155 K.W. demand.....	<u>16.740</u>
	18.228 K.W.    25 K.V.

Total Demand..... 69.247 K.W.

System No. 2, the multiple lighting system on Queen Street, consists of 23 units located on Queen Street between Westmorland and St. John Streets. Each unit consists of a 500 W. 115 Volt lamp set in a novalex luminar fixture and hung on a bracket attached to the pole, these units being controlled by a control switch which is energized by our series lighting system. This system was installed and is owned, maintained, and energized by the Maritime Electric Company, the City paying the Company \$75.00 per year for each unit.

FREDERICTON WATER SUPPLY.

Year 1945 .... Jan. 1st. to Dec. 31st.

The quality of Fredericton's Water Supply for 1945 has changed little from previous years.

By the use of Chlorine the Coli-Aerogenes group of bacteria has been kept within the limits as set forth in The Drinking Water Standards of The American Public Health and American Waterworks Associations.

Following is a brief outline of terms and requirements of these Standards.

The Standard Portion for test is 10c.c.

The Standard Sample consists of Five Standard Portions.

A Positive Result indicates Coliform Group Present.

A Negative Result indicates Coliform Group Absent.

Requirements of the Test

1. In no month shall the number of Positives come to more than 10% of the total number of Portions examined in that month.

2. When less than 20 Samples per month are examined, one sample may show 3 Positive Portions out of the 5 portions making up the Sample.

The process just outlined, using a standard sample composed of 5 Portions, provides for an estimation of the Most Probable Number of Coliform Bacteria present in the Sample as set forth in the following table:

Number of Portions			When 5-10c.c. Portions are Examined	Most Probable Number of Coliform Bacteria per 100 c.c.					
	Positives	Negatives		Less than 2.2 per 100 c.c. of Sample	2.2	"	"	"	"
0	5								
1	4				2.2	"	"	"	"
2	5				5.1	"	"	"	"
3	2				9.2	"	"	"	"
4	1				16.0	"	"	"	"
5	0			More than 16	"	"	"	"	"

Other combinations may be taken according to the degree of precision wished. Portions of 100c.c. would be above table divided by 10.

(2)

It will be noted, in the tabulated list of tests following, that "less than 2.2" is the lowest estimation of which this combination, (i.e. 5-10c.c. portions) is capable. If we use 5-100c.c. portions it would be possible to get down to "less than 0.22 organisms per 100c.c. This refinement, however, would require ten times as much material and the purchase of expensive equipment.

Following is a list of tests for the year 1946

Fermentation test for detection of Coliform Group (formerly *B. coli*).

Primary Media ---- Lactose Broth.

Confirmatory Media 2% Brilliant Green Bile.

Plus-----Indicates Coliform Group Present.

Minus-----" " " Absent.

M. P. N. -----Most Probable Number of organisms per 100c.c. of sample.

Date of Sample	Origin of Sample	Cut of 5-10c.c. Portions		M.P.N.	
		PLUS	MINUS		
<b>1945</b>					
January 1	Pumping Station	0	5	Less than 2.2	
" 7	" "	0	5	" "	2.2
" 16	Engineering U.N.B.	0	5	" "	2.2
" 21	125 Charlotte St.	0	5	" "	2.2
" 30	Pumping Station	0	5	" "	2.2
Monthly average is less than 2.2 and no positives.					
<b>February</b>					
1	Pumping Station	0	5	" "	2.2
9	" "	0	5	" "	2.2
17	" "	1	4	Equals	2.2
20	Forestry U.N.B.	0	5	Less than 2.2	
28	Engineering U.N.B.	0	5	" "	2.2
Monthly average is less than 2.2 There was one Positive, or 4% of total Portions tested in February					

(5)

Date of Sample	Origin of Sample	Out of 5-10c.c. Portions Plus	M.P.N.
		Minus	
1945			
March 5	Pumping Station	0	5 Less than 2.2
" 10	125 Charlotte St.	0	5 " " 2.2
" 17	Capital Garage	0	5 " " 2.2
" 24	Pumping Station	0	5 " " 2.2
" 30	202 Saunders St.	0	5 " " 2.2
		Monthly Average is less than 2.2 . No Positives.	
April 3	Engineering Bldg. U.N.B.	0	5 " " 2.2
" 9	202 Saunders st.	0	5 " " 2.2
" 19	Pumping Station	0	5 " " 2.2
" 25	U.N.B. Forestry	0	5 " " 2.2
" 29	125 Charlotte St.	0	5 " " 2.2
		Monthly average is less 2.2. No Positives.	
May 4	Queen Hotel	0	5 " " 2.2
" 4	Engineering U.N.B.	0	5 " " 2.2
" 10	Engineering U.N.B.	0	5 " " 2.2
" 16	278 Church St.	0	5 " " 2.2
" 21	125 Charlotte St.	0	5 " " 2.2
" 29	202 Saunders St.	1	4 equal to 2.2

Monthly average for May is less than 2.2. There was 1 Pos. or 3% of the total ,50 testedfor the month. The allowable is 10%

June 6	Pumping Station	0	5 Less than 2.2
" 18	" "	0	5 " " 2.2
" 25	" "	0	5 " " 2.2
" 26	" "	0	5 " " 2.2

Monthly average is less than 2.2. No Positives.

(5).

Date of Sample	Origin of Sample	Out of 5-10c.c. Portions			M.P.N.
		Plus	Minus		
<b>1945</b>					
November 5	Engineering U.N.B.	0	5	Less than	2.2
" 11	Alexandra St.	0	5	" "	2.2
" 16	125 Charlotte St.	0	5	" "	2.2
" 25	Forestry U.N.B.	0	5	" "	2.2
" 29	Pumping Station	0	5	" "	2.2
Monthly Average is less than 2.2. No Positives.					
December 5	125 Charlotte St.	0	5	" "	2.2
" 12	Pumping Station	0	5	" "	2.2
" 18	Engineering U.N.B.	0	5	" "	2.2
" 24	Pumping Station	0	5	" "	2.2
" 50	" "	0	5	" "	2.2
Monthly Average is less than 2.2. No Positives.					

The average Most Probable Number of Coliform organisms per 100 for the year is less than 2.2

Out of all the portions tested in any month there were never over 10% Positive.

There were 295 ~~ten~~ c.c. Portions tested in the year. Of these only four portions were Positive or 1.4%

Alum was not used from January 25th. to March 16th.

Chlorine dosage varied from 1.1 ppm. to 2.5 ppm. with a residual of 0.1 to 0.5 ppm. It is not possible to keep the Chlorine dose uniform with the high demand and our present equipment. A Chlorinator would make it possible to get a much more uniform dosage.

It is not possible to get clear sparkling water at all times at our present too rapid rate of passing water through the settling basin. A settling basin of from four to six hours capacity (our present one is one and one half hours) would remedy this defect.

Fredericton N.B.  
January 31st. 1946.



System No. 3 consists of six multiple lights, each of 250 W. strength, located in the C. N. R. Subway. This system is also controlled by a control switch which is energized by the series street lighting system.

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

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

The street lighting costs for the year 1945 are as follows:-

Expenditure.....	\$ 10,682.22
1945 Appropriation.....	<u>10,000.00</u>
Dr. Balance.....	\$ 682.22

This Expenditure is made up as follows:-

167-600 C.P. Lamps @ \$1.68 <sup>3</sup> .....	\$ 281.84
384-250 C.P. Lamps @ 97 <sup>1</sup> / <sub>2</sub> ¢.....	374.40
6-200 C.P. Lamps @ 31 <sup>1</sup> / <sub>2</sub> ¢.....	1.89
27-150 C.P. Lamps @ 30¢.....	8.10
Current on Subway Lighting and series fixtures from Nov. 29/44 to Nov. 29/45 (280757 K.W. hrs.).....	7,559.84
Charges on multiple fixtures installed on Queen Street at the contract price of \$75.00 per light per year.....	1,725.00
Maintenance, labour as per contract price.....	330.96
Material purchased for new installations and maintenance of lamp fixtures (including only such articles as lamp standards, lamp brackets, heads, sockets, shades, etc.).....	174.89
Material used and extra labour supplied by Maritime Electric Co. in line maintenance extension.....	98.89
Miscellaneous charges.....	116.45
Telephone in transformer room.....	<u>9.96</u>
Total.....	\$ 10,682.22

The total per capita charge for street lighting 1945 population of 10,862 persons  $\frac{10682.22}{10862} = 98\frac{4}{5}$

TABLE SHOWING CURRENT CHARGES FOR 1945  
ON SERIES LIGHTING

Date of Bill	K. W. H.	Demand in K.W.	Average No. of Burning Hrs. per Night	Bill per Month
Nov. 29/44				
to Dec. 29/44	31,864	74.9	14 $\frac{1}{4}$	\$ 802.86
Dec. 29/44				
to Jan. 29/45	30,411	72.9	14 $\frac{1}{2}$	769.88
Jan. 29/45				
to Feb. 28/45	26,427	72.9	13	690.08
Feb. 28/45				
to March 29/45	22,777	72.9	11 $\frac{1}{4}$	616.56
March 29/45				
to April 28/45	21,869	73.6	9 $\frac{1}{2}$	600.67
April 28/45				
to May 29/45	17,596	70.9	8 $\frac{1}{2}$	508.87
May 29/45				
to June 28/45	15,105	70.9	7 $\frac{3}{4}$	458.92
June 28/45				
to July 30/45	15,213	72.9	7 $\frac{1}{2}$	464.26
July 30/45				
to Aug. 31/45	17,635	72.9	8 $\frac{3}{4}$	512.84
Aug. 31/45				
to Sept. 28/45	23,768	77.4	10 $\frac{1}{2}$	645.79
Sept. 28/45				
to Oct. 29/45	28,346	77.4	12	737.76
Oct. 29/45				
to Nov. 29/45	29,746	70.9	13 $\frac{1}{2}$	751.35
	280,757			\$ 7,559.84

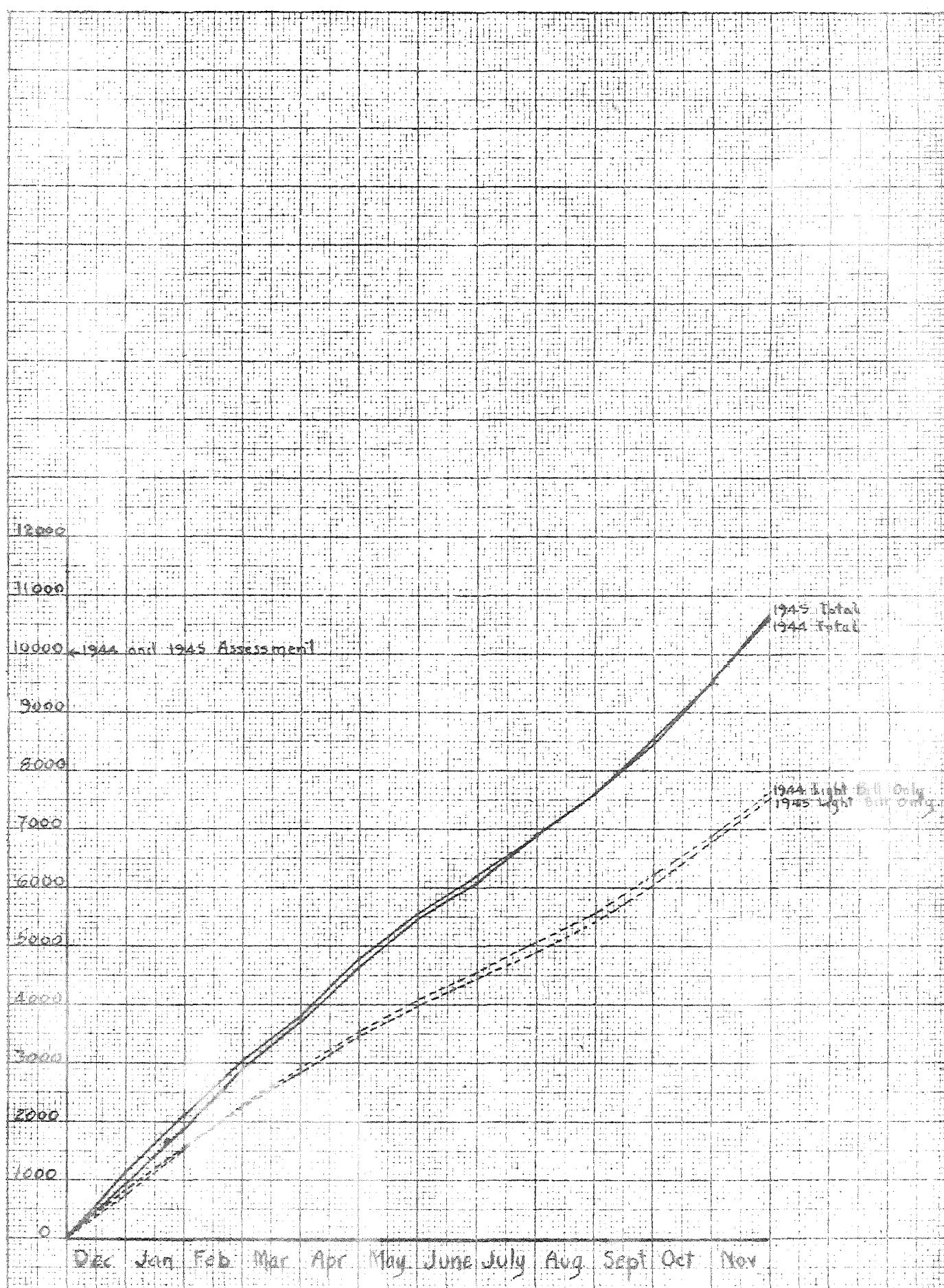
TABLE SHOWING COMPARATIVE YEARLY COSTS IN STREET LIGHTING

Year	Total Yearly Cost	Yearly Appropriation
1929	\$ 7,434.72	\$ 7,000.00
1930	7,115.40	7,000.00
1931	6,672.23	10,000.00
1932	6,532.51	6,000.00
1933	6,425.87	6,000.00
1934	6,165.28	6,000.00
1935	6,632.33	6,000.00
1936	6,957.72	7,000.00
1937	9,688.62	7,000.00
1938	8,314.06	9,000.00
1939	8,645.97	7,500.00
1940	8,172.25	7,500.00
1941	9,888.78	8,500.00
1942	9,803.27	10,000.00
1943	11,033.89	10,000.00
1944	10,673.80	10,000.00
1945	10,682.22	10,000.00

A graphic comparison of 1944 and 1945 street light expenditure and power cost is shown on the plate:-  
The curve for power cost includes the bill for the series lighting and the lighting of the Subway only, and does not include the bill for the multiple fixtures installed on Queen Street and owned by the Maritime Electric Company.

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If Sheet is Read This Way (Horizontal), the Date Must be Top.  
If Sheet is Read the Other Way (Vertically) this must be Left-Hand Side.



SEWERAGE DOMESTIC

Gross Expenditure.....	\$ 3,467.43
Credits.....	<u>1,477.90</u>
Net Expenditure.....	\$ 1,989.53

The credit of \$1,477.90 is made up of work done on the domestic sewerage for private parties. This work consists of all sewerage installation and sewerage maintenance other than that done on the principal sewerage main which serves the street.

Two 8-inch extensions were made this year:-

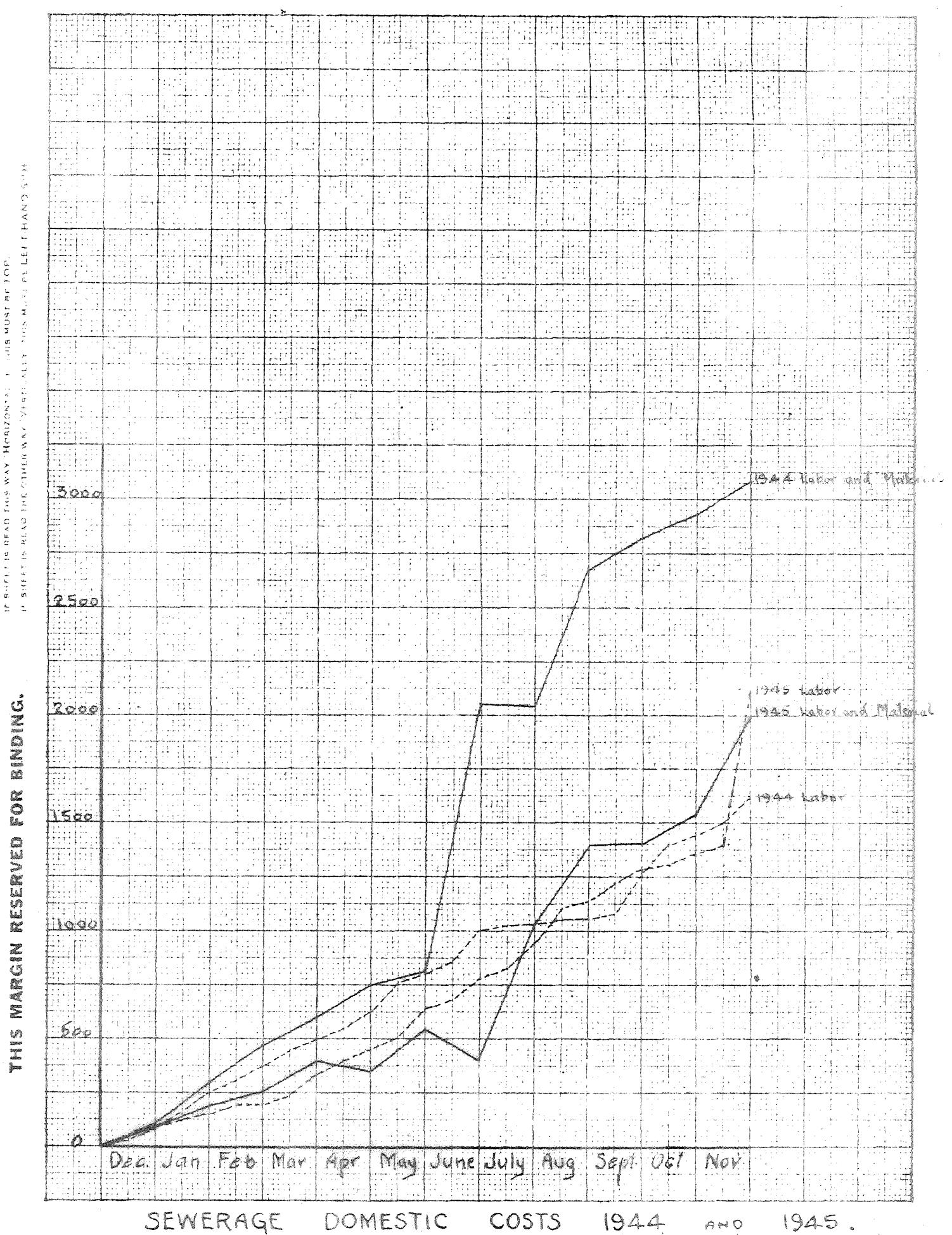
- (1) Winslow Street from Grey to Alexandra Street extended 53 feet
- (2) Dundonald Street from Westmorland to Northumberland Street extended 300 feet

The entire domestic sewerage system was flushed out once during the summer between June 15th and June 22nd at a labour cost of \$111.80.

The number of new customers connected with the City sewerage system this year..... 19

Old sewerage connections dug out and relaid.. 7

A graphic comparison for domestic sewerage costs for 1944 and 1945 is shown on the plate:-



## WATER

The expenditure in this department is divided into two headings, namely, Water Ordinary and Water Pumping Station.

### Water Ordinary

This account takes in all expenditure for water outside the pumping station and pumping station grounds. The expenditure under this heading is made up as follows:-

Gross Expenditure.....	\$ 13,588.67
Credits.....	574.57
Net Expenditure.....	\$ 13,014.10

The credits are made up of work done for and material sold to private parties when installing a water service over ground other than City property or when the material is to be used on parts of systems which do not belong to the City.

The Gross Expenditure is made up as follows:-

City Payroll for hydrants.....	\$ 682.92
City Payroll for meters.....	2,095.30
City Payroll for Water Ordinary.....	<u>5,232.90</u>
Total Payrolls.....	8,011.12
Material and other charges.....	<u>5,577.55</u>
Gross Expenditure.....	\$13,588.67

### Water Extension:-

This year an extension of 1681 lineal feet of 6-inch water main was made on Green Street and Graham Avenue. This water main was hooked up to the reservoir on the University of New Brunswick grounds and supplied all the existing dwellings on Green Street and Graham Avenue which had not been previously supplied with water. There are three dwellings on the southern extension of Windsor Street which are as yet not reached by this water extension.

Also, there is considerable vacant land on Green Street from Graham Avenue to Maryland Road and on the Maryland Road from Green Street to Albert Street which, I believe, will have to be supplied with water and sewerage in the near future as there is a strong demand by prospective home builders to be permitted to build in this area.

On the installation last year of 1681 lineal feet our costs were made up as follows:-

Labour.....	\$ 2,156.65
Rental of bulldozer.....	108.00
Rental of gas shovel.....	298.75
City tractor.....	144.00
Gas and oil.....	35.20
6-inch Cast Iron Water Pipe.....	2,689.60
Lead (1500 lbs.).....	15.00
Two hydrants.....	395.92
Seven 6-inch Water Gates.....	217.42
Gravel (285 yds.).....	285.00
Small tools, overhead, etc.....	<u>300.00</u>

Total.....\$ 6,645.54

These costs gave us a cost per lineal foot of \$3.95 installed. This installation was made in a particularly rainy season in the fall. The soil is clay and boulder which is difficult to handle when wet. On this account, the installation probably cost 75¢ a foot more than it would have cost if the construction had been foreseen and taken place at the proper time of year.

#### Hydrants:-

We have in the City 156 hydrants:- 143 in the City proper, 6 on University of New Brunswick grounds, 7 in military areas.

The labour costs show an average yearly cost per hydrant of \$4.13.

#### Meters:-

Of all our water services in the City 618 are charged under flat rate and 1181 are on meter, giving us altogether 1799 services.

The labour cost this year per meter for installing, reading, repairing, etc. is \$1.67.

Seventy-nine meters were stopped this year and had to be repaired.

All meters are read twice a year and bills are sent out twice a year. We have 74 customers whose meters are read once a month although they also are billed only twice a year. These are such customers who ordinarily have large consumptions and where a stopped meter or a meter turned over without being noticed would mean considerable loss of revenue to the City. All meters on

military buildings are included in this group of monthly read meters.

Meters in store room January 1st, 1946:-

5/8 meters repaired and fit for service.....	4
New 5/8 meters.....	8
3/4 meters fit for service.....	4
1-in. meters that can be repaired.....	4
New 1-in. meters.....	0
New 1-in. meters with 1 $\frac{1}{2}$ " connections.....	0
Compound meters fit for service.....	0
Compound meters not fit but which can be repaired.....	2
1 1/2 Crest meters.....	1
1/2 meters that can be repaired and made fit for service.	8

DISTRIBUTION SYSTEM

New services installed this year.....	34
Old services relaid this year.....	22
Frozen services which had to be thawed.....	3
Services discontinued.....	0
Water breaks repaired.....	6
Hydrants repaired.....	7

We had in the City on the 30th day of November 1945 1799 water services.

The Fredericton Distribution System consists of 17.40 miles of water main made up of the following sizes:-

10 inch main.....	1.53 miles
8 inch main.....	4.21 miles
6 inch main.....	9.78 miles
4 inch main.....	1.60 miles
3 inch main.....	.28 miles

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

TABLE SHOWING COMPARATIVE YEARLY COSTS

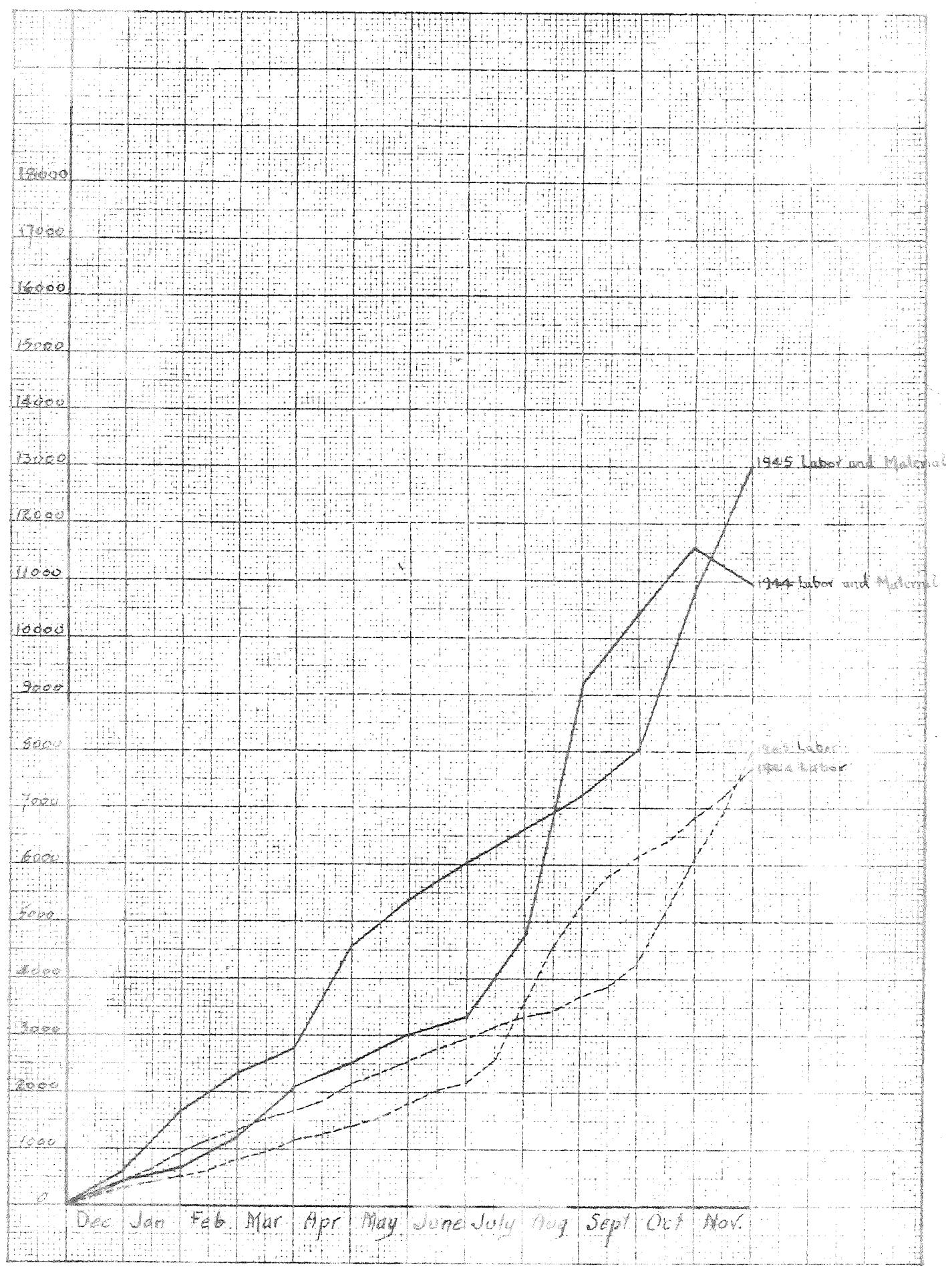
WATER ORDINARY

Year	Labour	Material	Gross Expenditure	Credits	Net Expenditure
1930	3,647.97	2,313.18	5,961.15		5,961.15
1931	3,836.33	4,376.87	8,213.20	279.65	7,933.55
1932	2,666.30	1,854.06	4,520.36	122.47	4,397.89
1933	2,333.25	1,604.17	3,937.42	30.27	3,907.15
1934	3,247.51	4,112.34	7,359.85	891.23	6,468.62
1935	5,372.83	5,897.23	11,270.06	398.42	10,871.64
1936	4,303.14	3,725.91	8,029.05	392.35	7,626.70
1937	3,718.86	3,938.81	7,657.67	265.46	7,401.21
1938	4,797.47	2,254.68	7,052.15	153.11	6,899.04
1939	4,201.24	3,248.61	7,449.85	570.44	6,879.41
1940	4,231.75	2,708.22	6,939.97	808.48	6,131.49
1941	2,908.37	2,446.27	6,354.64	459.08	4,895.56
1942	3,407.91	1,989.02	5,396.93	411.44	4,985.49
1943	5,559.39	14,670.96	20,230.35	5,020.06	15,210.29
1944	7,713.27	5,772.85	13,486.12	3,501.14	9,984.98
1945	8,011.12	5,577.55	13,588.67	574.57	13,014.10

A graphic comparison of expenditure on Water Ordinary for years 1944 and 1945 is shown on the following page:-

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WATER ORDINARY COSTS 1944 AND 1945.

## WATER PUMPING STATION

### Water Pumping Station Costs 1945:-

Gross Expenditure.....	\$ 24,990.14
Credits.....	3,534.72
Net Expenditure.....	\$ 21,455.42

This Credit of \$3,534.72 is made up as follows:-

30.87 tons of coal charged to Pumping Station and sold to other City Departments.....	\$ 199.72
Water charged to Sewerage Domestic for flushing domestic sewers.....	70.00
Water used in City Hall building.....	75.00
Water used in Old Street Lighting Building on Carleton Street.....	25.00
Water used in City Yard.....	50.00
Water used in City Alms House.....	25.00
Water used in City parks.....	50.00
To yearly rental of 152 hydrants at \$20.00.....	<u>3,040.00</u>
	\$ 3,534.72

The Gross Expenditure is divided as follows:-

City Payroll for salaries of engineer at Pumping Station.....	\$ 6,048.48
Work done by other City employees in and around Pumping Station.....	2,136.55
Total City Payrolls.....	8,185.03
Material and Workmen's Compensation Charge.....	16,805.11
Gross Expenditure.....	\$ 24,990.14

The material cost of \$16,805.11 is itemized as follows:-

Item # 1	Light supplied and power supplied by the Maritime Electric Co. (427,900 K.W. hrs.).	\$ 9,967.59
Item # 2	Transformer charges.....	151.92
Item # 3	Lime, 15,600 lbs.....	625.39
Item # 4	Alum, 161,280 lbs.....	2,879.74
Item # 5	Coal, 181.41 tons.....	1,173.73
Item # 6	Fuel oil.....	nil
Item # 7	Engine oil, 88 gals. D.B. Oil.....	51.06
Item # 8	Motor oil.....	nil
Item # 9	Gasoline, 400 gals.....	84.00
Item # 10	Maintenance and repairs of the building and machinery.....	609.16
Item # 11	New installations.....	nil
Item # 12	Supplies, packing, rags, etc.....	96.02
Item # 13	Stationery, forms, charts, etc.....	75.91
Item # 14	Workmen's Compensation Board.....	nil
Item # 15	Mr. E. W. Hagerman's salary.....	900.00
Item # 16	Hoisting chemicals.....	157.50
Item # 17	Miscellaneous, telephone, etc.....	33.09
	Total.....	\$ 16,805.11

**COMPARISON OF WATER PUMPED AND COSTS  
FOR LAST SIXTEEN YEARS**

<u>Year</u>	<u>I. G. Water Pumped</u>	<u>Yearly Gross Expenditure at Pumping Station</u>	<u>Pumping Station Cost per 1000 gals. (using Gross Expenditure)</u>	<u>Total Yearly Water Costs (Net Expend- iture Water Ordinary and Gross Expend- iture Water Pumping Station</u>	<u>Total Yearly Cost per 1000 Gallons</u>
1930	204,405,000	\$ 16,791.22	8.21 cents	\$ 22,752.37	11.1 cents
1931	187,164,000	16,425.55	8.8 "	24,559.10	13.0 "
1932	171,032,000	16,915.58	9.9 "	21,313.47	12.5 "
1933	175,050,000	16,483.67	9.5 "	20,390.82	11.6 "
1934	202,720,000	15,999.50	7.9 "	22,468.12	11.1 "
1935	197,641,000	16,251.61	8.1 "	27,123.25	12.6 "
1936	193,450,000	17,189.21	8.8 "	24,825.91	12.6 "
1937	187,008,000	19,678.21	10.5 "	27,079.42	14.5 "
1938	181,558,000	19,239.49	10.6 "	26,138.53	14.4 "
1939	199,662,000	18,144.43	9.1 "	25,023.84	12.5 "
1940	203,975,000	22,503.35	11.3 "	28,634.84	14.0 "
1941	222,255,000	19,474.56	8.8 "	24,370.12	11.0 "
1942	257,205,000	23,400.09	9.1 "	28,385.58	11.0 "
1943	280,115,000	26,338.50	9.4 "	41,548.79	14.0 "
1944	295,945,000	22,926.61	7.7 "	32,911.59	11.1 "
1945	321,355,000	24,990.14	7.7 "	38,004.24	11.8 "

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

The Water Pumping Station was as usual under the supervision of the plant superintendent and chief engineer, John Malloy.

The deep water pump well was drained and cleaned out once during the year.

The coagulating basin was cleaned out three times during the year.

Our water pumpage for the year has increased by some ~~26~~,000,000 gals. or about ~~9%~~ over last year. The increased consumption is readily seen by glancing at the above table headed "Comparison of Water Pumped and Costs for Last Sixteen Years."

The chart gives a graphic comparison of Water Pumping Station costs for the years 1944 and 1945.

THIS MARGIN RESERVED FOR BINDING.

READ THIS WAY HORIZONTAL TO YOUR RIGHT  
READ THIS WAY VERTICAL DOWN ON LEFT HAND SIDE

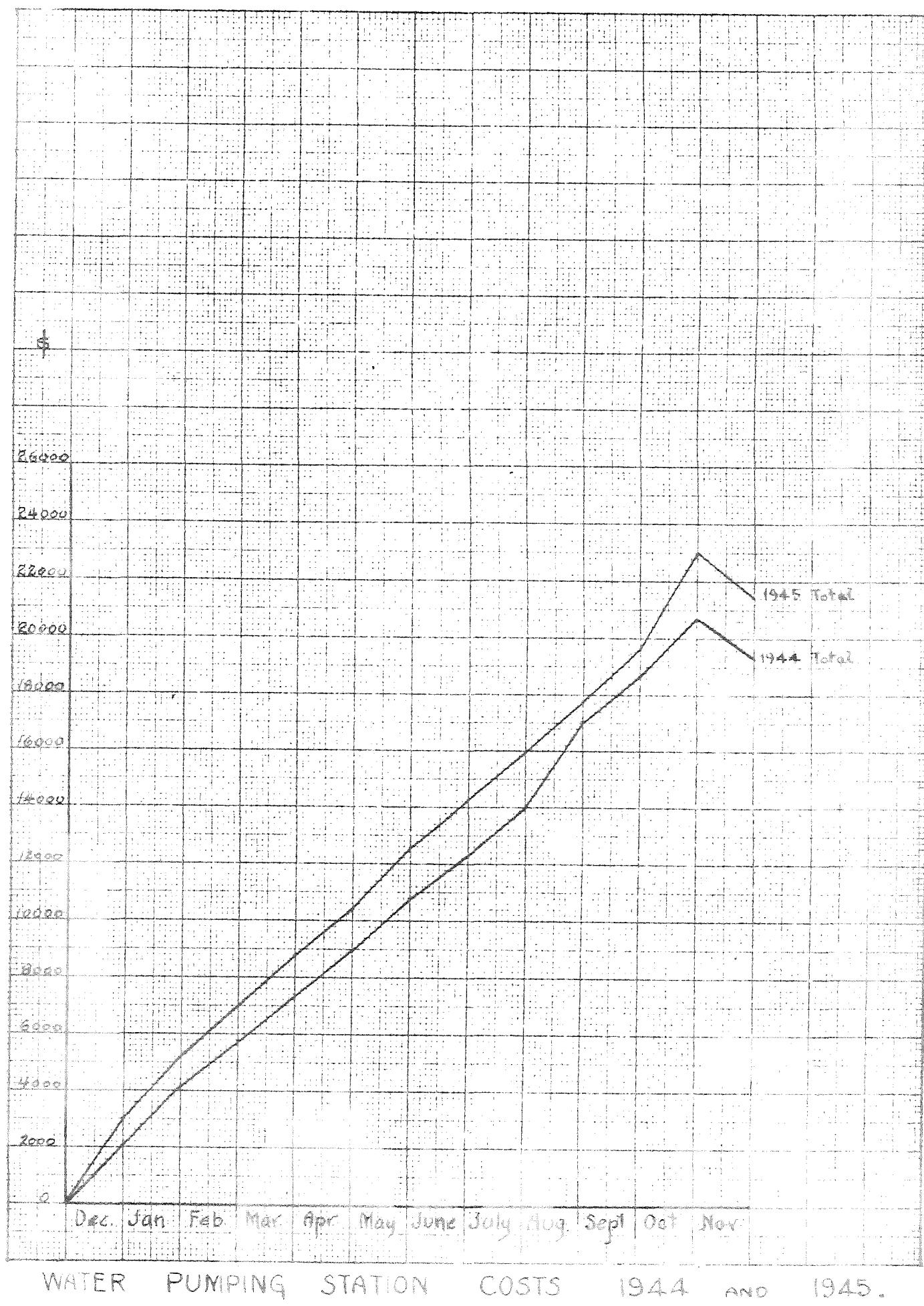


Table Compiled from Daily Pumping Station Charts -  
Year 1945, showing water pumped and material  
and machinery used in pumping

Total Hours in Month	Month of	Gallons Water Pumped	Hrs. Supplied by Coal Lbs.	Power K.W.H.	Low Lift Pump		Service Pump	
					No. 1 Maritime Motor	No. 2 Motor	No. 1 Motor	No. 2 motor
744	December / 44	25,225,000	46,200	35,400	744	663 $\frac{1}{2}$	744	744
744	January / 45	27,215,000	61,700	36,100	743	705 $\frac{1}{2}$	743	5/6
672	February	23,565,000	59,700	33,500	672	604 $\frac{1}{2}$	672	5/6
744	March	27,150,000	50,300	43,300	744	698	177 $\frac{1}{2}$	744
720	April	27,305,000	32,700	26,100	719 $\frac{1}{2}$	171	720	28-
744	May	27,865,000	27,900	35,500	744	675	188	1/6
720	June	27,015,000	22,800	35,300	717 $\frac{1}{2}$	641 $\frac{1}{2}$	161	717 $\frac{1}{2}$
744	July	27,715,000	900	35,000	744	691	186	744
744	August	28,225,000	37,800	743 $\frac{1}{2}$	718 $\frac{1}{2}$	691 $\frac{1}{2}$	168	743 $\frac{1}{2}$
720	September	26,650,000	11,400	37,500	718 $\frac{1}{2}$	665 $\frac{1}{2}$	160 $\frac{3}{4}$	719 $\frac{1}{2}$
744	October	26,935,000	24,300	35,900	744	687	189	744
720	November	26,490,000	41,900	36,500	720	653 $\frac{1}{2}$	196	720
8760 hrs.		321,355,000	379,800	427,900	8754 2/3	48	8036 $\frac{1}{2}$	8036 $\frac{1}{2}$
							8756 $\frac{3}{4}$	

TABLE SHOWING PRINCIPAL PURCHASES 1945

<u>Material</u>	<u>Amount Purchased 1945</u>	<u>Average Price f.o.b. F'ton</u>	<u>Amount in Stock Dec. 1/45</u>
4" Soil pipe	60 ft.	49¢ per ft.	
4" Terra Cotta pipe	0		
5" Terra Cotta pipe	2500 ft.	32¢ per ft.	836 ft.
6" Terra Cotta pipe	376 ft.	32¢ per ft.	
8" Terra Cotta pipe	500 ft.	45¢ per ft.	394 ft.
Portland Cement	1270 bags	75¢ - 85¢ per bag	
Brick	11,600 brick	\$18.00 per 1000	
Fill	821 cu. yds.	60¢ cu. yd. delivered	
Gravel (pit)	36 cu. yds.	10¢ cu. yd. at pit	
	294 cu. yds.	50¢ cu. yd. at pit	
	2574 cu. yds.	10¢ from City pit	
Calcium Chloride	70 tons	\$32.08 per ton	90 bags
Road Machine Blades	20	\$6.80 - \$7.15 each	5
Lime	15,600 lbs.	\$4.09 - \$4.20 per 100	90 lbs.
Alum	161,280 lbs. (80.64 tons)	\$1.67-\$1.93 per 100 lbs.	
Coal (run of mine)	6 cars (299.55 tons)	\$6.47 - \$6.80 ton	10 tons
Springhill Coal	9690 lbs. (4.845 tons)	\$12.17-\$12.50 ton	
Minto Coal	14230 lbs. (7.115 tons)	\$8.50 - \$9.00 per ton	
Colas	0		
Primer M. C. 1	1440 gals.	13.9¢ per gal.	
R. C. 4	23988 gals.	13.29¢ per gal.	60 bbls.
5/8 Copper Tubing	990 ft.	\$15.59 per 100 lbs. (and freight)	660 ft.
3/4 Copper Tubing	264 ft.	\$21.81 per 100 lbs. (and freight)	
5/8 Lead pipe	11 coils (2921 lbs)	\$9.75-\$13.75 per 100#	60 ft.
6-in. Cast Iron Pipe	0		
6-in. Cast Iron Elbow	1	\$8.95 per lb. & freight	
6-in. Cast Iron Tees (B.S. & Bell)	21	\$12.50 each	15 tees
6-in. Cast Iron Sleeves	9	\$8.00 each	6
Lumber	6470 ft.	\$35.00-\$75.00 per 1000	
Lead	1515 lbs.	10¢ per lb.	
5/8 x 3/4 Trident Cold Water Meters	10	\$14.34 & freight	8
1-in. Galvanized pipe	211 ft.	14.7¢ - 17 $\frac{3}{4}$ ¢ per ft.	
$\frac{3}{4}$ -in. Galvanized pipe	1640 ft.	11.25¢ - 12.25¢ ft.	11 jts.
Catch Basin (frame and cover)	18	\$30.73	3
Manhole (frame & cover)	6	\$28.22	5
4-in. McAvity Millwood Iron Body Bronze mounted Hub End Water Gate Valve)	4	\$19.00 each & freight	/
6-in. McAvity Millwood Iron Body Bronze mounted Hub End Water Gate Valve)	2	\$35.75 each & freight	3
Used Remington Adding Machine	1	\$125.00	
Condensation Pump, Trane Horizontal #HC-220			
Serial 9464	1	\$185.80	
Snow Fence	3000 ft.	\$9.50 per 100 ft.	
Dipping Needle	1	\$26.50	
Arsenic of lead	1916 lbs.	14¢ per lb.	

Material	Amount Purchased 1945	Average Price f.o.b. F'ton	Amount in Stock Dec.1/45
Magneto Complete for 2 cyl. 8 H.P. Hopper Cooled LeRoi Rower Unit Engine (Serial No. 75249)	1	\$67.00	
No. 194 Delco Batteries	2	\$24.45 each	
Gasoline (regular)	4692 gals.	33¢ per gal.	
Gasoline (Tax exempt)	1395 gals.	21¢ per gal.	
Fuel Oil	2145 gals.	11½¢ per gal.	
Tennis nets	3	\$24.00 each	
Tennis tapes	3	\$12.00 each	
36 ft. Extension ladder	1	\$16.00	
#407 I.H.C. horse-drawn plough	1	\$26.50	
Prestone	35 gals.	\$3.72 per gal.	
Wood hydraulic F.I.C. Hoist with C-4 steel body	1	\$620.00	
Eureka lawn mowers 16" B.B.	3	\$12.00 each	
Model 1673 Chevrolet Truck	1	\$1709.00	
Dual purpose rear axle	1	\$135.00	
Extra 825 x 20 Tires		\$75.05	
Extra Shock Absorbers - front		\$19.50	
1100/24 8 Fly Tire & Tube	1	\$127.95	
32 x 6 x 10 Dunlop Tires	2	\$54.90 each	
32 x 6 x 10 Dunlop Tires	2	\$15.80 each	
420 G.M.P. Pump - Serial # 1065 ( A.R.P.)	1	\$250.00	

Stopped Water Meters October 1945

Mrs E.Jewett Estate.....	480	George Street
Robert Davis.....	65	Charlotte Street
Vernon Rogers.....	187	Charlotte Street
Schleyer Estate.....	302	Charlotte Street
Harry Velinski and Simeon Chippin.....	442	Charlotte Street
Hon W.G.Clark.....	476	Charlotte Street
Alfred Smith.....	643	Charlotte Street
Mrs Harry Lawson.....	880	Charlotte Street
J.W Long.....	552	Needham Street
A.F.Bailey.....	180	Saunders Street
Harvey Welton Estate.....	379	Saunders Street
Department National Defence Hut #24 .....		Saunders Street
Department National Defence Hut #12.....		Saunders Street
Military District #7 Hut #3 .....		Woodstock Road
Mrs John Swift.....	141	Aberdeen Street
Farmers Dairy.....	483	King Street
Miss Ladds.....	154	Aberdeen Street
H.G.Kitchen.....	129	Westmorland Street
Hiram Lodge.....	135	Carleton Street
Alexander Davidson.....	201	St John Street
Mrs M Richards.....	194	University Avenue
Bliss Wood.....	320	University Avenue
Simeon Bell.....	316	University Avenue
Mrs G.E.S.Bailey.....	342	University Avenue
Miss J.Wilson.....	8	Waterloo Row
James Jamieson.....	26	Waterloo Row
Dr.Tothill.....	278	Waterloo Row
Charles A.Jewett.....	31	Allan Street
Walter Kitchen.....	346	Campbell Street
Walter Kitchen.....	352	Campbell Street
Budovitch Brothers.....	273	King Street
David Gorman Estate.....	617	King Street
David Gorman Estate.....	621	King Street
F.B.Edgecombe Estate.....	736	King Street
John Forbes.....	245	Queen Street
Sharkey Building Meter #2.....	570	Queen Street
Educational Office.....		Queen Street
R.Chestnut and Son.....	636	Queen Street
DiGiacinto Gaetina.....	658	King Street
Mr.Moore.....	824	George Street
Miss McNair.....	347	St.John Street
Abe Levine.....	373	King Street
J.Clark and Sons.....Meter #2.....	426	King Street

Stopped Meters April 1945

St. Andrews Presbyterian Church .....	346	Brunswick Street
F.A. Good Estate.....	732	Brunswick Street
E. Jewett .....	480	George Street
J.O'Leary.....	635	George Street
Mrs A.G. Lemont.....	753	George Street
Mrs B. Morten.....	448	George Street
Dr. H.S. Wright.....	492	George Street
Miss Areta Gerow.....	251	George Street
Mrs Stanley Titus.....	313	George Street
Mrs. McIntosh.....	658	King Street
Mrs McIntosh.....	636	King Street
F.A. Good Estate.....	672	King Street
David Gorman Estate.....	621	King Street
Harry Velinski and Simeon Chippin.....	442	Charlotte Street
Henry Lehr.....	663	Charlotte Street
Mrs Hatry Lawson.....	880	Charlotte Street
Schleyer Estate.....	302	Charlotte Street
Mrs H.G. Kitchen.....	357	Saunders Street
Harvey Welton Estate.....	379	Saunders Street
Mr. W.J. Smith.....	691	Churchill Row
Mrs Bessie Brown.....	449	Needham Street
W.L. Long.....	552	Needham Street
W.R. Tait.....	195	Aberdeen Street
Miss Ladds.....	158	Aberdeen Street
John Forbes.....	245	Queen Street
Sharkey Building.... Meter #2.....		Queen Street
Harry Ryan.....	607	Queen Street
R.Chestnut & Son Estate.....	636	Queen Street
Abe Levine.....	373	King Street
David Gorman Estate.....	617	King Street
DiGiacento Gaetinia.....	658	King Street
Borden Trites.....	182	Northumberland St.
W.H. Sutherland.....	91	Northumberland St.
Morgan Estate.....	81	York Street
E.G. Hoyt.....	338	York Street
Woods Motors Ltd.....	101	Regent Street
Mrs H.A. Watson.....	154	Regent Street
Mrs. F.O. Creighton.....	221	Regent Street
Mrs W. P. Keenan	241	Regent Street
Harley Gilby.....	613	Beaverbrook Street
Mrs C. Tait.....	364	Regent Street
Province of N.B.....	71	St. John Street
Alexander Davidson.....	201	St. John Street
Christ Church.....	212	St. John Street
Frank Clark.....	262	St. John Street
Hiram Lodge .....	135	Carleton Street
J.Clark and Son.....	426	King Street
R/E. Balch.....	103	Alexandra Street
Mrs G.E. Bailey.....	342	University Avenue
L.Sewell.....	382	University Avenue
Reid Morgan.....	27	Shore Street
Maritime Electric.....	48	Lansdowne Street
James Jamieson.....	26	Waterloo Row
A.M. Gibson.....	58	Waterloo Row
Dr. Tothill.....	278	Waterloo Row

Military District No. 7 Hut #21 Woodstock Road

Installation of New Water Services  
and  
Maintenance and Repaires to old Services  
1945

Dec. 5/44	Sheriff C.N.Goodspeed 752 George Street	New
Dec 11/45	Hydrant corner Regent and King Street	Repaired
Dec 12/45	Morgan Kerten 737 Beaverbrook Street	Repaired Box
Dec 18/45	Hydrant corner Brunswick and Carleton Street	Repaired
Jan 6/45	Hydrant Brunswick St. between Northumberland and Smythe Streets	Repaired
Jan. 10/45	Water Break Corner Brunswick and Northumberland	Repaired
Jan. 11/45	Hydrant corner Shore and Waterloo Row	Repaired
Mar. 10/45	Hydrant Queen St. between Phoenix Square and Westmorland Street	Repaired
April 6/45	Water Break University Avenue near Shore St.	Repaired
April 8/45	Royal Ryan 821 Union Street	New
April /45	Dr.A.W.G.Good 685 Queen Street	Relaid
April /45	T.Wilby 304 Woodstock Road	New
April /45	Douglas Pickard 132 Aberdeen Street	New
April 20/45	Hydrant College in front of old Gym	Repaired
April 21/45	Water Break Brunswick St. opposite Vanbuskirk property	Repaired
May /45	Water Break Campbell St. Phoenix Square to Westmorland Street	Repaired
May /45	A.A.Waters 242 Saunders Street	Relaid
May /45	H.G.Kitchen 526 Queen Street(Gleaner Office)	Relaid
May 8/45	Roy Ramey 634 Brunswick Street	Relaid
May 10/45	A.and B. Clubhouse	Repaired
May 11/45	D Gorman King Street	Relaid
May 17/45	Charles Simms 368 Woodstock Road	New
May 21/45	Minot Brewer 770 George Street	Relaid
May 22/45	Wallace Bridges 155 Saunders Street	New
May 25/45	B.Leutchford 386 Regent Street	New
June 11/45	Capt. E.J.Simeon 182 Charlotte Street	Relaid
June 8/45	Budovitch 226 King Street	Relaid
June /45	Flushing Water Mains	
June 24/45	Frank Estey 230 Aberdeen Street	Relaid
June 25/45	Water Break Mrs. Thomas Styran 349 Dundonald Street	Repaired

Installation of New Water Services  
and  
Maintenance and Repaires to old Services  
1945

June /45	Frank Estey	312 Saunders Street	Relaid
July /45	Liquor Commission Store	642 Queen Street	Relaid
July /45	Donald Tweedale	Beaver Brook Street	New
July /45	Stanley Tomilson	379 Northumberland St.	Repaired Box
July 14/45	J. McPeake	Rookwood Avenue	Relaid
July 14/45	Mrs Richards	186 University Avenue	Relaid
July 19/45	Mrs Frank Pridham	249 Saunders St.	Relaid
July 20/45	Water Break	515 Brunswick St.	Repaired
July 23/45	Mr Gullison	Brunswick St.	Repaired
July /45	Hydrant Argyle St	in front of John Palmers	Repaired
Aug. 10/45	Bliss Wood	824 George Street	Relaid
Aug. 16/45	Robert McFarlane	348 Westmorland Street	Relaid
Aug. 18/45	Hydrant	corner Aberdeen and Westmorland St.	Repaired
Aug 20/45	V.Bastin	Winslow Street	New
Aug 23/45	Miss Olmstead	St.John Street	New
Aug. 27/45	Hon. J.E.Michaud	58 Waterloo Row	Relaid
Aug. /45	Harry Steen	216 O'Dell Avenue	Relaid
Aug.../45	Fred Smith	296 Church Street	Relaid
Sept./45	Ansil Moore	Regent Street	New
Sept./45	Sterling Brewer	153 Argyle Street	Relaid
Sept/45	Children's Home	199 Woodstock Road	Relaid
Sept 26/45	Mrs Charles Manuel	Winslow Street	New
Sept. /45	Mrs Rowan	42 Shore Street	Relaid
Oct./45	W.G.Clark	University Avenue	New
Oct/45	O'Dell Construction Co.	Brockwood Avenue	New
October /45	Water Main	on Graham Avenue and Green Road	New
Nov./45	Miss Marie McNair	632 Graham Avenue	New
Nov./45	Sidney Horten	639 Graham Avenue	New
Nov./45	Mrs James E Lyons	640 Graham Avenue	New
Nov./45	Miss Majory Gibson	648 Graham Avenue	New
Nov./45	W.C.Hodgson	655 Graham Avenue	New
Nov./45	John Harrington	656 Graham Avenue	New

Installation of New Water Services  
and  
Maintenance and Repairs to old Services  
1945

Nov./45	Fred Parr	663 Graham Avenue	New
Nov./45	Thomas Jaffrey	672 Graham Avenue	New
Nov./45	Harry Richardson	681 Graham Avenue	New
Nov./45	Stanley Tomilson	684 Graham Avenue	New
Nov./45	Mrs Emil Olsen	725 Graham Avenue	New
Nov./45	Joseph Fletcher	720 Graham Avenue	New
Nov./45	Ronald Bemrose	697 Green Road	New
Nov./45	E.E.Burden	700 Green Road	New
Nov./45	H.Day	727 Green Road	New
Nov./45	William Simcock	753 Green Road	New
Nov./45	Thomas Ford	793 Green Road	New
Nov./45	Hydrant Rockwood Avenue Near J.McPeak's		Repaired
Nov./45	Donald Stevenson	Dundonald Street	New
Nov.,/45	Province of N.B. Forestry Building York Street		New

Installation of New Domestic Sewers  
and  
Maintenance and Repairs to old Domestic Sewers

Dec. 5/45	Sheriff C.N.Goodspeed	752 George Street	New
Apr. 8/45	Royal Ryan	821 Union Street	New
Apr. /45	T.Wilby	304 Woodstock Road	New
April /45	D.Pickard	132 Aberdeen Street	New
Apr. 24/45	Glen Libby	556 George Street	Dug Out
May 4/45	Robert Douglas	550 George Street	Dug Out
May 17/45	Charles Simms	368 Woodstock Road	New
May 21/45	Wallace Bridges	155 Saunders Street	New
May 25/45	B. Leutchford	386 Regent Street	New
June 26/45	William McCormack	103 Alexandra Street	Dug Out
July /45	Donald Tweedale	Beaver Brook Street	New
Aug/45	Municipal Home	York Street	Repaid
Aug. /45	Miss Olmstead	St. John Street	New
Sept/45	William Clark	267 Charlotte Street	Relaid
Sept/45	Marcel de Merten	University Avenue	New
Sept/45	Ansil Moore	Regent Street	New
Sept.28/45	Frank Pridham	249 Saunders Street	Dug Out
Sept.29/45	Mrs Charles Manuel	Windsor Street	New
Nov./45	Raymond Crewdson	Rockwood Avenue	Dug Out
Nov/45	Mr.Donald Stevenson	Dundonald Street	New
Nov./45	Stephen Brophy	236 Dundonald Street	New
Nov./45	Cecil R Jordon	230 Dundonald Street	New
Nov./45	Harry Maybe	229 Dundonald Street	New
Nov/45	Provincial Government Forestry Building	York St	New
Nov. /45	V.Bastin	Winslow Street	New
Nov. /45	Extension Domestic Sewer	Dundonald St	New