

ANNUAL REPORT
OF THE
GOVERNOR OF CITY PRISON.

HALIFAX, MAY 2, 1904.

To the Chairman and Members of City Prison Committee:

GENTLEMEN,—I beg to submit herewith the statistical statements relating to City Prison for the year ending 30th of April, 1904, shewing,

1. The numbers and sexes of prisoners and offences.
2. The monthly return of labor, with its estimated value.
3. The estimated value of furniture, clothing, bedding, stock, etc., in the prison.
4. The quantity and estimated value of farm produce raised and consumed.

The monthly statements regularly submitted to the Committee, have enabled the Committee to obtain a full knowledge of the working of the institution; and the Committee's regular visitations and enquiries enable me to dispense with the formality of a detailed report.

As in former years, my own and Mrs. Murray's thanks are due to the chairman and members of Committee for courtesies extended.

I have the honor to be, gentlemen,

Respectfully yours

WM. MURRAY,
Governor City Prison.

Table No. 1.

Return of Prisoners and Offences, City Prison, year ending April 30th, 1904.

OFFENCES.	Total:	May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		April.		Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
		Drunkenness	193	10	2	24	6	16	2	11	15	2	8	3	17	4	10	1	7	4	7	2	15	5	17	5	157	36
Larceny	8	1			1								2								4				8		
Profane Language	18		2		5	1							3	3				3		1						8	10
Assault	19	3		5		3					2		3					1			1		1		19		
Disorderly House	5										1		1	2					1						2	3	
Violation License Act	1													1											1		
Lewd Conduct	7				2			1		1														3		7	
Disorderly Conduct	6				1															1		1		3		6	
Vagrancy	4										2								1	1					3	1	
Totals	261	14	4	29	11	24	2	11	16	2	14	3	27	9	10	1	21	6	10	2	21	5	24	5	211	50	

CITY PRISON REPORT.

Table No. 2.

Labor Return of City Prison, year ending 30th April, 1904.

WORK.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	Total.
Stone broken	\$ 17 50	\$ 21 00	\$ 35 00	\$ 21 00	\$ 28 00	\$ 10 85	\$ 17 50	\$ 35 00	\$ 17 50	\$ 7 00	\$105 00	\$105 00	\$ 420 35
Male Prisoners, Farm Labor ...	70 00	50 00	50 00	56 00	40 00	28 00	25 00	6 00	50 00	25 00	15 50	25 00	440 50
Conveying Pris- oners, etc.....	7 35	10 10	7 00	5 60	7 00	5 60	8 75	5 60	4 00	2 10	8 25	10 50	81 85
Earnings in Car- penter's Shop..	30 00	10 00	6 00	4 00	6 00	7 00	12 00	26 00	20 00	3 00	18 00	20 00	161 00
Earnings in Blacksmith's Sp	12 00	12 00	7 00	8 00	11 00	4 00	20 00	20 00	12 00	8 00	22 00	14 00	150 00
Male Prisoners, House Work..	39 00	39 00	50 90	39 00	39 00	40 50	37 50	39 00	39 00	37 50	39 00	39 00	478 40
Female Prisoners' Work.....	31 25	31 50	33 75	39 00	58 50	39 00	62 50	39 00	65 00	37 50	65 00	65 00	367 00
Horse Work on Farm.....	78 00	80 00	78 00	75 00	90 00	54 00	75 00	65 00	12 00	54 00	30 00	30 00	721 00
Totals.....	\$285 10	\$253 60	\$266 65	\$247 60	\$279 50	\$188 95	\$258 25	\$235 60	\$219 50	\$174 10	\$302 75	\$303 50	\$3020 10

Table No. 3.

Estimated Value of Furniture, Clothing, Bedding, etc, in City Prison, year ending 30th April, 1904.

Bedding and Clothing	\$1023 00
Furniture and Utensils.....	283 00
Contents of Surgery	200 00
Horses (4), Carts, Implements.....	1260 00
Other Implements	69 50
Tools and Stock in Workshop	140 00
Total estimated value	<u>\$2975 50</u>

Table No. 4.

Quantities, and Estimated Value of Farm Produce, raised and consumed at City Prison, year ending 30th April, 1904.

300 bushels Potatoes, at 40c	\$120 00
50 bushels Carrots, at 30c.....	15 00
150 bushels Turnips, at 30c.....	45 00
40 bushels Parsnips, at 30c	12 00
20 tons Hay, at \$12.00	240 00
Cabbage, Beans, Mangolds, etc.....	40 00
Total estimated value	<u>\$472 00</u>

ANNUAL REPORT
OF
CHIEF OF POLICE.

HALIFAX, N. S., May 12th, 1904.

A. B. CROSBY, ESQ., MAYOR, *Chairman Police Commission:*

SIR,—I have the honor to submit my eleventh annual report as Chief of Police for the City of Halifax.

There has been no change in the personnel of the force during the past twelve months, there having been no resignations, deaths, dismissals or additions. The force consists of a Chief, Deputy-Chief, Detective, six Sergeants and thirty-seven men—no more, not as many in fact, as we had twenty-five years ago when the built up and occupied limits of the City were very materially less than they are now and have for some years been. Under these circumstances, it will be seen that it is utterly impossible to give the outlying portions of the City, west, north and south, the police protection which is an absolute necessity and which is very reasonably being demanded by the citizens. Within a short time a formal request for more police in the south-west part has been made by an authorized delegation of reputable gentlemen, and it is hoped that as soon as possible their request will be complied with. A recent event, on which it does not become me to comment, because a criminal trial yet to take place is the outcome of it, emphasizes the necessity for increased patrol, but that cannot be given in any effective degree without lessening the number of men for duty in the centre of the City where, from causes with which the Commission and the citizens are well acquainted, there is ample employment for all the men now at my disposal.

Though in a former report I suggested the temporary employment of extra men at certain seasons, such men to be a reserve from which to fill permanent positions, I am convinced now that the only

way in which the needed protection can be effectually given, and the most satisfactory and economical way in the end, will be to increase the force by two divisions, allowing a division for day duty and a division for night duty, thus affording the now virtually unprotected residents of the north, west and south, the police protection for which they pay and to which they are fully entitled. The cost of such an addition may startle the rigid economists, but like other costs will be found to be in the long run a paying investment, for with a sense of greater security for person and property there will naturally be an increase in the number of houses and occupants. Lots of land for years vacant and only paying nominal taxes will be built on and become a source of greater revenue to the City. Apart from that consideration, the citizens who dwell in the suburbs are entitled to police protection. I trust that the City Council will see its way clear to furnish it to them.

I have taken the liberty to thus express my opinions, believing that the matter should be freely and fully discussed to be fairly understood.

As connected with this phase of police work, I beg to refer to another matter of importance, attention to which is necessary for increased efficiency. There should be police stations north, west and south. I think it unnecessary to enter into any elaborate argument to prove this. Bringing a prisoner, night or day, from one of the extremes to the centre means taking away one, two or even three of the half dozen detailed for duty in the northern or southern half of the City, and, through opportunity for protracted resistance on the part of the prisoner, not only causes scenes which should not be witnessed on our streets, but for the time being leaves a large portion of the City without any police protection whatever. The cost may be again urged here as an objection, but such an objection should not be allowed to stand in the way of absolute necessities. As a taxpayer, I am interested in keeping down the taxes, but not at the expense of the efficiency of the police service and the good name of the City.

The good record of the force as a whole has been maintained during the year. Where there has been remissness on the part of individual members and complaint was made the Commission has dealt with the matter, but in no instance has the offence been considered serious enough to be followed by dismissal, hence there have been no changes.

There has been perhaps more than the usual amount of "absenteeism" from sickness, the six sergeants and thirty-two of the men showing an aggregate of 972 days' absence—the absence being from one day to one hundred and twenty-six days. One, Sergeant (Leehan) met with a painful and serious accident while on duty.

The number of days thus lost by the force, added to very materially by regular vacations (two weeks each) and special leave, increased the difficulty of giving extended patrol service, for at no one time could all the men be said to be available for service. This is an unavoidable contingency, however, and is not referred to in any fault-finding-spirit, for I am proud to say that the record of my officers and men in this respect compares favorably with the records of the police of other cities, as I have satisfied myself from information sought and obtained.

As in former years, the services rendered by Detective Power have been of much importance, and were performed with the success and skill for which he has established a well-deserved reputation. Mainly through his instrumentality the Dorchester Penitentiary has received more than the usual quota from Halifax for terms ranging from two to ten years, and while there has been, as usual, no capital or really serious crime to record, some persons who promised to become noted criminals were cut short in their careers by prompt and intelligent action on the part of the Detective, through whom considerable quantities of stolen property have been restored to their legitimate owners and further depredations prevented. Mr. Power's services have also been obtained by the Government and others for important matters out of the City, and invariably with results satisfactory to those by whom he was employed.

The general good order of the City has been maintained during the year, notwithstanding that we are gradually receiving some very undesirable additions to our population. The pistol and the dagger—common in the every-day history of some cities—have been comparatively unknown in Halifax and it is hoped that it may continue so. Should there be a change, however, and the carrying of weapons become as common in Halifax as elsewhere, offenders may rest assured that no mercy will be shewn by the police, and that no one must look for leniency from judges and magistrates need scarcely be added. The practice must not be allowed to grow. The newcomer must not bring that native custom with him; and if there are any of our own people who think it is the correct thing to go armed,

particularly callow youths just free of their mothers' laps, they will consult their own interests if they leave their revolvers at home, or, better still, with the gunsmiths.

At times during the past year more than the usual attention was given in the City Council, and by some members of the Council, to the matter of violations of the Liquor License Act, more particularly to Sunday selling by licensed dealers. It was a great satisfaction to me to have thus evidenced the opinion of law-abiding people in the community in favor of suppressing the evils of Sunday drunkenness. Since this I have invariably reported to the Council all complaints handed in to me for infractions of the Act on Sunday.

The closing of saloons on that day is something very much to be desired. The working men are as a consequence benefited by the Sunday rest and better enabled to face the labors of the next week, and it is a satisfaction to me to be able to point out to persons coming from abroad that in British possessions our people have a strong regard for Sunday observance and for the enforcement of law and order.

The usual table of offences, sexes, religions, etc., is appended. Compared with last year, it will be seen that the list offences is five less, there being 104 enumerated for that year and 99 for the twelve months now being reported on. For this year absentees from school increased by 14, not that there is likely to have been that many more absentees, but the Truant Officer, an officer of the School Board, made more captures. Common assaults (179) decreased by 34; disturbances on the street were practically the same (134 for previous year, 137 for this); drunk on the street (636) showed a decrease of 8; larceny (141) showed an increase of 12; and violations of the Liquor License Act (58) gave an increase of 26.

As to the ages of offenders, there were small but pleasing decreases in the number between 8 and 12 and 12 and 16, but those between 16 and 20 increased 17, the number being 135, and those between 20 and 25 increased by 6. There is evidently a growing need for juvenile reformation, and it is most devoutly to be wished that the attention now being given by the Provincial Government to juvenile reformatories—a subject to which I have referred in former reports—will be productive of good results.

At this point I may be permitted to refer to the open air enter-

tainments given at night during the past few seasons. The attendance at some of these entertainments—notably the Green Bank concerts—is very largely made up of young persons of both sexes. I might almost say very young persons. Certain it is that many of the girls are too young to be at such places without proper guardians. The Police officers know their powers under the circumstances, but they also know their limitations. Parents and guardians must, by the exercise of their parental authority or by accompanying the children, help the police not only to maintain the order which is necessary on such occasions, but to prevent that which has already brought shame and sorrow on more than one household. As there promises to be at least the same attractions the coming summer as in past seasons, those interested in and responsible for the gathering might make some special effort to aid the limited number of police which can be spared for such occasions in preserving reasonable order and preventing the recurrence of some of the scenes of former occasions.

It is but justice to our citizens to add that, with the exceptions thus generally referred to, the behaviour of the thousands who gather nightly at Green Bank, the Arm, and elsewhere, is all that could be desired and altogether in keeping with the reputation which Halifax has earned of being a model city as regards good order and decorum on occasions when miscellaneous crowds are gathered and when the reverse might reasonably be looked for.

Trusting that the comments I have made on matters affecting the City coming within the purview of the police will not prove unacceptable, and that the force and its management will continue to merit the confidence of the public, I remain,

Your Worship's obedient servant,

JOHN O'SULLIVAN,
Chief of Police.

LIST OF OFFENCES 1903-1904.

Absenting themselves from school	55
Absenting seamen	13
Affray	1
Arson	7
Assault (aggravated)	34
Assault (common)	179
Assault (indecent)	11
Assault (attempted)	1
Assault (with intent to kill)	1
Assaulting police	9
Bigamy	1
Breaking warehouse	5
Buggery	1
Burglary and theft	12
By threat of violence preventing seamen from working on vessel	1
Carnal knowledge of girl under 16 years of age	1
Cattle at large	4
Challenging to fight	5
Coasting on street	2
Committing indecent act	13
Common drunkard	5
Common nuisance	1
Cruelty to animals	10
Damage to property	6
Desertion from Army	3
Discharging firearms on street	2
Discharging firecrackers on street	1
Disobeying lawful command of master of ship	3
Disturbance on or near street	137
Drunk on street	636
Escaping from City Prison	4
False pretences	2
Fighting on street	5
Forgery	6
Having dangerous weapon in possession	3
Having Military decorations in possession	2
House breaking with intent	4
Housebreaking and theft	5
Householder permitting indecent act on premises	1
Inmate disorderly house	4
Inmate bawdy house	3
Keeping bawdy house	2
Keeping disorderly house	3
Keeping gaming house	1
Keeping vicious dog	5
Keeping firecrackers for sale	2
Larceny	141
Larceny (attempted)	2
Larceny from vessels	6
Libel	1

Manslaughter	8
Mischief	34
Neglect to have lights on excavation	1
Neglect of parental control	3
Neglect to provide for family	25
Neglecting to register dog	19
Obstructing street with encumbrances	3
Obstructing street by standing together	14
Obstructing police	8
Peddling without license	2
Permitting horse to stand on street longer than necessary	1
Perjury	3
Pointing firearm	1
Publishing obscene matter	3
Rape	1
Resisting police	15
Riding bicycle on sidewalk	1
Riding bicycle without light	1
Selling firecrackers	1
Shopbreaking and theft	6
Shopkeeper selling on Sunday	1
Smoking cigarettes (minors)	5
Stowaways	1
Suicide (attempted)	1
Taking girl under 16 years out of lawful care of parent or guardian	1
Throwing stones on street	3
Trespassing on I. C. R. property	20
Trespassing on private property	5
Undertaking to tell fortunes	2
Unsound mind	5
Using forged document	1
Using abusive language	24
Using profane language	40
Using obscene language	26
Using threatening language	26
Uttering forged document	2
Uttering forged money orders	3
Vagrancy	19
Violation Compulsory School Act	20
" City Health Rules	9
" Chimney Ordinance	2
" Hack and Truck "	10
" Inland Revenue Act	2
" Liquor License Act	58
" Lord's Day Act	9
" Snow Ordinance	3
Washing windows after hours	2
Wounding	12
Wounding with intent to maim	2
Total	1826

PLACE OF BIRTH.

Halifax	602
Nova Scotia.....	271
New Brunswick.....	33
Prince Edward Island.....	18
Ontario	6
Quebec	7
Newfoundland.....	96
Labrador	5
England	122
Scotland	18
Ireland.....	53
Wales	5
West Indies.....	3
Bermuda.....	1
East Indies.....	1
United States.....	26
Germany.....	2
France.....	6
Russia.....	2
Denmark.....	3
Norway.....	7
Sweden.....	7
Italy.....	7
Spain.....	1
Holland.....	2
Finland.....	1
Austria.....	1
Switzerland.....	4
Poland.....	1
Saxony.....	1
Turkey.....	1
China.....	1
Syria.....	1
Cape de Verde Islands.....	1
St Pierre, Miquelon.....	1
Not given.....	504
Total.....	1826

RELIGION.

Roman Catholic.....	705
Church of England.....	332
Presbyterian.....	86
Methodist.....	82
Baptist.....	79
Lutheran.....	15
Hebrew.....	2

Christian	1
Methodist Episcopal	1
No religion	3
Salvation Army	1
Congregationalist	1
Agnostic	1
Unitarian	1
Not given	516
Total.....	1826

AGE.

Under 8 years	2
Between 8 and 12 years	34
" 12 " 16 "	86
" 16 " 20 "	135
" 20 " 25 "	255
" 25 " 30 "	217
" 30 " 40 "	270
" 40 " 50 "	197
" 50 " 60 "	79
" 60 " 70 "	35
" 70 " 80 "	7
Not given	509
Total.....	1826

SEX.

Month.	Male.	Female.	Total.
May, 1903	147	11	158
June	144	27	171
July	144	27	171
August	139	24	163
September	183	20	203
October	131	27	158
November	149	30	179
December	109	19	128
January, 1904	64	18	82
February	83	12	95
March	135	21	156
April	144	18	162
Total.....	1572	254	1826

COAL WEIGHER'S REPORT.

HALIFAX, N. S., May 11, 1904.

To His Worship the Mayor and City Council:

GENTLEMEN,—I have the honor to submit herewith for your information my Annual Report showing the amount of coal and coke weighed by the City Weighers during the civic year ending the 30th of April, 1904, also the quantity weighed of the different coals:

	Tons.	Lbs.
Sydney Reserve Mine Coal.....	36494	1742
Old Mine Sydney Coal.....	11419	1087
Port Hood Mine Coal.....	4562	1187
Slack from Soft Coal.....	6003	195
Inverness Mine Coal.....	3110	1136
Acadia Mine Coal.....	943	915
New Sydney Mine Coal.....	214	1270
Pictou Mine Coal.....	55	700
Drummond Mine Coal.....	896	1687
United State Anthracite Coal.....	24576	1792
Coke	2298	399

90576 tons 110 @5c.perton \$4528.80

Expenses for year.....	\$ 57.20	
Paid R. Story, Supernumerary.....	181.25	
Paid W. James, Supernumerary.....	26.18	264.63
		<u>\$4264.17</u>

The above amount divided among nine men gives to each the sum of \$473.79 2-3.

Respectfully submitted,

S. CUMMINS,

Supervisor of Weighers.

REPORT OF BOARD OF HEALTH.

HALIFAX, N. S., May 6, 1904.

To the Chairman and other Members of the City Health Board:

GENTLEMEN,—I respectfully submit for your information the following summary of work performed in this department for the Civic year ending April 30th, 1904.

The Board during the past year held seventy-four meetings at which a large number of sanitary improvements were ordered and subsequently carried out.

During the year sixty-nine notices were served for defective plumbing and drainage in houses, and all of which have been attended to as recommended by the Inspector of Plumbing.

Three persons were summoned for violations of the Plumbing Rules and Regulations, and one for neglecting to comply with the Board's order to correct plumbing, and were convicted and fined in all \$42.00 which was paid.

Two Privy Vaults in yards of premises were emptied and disinfected by order of the Board and the cost of same was afterwards collected from one, the other at present being in the hands of His Honor the Recorder for collection.

During the year an Ambulance was constructed by order of the Board at a cost of \$356.00 for the conveyance to Hospital of cases of Infectious and Contagious diseases.

Eleven notices were served during the year for the removal of outside privy vaults and seven were thus removed and proper W. C.'s constructed in the houses, the remainder being given an extension of time to comply with the order. Five privies which were ordered to be removed last year were also removed.

The correspondence for the year consisted of 132 letters received and 769 sent out, of the latter number 625 were notices served ordering sanitary improvements and removal of nuisances.

Complaints respecting the unsanitary condition of 329 premises were received at this office all of which were carefully investigated and dealt with as the circumstances in each case required.

During the year 1329 permits were issued for the removal of night soil and 2178 loads were thus removed.

The total number of cases of contagious diseases reported for the past year was one hundred and seventeen cases of Diphtheria. Thirteen Scarlet Fever and one of Small Pox, with eighteen deaths from Diphtheria.

Forty-four cases were admitted to the Hospital for Infectious Diseases, viz: nineteen for Diphtheria, twelve for Scarlet Fever, ten for Measles, two for Erysipelas and one for Itch, there being one death from Diphtheria and one due to Measles.

The following is a Summary of the work performed by the Inspectors.

A. J. Penny.

From May 1st, 1903 to April 30th, 1904.

Number of house to house inspections made.....	4689
“ complaints investigated.....	147
“ re inspections made.....	473
“ premises found in bad condition and notified....	428
“ houses placarded for Scarlet Fever.....	11
“ houses placarded for Diphtheria.....	104
“ houses disinfected for Scarlet Fever and Diphtheria.....	117
“ houses disinfected for Consumption.....	6
“ calls made to infectious houses.....	185

Samuel S. Parker.

From May 1st 1903 to April 30th, 1904.

Number of house to house inspections made.....	3813
“ complaints investigated	128
“ re inspections made.....	329
“ premises found in bad condition and notified....	276
“ inspections made to meat and grocery stores....	3638
“ “ “ slaughter houses, markets, &c.	757
“ “ “ dairymen’s places.....	218
“ houses placarded for Diphtheria.....	13
“ “ “ Scarlet Fever.....	2

Condemned and had destroyed as unfit for human food :

5 carcasses and 7 quarters of Veal, 9 carcasses of Mutton, 8 of Lamb, 3 of Beef and 1 barrel of Pork.

Number of houses fumigated for Diphtheria and Scarlet Fever,
11.

Respectfully submitted,

JOHN A. WATTERS,

Secretary.

CITY ENGINEER'S REPORT.

CITY WORKS DEPARTMENT.

COMMITTEE ON WORKS, 1903-04.

A. B. CROSBY, MAYOR, *Chairman.*

ALD. M. T. FOSTER,

ALD. JAMES ADAMS.

(Alderman Foster resigned and Alderman D. H. Campbell
was appointed December 10th, 1903).

OFFICERS :

F. W. W. DOANE, M. CAN. SOC. C. E., *City Engineer.*

H. W. JOHNSTON, *Assistant City Engineer.*

WATER WORKS.

EWEN MORRISON.....*Foreman.*

CLAUDE DONOVAN.....*Plumbing Inspector.*

JOHN E. BURNS.....*Water and Meter Inspector.*

STREETS, SEWERS, &c.

JOHN McDONALD.....*Foreman.*

OFFICE.

JAMES J. HOPEWELL.....*Clerk of Works.*

MISS MINNIE HUNTER.....*Stenographer.*

CITY ENGINEER'S OFFICE, CITY HALL,

HALIFAX, N. S., May 2nd, 1904.

To His Worship the Mayor:

SIR,—I have the honor to present the report of the Department of City Works for the Civic year ending April 30th, 1904, my thirteenth annual report:

WATER WORKS.

Amount of funded debt on Water Account.....	\$1,056,600	00
“ transferred from revenue.....	36,000	00
“ of debt redeemed by Sinking Fund.....	8,000	00
“ “ “ Revenue.....	30,000	00
“ “ “ premiums on loans....	4,073	33
	<u>\$1,134,673</u>	<u>33</u>
Amt. expended to April 30th, 1903....	\$1,120,385	46
“ “ May 1st, 1903,		
“ to April 30th, 1904....	\$8,975	92
“ repaid “ 1904....	1,208	36
	<u>7,767</u>	<u>56</u>
“ of total cost to date.....	<u>\$1,128,153</u>	<u>02</u>
	<u>\$6,520</u>	<u>31</u>

COST OF MAINTENANCE, 1903-04.

Interest.....	\$48,042	00
Sinking Fund.....	2,625	00
Maintenance of System.....	24,579	11
	<u>\$75,246</u>	<u>11</u>

The cost of maintenance does not include pipe used and not yet paid for. The increase is caused by the renewal of old three-inch mains. Over a mile and a quarter of these old pipes were replaced with larger mains. The old pipes were not only too small for good

service, but were filled up by corrosion. The pipe taken up in Victoria Road was laid in 1866. The coating was still good, but the incrustation had filled the pipe about half full. After drying it was easily separated from the iron, leaving the pipe smooth, except in a few places where the coating had been broken. The iron was apparently uninjured.

NEW WORK.

There were ten petitions for the extension of main distribution pipes presented to the Council and eight orders passed.

Extensions were made in seven streets two of which, measuring 1240 feet, were in the low service district, the remainder, aggregating 980 feet, are high service. The total length of mains laid during the year was 9476 feet, the total now in use being $69\frac{1}{2}$ miles.

Six thousand eight hundred and seventy-two feet (6872) of old three-inch pipe was renewed with four-inch and 384 feet with six-inch.

Seven new main stop valves and two hydrant valves were placed in service. The total number in use is 788.

Three old hydrants were replaced with improved City design frost jacket hydrants with steamer nozzles.

Two thousand two hundred and thirty-nine (2239) feet of pipe was laid for 68 new services and 891 feet of old service pipe was renewed.

CLEANING MAINS.

The low service 24-inch main was cleaned on November 4th, two years having elapsed since the last cleaning. The high service main was cleaned on May 28th, Sept. 4th and Nov. 5th. At the last cleaning the 15-inch scraper was first inserted as usual and the men then proceeded to Spruce Hill Lake and inserted the 20-inch scraper at the pipe house. The water was turned on and the scraper started but after going about six feet stuck fast.

It could not be started again and the gates were shut down and the water drained from the gate house. It was impossible to pull the scraper back and Mr. Morrison was obliged to crawl into the pipe and take off the rear valve, when the remainder of the scraper

was extracted. The leather valve was new, dry and hard and had not been soaked sufficiently. The pressure was light, as the lake was down 38 inches and there was only about seven feet of water over the pipe. The cleaning of the 20-inch pipe was therefore abandoned, the reducer replaced and the cleaning of the 15-inch pipe completed.

PRECIPITATION.

The total rainfall for the year 1903 was about the average. The record for May, .676 inches, is the lowest yet noted, that part of the year being very dry.

The first snow fall came early, sleighs being on the streets on the evening of November 27th. More snow fell during the first week in December making good sleighing. There was sleighing all through the winter. A snow storm on April 16th, 1904, made sleighing during the afternoon and next morning. A fall of snow during the night of April 20-21 brought the sleighs out again.

At Spruce Hill Lakes the settling pond froze so that a man could walk over it, the first time on record. In February, 1904, part of the wall around the pond was pushed over by the ice. On April 12th, the ice in the lower end of the lake began to break up. It was very thin and weak, but driven by a strong southerly wind, it knocked down more of the wall, the North-West corner and part of the North and West walls having fallen.

Long Lake overflowed in January, March, April, November and December. The surface of the lake on October 15th was 5 feet 10 in. below the waste weir. Spruce Hill Lake reached its highest level for the year, 364.46, on April 9th. On October 10th it was 3 feet 11 in. below waste weir level.

The new Agreement for supplying

WATER FOR THE INTERCOLONIAL RAILWAY

was finally approved and signed and goes into effect at once. The supply is entirely by meter, provision being made for payment for fire protection. It is much more satisfactory to the Water Department than the old one and the remuneration fixed for the service is more equitable.

HIGH SERVICE SUPPLY.

The condition of the high service system was worse than ever during the cold months, in consequence of the extraordinary severity of the winter. The pressure dropped in December with the first cold snap and was never satisfactory again during the cold months.

At the meeting of Council held on February 9th, 1904, the City Engineer was instructed to report a scheme for improving the condition of the high service water supply. Accordingly, a report was made at a meeting held March 10th, repeating former recommendations for reducing and preventing waste, and also that "If, in the opinion of the Council, it is not advisable to adopt this remedy, I would respectfully suggest that the whole question of future supply be thoroughly investigated; that the City Engineer be authorized to examine all possible sources from which additional supply can be obtained to meet the requirements of the City for the next thirty years either for an independent service or addition to the present supply by gravitation, pumping stations, stand pipe or reservoir; that surveys, plans and estimates of cost be prepared for each possible scheme so that the Council may be in a position to weigh one with another and to decide which (if any) it would be advisable to adopt."

A Committee was appointed to confer with the City Engineer, but had not reported at the close of the year.

Assuming for the present that the solution of the problem must be found in an increased supply, where is it to come from? The High Service is the district from which most of the complaints come. Naturally, the first suggestion is to increase the capacity of the supply main. The conditions in Halifax are unlike those existing in any other City on the Continent. While in other cities the capacity of the mains is largely reduced by rust and the joints allow a large leakage, we are constantly cleaning our mains and all joints made during the last thirteen years are turned and bored and cannot leak if properly laid. The mains laid to the part of the district which receives the poorest service are new. The pressure on the supply main is no less and friction loss in the main no greater than it was fifteen years ago.

Mr. Keefer, a Hydraulic Engineer of the highest standing, and Mr. Keating, who also enjoys a well earned reputation as a

Hydraulic Engineer, agreed that the high service main would deliver two million gallons a day at the highest levels in the City, and that the average daily supply from the Spruce Hill Lakes would be only one and a half millions. While in the dry years it would be only one million. Even if the capacity of the main has been reduced 25 per cent. it will deliver the total average supply and if it were reduced 50 per cent. it could exhaust the total available yield of the watershed during a dry year. There can be no increase from that quarter.

There are no other lakes as high as Spruce Hill in the neighborhood. Pock Wock is the nearest lake from which a gravity supply could be obtained. A service from Pock Wock would be expensive and probably would require an increase in the annual expenditure of \$50,000.00.

A distributing reservoir or stand pipe would equalize the pressure and improve the supply during heavy consumption, but it could not be filled by gravity under present conditions in Winter, nor could it be filled by pumping from either service. From the high service is out of the question, and from Long Lake we wasted only 700,000 gallons a day in the dryest year. Much more than that quantity will be required for the low service very soon unless there is some change.

It is evident, therefore, that any increase must come from water sheds outside the existing systems.

It may be possible that an intermediate system could be established so that the high service could be confined to the highest levels and the new system laid to the lower portions of the present high service district. It may be possible to establish such a system by taking Birch Cove Lake and laying a main along a route the greater part of which might be followed by a future line to Pock Wock. Surveys and studies would be required before the feasibility of such a scheme could be determined. The distribution system would have to be altered for the new service and the total cost would necessitate an annual increase in our taxes of probably not less than \$15,000.00 a year.

When we are forced by the Underwriters to provide a fire service equal to the best as given by older and wealthier cities, it will be well before going farther afield to consider the advisability

of obtaining such a service from the harbor. The City could be divided into districts, each supplied by pumping stations operated by gas engines or other motive power, a separate system of pipes being laid. In the higher levels the use of the salt water would relieve the system during the months when the street sprinklers are on their rounds. A station at the City Wharf with (if necessary) a stand pipe on the Citadel could cover almost the whole business district.

In the opinion of your Engineer, the City should not be forced at present to make such a heavy expenditure as the adoption of any suggested scheme for new supply would render necessary. The existing sources of supply are ample for the legitimate needs of the City for years if properly husbanded.

It is generally admitted that a large proportion of the water supplied, amounting to perhaps one-half of the entire quantity, is unnecessarily used or wasted; that there is a maximum consumption in the cold months of winter and a corresponding but smaller maximum in the hot dry months of summer; that the unnecessary use and waste are largely preventable and can be greatly reduced by proper effort.

The total consumption in Halifax can be estimated only. In 1899-1900 your Engineer asked for Venturi Meters to place on the main supply pipes for ascertaining the exact daily consumption in order to enable him to deal intelligently with the water supply problem. The request was not complied with on account of the cost.

There are two causes for loss and unnecessary use of water.

In an old system a large amount of water is lost by leaks from broken main and service pipes and by the existence of defective joints. The pipes being underground the defects sometimes remain for some time undiscovered the water flowing into drains. In the high service owing to the turned and bored joints and the absence of old drains it is probable that the leakage from the mains is comparatively small. There is no doubt, however, that a percentage of the waste is caused by small leaks. Underground leaks in the streets can be best located by placing meters on the street mains in such a manner that blocks or districts can be isolated from the remainder of the pipe system. The type of meter used for buildings

is not well adapted to this service but either the Venturi meter previously mentioned or the Deacon waste-water meter can be used to good advantage. Both of these meters record the rate at which water is drawn through them, and by closing valves on the pipes, the leaks, both in mains and service pipes, can be located within narrow limits.

The Deacon meter gives a continuous record of the rate of flow the Venturi meter records the rate of flow at intervals of ten minutes.

By the most thorough inspection it is not practicable to prevent all underground waste of water, and the best results can only be obtained by well trained conscientious employees. This condition of affairs is more or less difficult of attainment, but it is perfectly feasible to reduce the underground waste to from 10 to 15 gallons per capita.

There is a larger loss of water supplied on the premises of the individual water taker. A great part of this loss is due to defective pipes or plumbing fixtures. Where the amount paid for water is not fixed by meter the average water taker pays little attention to the condition of the plumbing on his premises, and so long as the leaking fixtures cause no damage to his property, they are seldom repaired unless discovered by the Inspector.

The greatest source of negligent waste from defective fixtures is the ball cock which controls the flow of water into tanks supplying water closets and other fixtures. The ball cock seldom remains tight more than a few months, and when defective allows a constant stream of water, often of considerable size, to flow unseen, though not always unheard to the sewer. Unless the inspection is very thoroughly performed, the greatest source of this kind of waste is apt to be overlooked as the tank is generally placed where it is difficult of access.

During the winter large quantities of water are allowed to run especially in houses of the cheaper class to prevent freezing of the pipes, and throughout the year faucets and water closet fixtures are left or fastened open for the purpose of flushing water closets and drain pipes or to keep the water cool. In Cities where meters are in general use, waste of this character does not occur to any great extent, as each property owner is pecuniarily interested so to arrange the plumbing in his buildings that it does not become necessary to allow water to run in order to prevent it from freezing.

Few people realize that more water will leak through an orifice the size of an ordinary pin under good average pressure in twenty-four hours than would be used by a fairly economical family. It is the continual running of hundreds of little streams which causes the greater part of the waste on the premises of the water takers, and by far the larger part of such waste is preventable.

The great unnecessary consumption of water is not only causing larger annual expenditures for maintenance and operation, but is hastening the time when great expenditure must be incurred for new sources of supply. If on the other hand, unnecessary consumption is preventable, as is believed to be possible, additional construction may be deferred for years.

No system of house to house inspection can be effective unless it is continuous, frequent and thorough and backed up by severe penalties. A daily inspection of each house will not accomplish the desired result and such inspection would be a most expensive remedy. House to house inspection is also open to the objection that the constant visits of inspectors are annoying to the house-holders.

“ Mr. Dexter Brackett, Engineer of the Distribution Department of the Metropolitan Water Board, Boston, one of the highest authorities on such matters, says in his latest report :—

“ The most certain means of detecting waste and the most effectual means of preventing the extravagant use and waste of water is that of measuring the water supplied to each municipality, district or individual water taker, and obliging each municipality and individual to pay for water in proportion to the quantity used. Where meters are in use, each water taker finds it to be for his interest to see that the plumbing fixtures which he uses are of the best quality, and that they are kept in repair, that the pipes in his buildings are so located that they will not freeze in cold weather ; and that his family or employees are not wasteful in the use of water. The introduction of meters upon all old works has always been followed by a reduction in the quantity of water used ; and in cities and towns where they have been introduced when the works were built, the per capita consumption is universally very low.”

“ The fear has been sometimes expressed by those who have not given the subject careful study, that the use of water meters will have the effect of reducing the use of water by the poorer class of

takers below an amount necessary for health. The experience in the cities and towns using meters does not indicate that there need be any fear of such a result."

The medicine may not be pleasant to take in some cases, but there is no doubt that it is the cheapest and most effective and most lasting cure that the City can obtain for the disease from which it is suffering.

SEWERS.

Three sewers were constructed during the year. That on Young Street between Gottingen Street and Kempt Road being the most expensive. It was laid through an undrained swamp, and the water caused a great deal of trouble. The caving of the material also added to the expense.

The length of sewers constructed under the act from 1890 to 1905 inclusive is 112,090.06 feet.

Cost.....	\$503,171 13
Amount assessed on property owners.....	232,431 32
	<hr/>
Balance paid by City.....	\$270,739 81

Seventeen concrete catchpits were constructed making a total of 744.

At the meeting of Council held on October 26th, a resolution was passed adopting a recommendation for the construction of a system of relief sewers in connection with the main trunk sewer across the Common. The resolution also provided for the preparation of an act to secure an appropriation but nothing further was accomplished.

The sewer appropriation is about exhausted, but petitions for new sewers are still coming in and some provision must be made for continuing the work.

HOUSE DRAINS AND PLUMBING.

One hundred and eleven permits were issued for laying, cleaning or repairing drains.

The Plumbing Inspector reports approval of 318 applications

for permission to do plumbing work and 284 certificates recommended for work properly performed.

The Inspector again complains of the delay in filing applications and neglect to give notice of finished work. It will be necessary to deal more harshly with the delinquents unless there is a change for the better in the near future.

Mr. Claude Donovan resigned the office of Plumbing Inspector at the end of the year. He was appointed when the Plumbing Department was organized in 1892, and deserved the greater share of the credit for the success that has attended the efforts of the City Health Board to give to the citizens of Halifax the benefits of modern sanitary plumbing. He had a thorough knowledge of the duties of his office and the theory and practice of plumbing. In his resignation the City loses an official whose knowledge, experience and ability it is difficult to duplicate.

The applicants for the position were examined by the Board of Plumbing Examiners and Mr. D. P. O'Neill having shown the greatest proficiency was recommended and appointed to the vacancy.

The sprinkling carts were painted inside as usual. The old sprinklers on two carts were replaced by Studebaker sprinklers. A new wooden tank one horse cart for the Islesville house was made in the shops, the cost without the sprinkler being \$245 80

Iron and Wood.....	70 00
Sprinkler (Studebaker).....	75 00
Valve.....	11 00
Wheels.....	35 00
Springs.....	15 00
Labor.....	106 00
Painting.....	8 80

\$320 80

The quantity of ashes and garbage removed continues to increase and at times overtaxes our equipment. The number of loads (large two-horse teams) removed in December and June 1903 were:—

	DECEMBER.	JUNE.	DECEMBER.	JUNE.
Ward 1.	Ashes..... 16	8 to 10	Garbage..... 5	5 to 9
" 2.	" 21	12 to 15	" 8	15 to 21
" 3.	" 11	5 to 8	" 7	7 to 8
" 4.	" 9	4 to 8	" 4	5 to 7
" 5.	" 14	12 to 14	" 8	10 to 15
" 6.	" 4	2 to 4	" 4	3 to 6

STREETS.

Inglis Street was widened West of Acadia Street by purchasing a narrow strip of land from Mr. S. H. Holmes.

A piece of land ten feet wide on the front of Mr. Hobrecker's property on the West side of Young Avenue was also obtained to bring the street at that point to the correct width.

The buildings on the West side of Water Street, from Duke Street South having been destroyed by fire about the first of April, the Council decided to widen the Street at that point. A plan was prepared and approved affecting six properties. Messrs. John McInnes and W. G. Wiswell were appointed by the Council to appraise the land required and the amount of their valuation, \$3273.00 was offered to their respective owners.

William Robinson was granted a lease for a boat slip at the West end of South Street, for five years from May 1st, 1904.

Adam Marr received a similar privilege at the West end of Coburg Road.

941 square yards of cement sidewalk were laid, 2770 yards of tar concrete, and 567 yards of brick relaid. Cement sidewalks cost \$1.54, tar concrete from 42c. to 60c., brick 24c. per square yard.

A combined concrete curb and gutter was laid on the South side of Fawson street, the cost per lineal foot laid was \$0.98, the cost of curb and gutter alone being \$0.42.

Diagonal crossings of paving setts were laid at the intersection of Barrington and Buckingham Street and Argyle and Jacob Street.

A contract for supplying stone for breaking at the Poor Associ-

ation sheds for three years at 1-7/10 cents per bushel was made with J. W. Hamilton. Stone for the Crusher was purchased at 2 cents, 39690 bushels being broken. The quantity broken at the sheds was 33991 bushels, total cost \$2081.52 or 6-1/8 cents per bushel. The sheds were opened January 13th, and closed April 2nd.

CITY PLAN.

Three sections of the official plan have been completed and advertised for approval on June 9th, 1904. The district covered is

Section 1—Bounded by Young Street, Robie Street, North Street and Windsor Street.

Section 2—Bounded by Young Street, Windsor Street, North Street and Oxford Street.

Section 3—Bounded by Oxford Street, Quinpool Road, Pine Street and Chebucto Road.

CITY PROPERTY.

Almost the whole of the interior woodwork in the Western half of the City Hall was painted in 1902-3. The remainder was painted during the past year by Walsh Bros., their tender being the lowest. The lavatory in the Police Station was remodelled and painted. The flag-staff on the Grand Parade was found to be badly decayed and was renewed by the City Carpenter. The lowest tender for the work of taking down the old staff and erecting the new one was \$75.00. Mr. Brush performed the same work for \$23.86.

A line of wire was strung between the City Engineer's Office and the Store Keeper's Office City Yard, Bell Road and private telephones installed.

The tower of the Old Exhibition Building was altered and repaired. The windows in the upper storeys were removed and the openings closed. This portion of the building had been in a very bad condition,

During the year the City acquired the "Little Fuel Yard" on the corner of Bedford Row and Prince Street. It will be the site of an up-to-date fire station in the near future.

PUBLIC BATHS.

The Beach Bath was opened July 1st., and closed October 10th. The number of bathers was : males 4026, females 1193, total 5219. The expenditure was \$371.48 ; receipts \$229.20 ; stock on hand May 1, 1903, 390 trunks, 72½ one and two piece suits, 402 towels.

The floating bath was opened July 1st., and closed Sept 26th. The attendance was 1192 males, 386 females, total 1578 ; expenditure \$421.04, receipts \$8.35.

STREET RAILWAY.

A cross over at the entrance to the I. C. R. passenger station was the only new construction during the year.

CABLE CONDUITS.

The Nova Scotia Telephone Company laid underground conduits in Granville Street from Sackville Street to Buckingham Street, to Barrington, to Jacob, to Brunswick, to Cogswell, to Gottingen Street, with necessary branches. A branch was also laid in Queen Street South from Spring Garden Road. 9187 feet of cable was installed containing 561 miles of wire.

At the meeting of Council on March 10th, permission was granted for a conduit with branches on Pleasant Street from Spring Garden Road to Kent Street, also for branches on Prince Street between Granville and Hollis Streets, Hollis between Prince, and George, Duke, between Granville and Hollis, and corner Barrington and Buckingham Street.

The reports of Foreman and Inspectors and statements of expenditure, &c., are appended.

Respectfully submitted.

F. W. W. DOANE,
City Engineer.

REPORT FOREMAN WATER DEPARTMENT.

CITY HALL, May 2nd, 1904.

F. W. W. DOANE, ESQ.,

City Engineer.

SIR,—I have prepared the Annual Report of Stock belonging to the Water Department and length of main and service pipes laid, with length of pipes re-cleaned, also location of houses supplied with water during Summer of 1903, all of which is

Respectfully submitted,

E. MORRISON,

Foreman Water Department.

Mains Laid in 1903.

NEW MAINS.

STREET.			CAST IRON MAIN PIPE.					HYDN'TS.		COST PER FOOT IN CENTS.						Total Cost.						
IN	FROM.	TO.	High or Low Service.	3 inch Pipe in Feet.	4 inch Pipe in Feet.	6 inch Pipe in Feet.	9 inch Pipe in Feet.	Joints.	No. of Valves.	Length of Pipe—feet.	Size of Pipe—Inches.	Number.	Number of Valves.	Percentage of Rock.	Pipes and Specials.		Valves and Hydrants.	Labor and Cartage.	Lead, Gasket, etc.	Dynamite and Fuse.	Incidentals.	Total.
Beech	Oak	North 81 feet	H			81		T. & B.	1					90	67.1	24.7	142.4	2.0	5.6		241.8	\$ 195 66
Chestnut...	Cedar	South 200 feet	H		200			"	1					5	40.0	8.0	65.5	2.0	3.6		119.1	238 19
* LeMarchant	End of S. pipe	End of N. pipe	H			477		"	1						60.3	11.3	11.3	0.6			72.2	344 49
Parker	Windsor	North 198 feet	H		198			"	1						42.7	8.1	33.1	1.0			84.9	168 22
School	Rector	South 180 feet	L			180		"	1						60.0	11.1	102.7	0.8			174.6	314 20
Summit	End of pipe	West 24 feet	H			24		"	2						6.0		43.7	1.7			105.4	25 28
* Young	Kempt Road	East 1060 feet	L			1060		"	2						61.5	3.8	7.5	0.4			73.2	784 13

* Laid in sewer trench.

STREET MAINS REPLACED WITH LARGER MAINS.

STREET.			High or Low Service.	Size old Pipe— inches.	SIZE IN INCHES AND LENGTH IN FEET—NEW PIPE.					Number of Valves.	COST PER FOOT IN CENTS.						Total Cost.
IN	FROM	To			4 inch Pipe in feet.	6 inch Pipe in feet.	9 inch Pipe in feet.	Joints.	Pipes and specials.		Valves and Hydrants.	Labor and Cartage.	Lead, Gasket, etc.	Dynamite and Foss.	Incidentals.	Total.	
Argyle	S. side Buckingham	North 281 feet....	L.	3	231	.....	T. & B.	1								
"	N. side Prince ..	Sackville.....	L.	3	407	.....	"	3	42.6	13.1	49.2	1.6	.....	106.5	\$	732 30
Blowers	Grafton	Albermarle.....	L.	3	207	.....	"	1	47.0	7.8	44.2	2.5	.....	101.5		210 06
Craighton	Gerrish	South 306 feet....	L.	3	306	.....	"	1								
"	Cunard'	Falkland	L.	3	915	.....	"	4	40.5	6.6	41.5	1.0	.....	89.6		1093 46
Fawson	Hollis	Water	L.	3	349	.....	"	2	42.2	9.4	53.5	1.5	.....	107.2		364 39
Granville... ..	Buckingham	Prince	L.	3	1106	.....	"	2								
"	Sackville.....	Salter	L.	3	605	.....	"	2	40.3	3.7	36.9	0.7	.....	81.6		1405 95
Hollis	George	North 503 feet....	L.	3	503	.....	"	3								
"	Salter	Bishop	L.	3	646	.....	"	2	41.2	7.0	48.3	1.1	.....	97.6		1120 56
Maitland	Gerrish	Brunswick Laue..	L.	3	1556	"	3	41.3	3.1	38.6	0.8	0.2	84.0		1396 34
Victoria Rd.	Queen	East 384 feet	L.	3	384	.....	"	1	60.0	5.2	65.1	0.9	.....	131.2		503 82

Total length in feet of Cast Iron Water Mains in the Water Supply System of the City of Halifax.

	SIZE OF PIPE IN INCHES.										Less than 3 in.	Total.
	27	24	20	15	12	9	8	6	4	3		
Length December 31st, 1902	14560	20524	6712	44236	37201	43127	415	131559	20540	44725	898	364497
Laid during 1903								2206	7270			9476
	14560	20524	6712	44236	37201	43127	415	133765	27810	*37469	898	*366717

Equal to $69\frac{2}{5}\frac{3}{2}\frac{9}{80}$ miles.

* 7256 feet of 3 inch pipe replaced by 4 inch and 6 inch.

N. B.—45 feet of 20 inch pipe in waste way Chain Lakes, and pipes from mains to hydrants (except wharves) laid previous to 1897, not included in above summary.

Pipe Cleaning by Mechanical Scrapers, 1903.

DATE.	LOCATION.	Diameter in Inches.	Length cleaned in feet.	COST.	REMARKS.
May 28th.	High Service Main.....	20	6712	\$19 00	Re-cleaned.
" "	" "	15	29628		
Sept. 4th.	" "	20	6712	19 61	"
" "	" "	15	29628		
Nov. 5th.	" "	15	29628	17 20	"
" 4th.	Low Service.....	24	13400	11 45	"

New Service Pipes, 1903.

$\frac{1}{2}$ Inch. Feet.	$\frac{3}{4}$ Inch. Feet.	1 Inch. Feet.	2 Inch. Feet.	3 Inch. Feet.	Total Feet.
2017	82	66	27	42	2239

House Services Renewed, 1903.

$\frac{1}{2}$ Inch. Feet.	$\frac{3}{4}$ Inch. Feet.	1 Inch. Feet.	Total Feet.
727	143	21	891

Old Hydrants Replaced with Frost Jacket Hydrants, 1903.

STREET.	LOCATION.	Kind.	Service.	Size of Pipe in Inches.	Length of Pipe in Feet.	No. of Nozzles.	Distance Valve from Hydrant.
							FT. IN.
Buckingham...	Cor. Granville	City..	Low..	6	3	3	.. ..
Cornwallis	Cor. Brunswick	"	"	6	3	3	4 2
Prince William	Cor. Maitland	"	"	6	3	3	4 0

Location and Size of Valves Set, 1903.

NEW VALVES.

STREET.	LOCATION.	Size.	Service.
		Inch.	
Beech	S. side Oak, S. E. cor. 27' 4"	6	High.
Chestnut .	S. E. corner 22' 6"	4	Low.
	N. of corner 2' 0"		
Hollis ...	N. side George, N. E. cor. 19' 6"	4	Low.
Parker....	N. side Windsor	4	High.
	E. side to house 33' 9"		
	S. of N. cor. of house 20' 3"		
School....	S. side Rector, S. W. cor. 20' 9"	6	Low.
W. Young	W. of Gottingen 554 ft.	6	Low.
W. Young	W. side Longard Road	6	Low.
	N. W. of corner 23 ft		

Hydrant Valves.

STREET.	LOCATION.	Size.	Service.
		Inch.	
Cornwallis...	Corner Brunswick 4' 2" from hydrant	6	Low.
Prince Wm .	Corner Maitland 4' 0" from hydrant	6	Low.

Old Valves Replaced.

STREET.	LOCATION.	SIZE.		Service.
		Old.	New.	
Argyle	S. side Buckingham S. E. cor 23' 2" South 6" ..	3	4	Low.
Argyle	N. side Sackville, N. E. cor. 20 ft.	3	4	Low.
Argyle	S. side Sackville, S. E. cor. 39' 4" N. E. cor. 31' 4"	3	4	Low.
Argyle	S. side Prince, S. E. cor. 20' 6" N. of cor. 1' 6" ..	3	4	Low.
Argyle	N. side George St., 20' 7" from N. W. corner ..	4	4	Low.
Blowers	W. side Grafton, N. W. cor. 18' 2"	3	4	Low.
Creighton	S. E. cor of Gerrish 18' 6"	3	4	H. & L.
Creighton	S. side Cunard, S. E. cor. 15' 4"	3	4	Low.
Creighton	N. side Cornwallis, N. E. cor. 16' 2"	3	4	Low.
Creighton	S. side Cornwallis, S. W. cor. 15' 9"	3	4	Low.
Creighton	N. side Falkland, N. W. cor. 16' 8"	3	4	Low.
Fawson	W. side Water, N. W. cor. step 45' 4" to F. plug 18' 10"	3	4	Low.
Fawson	E. side Hollis, S. E. cor. not steps 17' 5" in line with street	3	4	Low.
Granville	N. side Salter, N. W. cor. 29' 3"	3	4	Low.
Granville	S. side Blowers, S. W. cor. 29' 5" S. of cor. 1' 2"	3	4	Low.
Granville	S. side Buckingham, N. E. cor. 20' 8" S. of cor. 4' 2"	3	4	Low.
Granville	S. side Duke, S. E. cor. 18' 9"	3	4	Low.
Hollis	N. of Duke, N. W. cor. 31' 9"	3	4	Low.
Hollis	N. side Bishop, N. E. cor. 19' 8", N. 1' 0"	3	4	Low.
Hollis	S. side Duke, S. E. cor. 18' 8"	3	4	Low.
Hollis	S. side Salter, N. W. cor. 22' 2"	3	4	Low.
Maitland	N. side Brunswick Lane, N. W. cor. 18' 1"	3	4	Low.
Maitland	N. side Cornwallis, N. E. cor. 16' 6"	3	4	Low.
Maitland	S. side Gerrish, S. W. cor. 35' 11"	3	4	H. & L.
Victoria Rd.	W. side Queen, N. W. cor. 27' 11"	3	6	Low.

Total Number of Valves, Main and Distribution Services, December 31st, 1903.

	27"	24"	20"	15"	12"	9"	6"	4"	3"	1½"	1¼"	1"	¾"	Hydrant Valve 6"	Total.
In use December 31st, 1902.....	1	8	2	29	55	66	320	61	145	1	9	2	11	69	779
Set during 1903.....	..	..	..	..	..	..	5	26	..	..	..	..	..	..	33
	1	8	2	29	55	66	325	87	*121	1	9	2	11	71	*788

* 24 three inch valves replaced by larger valves.

N. B.—All valves open by turning to the right, except 2 on the 24" mains at their junction below Chain Lake pipe houses.

Pipe Stock on Hand December 31st, 1903.

No. of Pieces.	Diameter in inches.	Weight of one in lbs.	Total weight in lbs.	Val. per lb in cts	Total Value.	REMARKS.
3	27	2870	8610	1 ¾	\$ 150 67	Class A. T. & B. 12 ft
3	27	3206	9606	1 ¾	168 10	Class B T & B. "
1	27	3658	3658	1 ¾	64 01	Class C. T & B. "
6	24	2360	15160	1 ¾	202 13	
4	20	1263	5052	2 ¼	113 67	
9	15	1200	10800	2 ¼	243 60	
4	12	680	2720	2 ¼	61 20	
13	10	550	7150	2 ¼	160 87	
95	9	500	47500	2 ¼	1068 75	
36	8	386	13896	2 ¼	312 66	
299	6	380	113620	2 ¼	2556 45	12 ft. long.
813	6	280	227640	2 ¼	5121 90	9 ft. long.
17	5	222	3774	2 ¼	84 91	
74	4	204	9096	2 ¼	204 66	12 ft. long.
611	4	156	95316	2 ¼	2144 61	9 ft. long.
94	3	130	12220	2 ¼	274 95	9 ft. long.
26	.....	26	676	2 ¼	15 21	Stand pipes.
63	.....	12	756	2 ¼	17 01	Plates.
150	.....	6	900	2 ¼	20 25	Caps.
150	.....	18	3464	.....	77 94	Sleeves for ser. pipes
180	.....	4	720	.....	16 20	Sq. caps for stopc'ks
2699			592334		\$13079 15	

Pipe—Specials.

No. of pieces.	Diameter in inches.	DESCRIPTION.	Weight of one in lbs.	Total weight in lbs.	Valve per lb. in cents.	Total Value.
12	27	Thimbles				
2	27	Bell Mouth	831	1662	2 $\frac{1}{4}$	\$ 37 39
13	27	Bevel Collars	795	10335	3 $\frac{3}{4}$	310 04
1	27	Plain Special, 2 ft. long, Class A	404	404	1 $\frac{1}{4}$	7 07
1	27	“ 2 “ “ B	460	460	“	8 05
1	27	“ 3 “ “ B	700	700	“	12 25
1	27	“ 4 “ “ B	920	920	“	16 10
1	27	“ 5 “ “ B	1248	1248	“	21 84
2	27	“ 5 “ “ B	1144	2288	“	40 04
1	27	“ 3 “ “ C	820	820	“	14 35
1	27	“ 3 “ “ C	930	930	“	16 27
1	27	“ 4 “ “ C	1068	1068	“	18 69
1	27	“ 5 “ “ C	1332	1332	“	23 31
1	24	Bevel Collar	688	688	3	20 64
12	24	Thimbles	396	4752	2 $\frac{1}{4}$	106 92
1	24	Cap	290	296	“	6 52
6	24	Split Thimbles	620	3720	2 $\frac{1}{2}$	93 00
1	24	Y Branch 24" x 24"	2372	2372	2 $\frac{1}{4}$	53 37
4	20	Thimbles	230	920	“	20 70
1	20	Split Thimbles	453	453	2 $\frac{1}{2}$	11 32
3	15	4-way branches	896	2688	2 $\frac{1}{4}$	60 48
3	15	4-way “ 15" x 6"	660	1980	“	44 55
1	15	3-way branch	812	812	“	18 27
2	15	Y's	1112	2224	“	50 04
4	15	Thimbles	234	936	“	21 06
1	15	3-way branch 15" x 12" x 6"	580	580	“	13 30
1	15	Reducing to 6"	400	400	“	9 00
5	15	Saddles 15" x 6"				
9	15	Split Thimbles	260	2340	2 $\frac{1}{2}$	58 50
1	12	1-way branch	615	615	2	13 84
3	12	4-way branch 12" x 9"	500	1500	2 $\frac{1}{4}$	33 75
4	12	4-way branches 12" x 6"	475	1900	“	42 77
2	12	3-way “ 12" x 12"	524	1048	“	23 58
3	12	3-way “ 12" x 9"	494	1482	“	33 34
1	12	3-way “ 12" x 6"	469	469	“	10 55
2	12	Reducing to 9"	240	480	“	11 00
8	12	“ 6"	200	1600	“	36 00
2	12	“ 6" with faucets	200	400	“	9 00

PIPE SPECIALS.—(Continued).

Nc. of Pieces. Diameter in inches.		DESCRIPTION.	Weight of one in lbs.	Total weight in lbs.	Value per lb. in centes.	Total Value.
21	12	Thimbles	160	3360	2 $\frac{1}{4}$	75 60
5	12	Caps	45	225	"	5 06
2	12	Saddle 12" x 4"	90	180	"	4 05
13	12	Split Thimbles.....	222	2886	2 $\frac{1}{2}$	67 93
2	9	Six-way branches, 9" x 9" x 9" x 8"	450	900	2 $\frac{1}{4}$	20 25
6	9	Three-way branches, 9" x 9"	355	2130	"	47 92
10	9	" " " 9" x 6"	335	3350	"	75 37
7	9	Reducing 9" to 6"	157	1099	"	24 73
3	9	Offsets	156	468	"	10 93
20	9	Thimbles	112	2240	"	50 40
1	9	Saddles 9" x 4"	45	45	"	1 01
20	9	Split Thimbles	139	2780	2 $\frac{1}{3}$	69 50
7	9	Caps	34	238	2 $\frac{1}{4}$	5 35
2	6	Four-way branches	255	510	"	11 47
9	6	Three-way "	209	1881	"	42 32
4	6	Three-way " 6" x 3"	131	524	"	11 77
3	6	Reducing to 4"	114	342	"	7 74
10	6	Reducing to 3"	105	1050	"	23 62
13	6	Thimbles	75	1025	"	23 06
8	6	Offsets	140	1120	"	25 20
4	6	Y branches	209	836	"	18 97
22	6	Split Thimbles	92	1024	2 $\frac{1}{3}$	25 50
15	6	Caps	19	285	2 $\frac{1}{4}$	6 41
3	6	Bends	140	420	"	9 45
19	4	4-way branches	123	2337	"	52 58
5	4	3-way branches	114	570	"	12 82
6	4	Y branches	96	576	"	12 96
4	4	Reducing to 3"	84	336	"	7 56
7	4	Offsets	66	462	"	10 39
4	4	Thimbles	29	116	"	2 61
12	4	Bends	88	1056	"	23 76
12	4	Split Thimbles	64	768	2 $\frac{1}{3}$	19 20
8	3	Crosses	90	720	2 $\frac{1}{4}$	16 20
4	3	3-way branches	60	240	"	5 40
10	3	Thimbles	29	290	"	6 52
7	3	Split Thimbles	48	336	2 $\frac{1}{4}$	8 30
25	5	Main Stopcock Caps	16	400	2 $\frac{1}{4}$	9 00
8	2	4-way branches	30	180	"	4 40
2	2	Angle branches	23	46	"	1 03
10	....	Fire Hydrants .....	.....	.....	66.50	665 00
10	....	Casting for fire plugs	418	4180	.03	123 40
7	....	Bases for fire plugs	140	980	.03	29 40

PIPE SPECIALS.—(Continued).

No. of Pieces. Diameter in inches.	DESCRIPTION.	Weight of one in lbs.	Total weight in lbs	Value per lb. in cents.	Total Value.
6	Jackets for fire plugs	340	2040	.03	\$ 61 20
11	Extension pieces for fire plugs	124	1364	.03	40 92
16	Cast iron caps	5	80	.03	2 40
8	Cast iron caps suction hose	9	72	.03	2 16
	Brass castings, all sorts	100	100	.35	35 00
6	Brass nozzles for fire plugs	2½	15	.60	9 00
2	“ suction hose	5½	16	.60	9 60
	Tin tubing	250	250	.33	82 50
	Refined iron	400	400	.01½	6 00
12	Cast iron tops for stopcocks	5	60	.02½	1 50
2	Bases for fire plugs 6" x 3"	150	300	.03	9 00

Joint Staves.

For 6 inch pipe.	For 9 inch pipe.	For 12 inch pipe.	For 15 inch pipe.	For 20 inch pipe.	For 24 inch pipe.	Key Wedges.	Cost of each.	Total cost.
.....	2700	2000	1000	600	6500	.....	\$0 1¼	\$160 00
.....						1000	¼	2 50

Valves.

No. of Pieces.	Size in Inches.	DESCRIPTION.	Weight of one in lbs.	Total weight in lbs.	Value of each.	Total Value.
1	12	Regulating Valve.....				\$ 206 66
1	6	“.....				103 33
4	15	Stopvalves.....			\$ 60 00	240 00
3	12	“.....			40 00	120 00
9	9	“.....			25 77	231 93
56	6	“.....			17 49	979 44
52	4	“.....			15 00	780 00
5	3	“.....			12 00	60 00
4	1	Service Stopcocks.....			2 50	10 00
24	$\frac{3}{4}$	“.....			2 00	48 00
26	$\frac{1}{2}$	“.....			1 60	41 60
8	$\frac{3}{8}$	“ curb.....			1 60	12 80
4	15	Gun Metal Spindles.....	28	112	60	67 20
4	9	“ “.....	14	56	60	33 60
8	6	“ “.....	9	72	60	43 20
12	4	“ “.....	6	72	60	43 20
12	3	“ “.....	5	60	60	30 00
213						\$2856 96