May 1. To Morris St. Engine House			4000	00	
Bedford Row Engine House			5000	00	
Gerrish St (old) Engine House			1000	00	
Isleville Engine House			1000	00	
Quinpool Road Engine House			2500	00	
Spring Garden Road Engine House			1000	00	
Keeprs'r House, Spruce Hill Lake			500	00	
Keeper's House, Chain Lake			500	00	
Keeper's House, Long Lake			500	00	
		$	82900	00	
Factories Insurance Co., Rainnie & Keator, agts	$ 10362 50				
Lumber Insurance Co., Rainnie & Keator, agts	10362 50				
Factories Underwriters Insurance Co., Rainnie & Keator, agts	20725 00				
British Crown Assurance Co., Curren Hart & Co., agts	31087 50				
Hudson Bay Insurance Co., E. S. Stayner, agt	5181 25				
Rimouski Insurance Co., E. S. Stayner agt	5181 25				
Rate $.65		$	538	80	
Carpenters' risk on City Workshops			9	38	
E. G. Stayner on Beach Bath and equipment $3000 at $.96			28	80	
Nova Scotia Fire Insurance Co., prem. Stayner's Wharf $1000 at $2.95			29	50	
				$	606 48
Unexpended balance				$	143 52

RENTS OF CITY PROPERTY.

1912			
May 1. To J. W. Umlah, 1 year's lease Prospect corner, to June 1, '12	$	10	00
Chas. Traise, collector rent No. 38 George St. $120.00 less Commission $6.00		114	00
Edward Marten, pound keeper, rent City lot		13	45
F. W. Bissett & Co., rent and expenses Stayner's Wharf		357	80
Wm. McFatridge, rent Stayner's Wharf		252	65
Chas. Duggan 5 year's lease Hanover St. landing from Jan.1		5	00
Imperial Oil Co., 1 year's lease railway siding, Campbell Road to April 20, 1913		1	00
Dalhousie College, rent drainage right Carleton St. to Jan. 1		6	00
Scotia Pure Milk Co., rent hatchway to Jan. 1, 1913		1	55
Bank of Nova Scotia, rent hatchway to Jan. 1, 1913		1	67
Acadia Powder Co., rent hatchway to Jan. 1, 1913		1	61
Eastern Trust Co., rent hatchway to Jan. 1, 1913		1	71
Furness Withy Co., rent hatchway to Jan. 1, 1913		30	00
Simon Fraser, rent hatchway to Jan. 1, 1913		3	42
Amherst Boot & Shoe Co., rent hatchway to Jan. 1, 1913		3	60

May 1. To Dr. T. W. P. Flinn, rent hatchway to Jan. 1, 1913			2 24
Imperial Pub Co., rent hatchway to Jan. 1, 1913			2 52
Dartmouth Ferry Commission, rent wharf from May 1, 1912 to Jan. 1, 1913			533 34
T. J. N. Murphy, rent encroachment to Jan. 1, 1913			1 00
W. H. Isnor & Sons, rent Gerrish St. Engine House to Jan. '13			83 34
Bank of Montreal, Duke St., rent hatchways to Jan. 1, 1913			10 20
Bank of Montreal, Gottingen St., rent hatchways, to Jan. 1,'13			13 14
Peter Allan, rent encorachment to Jan. 1, 1913			6 00
H. W. Cameron, rent hatchway to Jan. 1, 1913			2 52
Dartmouth Ferry Commission, rent wharf to April 1, 1913			330 00
Imperial Oil Co., 1 year's lease railway siding in advance			1 00
Deposited with City Treasurer			$ 1788 76
Less Arbitratorfls fees "Bissett" rental Stayner's Wharf			30 00
			$ 1758 76

GARBAGE INCINERATOR.

1912			
May 1. By Appropriation			$ 46000 00

Expenditure.

May 1. To Longard Bros., per contract on account		$ 44500 00	
Labor, putting in drain		169 84	
			$ 44669 84
Credit balance carried forward			$ 1330 16

DEPOSITS FOR PRIVATE DRAINS, ETC.

1912			
May 1. By Balance brought forward 1911-12			$ 62 47
Nickerson & Hart, deposit for drain connection			200 00
John O'Sullivan	"		30 00
L. A. Wilson	"		25 00
L. A. Wilson	"		25 00
J. E. Roy	"		150 00
Mrs. M. W. Macdonald	"		50 00
Falconer & Macdonald	"		150 00
L. Clyde Davidson.	"		150 00
Wentzell's Ltd.	"		50 00
Dept. Railway & Canals	"	Deep Water.	34 74
Davison & Fraser	"		30 00
N. S. Provincial Government	"	College	91 37
S. Cunard & Co	"		50 00
Jos. Ward, deposit for cleaning wharf			10 00
Brookfield Bros., deposit for cleaning wharf			5 00
F. W. Gibson, Marlboro House, deposit for cleaning drain			20 00
Hart & Nelson, deposit for repairs			10 00
			$ 1143 58

Expenditure.

May 1. To L. A. Wilson, refund on deposit	$	38 60	
Nickerson & Hart "		110 61	
Falconer & MaDoncld "		6 56	
John O'Sullivan "		3 03	
J. E. Roy "		86 52	
L. Clyde Davison "		109 48	
Mrs. M. W. McDonald "		27 20	
Falconer & McDonald, refund on deposit, work not done		150 00	
Labor		379 23	
Material		98 47	
S. Cunard & Co., refund on deposit		12 90	
Wentzells Ltd., refund on deposit		1 41	
			$ 1024 01
Credit balance carried forward 1913-14			$ 119 57

WATER MAINTENANCE.

1912			
May 1. By Balance brought forward 1911-12			$ 25786 18
Collections per City Collector			114822 89
Interest on bank balances			2370 80
City Works Office, collections			893 09
			$143872 96

Expenditure.

May 1. To Interest	$	53164 80	
Labor		20985 24	
Salaries		7100 00	
Sinking Fund		6277 49	
H. B. Clarke & Son, water meters, repair parts		2436 82	
Neptune Meter Co., water meters, repair parts		1470 25	
Laurence Hardware Co., lead pipe, supplies etc		1012 01	
T. C. Allen & Co., stationery supplies, Engineer's, Works office		628 65	
Hillis & Son, iron castings		420 26	
A. & W. MacKinlay, blank books, etc		396 63	
W. S. Craig, plumber's work		380 10	
Austen Bros		312 71	
S. Cunard & Co., coal		289 02	
Maritime Tel. & Tel. Co., rent telephones		218 04	
F. Parsons, horse for Foreman Morrison		200 00	
Brookfield Bros., lumber		208 53	
Macdonald & Co., brass castings		140 82	
Halifax Elec. Tram, electric light, power		85 68	
Can. Explosive Co., dynamite, fuses		93 00	
Farquhar Bros., supplies		76 75	
James Robinson Co., Ltd., 1000 lbs. lead yarn		79 00	
Longard Bros., machinist's work		56 65	

Henry Lovett, leather	42	70	
Herald Pub. Co., advertising	47	73	
Chronicle Pub. Co., advertising	38	48	
E. Wrayton, making duplicate water bills	36	00	
Bentley Flemming Co., pitch pine	39	80	
Scotia Foundry Co., iron castings	35	80	
King Edward Stables, horse hire	33	00	
Imperial Oil Co., oil	35	28	
W. N. Brown, repairs wheels, waggons	34	25	
E. Ellis	30	00	
Robinson Bros., cartage	33	15	
Halifax Printing Co., meter cards, slips	37	00	
Jas. Simmonds, Ltd., hardware	22	50	
H. Mueller Mfg. Co	18	99	
A. Hutchison, ice, City Clerk, Aldermen's room	16	00	
Blackadar Bros., advertising	15	90	
A. J. McNutt, repairs waggons	15	00	
Jean Gossip, typewriting, City Solicitor	12	65	
McAlpine Pub. Co., 3 city directories	10	50	
L. Chittick & Son, ice, Works Dept	10	00	
J. C. Merlin, 6000 wooden wedges	12	80	
Builders' Iron Foundry Co., chart records, etc	13	30	
R. G. Dun & Co., subscription	10	00	
H. McFatridge, vet. services	9	00	
P. Dowd, repairs wheels	6	00	
John McDonald, cab hire, Engineer	5	00	
F. W. W. Doane, cab hire, Engineer	3	00	
W. C. Knight, repairs harness, 1 whip	3	40	
John Starr Son & Co., elec. supplies	4	90	
West. Union Tel. Co., telegrams per Engineer	3	04	
W. J. Regan, repairs harness	3	50	
H. Schaefer, plumbing Inspector's badge	2	50	
H. L. Dalziel, plumber's work	2	00	
R. N. McDonald, 4 bags salt	3	00	
Cragg Bros., supplies Engineer's office	3	80	
Engineering Record, subscription Engineer's offic.	4	50	
I. C. Stewart, paid plumbing bill	2	60	
W. J. Hopgood, 2 boxes candles	1	56	
R. B. Adams & Co., supplies	2	05	
Kelly's Ltd., repairs harness	2	25	
G. A. Perrier, plumber's work	1	25	
Dom. Express Co., frt. 1 parcel Engineer	1	10	
Sewerage, transfer for material used	101	32	
Streets, transfer for aaterial used	183	75	
Teams and Stables, transfer for baord 2 horses, Engineer's and foreman's	312	00	
City Property, transfer account City Workshops.	98	51	
Morton & Cragg, 2 Yale locks	1	50	
United Typewriter Co., supplies	6	50	
Neil Fox, harness repairs	8	25	
H. H. Marshall, subscription "Chronicle"		6	00
E. W. Crease & Son, 4 boxes candels	6	60	
			$ 97422 16
Credit blaance carried forward 1913-14			$ 46450 80

WATER CONSTRUCTION.

1912			
May 1.	By Balance brought forward 1911-12		$ 8697 93
	Loan on Reservoir etc		80000 00
	City Works Office, collections for materials etc		1766 10
			$ 90464 03

Expenditure.

May 1.	To D. Y. Stewart & Co., water pipe		$ 40313 81	
	Glenfield, Kennedy Co., water valves		2863 37	
	Labor		8689 78	
	Laurence Hardware Co., lead pipe, supplies		594 95	
	Ed. Maxwell, on acct. contract pipe house		2526 00	
	Hillis & Son, iron castings		606 89	
	Longard Bros., brass castings, etc		50 96	
	Macdonald & Co., brass castings, etc		51 73	
	Scotia Foundry Co., iron castings, etc		60 18	
	Leadite Co., 3 barrels lead cement		140 51	
	Jas. McGrath & Co., truckage pipe		1000 00	
	Wm. Fraser, testing water pipe		159 10	
	Henry Lovett, leather		37 54	
	Sewerage, transfer for material used		20 33	
	Streets, transfer for material used		2 47	
	Direct Cable Co., cablegram per Engineer		1 25	
	Canadian Explosive Co., dynamite, fuses		44 50	
	T. C. Allen & Co., stationery		95 54	
	Bentley & Flemming, 2 rollers		20 00	
	Wm. Stairs, Son & Morrow, tap drills		12 60	
	Contract Record, advertising		40 65	
	Engineering News, advertising		32 65	
	Herald Pub. Co., advertising		70 33	
	Blackadar Bros., advertising		35 75	
	James Jack	$ 100 00		
	William Kimber	1250 00		
	Chas. Kelly	625 00		
	Andrew Tuura	625 00		
	Jas. P. Murray	750 00		
	Jas. P. Murray	250 00		
	Jas. P. Murray	125 00		
	David Graydon	625 00		
	David Nicholson	1250 00		
	Wm. Thompson	375 00		
	Sadie Henneberry	100 00		
	Mrs. Cameron	100 00		
	Paid into Court acct. expropriation reservoir		6050 00	
				$ 63520 89
	Credit balance carried forward 1913-14			$ 26943 14

COST OF WORK.

	Labor	Material	Total Cost
Shop	$ 3926 75	.....	$ 3926 75
Repairs on service	6812 87	.....	6812 87
Extensions of service	1958 62	$ 1428 49	3387 11
Repairs on fireplugs and main stopcocks	2197 06	.....	2197 06
Repairs on bursts and leaks and searching for same	414 50	.....	414 50
Meter reading	1827 17	.....	1827 17
Inspection of fittings	100 10	.....	100 10
Testing and piling water pipe	406 75	.....	406 75
Cleaning and testing mains 20" and 15"	44 03	.....	44 03
Repairs dam, Spruce Hill Lake	21 72	.....	21 72
Brandram & Henderson, putting 4" pipe sprinkler	110 55	134 54	245 09
Brandram & Henderson, repairs fireplug	11 16	65 50	76 66
Dresden Row, renewing and connecting service pipe3" by 4" and 6"	166 84	37 46	204 30
South Clifton St., 6" main	30 19	28 80	58 99
Maynard St. to Black St. connecting 6" main	109 00	89 33	198 33
Preston St. S. side Jubilee Road, 6" Main	280 24	120 64	400 88
Preston St., S. side Jubilee Road, changing position fireplug	46 75	33 37	80 12
Chain Lake Pipe House, contract and other work, waste weir	394 50	.....	394 50
H. R. Silver & Co., 6" sprinkler	45 80	93 15	138 95
Hollis St. N. from Morris St. replacing 4" by 12" main	2011 63	1651 61	3663 24
Brunswick St. from Jacob to North St., renewing service pipes	886 52	.....	886 52
R. C. Orphanage Quinpool Road, replacing 3-4" by 1" pipe	24 60	36 00	60 60
South Park St., renew service pipes	101 39	.....	101 39
Brunswick St. W. side, south from North St., shifting and renewing fireplugs	31 53	.....	31 53
Victoria Road, renewing service pipes	41 19	.....	41 19
Robie St., renewing service pipes	168 00	.....	168 00
Robie St., N. from Qunipool Road, replacing 12" by 15" main	4010 43	7765 06	11775 49
Chestnut St., cleaning dead end pipe	6 39	.....	6 39
W. Stairs Son & Morrow, 6" sprinkler	38 20	57 07	95 27
Norwood St. E. from Connaught Ave., 6" main	303 23	170 17	473 40
Cunard St. corner Maynard St., removing fireplug	14 80	.....	14 80
Cunard St. corner Creighton St., changing position fireplug	28 72	27 80	56 52
Cunard St. corner Gottingen St., changing position fireplug	69 27	30 43	99 70
Willow St. E. of Robie St. 6" stopcock	11 44	21 69	33 13
John Tobin & Co., 6" sprinkler	34 80	75 20	110 00
York, N. Kline and Qunin Sts., repair pumps	9 28	.....	9 28
Dominion Coal Co., 3" main	91 10	109 50	200 60
Clifton and St. Albans Sts., 6" main	138 46	111 06	249 52
Hungry Hill, labor survey reservoir	17 52	.....	17 52
Market Wharf, fitting 2" pipe	10 50	18 50	29 00
Furness Withy wharf, replacing old by new fireplug	3 30	39 00	42 30

Salvation Army, 220 Argyle St., replacing old pipe by 1"	20 55	18 30	38 85
Queen St., cleaning and repairing pump	8 34	.....	8 34
Incinerator, laying 4" pipe	122 40	130 17	252 57
Water St., opp. elevator, removing fireplug	22 43	.....	22 43
Marshall Bros. laundry, laying pipe"	3 50	10 30	13 80

CITY ENGINEER'S REPORT

CITY WORKS DEPARTMENT

COMMITTEE ON WORKS 1912-1913.

F. P. BLIGH, Mayor, *Chairman.*
ALDERMAN P. F. MARTIN,
ALDERMAN WM. DENNIS.

OFFICIALS.

F. W. W. DOANE, M. Can. Soc. C. E., *City Engineer,*
H. W. JOHNSTON, M. N. S. Soc. E., *Deputy City Engineer.*
A. R. MacCLEAVE, M. N. S. Soc. E., *Assistant Engineer,*
T. W. J. LYNCH, Jun. N. S. Soc. E., *Surveyor and Draughtsman,*
Miss HELEN M. DUSTAN, *Stenographer and Accountant*

WATER WORKS.

EWEN MORRISON.....*Foreman,*
DANIEL J. McLEAN....*Assistant Foreman,*
WM. P. MORRISCEY....*Plumbing Inspector,*
ARTHUR L. SMITH.....*Meter Foreman,*
JOHN E. BURNS.....*Chief Water and Meter Inspector*
W. H. DANIELS.....*Service Foreman.*

STREETS, SEWERS, ETC.

JOHN McDONALD.....*Foreman,*
JAMES DOWNIE.....*Assistant Foreman.*

OFFICE.

JAMES J. HOPEWELL...*Clerk of Works,*
MISS MINNIE HUNTER.*Assistant Clerk of Works.*

City Engineer's Office, City Hall,

Halifax, May 1st, 1913.

To His Worship the Mayor.

Sir:—I have the honor to submit my twenty-second annual report on the public works of the City under the supervision of the City Works Department:—

Water Works.

Amount of funded debt on water account		$1,263,441.00
Amount transferred from revenue		51,000.00
Amount of funded debt redeemed by sinking fund		8,000.00
Amount of funded debt redeemed by revenue		30,000.00
Amount of funded debt redeemed by premiums on loans		4,073.33
		$1,356,514.33
Amt. expended to Apr. 30, 1912	$1,267,816.40	
Amt. expended in '12	$63,520.89	
Amt. repaid in '12	1,766.10	
	61,754.79	
Total cost of water works to date		$1,329,571.19
Balance on hand		26,943.14
Amount paid into sinking fund in excess of of debt redeemed		58,848.49

Cost of Maintenance.

Interest	$ 53,164.80
Sinking Fund	6,277.49
Maintenance of System	37,979.87
	$ 97,422.16

or 7.33 per cent of the cost of the system to date, interest and sinking fund being 4.47 per cent and maintenance, including renewals, 2.86 per cent.

Renewals.

Street mains were renewed with larger pipes on three streets. In Hollis Street the old pipe four inches in diameter was taken up from Morris Street to the north side of Salter Street and replaced with twelve inch pipe. This main distribution pipe is intended to connect through the Morris Street twelve inch pipe with the twelve inch main on Pleasant Street and the fifteen inch main on Park Street. At its north end it will connect with the twelve inch main on JacobStreet. The change will give a much larger fire supply in the down town business district.

The City Engineer's report, adopted by the Council on March 12, 1912, contained a recommendation to lay an encircling main 15 inches in diameter on Robie Street from Young Street to South Street; South Street from Robie to LeMarchant; LeMarchant from South to Coburg Road; Coburg Road from LeMarchant to Lilac; from Coburg Road to Quinpool Road via Lilac and Preston Streets; Young Street from Robie to Oxford; Oxford from Young Street to Quinpool Road taking up any existing pipe and replacing with the larger main.

This work was begun by taking up the 12-inch high service distribution pipe from Quinpool Road to West Street and the 6-inch pipe from West Street to May Street and laying 15-inch pipe. Winter weather stopped the work at May Street.

Repairs.

ON	COST	Cost per mile of mains.
Service	$6812 87	$88 49
Hydrants and valves	2197 06	28 53
Leaks in mains	414 50	5 38

New Work.

Distribution mains were laid for only seven extensions of the water service; one was in the low service district, the remainder in the high service, the total length of new extensions being only 912 feet. The total length of mains now in use is 77 miles.

Fifteen new main stop valves and three hydrant valves were added and twelve old valves removed. The total number in use is nine hundred and eighty-two.

The total number of hydrants in service is 467.

Three thousand four hundred and seventy-five feet of pipe was laid for 96 new services and three thousand six hundred and ninety-four feet was renewed. The total number of service pipes laid is 7912. About seven eighths of those laid in 1912 were in the high service system.

Meters.

One hundred and sixty-three meters were installed during the year and twenty-six removed, making the total number in service at the end of the civic year, 4298. The number of meters repaired was 406 or 9.44 per cent of the total number in use. One hundred and fifteen of these were repaired in the shop, and the remainder, 291, were repaired in service. Only 40 or less than one per cent were bursted by frost. The average cost of repairs was 23 1-5 cents per meter repaired or 2 1-5 cents per meter in service. The percentage of service pipes metered, is 54.3. All meters purchased were straight reading and registered in Imperial gallons. This register has been adopted as a standard.

Meteorological Records.

The number of days on which precipitation was recorded was 196 and the total 58.144 inches is 103 per

cent of the mean for the past forty four years (56.393 inches).

Long Lake reached its lowest level on the 25th day of October when the surface of the lake was 203.08 or 2.91 feet below the granite spill-way. Spruce Hill Lake rose to 364.34 on June 1st, and on October 25th fell to 361.80 or 2.58 below overflow.

Cleaning Mains.

The cleaning of the high service main in the Spring and also immediately before the exhibition was again unnecessary as the supply following the installation of meters was satisfactory. The main was cleaned once only—on the 22nd of October, the 36340 feet costing only $28.01. The scraper left Spruce Hill Lake at 10.44 and emerged at St. Andrew's Cross at 2.52.

Gate Houses.

Mr. E. Maxwell completed his contract for the granite gate houses at Spruce Hill Lake and Chain Lake and the appearance of the new structures makes a decided improvement in the head-works properties.

Reservoir.

The land required for a site for twin reservoirs on the summit of Shaffroth's Hill was expropriated but so much time was used in the legal proceedings that it was decided to postpone the construction until 1913. By letting the contract early it was expected that the reservoir could be in service for the winter of 1913:14. The contract was awarded on April 14th, 1913 to the Standard Construction Company Ltd., for $55,107.00 and $3.50 per cubic foot for extra excavation, $7.50 for extra concrete $11.00 for extra concrete in columns and $0.04 per pound for extra reinforcing.

Legal Matters.

Fenerty vs. City has not come up for trial owing to pressure of other work. The action is for alleged wrongful withholding and diversion of the supply of water to which he is entitled, the special dates mentioned being May, June, July, August, September, October and November 1911.

The 24 inch wooden measuring weir on Bayers Brook installed in 1909 was replaced during the working season by a permanent concrete weir.

At the meeting of Council held on February 6th, 1913, Mr. W. J. O'Hearn was granted permission to erect a camp on the island in Ragged Lake at a nominal rental of one dollar a year for five years.

The necessary notice was given to the Department of Militia and Defence to terminate the agreement under which they are supplied with water, the purpose being to make a new agreement on terms more favorable to the City.

Condition of Supply.

While the high service system continues to supply satisfactorily since the installation of meters, conditions in the low service system are growing in the opposite direction. Complaints are becoming more frequent especially from consumers on the higher points of the low service system. Although the high service holds its pressure in spite of new service pipes, the low service in which the new service pipes numbered only about one-seventh of those installed in the high system, is losing pressure every year as the waste increases. There is no doubt that it will continue to do so until the proper remedy for waste is applied.

The lowest average rate of consumption per diem for one month was 301,000 gallons in the high service and 6,425,000 gallons in the low service. Assuming that the population in the high service district is 20,000 and in the low service 25,000, the minimum consumption per capita was 65 gallons in the high and 257 gallons in the low, the latter being about four times the former. On the same basis the maximum daily consumption in the low service district was 320 gallons per capita.

Purity of Supply.

The following remarks are repeated from the City Engineer's report for 1911-12.

"The City Engineer's report for 1908-09 contained the following:—

"There is a possibility of contamination of the low service water supply from houses on the water shed, from the highway and from the railroad, although in most cases the possibility is more remote than in those which we have been watching. In the case of the Halifax and South Western Railway the line runs a short distance north of the upper and lower Chain Lake and crosses water courses which are dry in summer but which during and immediately after rains, carry the surface water to the lakes. When the line was under construction I used every effort to prevent contamination of the water in consequence of the number of men employed along the hill side above the lake. Now that the line is open there is still a remote possibility of disease germs being dropped from a passing train and carried in the water courses already mentioned, to the lake. Typhoid fever is a water-born disease and while there is a possibility, no matter how remote, every precaution should be taken.

"In Beech Hill there are several instances in which the barn and privy are very close to the surface water course running directly to Long Lake, from which the

City's water supply in the low service district is drawn through the Chain Lakes. If the City could afford it, there should be no residences allowed on the watershed.

"The conditions mentioned were pointed out to Dr. Starkey and he endorsed the recommendations of the City Engineer. Immediate steps should be taken to prevent the use of closets while the trains are passing over the watershed and that portion of the water shed not yet acquired by the City, should be purchased without delay."

Streets.

The length of concrete sidewalks to date is 86,697 feet or 16.4 miles. The area laid in 1912 was 14,501 square yards; length 14,663 feet; cost $1.26 to $1.94 per square yard. Included in the sidewalk work there weas 1732 feet of straight granite curb, 290 feet of corner granite curb, 2,343 feet of straight granite gutter and 290 feet of corner granite gutter. Granite curb and gutter cost from $2.59 to $2.97 per foot. There was also 4,216 feet of combined concrete curb and gutter which cost from 68 1-4 cents to 96 1-2 cents per foot and 3,452 square yards of sod costing from 15 1-2 cents to 24 cents per square yard.

The extension of Charles Street from Maynard Street to Gottingen Street was completed and the land required for the widening of Cunard Street from Gottingen Street to Agricola Street was acquired. Some of the buildings were removed before the end of the year. Charles Street extension cost to date $14,391.57 and Cunard Street $29,451.93.

The plan for the extension of Oakland Road from Oxford Street to the North West Arm was approved and expropriation proceedings begun.

An exchange of land was made with Mr. H. S. Tremaine to widen Chebucto Road at his property.

Mr. M. E. Keefe received $724.00 for land required to widen Inglis Street. The Association for Improving the Condition of the Poor, were paid $100 for land at the north-west corner of Argyle and Prince Street and Mr. William Dennis obtained $376.00 for land at the corner of Argyle and Sackville Street.

A strip of land owned by the City on the west side of Larch Street in front of Mr. W. L. Payzant's property was exchanged for a strip on the east side owned by Mr. Payzant, to bring Larch Street to the official lines from Coburg Road to Mr. Payzant's property.

The City purchased from Mr. J. A. Meagher a lot of land on Yukon Street 30 feet by, 23 feet for $350.00 to extend Monastry Lane.

Waegwoltic Avenue location was approved and laid down upon the Official Plan.

The official line of Morris Street Boulevard on the north side from Robie Street to Dalhousie College grounds and on the south side from Seymour Street west was placed on the official plan under authority of Council dated August 7th, 1912. The Dalhousie property will be planned with the boulevard as the main approach.

The renumbering of South Street was authorized and will be carried out when the new directory is issued.

Charles Duggan obtained a renewal of his lease of Hanover Street end for ferry purposes for five years from December 31st, 1912.

The Nova Scotia Fertilizer Company were granted a permit to lay down a siding across and along Campbell Road at their works and to divert the road.

The paving of Cogswell Street between Gottingen Street and Brunswick Street was the only permanent

roadway work ordered. The block of Sackville Street between Barrington Street and Argyle Street and the north side of the roadway on Spring Garden Road westerly from Tower Road to the middle of the block were paved with rocmac under the supervision of Foremen supplied by the Rocmac Corporation of America, Limited. The work cost $1.57 per square yard and has shown no striking advantages over ordinary macadam. It is claimed by the corporation that the fault is in the crushed limestone, the percentage of carbonate of lime being too low.

The subgrade was formed and consolidated and the foundation course spread, filled and rolled according to usual specifications for such work for ordinary macadam roadway. Upon the foundation so prepared, a stiff mortar composed of limestone screenings mixed with Rocmac solution was spread to a uniform thickness in the proportion of one inch for each three inches of rolled, crushed stone wearing surface. The proportions of the mortar were 15 imperial gallons of Rocmac solution to one cubic yard of limestone screenings.

Upon the mortar or matrix was spread the crushed stone which was rolled and sprinkled with water to flush the matrix up until a grout formed over the entire surface. As the grout rose it was brushed by a hand broom so as to prevent it from lying in patches. After the rolling was completed about 3-8 inches of limestone dust was spread over the surface to absorb any excess of solution and to form a cushion while the process of setting was going on.

The specification for limestone was that it should be crushed to a size that would pass through a quarter-inch mesh and 50 per cent of particles should be dust.

1097 square yards were laid. The limestone cost seventy cents per ton f. o. b. quarry in Cape Breton. It was crushed by Brandram-Henderson Co. Ltd. About 800 gallons of Rocmac solution was used at a cost of 45 cents per gallon.

Sewers.

Sewers were laid in eight streets only, The total length added as shown on the attached statement is 5,750 feet and the average cost per foot $8.66.

The length of sewers constructed under the sewer act from 1890 to 1912 inclusive is 158,298 feet or 29.98 miles.

The sewer on Oxford Street cost an average of $12.60 per foot, caused by the season in which the work was done, the quantity of water encountered, the depth required to get proper grades and the extraordinarily tough character of the rock. All sewer work done in the winter cost more than similar work done in summer.

Coburg Road Sewer Outfall.

The preliminary steps were taken to obtain a right of way for the intercepting sewer along the Arm from Jubilee Road to Black Rock, but some of the property owners and others interested were able to obstruct proceedings so that no progress was made.

As the end of the season approached, property owners along the line of the Coburg Road and Oxford Street sewer urged that permission be given to them to connect their drainage system with the sewer. Their petition was supported by the City Health Board and the City Engineer submitted the following report:—

City Engineer's Office, October 2nd- 1912.

His Worship the Mayor.

Sir:—I beg to report on the request of property owners on Coburg Road and Oxford Street that some temporary provision should be made to give them adequate drainage for their properties until the trunk sewer is constructed along the Arm.

I had hoped to be able to report on the whole problem by this time, but I have been unable to obtain an engineer to assist me in the work, as one member of the Works Committee insisted that such employment should not be in any way permanent. If I had been able to promise a year's work I could have employed a man two months ago, but no good man will leave steady employment for a few days work. I hope to complete the preliminary survey in the near future, after which I shall prepare a report as rapidly as the seriousness of the problem will permit.

I can suggest no means of disposing of the drainage of the houses on Oxford Street and Coburg Road temporarily, except by discharging directly into the Arm at the foot of Coburg Road, or by discharging through a sedimentation pit or tank at the same place. Such a system. I am informed, is in use by the Birchdale Hotel and the Waegwoltic Club.

The Birchdale Hotel outlet discharges at the foot of Coburg Road immediately at the St. Mary's Young Men's Club House. The Waegwoltic drain discharges somewhere in front of their property. Mr. Bowes claims that his system stops all solids in the sewage and the discharge is clear water only. I am not sure but he used the word "clean" instead of "clear".

By actual count, the total number of people living in the houses to be drained, is eighty. Birchdale Hotel had that number living in it, I am informed, during the summer, while at the Waegwoltic, hundreds of people use the sanitary conveniences at times in the day. If the system is all right for the Birchdale and the Waegwoltic, I can see no good reason why it should not be all right for people living on Coburg Road and Oxford Street, as a temporary expedient. Both the Manager of the Birchdale and the President of the Waegwoltic Club have endorsed it, and I have heard no complaint from bathers or persons frequenting the landing at the foot of Coburg Road.

The estimated cost of constructing a temporary wooden pit or tank at the foot of Coburg Road, and disposing of the drainage of the houses that may be connected is from $880 to $1000. The structure would, of course, be a temporary one only, so that it might be removed as soon as the trunk sewer is constructed. Such a tank is designed to arrest the solids in the sewage and hold them in the tank until anaerobic bacteria which work without oxygen break up the solids and decompose them into harmless sludge. Nature takes care of the process and no chemical or other treatment is needed unless the effluent is to be discharged into drinking water, in which case it may be further purified by filtration and the application of hypochloride of calcium. Such purification, however, is not necessary, although some of those who have discussed it, have forgotten that the City does not require the water of the Arm for drinking purposes. The contention that the small quantity of sewage from a city of 80 people can pollute a large body of water like the Arm, with hundreds of millions of gallons flowing up and down twice a day and changing with every tide, is simply absurd.

Regarding the urgency of some provision for sewage disposal at this point, I am informed by householders that in some cases, the sewage from adjoining cesspits at times flows through the cellars. One property owner told me that his children were playing about where the sewage was flowing, and that he was obliged to send them to the country to avoid possible illness. Surely the life of little children is of some importance, and I have no hesitation in making a choice between the possible sacrifice of the lives of children and a temporary inconvenience to those who, enjoying the privilege of draining to the Arm themselves, would deny it to their less fortunate neighbours.

I have not changed my opinion as to the desirability of discharging permanently at the foot of Coburg Road and other streets, but I had never imagined that the obstruction of the owners of the property through which the trunk sewer must pass would delay construction so long. If a

further delay of two or three years is probable, then I would strongly recommend that a temporary system of disposal as suggested, be constructed at the foot of Coburg Road to be removed as soon as the trunk sewer is constructed, and that the property owners on Coburg Road and Oxford Street be permitted to connect with this sewer, as this work must also be done before the sidewalk can be alid.

F. W. W. DOANE, *City Engineer.*

The City Council held a public hearing after which the City Engineer's report was adopted. The temporary tank and outfall were constructed at a cost of $958.34 and the houses along the sewers, connected.

The Engineer was instructed to report on a proposal to extend the intercepting sewer from Black Rock down to the neighbourhood of the mouth of the Arm. The following report was submitted but has not been considered yet:—

North West Arm Sewer Outfall.

City Engineer's Office, May 3rd, 1913.

His Worship the Mayor.

Sir:—I beg to report on the locations proposed for the discharge of the sewage to be collected on the western slope of the City.

On the 18th of May, 1911, the City Council adopted a report of the City Engineer recommending that the intercepting sewer be carried along the shore of the Arm to a point near Black Rock below the boat houses on the Oaklands property. By this plan it was proposed to clarify the sewage only, before discharging it into the Arm, so that there would be no apparent nuisance. Subsequently I was asked to report on an alternative proposal to extend

the intercepting sewer down along the shore of the Arm to an outlet at or near Point Pleasant. The City Works Committee recommended in October last, that the intercepting sewer be extended to Chain Rock at the earliest possible date.

In considering the matter in the first place, two systems were possible—one what is known as the combined system, which is in use on the eastern slope, the other the separate system, by which the storm water would be discharged directly into the Arm at the street ends through one system of pipes, and the house sewage carried to one point of discharge farther down the Arm by another. The system recommended, chosen chiefly on account of the difference in cost, would provide for the discharge of both the house and storm sewage for a good many years at one point. As the population grows on the western slope, the overflow, after the sewer is well washed out by rain, would be discharged at the street ends if the sewer ever filled more than four feet deep. This overflow, emptying well out from the shore, would be so thoroughly diluted with rain water before it would begin to discharge, that there could be no offence from it.

The objection urged to the location first suggested, has been based on prejudice rather than well grounded opposition. It was the intention to discharge the sewage from 30 to 55 feet under water, and I feel confident from the experience in other cities, that there would have been no apparent nuisance, even if no other treatment were provided than coarse screening. Several notable installations of such methods of disposal may be quoted where results are satisfactory. Perhaps the most important, near home, is the outlet for the sewage of the South Metropolitan District, discharging into Boston Harbor by a main outlet near Peddock's Island. The report of the Massachusetts State Board of Health for 1911 says that the quantity discharged at this outlet, averages forty millions gallons a day, and the outlet is very difficult to locate, even under most favourable conditions. The sewage is discharged

at a depth of thirty feet through two 60-inch cast iron pipes, while our outlet would be one 48-inch pipe only, discharging a comparatively small quantity of sewage. If the sewage is discharged near the bottom in a good depth of water, it will be thoroughly diluted with the sea water and its presence cannot be detected. In my opinion, there is no danger of polution of the waters of the Arm that can be detected by the eye or nostril in the operation of such a system.

The opponents of the scheme, however, claim that the sewage should be purified. It was not the intention of the scheme recommended to purify the sewage as if it were to be discharged into drinking water, nor is it claimed that it will. If the sewage must be purified so that there will be absolute certainty of no danger to bathers, then the scheme recommended will not do the work, but I must point out that if the sewage is purified and discharged into the Arm, it does not follow that the waters of the Arm will be safe for bathers, as steamers carrying excursions, the hotels, houses and boat houses along the Arm are discharging material now which makes it impossible to pronounce the waters of the Arm absolutely pure for bathing. No matter how well the sewage is treated, the waters of the Arm cannot be maintained in an absolutely pure condition, as the boat houses and houses out of reach of the sewer would still discharge sewage into the Arm.

The estimated cost of extending the sewer from a point near Black Rock to a point near the summer house at the Point is $115,000.00, but that estimate does not include land damages which I am unable to estimate, owing to fluctuations in land values recently and the location of the proposed railway through some of the lands which will be traversed.

Probably the best location for an outfall on the Arm side of the Park would be the point immediately below the Chain Battery, but an outfall there would be within 100 yards of the public bathing beach. A location on the north

side of the Point on which the summer house is erected, would be preferable, as it will be about 1-4 of a mile below the bathing beach. It would be more difficult to construct and maintain it there, however, as the sea breaks on that point, but if it is wrong to locate the outfall at Black Rock because it will endanger the health of bathers who can afford to use the bathing facilities at the boat clubs, it would be wrong to locate it within 100 yards of the five cent bathing houses which the general public use.

A sewage purification plant at Black Rock would, in my opinion, not be desirable even if it saved money in first cost, because the cost of operation would make up the difference in annual charges, compared with the extension to the Park, and it is very dificult to operate such a plant without nuisance. Further, it might affect land values. On the other hand, if the Council decides that the sewer must be extended to the Park, I think the cost would be large enough without adding purification works to it.

Respecting Sir Sanford Fleming's suggestion that the railway right of way might be used as a location for an outfall, it would be necessary to carry the sewer through the district to be drained at an elevation of about fifty feet above the water in order to get through the railway cutting, to say nothing of the question of permission from the railway department. An elevation of fifty feet would not drain the district below that level, which includes a comparatively large area in the vicinity of the Upper Arm and Dutch Village. This objection could only be overcome by installing a pumping system, the operation of which would be expensive, and the total first cost would be larger than for an outlet at the Park.

F. W. W. DOANE, *City Engineer.*

Catchpits Drains Etc.

Thirty-four concrete catchpits were constructed and eight abandoned and filled in, making the total 999.

One hundred and eighty-two permits were issued for laying, cleaning and repairing drains.

The Plumbing Inspector reports approval of 494 applications for permission to do plumbing work, a decrease of eight. Four hundred and thirty-six certificates were issued for completion of work.

The Board of Plumbing Examiners held four meetings. Five candidates were examined, three of whom passed finally and one received permission to work for one year, pending further examination.

Internal Health.

The amount expended in this service was divided generally as follows:—

Cleaning unpaved streets	$6822.16
Cleaning paved streets	5500.00
Cleaning catchpits	3472.97
Sprinkling (by contract only)	1771.50
Removal of ashes and garbage	3535.63
Repairs, renewals, supplies, etc	2114.84
Incinerator	1302.64

To the above should be added the cost of the work performed by the City teams in scavenging and sprinkling.

Incinerator.

The contract for the incinerator was awarded to Longard Bros. for $44,775 and $1200 for engine and clinker crusher. The report of Mr. H. W. Johnston, Assistant City Engineer, attached hereto, gives a full description with result of tests.

City Property.

The most important work undertaken was the construction of a market on the site bounded by Brunswick, Buckingham, Albermarle and Duke Street. Daniel Murphy was given a contract to remove the old buildings for $350.00.

Architects were invited to submit competitive plans and Mr. S. P. Dumaresq won first place, Harris and Horton second. Tenders were obtained, but the contract has not been awarded.

A contract for the completion of the dwellings in the Workshops building was awarded to Freeman Bros. for $4740.00. When the apartments were ready for occupation the stable foreman was installed in one of them.

At the City Prison a drain was laid to connect with the drain from the smallpox hospital; a concrete floor was laid in the basement; a hot water heating system was put in by John White & Co. at a cost of $1775.00 and a plumbing system by G. A. Perrier for $1397.00.

Permission was granted to H. D. McKenzie Co., Ltd., to place a siding on City property west of the Incinerator.

After extended negotiations, an agreement was reached with the Dartmouth Ferry Commission providing that the City will lease the ferry dock and South Wharf at the old rental, $800, on condition that the Commission will construct and maintain in the south side of the wharf, a public landing and also will lease the whole Stayner property for $520 per annum (four per centum on the purchase price $13,000) plans of station building and location to be subject to the approval of the City and the Stayner buildings to be kept in good repair. Both leases will be for 25 years.

Street Railway.

The Halifax Electric Tramway Company, Limited, laid a single track on Hollis Street from Morris Street to their car barn south of South Street and on Gottingen Street from Cunard Street to Kaye Street. They also laid double track on the following streets:—

Morris Street	between	Pleasant and Hollis,
Hollis	"	Salter and Prince,
Buckingham	"	Granville and Brunswick,
Brunswick	"	Buckingham and Cogswell,
Cogswell	"	Brunswick and Gottingen,
Gottingen	"	Cornwallis and Cunard,
Cunard	"	Gottingen and Agricola,
Agricola	"	Cunard and West
"		Charles and Almon,
Almon	"	Agricola and Windsor,
Windsor	"	Almon and Quinpool Road,
Quinpool Road	"	Windsor and Oxford,
Oxford	"	Quinpool Road and Coburg Road.

Permission was granted to double track Inglis Street and to complete the double track on Campbell Road from the railway bridge to Roome Street.

Electric Work.

The usual tests were made for electrolysis.

The Maritime Telegraph & Telephone Company, Ltd., were given permission to lay underground on Inglis Street and Gerrish Street, for which they agreed

(a) To accede to legislation increasing the license fee from $600 to $1000.

(b) To do any necessary trimming of trees under the supervision of Superintendent Power,

(c) To lay an extra duct for the City's use at any time any of their trenches are open, the City to pay the cost of the duct and laying.

A new contract for street lighting was made with the Halifax Electric Tramway Company, incandescent lights to be at the same rate as before; arc lights to be $62.50 per annum for all night and every night, term of contract three years from January 1, 1913.

The Halifax Development Company signed an agreement with the City under which they were to receive a permit to place wires upon the poles of the Halifax Electric Tramway Company. The Company agrees to pay the City four per cent on its gross income from the sale in the City of electric energy.

Public Baths.

The beach bath was opened on June 28th, 1912 and closed on September 16th. The number of bathers was: male 1934, female 278, total 2212. The expenditure was $418.52, receipts $53.20.

Buildings.

1908–09	Total number of permits.....	608	Total value.....		$952.410
1909–10	"	557	"		538,280
1910–11	"	475	"		397,038
1911–12	"	441	"		526,000
1912–13	"	411	"		615,424

	New Buildings		Additions, Alterations, etc.		
Month	No.	Value	Month	No.	Value
May.....	14	$ 41,900	May.....	34	$ 48,305
June.....	16	33,135	June.....	31	9,120
July.....	13	130,450	July.....	29	12,544
August.....	5	5,675	August.....	40	50,328
September.....	6	35,250	September.....	48	25,320
October.....	6	29,000	October.....	28	7,645
November.....	6	10,850	November.....	25	35,630
December.....	11	32,900	December.....	11	5,400
1913					
January.....	5	9,400	January.....	10	5,205
February.....	2	5,000	February.....	8	2,390
March.....	11	18,699	March.....	18	3,980
April.....	23	54,925	April.....	11	2,373

Violations of the Law Reported to the City Solicitor During 1912-13.

Date	Owner	Location	Violation
June 19, 1912	Waegwoltic Club	Coburg Road	Addition being made to bathing house without a permit, also encroachment.
July 12, 1912	G.A.Moulton....	Norwood St....	Erecting bldg. without permit.
July 15, 1912	H.D.McKenzie & Co.....	Kempt Road...	Erecting bldg. without permit.
Aug. 19, 1912	Eliza Webber....	Proctor St.....	Erecting bldg. without permit. Wooden bldg. in brick district
Jan. 16, 1913	G.A.Wootten....	Robie St.....	Alteration which encroaches.
		Brunswick St.	Repairing bldg. without permit.

Expenditure.

The report of the Clerk of Works shows the totals:—

Water Maintenance	$ 97,422.16
Water Construction	63,520.89
Sewer Construction	53,828.12
Sewer Maintenance	468.52
Streets	33,409.85
Sidewalks	41,595.30
Internal Health, Street Cleaning, Scavenging, etc	19,019.74
Patrol Cleaning Paved Streets	5,500.00
Street Lighting	24,492.52
City Hall Lighting	870.05
Teams and Stables	7,797.87
City Property	2,598.08
Fire Insurance	606.48
Fuel, City Hall	1,152.05
Baths	418.52
Telephones	338.25
Electric Wiring Inspection	457.01
Workshops	5,005.98
Private Work	1,024.01
Market	433.94
Charles Street Extension	14,391.57
Cunard Street Widening	29,451.93
Fleming Park	739.25
City Prison Improvements	3,615.47
Incinerator	44,669.84
	$452,827.40
Increase in expenditure over 1911	107,820.59
Total labor payroll	138,021.98
Increase	15,632.42

The usual statements and reports are appended.

Respectfully submitted,

F. W. W. DOANE, *City Engineer.*

REPORT FOREMAN OF WATER DEPARTMENT.

Halifax, N. S., May 1st, 1913.

F. W. W. Doane, Esq., City Engineer.

Dear Sir:—I beg to submit for your information the annual report of Stock belonging to the Water Department, mains laid, renewed or cleaned; also service pipes added with location of new buildings supplied with water during the year 1912.

Respectfully submitted,

E. MORRISON,

Foreman Water Department.

New Mains Laid in 1912.

STREET	FROM	TO	High or Low service	Cast Iron Main Pipe						Cost per foot in cents.						TOTAL COST
				4 in. Pipe—feet	6 in. Pipe—feet	JOINTS	VALVES	Percentage of Rock	Pipes and Specials	Valves and Hydrants	Labor and Cartage	Lead and Gasket	Dynamite and Fuse	TOTAL		
South Clifton	End of pipe	48 feet north	H	....	48	T&B	...	....	60	....	62.9	....	....	122.9		$58.99
North Clifton	S. of St. Alban	Centre of St. Alban	H	....	27	"	1	10	60	74	189.4	3.4	5.1	896.1		249.52
St. Alban	Clifton	74 feet east	H	....	74	"	1	10	66.3	23	124.0	2.4	2.2	1602.4		
Longard Rd.	Main pipe	Incinerator	H	244	....	"	1	....	44.5	6.0	13.9	1.8	....	67.3		164.21
Maynard	End of pipe	To connect between Black and North	H	....	135	"	...	5	61.3	....	80.7	3.3	1.6	146.9		198.33
Norwood	Connaught Ave	216 feet east	L	....	216	"	1	100	60	9.3	140.4	2.1	7.4	219.2		473.40
Preston	Jubilee Road	168 feet south	H	....	168	"	...	100	60	....	166.8	1.3	6.6	238.6		400.88
Totals				244	668		4									

PIPES AS SPRINKLERS FOR EXTINGUISHING FIRES.

NAME	PREMISES	Size of Pipe	Length of Pipe	Cost.
Robt. Taylor Co., Ltd....	Brunswick Shoe Factory	6	18	$78 67
H. R. Silver.....	Up. Water St. Stores....	6	34	138 95
Wm.Stairs Son & Morrow	L. Water St. Stores.....	6	26	95 27
John Tobin & Co.....	Up. Water St. Stores....	6	26	110 00
Brandram-Henderson.....	Kempt Rd. Paint works	4	160	245 09

STREET MAINS REPLACED WITH LARGER MAINS, 1912.

LOCATION			Size in inches		Length in feet	Cost.
Street	From	To	Old	New		
Dresden Row.	End of 4". . .	Connect to 6" op. Artillery Pl.	3	4	72	$ 153 98
Hollis.....	Morris.....	N. side Salter...	4	12	1157	2663 24
Robie.....	Willow Tree	S. side May.....	12 & 6	15	3552	11775 49

TOTAL LENGTH (in feet) OF CAST IRON WATER MAINS IN THE WATER SUPPLY SYSTEM OF THE CITY OF HALIFAX.

	Size of pipe in inches.											Total length in feet.
	27	24	20	15	12	9	8	6	4	3	Less than 3	
Length Dec. 31, 1911	14560	20524	6732	44236	43668	50086	663	159187	35120	29620	898	405294
Laid during 1912.....	.....	.....	.....	3552	1157	.....	.....	772	476	.....	.....	5957
Taken up during 1912	.....	.....	.....	.....	1590	.....	.....	1962	1157	72	.....	4781
Hydrant pipes.....	.....	.....	.....	.....	.....	.....	.....	32	.....	.....	.....	32
Total Dec. 31, 1912	14560	20524	6732	47788	43235	50086	663	158029	34439	29548	898	406502

Equal to 76 5222-5280 miles.

N. B.—Pipe from main to hydrant (except on wharves) laid previous to 1897 not included in above summary.

PIPES CLEANED BY MECHANICAL SCRAPERS.

Date	Location	Diam. of pipe in inches	Length cleaned in feet	Cost	Remarks.
Oct. 22..	High Service.....	20″	6712	$28.01	Recleaned
Oct. 22....	High Service.....	15″	29628		

LENGTH OF SERVICE PIPES LAID DURING 1912.

Size	½″ feet	¾″ feet	1″ feet	1¼″ feet	3″ feet	Total length in feet
New.....	3329	10	36	28	72	3475
Renewed.....	3694	.....	.....	.....	.....	3694

CHANGING POSITION OF FIRE HYDRANTS.

Street	Location	Design	Service	Size of pipe in inches	Length of pipe in feet	No. of nozzles	Distance valve from hydrant	Cost
Cunard..	Cor. Creighton.....	City.	L	6	10′0″	3	7′7″	$56 52
Cunard..	Gottingen.....	City.	L	6	12′0″	3	10′0″	99 70
Preston..	Jubilee Road..	City.	H	6	10′0″	3	5′3″	80 12

SUMMARY OF HYDRANTS.

Number on Streets, December 31st, 1911	414
" Wharves, December 31st, 1911	20
" Military and Naval Property	20
" Private Property	13
Number in service December 31st, 1912	467

NEW MAIN VALVES SET DURING 1912.

Street	Location	Size	Service
Clifton	S. side St. Alban, S. E. Cor. 27'2" N. of Cor. 1'6"	6"	High
Longard Rd.	From Incinerator to W. side St. 22'10" s. of Parker's Mill 5'2"	4"	High
Norwood	E. side Connaught Ave. S. E. Cor. 2'4"	6"	Low
St. Alban	E. side Clifton S. E. Cor. 30'2"	6"	High
Willow	E. side Robie S. E. Cor. house 41'11"	6"	High
Robie	S. side North S. W. Cor. house 39'7"	15"	High

VALVES REPLACED.

Street	Location	Size		Service
		Old	New	
Hollis	N. side Morris N. E. Cor. 20'7"	4"	12"	Low
Hollis	N. side BishopN. E. Cor. 19'0"	4"	12"	Low
Hollis	S. side Salter S. E. Cor. to house 26'3"	4"	12"	Low
Hollis	N. side Salter N. E. Cor. 19'10"	6"	12"	Low
Robie	S. side Quinpool Road	6"	15"	High
	Line of west side looking south 21'4" South of south line of Quinpool Rd. 15'10"			
Robie	N. side Quinpool Road	12"	15"	High
	North from S. side Quinpool Rd. 38'0"			
Robie	S. side Cunard S. W. Cor. 21'0"	12"	15"	High
Robie	N. side West to Wall No. 508—34'7"	6"	15"	High
	South of N. Cor. of house 4'2"			
Robie	N. side North N. W. Cor. house 36'10"	6"	15"	High

VALVES REMOVED.

Street	Location	Size	Service
Robie	North side Willow	6"	High
Robie	South side Willow	6"	High
Hollis	South side Bishop	4"	Low

VALVES SET ON HYDRANTS.

Street	Location	Distance from valve to hydrant	Size	Service
Cunard.....	Cor. Creighton.....	7'7"	6"	Low
Cunard.....	Gottingen.....	10'0"	6"	Low
Preston.....	Jubilee Road.....	5'3"	6"	High

TOTAL NUMBER OF VALVES.

	27"	24"	20"	15"	12"	9"	6"	4"	3"	1½"	1¼"	1"	¾"	Hydrant Valves 6"	Hydrant Valves 4"	Total
In service Dec. 31, 1911	1	8	2	29	71	82	391	109	103	2	9	2	11	155	1	976
Added in 1912.....	..	..	..	6	4	..	4	1	...	..	..	..	..	3	....	18
Removed.....	..	..	..	..	2	..	6	4	...	..	..	..	..	....	....	12
In service Dec. 31, 1912	1	8	2	35	73	82	389	106	130	2	9	2	11	158	1	982

PIPE STOCK ON HAND DECEMBER 31st, 1913.

Description		Number of pieces	Diameter	Weight of one in pounds	Total weight	Cost per pound	Total Cost
Three-way branch 15"x12"x6"	....	1	15	580	580	2¼	$ 13 30
Reducing to 12"	....	2	15	490	980	"	22 05
" 9"	....	2	15	469	938	"	21 11
" 6"	....	1	15	415	415	"	9 34
Split thinbles	....	4	15	260	1040	2½	26 00
Saddles 15"x6"	....	3	15	57	201	2¼	5 02
" 15"x3"	....	4	15	55	220	"	4 95
Four-way branches 12"x12"	....	7	12	615	4205	"	94 61
" 12"x 9"	....	4	12	500	2000	"	45 00
" 12"x 6"	....	4	12	475	1900	"	42 75
Three-way branches 12"x12"	....	12	12	524	6288	"	141 48
" 12"x 9"	....	1	12	494	494	"	11 11
" 12"x 9"x6"	....	4	12	500	2000	"	4 50
" 12"x 6"	....	8	12	469	3752	"	84 42
Reducing 12"x9"	....	7	12	240	1680	"	37 80
" 12"x6"	....	8	12	200	1600	"	36 00
Four-way branch 12"x3"	....	1	12	440	440	"	9 92
Thimbles	....	22	12	160	3520	"	79 22
Split thimbles	....	12	12	222	2664	2½	66 60
Saddles 12"x6"	....	4	12	100	400	2¼	9 00
" 12"x4"	....	2	12	90	180	"	4 05
" 12"x2"	....	1	12	43	43	"	97
Six-way branches 9"x9"x9"x3"	....	2	9	450	900	"	20 25
Three-way branches 9"x9"	....	2	9	355	710	"	15 97
" 9"x6"	....	7	9	335	2345	"	52 76
Reducing to 9"x6"	....	4	9	157	628	"	14 13
Thimbles	....	14	9	112	1568	"	35 28
Split thimbles	....	12	9	139	1668	2½	41 70
Saddle 9"x3"	....	1	9	50	50	2¼	1 13
Caps	....	3	9	34	102	"	2 29
Four-way branches 9"x6"	....	1	9	400	400	"	9 00
" 6"x6"	....	6	6	255	1550	"	34 42
Three-way branches 6"x6"	....	13	6	209	2717	"	61 13
" 6"x4"	....	5	6	300	1000	"	22 50
" 6"x3"	....	4	6	131	524	"	11 79
Reducing to 4"	....	6	6	114	684	"	15 39
" 3"	....	1	6	110	110	"	2 47
Offsets	....	3	6	140	420	"	9 45
Bends	....	6	6	140	840	"	20 90
Y's	....	3	6	209	627	"	14 11
Split thimbles	....	17	6	92	1114	2½	27 85
Caps	....	27	6	19	538	2¼	12 11
Caps for main stopcocks	....	32	5	16	512	"	11 52
Four-way branches	....	21	4	123	2583	"	58 12

PIPE STOCK ON HAND DECEMBER 31st, 1913 (*Continued*).

Description	Length of each in feet	Number of pieces	Diameter	Weight of one in pounds	Total weight	Cost per pound	Total cost
Three-way branches	....	4	4	114	456	"	10 66
Y's	....	6	4	96	576	"	12 96
Reducing to 3"	....	1	4	84	84	"	1 89
Offsets	....	3	4	66	198	"	4 45
Bend	....	1	4	88	88	"	1 98
Thimbles	....	30	4	29	870	"	19 57
Split thimbles	....	7	4	64	448	21	11 20
Crosses	....	7	3	90	530	22	14 35
Three-way branches	....	3	3	60	180	"	4 05
Thimbles	....	6	3	29	234	"	5 26
Split thimbles	....	28	3	48	1344	$2\frac{1}{2}$	33 60
Cast iron pipe T&B Class A	12	2	27	2870	5740	$1\frac{3}{4}$	100 44
" " B	12	3	27	3206	9678	"	168 10
" " C	12	1	27	3658	3658	"	64 01
" T&B	12	6	24	2360	14160	"	247 80
" "	12	4	20	1263	5052	$2\frac{1}{4}$	113 67
" Plain	9	4	15	1200	4800	"	108 00
" T&B	12	510	12	968	493680	"	11107 80
" Plain old	9	161	12	680	109480	$1\frac{3}{4}$	1914 90
" "	9	14	10	550	7700	"	13 75
" T&B	12	206	9	680	14080	"	2201 40
" Plain old	9	69	6	500	34500	"	603 75
" "	9	2	8	386	772	"	13 51
" T&B	12	699	6	378	264222	$2\frac{1}{4}$	5944 99
" Been in use	12	17	6	378	6426	"	114 58
" "	12	165	6	378	62370	$1\frac{1}{2}$	935 55
" Plain, been in use	9	54	6	280	15120	"	226 80
" "	9	17	5	222	3744	$2\frac{1}{4}$	84 24
" T&B	12	22	4	202	4444	"	99 99
" Plain	12	5	4	202	1010	"	22 72
" T&B	9	662	4	156	103272	"	2323 62
" T&B old	9	63	4	156	9828	$1\frac{1}{2}$	147 42
Thimbles for service pipes	17	17	....	2	34	$2\frac{1}{4}$	76
Standpipes for service pipes	....	76	....	26	1976	"	44 46
Plates for service pipes	....	53	....	12	636	"	14 31
Round caps for service pipes	....	26	....	6	156	"	3 51
Sleeves and caps for service pipes	....	230	....	22	5060	"	113 85
Plates for main stopcocks	....	30	....	54	1620	"	36 45
4" Sleeves for main stopcocks	....	30	....	34	1020	"	22 95
Thimbles	....	11	27	624	6864	"	154 34
Bell Mouth	....	2	27	831	1662	"	37 39
Bevel Collars	....	13	27	795	10335	"	270 05
Plain specials Class A	....	1	27	404	404	$1\frac{3}{4}$	7 05
" " B	....	1	27	460	460	"	8 05
" 3' long Class B	....	1	27	700	700	"	12 25

PIPE STOCK ON HAND DECEMBER 31st, 1913 *Bontinued*().

Description	Length of each in feet	Number of pieces	Diameter	Weight of one in pounds	Total weight	Cost per pound	Total cost
Plain specials 4′ long ClasB	....	1	27	920	920	”	16 10
” 5′ Class B	....	1	27	1248	1248	”	21 84
” 6′ ” B	....	2	27	1360	2720	”	47 20
” 3′ ” C	....	2	27	820	1640	”	28 70
” 4′ ” C	....	1	27	1068	1068	”	18 69
” 5′ ” C	....	1	27	1332	1332	”	23 31
Saddles 27″x6″	....	2	27	70	140	3	4 20
Bevel Collar	....	1	24	688	688	2¼	15 48
Thimbles	....	8	24	396	3168	”	71 28
Saddles 24″x9″	....	1	24	125	125	3	3 75
Saddles 24″x6″	....	2	24	70	140	3	4 20
Split thimbles	....	6	24	620	3720	2½	93 00
Cap	....	1	24	290	290	2¼	6 32
Thimbles	....	5	20	230	1150	”	25 88
Split thimble	....	1	20	453	453	2½	11 32
Four-way branch 20″x12″	....	1	20	1176	1176	2¼	25 88
” 20″x6″	....	3	20	1021	3063	”	71 01
Three-way branch 20″x20″	....	1	20	1766	1766	”	39 73
” 20″x6″	....	3	20	1021	3063	”	68 92
Reducing to 15″	....	1	20	672	672	”	6 01
Four-way branches 15″x15″	....	3	15	987	2961	”	66 62
Three-way branch 15″x15″	....	5	15	786	3930	”	88 42
” 15″x 6″	....	52	15	620	32242	”	805 00
Y's	....	2	15	1112	2224	”	50 04
Thimbles	....	20	15	234	4680	”	105 30

FIRE HYDRANTS AND FITTINGS.

No.	Description	Weight of one in lbs.	Total weight in lbs.	Cost per lb. in cents	Total Value
2	Domestic hydrants	.....	.....	.....	$ 22 00
5	Frost jacket fire hydrants	.....	.....	.....	332 50
2	" Symonds make	.....	.....	.....	110 00
5	Manhole fire hydrants	.....	.....	.....	200 00
8	Spare jackets	340	2720	3	81 60
10	" bases	179	1790	3	53 70
7	Extension pieces for fire plugs	124	868	3	26 04
14	Cast iron caps for suction hose	8	113	3	3 36
24	2½" caps for fire plugs	5	120	3	3 60
1	set of brass fittings for fire plugs	.....	.....	.....	12 00
1	Base for fire hydrant 6"x3"	150	150	3	4 50
	Tin tubing	140	140	33	36 20
					885 50

JOINT STAVES.

For 6" pipe	For 9" pipe	For 12" pipe	For 15" pipe	For 20" pipe	For 24" pipe	Key wedges	Cost in cents	Total Cost
5000	500	2000	3200	600	3000	.....	1¼	$178 75
.....	.....	.....	.....	.....	.....	2000	¼	5 00
								$183 75

VALVES.

No.	Diameter in inches.	Description	Weight of one in lbs.	Weight of whole	Value of each	Total Value
2	20	Stopcocks	.....	.....	.....	.....
18	15	"	.....	.....	$70 00	$1260 00
18	12	"	.....	.....	53 00	954 00
10	9	"	.....	.....	25 75	257 50
64	6	"	.....	.....	20 00	1280 00
16	4	"	.....	.....	15 00	240 00
2	3	"	.....	.....	12 00	24 00
1	1¼	"	.....	.....	3 00	3 00
18	1	"	.....	.....	2 50	45 00
47	¾	"	.....	.....	2 00	94 00
24	½	"	.....	.....	1 50	36 00
92	½	Curb stopcocks	.....	.....	1 50	138 00
1	15	Gun Metal spindles	28	28	16 80	16 80
1	12	"	19	19	11 40	11 40
1	9	"	14	14	8 40	8 40
11	6	"	9	99	5 40	59 40
1	4	"	6	6	3 60	3 60
1	3	"	4	4	2 40	2 40
1	12	Regulating valve	.....	.....	.....	206 66
1	6	"	.....	.....	.....	103 33

MISCELLANEOUS.

Number	Description	Value of each	Total Value
1	Electric motor	.....	$ 203 00
1	Pipe tapping machine	.....	127 60
1	"	.....	100 00
1	5 H. P. steam engine and pump	.....	625 00
3	Derrick winches	$7 00	21 00
2	Hand winches	8 00	16 00
2	Platform scales	25 00	50 00
1	Boring machine	.....	80 00
1	2" to 6" Pipe cutting machine	.....	22 10
4	Lathes	.....	250 00
5	Pressure gauges	10 00	50 00
	Tape packing for meters	.....	50 00
	Blacksmith's tools	.....	150 00
			$1744 70

RECAPITULATION.

Description	Pieces	Pounds	Value.
Pipes	3258	1184396	$26829 03
Specials	545	149603	3616 55
Valves	.....	.....	4740 49
Joint staves	16300	.....	183 75
Meters	.....	.....	.....
Miscellaneous	.....	.....	1744 70
Fire Hydrants and fittings	.....	.....	885 50
			$38040 02

RENTED DOMESTIC HYDRANTS.

Street	Location
Duffus	S. E. Cor. Gottingen
Duncan	N. E. Cor. Harvey
Oak	S. E. Cor. Beech
Preston	S. W. Cor. Jubilee Road
Sullivan	Opp. Oland's Brewery
Tower Road	S. W. Cor. Fays Lane.

FREE PUMPS MAINTAINED BY CITY.

Street	Location
Campbell Road	Africville
Duffus	Opp. Grove Church
Lady Hammond Road	West of Longard Road
North Kline	North of Chebucto Road
Quinn	North of Quinpool Road
York	East of Oxford St.

HYDRAULIC HOISTS.

Street	Location	Size.
Barrington	G. M. Smith	4 inch
Hollis	Appraiser	3 "
Sackville	Dillon Bros	3 "

HYDRAULIC MOTORS.

Street	Location
Brunswick	Methodist Church.

PUBLIC DRINKING FOUNTAINS.

Street	Location
Bedford Row	Market Square.
North Park	South-west Cor. Cogswell
Public Gardens	Near South Park Street
Public Gardens	Near Spring Garden Road
St. Paul Street	Near Cor. Barrington Street.

ORNAMENTAL FOUNTAINS.

Street	Location
Grand Parade	Opposite George Street
Public Gardens	Victoria Jubilee
Public Gardens	South African Memorial.
Public Gardens	S. E. Corner.

SERVICE PIPES LAID, 1912.

Number	Owner or Agent.	Location of Premises.	No. of Stopcock	Size of Pipe	Purpose for which water is used.
1	Charles Baker	N. side Cedar	7817	1	Dwelling
2	Ralph Ward	N. " York	7818		"
3	Annie Goddard	W. Longard Rd	7819		
4	Jas. Doyle	W. Henry	7820		Barn
5	A. G. Hurley	N. Summit	7821		Dwelling
6	R. G. Hurley	N. ' Summit	7822	"	"
7	Joseph Burbidge	S. " Summit	7823	"	"
8	W. E. Newcomb	S. " Duncan	7824	"	
9	Mrs. McDonald	E. Longard Rd	7825		Dwelling & Shop.
10	D. Bellefountain	N. Mott	7826		Dwelling
11	Moirs Ltd	E. ' Grafton	7827	4	Factory
12	L. Hart Estate	E. " Oxford	7828	1	Dwelling
13	M. S. Coffin	E. " Henry	7829		"
14	Annie B. Godard	W. " Longard Rd	7830	"	"
15	Gray & Flinn	S. " South	7831	"	"
16	Adelaide Simmonds	N. " Roome	7832		
17	T. P. Connors	E. ' Louisburg	7833	"	"
18	T. P. Connors	E. " Louisburg	7834	"	"
19	Barnes Bros	E. " Maynard	7835	"	"
20	Barnes Bros	E. " Maynard	7836	"	"
21	Barnes Bros	E. " Maynard	7837	'	"
22	Geo. Clarke	W. " Clifton	7838	"	"
23	A. B. Crosby	W. " Pleasant	7839	"	"
24	A. M. Gorman	N. " Quinpool Rd	7840	"	"
25	Margt. L. Coffin	E. " Henry	7841	"	"
26	G. A. Cox	S. ' Shirley	7842	"	"
27	J. H. Dawes	W. " Vernon	7843	"	"
28	H. W. Cleverdon	E. " LeMarchant	7844	"	"
29	H. W. Cleverdon	E. " LeMarchant	7845	"	"
30	W. H. Cabot	N. " Chebucto Rd	7846	"	"
31	Jemima Philips	E. " Harvard	7847	"	"
32	F. H. Hayward	S. " Quinpool Rd	7848	"	"
33	Gray & Flinn	E. " Henry	7849	"	"
34	G. A. Cox	S. " Shirley	7850	"	"
35	Jas. C. Smith	S. " Roome (rear)	7851	"	"
36	D. P. McNeil	S. " Pepperell	7852	"	"
37	G. K. Butler	S. " Dutch Vil. Rd.	7853	"	"
38	L. H. Blakeney	S. " Duncan	7854	"	"
39	Mrs. E. Frost	E. " Preston	7855	"	"
40	Mary DeBay	S. " Jubilee Rd	7856	"	"
41	T. G. Dunlap	E. " Maynard	7857	"	"
42	P. Brushett	N. " Willow	7858	"	"

SERVICE PIPES LAID, 1912—(*Continued*).

Number	Owner or Agent	Location of Premises	No. of Stopcock	Size of Pipe	Purpose for which water is used
43	Wm. Phillips	N. " Yukon	7859	"	Hotel
44	Joseph Barr	W. " Argyle	7860	1	Hotel
45	Alden Lavers	S. " Roome	7861	½	Dwelling
46	Wm. Edwards	N. " Chebucto Rd	7862	"	"
47	Wm. McGrath	N. " E. Young	7863	"	"
48	Hadley Marks	S. " E. Young	7864	"	"
49	R. A. Spawton	S. side North St	7865	½	Shop
50	Jos. Burford	S. " Chebucto Rd	7866	"	Dwelling
51	Jas. Burbidge	S. " W. Young	7867	"	"
52	J. R. T. Wallace	N. " South	7868	"	"
53	J. R. T. Wallace	N. " South	7869	"	"
54	G. A. Wootten	W. " Robie	7870	"	"
55	Andy Sullivan	N. " Black	7871	"	"
56	Geo. Gregoire	E. " Brunswick	7872	"	"
57	A. Crease	N. " Coburg Rd	7873	"	"
58	J. R. Redden	N. " Coburg Rd	7874	"	"
59	Frank Gillis	W. " Oxford	7875	"	"
60	Rev. Gerald Murphy	E. " Brunswick	7876	"	"
61	James Baker	N. " Cedar	7877	"	"
62	Robt. M. Taple	W. " Seymour	7878	"	"
63	Geo. Inkpen	S. " Summit	7879	"	"
64	Anthony Mills	E. " Beech	7880	"	"
65	Chas. E. Myers	W. " Clifton	7881	"	"
66	Ernest Eveleigh	W. " Clifton	7882	"	"
67	Dennis Murphy	W. " Pepperell	7883	"	"
68	E. A. Corbin	W. " Quinpool Rd	7884	"	"
69	Mrs. I. Murray	S. " West	7885	"	"
70	Mrs. I. Murray	S. " West	7886	"	"
71	A. McFatridge	E. " Maynard	7887	"	"
72	E. Myra	W. " Union	7888	"	"
73	I. B. Jefferson	N. " Miller	7889	"	"
74	Gray & Flinn	W. " Henry	7890	"	"
75	G. A. Moulton	N. " Norwood	7891	"	"
76	E. R. Dares	E. " Gottingen	7892	"	"
77	S. S. Theakston	E. " LeMarchant	7893	"	"
78	H. H. Blois	N. " Quinpool Rd	7894	"	"
79	B. T. Morrow	W. " Dundonald	7895	"	Stable
80	Albert E. Force	E. " Agricola	7896	½	Dwelling
81	Reuben Ernst	S. " Chebucto Rd	7897	"	"
82	Morris Hilchey	S. " Chebucto Rd	7898	"	"
83	John Nolan	W. " Louisburg	7899	"	Barn
84	James Hutt	N. " Quinpool Rd	7900	"	Dwelling & Shop.

SERVICE PIPES LAID, 1912,—(*Continued*).

Number	Owner or Agent	Location of Premises	No. of Stopcock	Size of Pipe	Purpose for which water is used
85	J. S. Parker	W. " Longard Rd	7901	"	Dwelling
86	D. P. McNeil	S. " Pepperell	7902	"	"
87	Mary Lockhart	S. " Shirley	7903	"	"
88	Mary Lockhart	S. " Shirley	7904	"	"
89	J. S. Colp	S. " Chebucto Rd	7905	"	"
90	School for the Blind	N. " South	7906	"	Workshop
91	J. S. Short	W. " Windsor	7907	"	Dwelling
92	J. W. Harrison	W. " Connaught Ave.	7908	"	"
93	Jos. Ferguson	E. " Lorne Terrace.	7909	"	"
94	Albert Carter	N. " Allen	8910	"	"
95	M. Slaney	S. " W. Young	7911	"	"
96	N. Power	W. " Tower Road	7912	"	"

STATEMENT OF METERS FOR YEAR ENDING APRIL 30th, 1913.

Meters belonging to Department April 30th, 1912		4301
Meters purchased during year		252
Total meters belonging to Department, April 30th, 1913		4553
Distributed as follows:—		
In service	4244	
In store (new)	181	
In store (old)	109	
In repair shop (old Siemans)	19	
Private meters in service	54	
Total meters in service		4298
New meters set during year		163
Meters discontinued		26
Meters changed		124
Cause —Broken disc	24	
Frozen and burst	78	
Leak at body	16	
Cog wheel broken	6	
Meters tested		
Repaired at shop		

Repairs	No.	Labour	Material	Total
Dial broken	7	$ 1 25	.....	$ 1 25
Cast iron bottoms	14	1 46	4 90	6 36
Disc piston	3	1 25	2 55	3 80
Disc spindle	1	30	.....	30
Spindle change gear	12	90	60	1 50
Gear train broken	9	1 69	.....	1 69
Base spindle	7	3 60	60	4 20
Brass cover	2	90	30	1 20
Burst by frost	40	6 00	.....	6 00
Disc piston warped	9	45	.....	45
Hands broken	11	90	.....	90
Totals	115	$18 70	$ 8 95	$27 65

Repaired in service 291

Repairs	No.	Labour	Material	Total
Glass broken	5	$ 60	$ 25	$ 85
Stuffing box leaking	41	3 00	08	3 08
Cou ling leaking	20	1 80	20	2 00
Bottom leaking	78	5 70	27 30	33 00
Defaced	5	60	1 25	1 85
Hands broken	2	30	.....	30
Brass cap broken	3	90	30	1 20
Bolts stripped	28	1 20	2 80	4 00
Disc chamber strained	7	1 80	8 25	10 05
Not registering	102	10 20	.....	10 20
Totals	291	$26 10	$40 43	$66 53

Removed during alterations to premises	11
" on account of vacation of premises	4
" premises destroyed by fire	2
" water off in street	8
" larger meter installed	1

METERS OWNED BY CITY APRIL 30th, 1913.

	Diameter in inches.										Total.
	6″	4″	3″	2″	1½″	1¼″	1″	¾″	⅝″	½″	
Trident	0	0	0	34	17	0	24	132	2772	0	2979
Lambert	0	0	2	12	12	0	0	0	1251	0	1277
Siemans	11	17	42	9	5	10	28	32	0	128	282
Crown	0	0	0	0	0	0	1	2	1	0	4
Buffalo	0	0	0	0	0	0	0	0	2	0	2
Empire	0	0	0	0	0	0	0	0	1	0	1
Keystone	0	0	0	0	0	0	0	0	1	0	1
Hersey	0	0	0	0	0	0	0	0	1	0	1
Worthington	0	0	0	0	0	0	0	1	0	0	1
Nash	0	0	0	0	0	0	0	0	2	0	2
Disc	0	0	0	0	0	0	0	0	1	0	1
Standard	0	0	0	0	0	0	0	0	1	0	1
Niagara	0	0	0	0	0	0	0	0	1	0	1
Total	11	17	44	55	34	10	53	167	4034	128	4553

METERS IN STORE APRIL 30th, 1913.

	Diameter in inches.										Total.
	6″	4″	3″	2″	1½″	1¼″	1″	¾″	⅝″	½″	
Trident	0	0	0	2	3	0	4	32	58	0	99
Lambert	0	0	2	5	11	0	0	0	77	0	95
Siemans	2	3	14	4	1	6	16	5	0	42	93
Miscellaneous	0	0	0	0	0	0	1	1	q	0	3
Total	2	3	16	11	15	6	21	38	136	42	290

CITY METERS IN SERVICE APRIL 30th, 1913.

	Diamteter in inches.										Total.
	6″	4″	3″	2″	1½″	1¼″	1″	¾″	⅝″	½″	
Trident	0	0	0	32	14	0	20	100	2714	0	2880
Lambert	0	0	0	7	1	0	0	0	1174	0	1182
Siemans	9	14	28	5	4	4	12	27	0	67	170
Misccilaneous	0	0	0	0	0	0	1	2	9	0	12
Total	9	14	28	44	19	4	33	129	3897	67	4244

PRIVATE METERS IN SERVICE APRIL 30th, 1913.

	Diameter in inches.										Total.
	6″	4″	3″	2″	1½″	1¼″	1″	¾″	⅝″	½″	
Trident	0	0	0	0	1	0	11	22	8	0	42
Trident Crest	0	0	0	4	0		0	0	0	0	4
Lambert	0	1	5	0	0	0	0	0	0	0	6
Siemans	0	1	0	0	0	0	0	0	0	0	1
Indicator	0	0	0	1	0	0	0	0	0	0	1
Total	0	2	5	5	1	0	11	22	8	0	54

METERS IN REPAIR SHOP APRIL 30th, 1913.

	Diameter in inches.										Total
	6″	4″	3″	2″	1½″	1¼″	1″	¾″	⅝″	½″	
Siemans	0	0	0	0	0	0	0	0	0	19	19
Total	0	0	0	0	0	0	0	0	0	19	19

METERS DISCONTINUED DURING YEAR.

Street	No.	Date	Size	Meter Make	No.	Cause
Hollis	172	May 11, 1912	3/4	Siemans	161322	Alterations to premises.
Robie	364	July 20, 1912	5/8"	Trident	452403	"
Creighton	236	Aug. 9, 1912	"	"	452820	"
Hollis	174	Aug. 19, 1912	3/4	Siemans	161304	"
Barrington	241	Sept 24, 1912	5/8"	Trident	449612	"
Upper Water (Cunards Wharf)	.....	Oct. 18, 1912	"	"	449654	"
Brunswick	127	June 1, 1912	"	"	453606	Premises torn down.
Cunard	17	Jan. 7, 1913	"	"	463109	"
Sackville	75	June 15, 1912	3/4	"	239754	Military Meter installed.
Argyle	220	July 3, 1912	"	"	158276	Larger meter installed.
Buckingham	44	Sept 10, 1912	5/8	"	87660	Pipe not in use.
LeMarchdnt (School)	.....	Oct. 29, 1912	3/4	"	463066	Larger meter installed.
Cunard	19	Nov. 22, 1912	5/8	"	87607	House removed
Cunard	25	Feb. 11, 1913	1/2	Siemans	207760	"
Bedford Row	48	Dec. 16, 1912	5/8	Trident	87671	Vacant
Pleasant	29	Dec. 20, 1912	"	"	455007	"
Cunard	39	Jan. 20, 1913	"	"	463107	"
Albermarle	197	Mar 14, 1913	"	"	449629	"
Longard Rd. (Parkers Mill)	.....	Feb. 5, 1913	1	Siemans	184071	"
Kempt Road (Foundry)	.....	Feb. 5, 1913	3/4	Trident	239770	Pipe not in use
Granville	109	Mar 20, 1913	5/8	"	455000	"
Dockyard	1	Apr. 10, 1913	3/4	"	462995	"
"	1r	"	"	"	463012	"
"	2	"	"	"	462997	"
"	3	"	"	"	462996	"
"	3r	"	"	"	462991	"

DETAILED PRECIPITATION FOR THE YEAR 1912.

CITY OF HALIFAX.

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
1	0.340	0.150	....	0.072	....	0.206	....	0.056	....	0.150	....	0.020
2	....	....	0.040	0.300	....	0.010	....	0.048	....	0.820	0.930	0.710
3	0.100	....	T	0.274	....	0.200	....	0.230	....	0.010	....	0.020
4	0.040	....	T	T	0.090	....	....	....	....	....	....	....
5	0.080	0.140	....	0.050	....	....	....	0.010	....	....	....	0.250
6	0.820	....	....	0.120	....	....	....	0.088	....	....	....	....
7	0.020	....	0.330	0.010	....	0.386	....	T	....	....	T	0.030
8	0.020	0.100	0.314	0.200	....	....	....	....	0.200	....	0.582	0.020
9	1.490	0.400	0.060	T	0.740	0.210	....	....	....	....	....	....
10	0.020	0.050	1.400	....	0.092	0.030	....	0.090	....	0.062	0.050	0.010
11	....	0.020	....	....	0.010	0.160	0.376	0.524	0.350	....	....	0.170
12	0.080	....	T	....	....	0.020	0.150	1.254	0.030	0.100	0.060	....
13	0.640	T	0.318	....	T	0.660	0.074	0.120	....	0.328	....	0.180
14	....	....	0.030	....	0.130	0.046	0.190	....	....	....	0.414	....
15	0.714	....	0.226	0.076	....	....	0.030	0.600	0.020	....	1.506	1.010
16	0.168	0.460	0.660	0.012	0.258	T	....	0.030	1.044	0.050	0.020	0.050
17	0.060	0.580	....	T	1.466	0.380	....	....	....	....	....	0.110
18	0.120	....	....	....	....	0.030	....	....	....	....	0.210	1.630
19	0.660	....	0.024	1.238	....	....	0.440	0.182	0.020	....	....	....
20	0.138	0.100	1.244	0.028	....	....	....	....	0.960	0.232	....	....
21	T	0.080	....	....	0.290	....	....	....	0.020	....	....	....
22	0.020	0.544	....	....	....	....	2.730	0.086	....	....	....	0.320
23	0.380	....	....	0.776	0.022	....	0.410	0.156	....	....	....	0.140
24	0.020	....	0.320	0.010	0.188	....	0.050	0.010	....	0.120	0.010	1.170
25	....	....	0.406	T	0.372	....	0.042	0.070	....	0.030	1.490	....
26	....	....	....	....	....	0.200	T	....	....	1.816	....	1.470
27	....	0.200	0.340	0.570	....	....	0.054	0.158	....	0.040	....	....
28	....	0.020	....	0.130	....	....	T	....	....	0.020	0.500	0.060
29	....	....	0.746	....	....	T	0.028	....	0.038	....	0.120	....
30	....	....	0.224	....	1.560	0.020	0.090	0.012	0.682	....	T	0.460
31	0.060	....	....	....	1.186	....	0.010	....	....	....	....	0.580
Total...	5.990	2.844	6.682	3.866	6.334	2.558	4.674	3.724	3.364	3.768	5.892	8.418

Total for the year—58.114 inches.

DETAILED PRECIPITATION FOR THE YEAR 1912.

CHAIN LAKE.

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
1	.21	.14	....	.06	....	.15	....	.02	....	....	....	....
2	....	....	....	.25	....	....	....	.10	....	.71	1.00	....
3	....	....	....	.25	....	....	....	.03	....	....	....	.73
4	.20	....	....	.50	.07	....	....	.07	.01	....	....	....
5	....	....	....	....	....	....	....	....	....	....	....	.03
6	.75	.18	....	.19	....	....	....	.02	....	....	....	....
7	....	....	.12	....	....	.40	....	.07	....	....	....	....
8	....	....	.18	.35	....	....	....	....	.20	....	.40	....
9	1.55	.38	.04	....	.88	.24	....	....	....	....	.15	.20
10	....	.07	1.25	....	.03	....	....	.04	....	.08	.05	....
11	....	....	....	....	.07	.20	.48	.35	.37	....	....	....
12	....	....	....	....	....	.03	.20	1.69	....	.11	.06	.11
13	.36	....	.35	....	....	.62	.05	.14	....	.19	....	....
14	....	....	....	....	.12	.06	....	....	....	....	.42	....
15	....	....	....	.04	....	....	.15	.69	.09	....	1.11	.20
16	.74	....	.86	....	....	....	....	.03	.90	.03	.05	.95
17	.08	1.50	....	....	1.78	.05	....	....	....	....	....	.07
18	.20	....	.03	....	....	.50	....	....	....	....	.20	.07
19	.03	....	....	1.01	....	....	.38	.20	.03	....	....	1.28
20	.70	....	1.20	.04	....	....	....	....	.89	.28	....	.33
21	....	.20	....	....	.27	....	....	....	.03	....	....	....
22	.08	.54	....	....	....	....	2.44	.04	....	....	....	....
23	.30	....	....	.78	....	....	1.28	....	....	....	....	.25
24	....	....	.34	....	.13	....	....	.11	....	.03	....	....
25	....	....	.09	....	.30	....	.08	.09	....	.17	.92	.90
26	....	....	....	....	....	.19	....	....	....	2.09	.13	....
27	....	.40	.21	.21	....	....	.07	.08	....	.09	....	.83
28	....	.08	....	.50	....	....	....	....	.....	....	....	.60
29	....	....	.50	....	....	....	.03	....	....	....	.90	....
30	....	....	.45	....	1.50	....	.07	....	.94	....	....	.14
31	....	....	....	....	1.48	....	.03	....	....	....	....	1.10
Total...	5.20	3.49	5.62	4.18	6.63	2.44	5.26	3.77	3.46	3.78	5.39	7.79

Total for the year 57.01 inches.

DETAILED PRECIPITATION FOR THE YEAR 1912.

SPRUCE HILL LAKE.

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
1	.30	.09	....	....	....	.17	....	....	....	....	....	.03
2	.02	....	.03	.25	....	.03	....	.14	....	.70	1.03	....
3	.12	....	....	.52	....	....	....	.16	....	.03	....	.65
4	....	....	....	....	.08	....	....	....	.03	....	....	....
5	....	.09	....	....	....	....	....	....	....	....	....	.03
6	1.14	....	....	.16	....	....	....	....	....	....	....	.21
7	....	....	.09	.05	....	.52	....	.08	....	....	....	.03
8	.09	....	.31	.25	....	....	....	....	.24	....	.30	....
9	1.66	.45	.04	....	.97	.21	....	....	....	....	.33	.03
10	....	.06	1.77	....	.08	....	....	.06	....	.10	....	....
11	....	....	.07	....	....	.24	.54	.58	.59	.11	....	....
12	....	....	....	....	....	....	.20	1.25	....	.31	.11	.18
13	.30	....	.15	....	....	.89	....	.30	....	....	....	....
14	....	....	.16	....	.04	.21	.04	....	....	....	.48	.05
15	....	....	....	.05	....	....	.30	.63	.19	....	1.46	.05
16	1.00	.16	.91	....	.04	....	....	.15	.93	.03	.02	.83
17	.04	2.16	....	....	1.65	.20	....	....	....	....	....	.14
18	.12	....	....	....	....	.50	....	....	....	....	.20	.05
19	....	....	....	1.33	....	....	.38	.26	.05	....	....	1.32
20	.71	....	1.39	.06	....	....	....	....	1.33	.29	....	.45
21	....	.21	....	....	.20	....	....	....	.03	....	....	....
22	.03	.45	....	....	....	....	2.69	.16	....	....	....	....
23	.42	....	....	.73	....	....	1.53	....	....	....	....	.22
24	.04	....	.14	....	.15	....	.07	.18	....	.05	.03	....
25	....	....	.50	....	.40	....	.06	.05	....	.12	1.25	.98
26	....	....	....	....	....	.31	.03	....	....	1.39	....	....
27	....	.58	.14	.44	....	....	....	.11	....	.13	....	.79
28	....	.12	....	.23	....	....	....	....	....	....	....	.73
29	....	....	.39	....	....	....	....	....	....	....	1.18	....
30	....	....	.43	....	1.78	....	.11	.03	.90	....	.14	.05
31	....	....	....	....	1.38	....	.03	....	....	....	....	1.14
Total...	5.99	4.37	5.52	4.07	6.77	3.28	5.98	4.14	4.29	3.26	6.53	7.96

Total for the year—62.16 inches.